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THE CAUSAL MECHANISMS OF HORIZONTAL SHAREHOLDING

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Abstract. *Although empirical studies show that common shareholding affects corporate conduct and that common horizontal shareholding lessens competition, critics have argued that the law should not take any action until we have clearer proof on the causal mechanisms. I show that we actually have ample proof on causal mechanisms, but that antitrust enforcement should focus on anticompetitive market structures, rather than on causal mechanisms. I rebut claims that every type of causal mechanism that might produce anticompetitive effects is either empirically untested or implausible. I also show that critics are mistaken in claiming that common shareholders lack incentives to influence corporations to increase portfolio value by lessening competition. Finally, I show that preventing anticompetitive horizontal shareholding need not restrict diversification and would encourage, not discourage, desirable institutional investor influence on the efficiency of corporate conduct.*

INTRODUCTION

Common shareholding exists when the leading shareholders of different corporations overlap. The precise effects of such common shareholding will vary depending on just how much influence the common shareholders have over the corporations. But debate about that issue often obscures a basic economic reality: to ***whatever*** extent these common shareholders have influence over corporate conduct, it must cause the corporations to take into account the interests of the other commonly-held corporations more than they would if their ownership was totally separate. With separate ownership, each corporation's only goal would be (as economic models traditionally assume) to maximize its individual profits. With common ownership, single-firm profit-maximization is compromised by the fact that the corporation is to some extent influenced by common shareholders who are also interested in the profits of other corporations. When the commonly-held corporations are horizontal competitors in the same product market, this increased interest in the profits of competitors will naturally lessen their incentives to compete with each other. Such common shareholding between horizontal competitors is known as horizontal shareholding.

Dozens of empirical studies have now confirmed this economic reality that common shareholding alters corporate behavior. At least fifteen of those empirical studies have confirmed that horizontal ownership often has anticompetitive effects in concentrated markets. These include: nine market-level studies; a massive cross-market study of hundreds of consumer goods; two national studies across all industries; a new study of horizontal ownership by venture capitalists; a new study showing that when a firm's addition to the S&P 500 creates an exogenous increase in horizontal shareholding, it raises the stock price of its produce market rivals; and a new study showing that a financial institution merger that exogenously increased horizontal shareholding across competing beverage manufacturers increased their profits and revenue.[1] Only two of these empirical studies have been disputed, and

[1] Einer Elhauge, *How Horizontal Shareholding Harms Our Economy—And Why Antitrust Law Can Fix It,* 10 HARVARD BUSINESS LAW REVIEW 207 (2020) at 213–14, 217–19, 239–44 (collecting and reviewing the first 10 of those empirical studies) [hereinafter Elhauge, *How Horizontal Shareholding*]; Rosati, et al, *Common Shareholding in Europe* at 13–14, 167–210 (2020), https://ec.europa.eu/jrc/en/publication/common-shareholding-europe (showing horizontal shareholding has anticompetitive effects on beverage profits and revenue); Alex Haerang Park & Kyoungwon Seo, *Common Ownership and Product Market Competition: Evidence from the U.S. Airline Industry*, 48 KOREAN J. FINANC. STUD. 617 (2019) (finding that horizontal shareholding raises airline prices); Alexandro Ruiz-Pérez, *Market Structure and Common Ownership: Evidence from the U.S. Airline Industry* (2019), https://www.cemfi.es/~ruiz-

the critiques of the other two empirical studies have been rebutted at length.[2] Moreover, many other empirical studies have shown that common shareholdings alter corporate behavior in a host of ways that are not necessarily anticompetitive, especially when the common shareholdings are not horizontal. For example, empirical studies have shown that common shareholding affects corporations' mergers, contracting, advertising, alliances, innovation, holdup, cash retention, product positioning, knowledge diffusion, environmental positions, takeover bids, merger profitability, information exchanges, choice of bankruptcy regimes, and the rates and risks of their loans.[3] While the latter set of studies does not directly show anticompetitive effects, it does further confirm what we shall see is often denied when discussing horizontal shareholding: namely that common shareholders can and do alter the behavior of corporations in a way that reflects their interests in the commonly-held firms. Given the strong theoretical and empirical reasons to think that horizontal shareholding often has anticompetitive effects, scholars have in recent years advocated antitrust enforcement to police the problem.[4]

Notwithstanding the wealth of empirical evidence that common shareholders do influence corporate behavior, some critics (including the U.S. antitrust agencies so far) have argued that we should not act on the empirical findings that horizontal shareholdings have anticompetitive effects (given the dispute about some of those findings) until we have stronger proof on the causal mechanisms by which common

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perez/alexandro_ruiz_perez_JMP_nov2019.pdf (showing horizontal shareholding reduces entry into airline markets); Mengde Liu, *Players Behind the Scenes: Common Ownership in the Hospital Industry* (October 31, 2019), https://pdfs.semanticscholar.org/8dae/3f4c62c1eab3cf0412666f490f337149d223.pdf (showing that horizontal shareholding increases hospital prices); Kentaro Asai & Ben Charoenwong, Ownership Networks May Facilitate Bid-Rigging, (December 2020), https://ssrn.com/abstract=3298152 (showing that horizontal shareholding increases identical bidding for public contracts, which increases prices).

[2] Elhauge, *How Horizontal Shareholding, supra* note 1, at 222–39, 244–54.

[3] Martin C. Schmalz, *Common-Ownership Concentration and Corporate Conduct*, ANNUAL REV. FIN. ECON. 1, 19–23 (Dec. 2018) (reviewing the literature); Martin C. Schmalz, *Recent Studies On Common Ownership, Firm Behavior, And Market Outcomes* (January 19, 2021), https://ssrn.com/abstract=3725305, forthcoming 66 ANTITRUST BULLETIN, Issue 1 (2021) (updating his literature review).

[4] Elhauge, *How Horizontal Shareholding, supra* note 1, at 212, 255–86; Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267, 1267–78 (2016) [hereinafter Elhauge, *Horizontal Shareholding*]; Eric A. Posner, Fiona Scott Morton & E. Glen Weyl, *A Proposal to Limit the Anticompetitive Power of Institutional Investors*, 81 ANTITRUST L.J. 669, 669 (2017); Fiona Scott Morton & Herbert Hovenkamp, *Horizontal Shareholding and Antitrust Policy,* 127 YALE L.J. 2026, 2034–35 (2018).

shareholders influence corporate behavior.[5] The most thoughtful of these critiques is a new article in the *Yale Law Journal* by Professors Hemphill and Kahan. It offers a typology of causal mechanisms, and then argues that each type of mechanism either has not been empirically tested or is implausible.[6] Others go even further to argue that the empirical studies showing that common shareholding affects corporate behavior should be ignored because it is implausible that institutional investors would have incentives to try to influence corporate conduct through any mechanism.[7] The most sophisticated of these critiques are new articles by Professors Bebchuk, Cohen, and Hirst that argue that institutional investors (especially index funds and diversified active funds) have little incentive to exert influence over corporations to increase their valuations because doing so would not significantly impact the investment flow or institutional investor fees that profit such institutional investors.[8]

This article shows that these critiques are mistaken. I begin, in Part I, by showing that we have ample proof on causal mechanisms and that others are incorrect when they argue that enforcement should focus on causal mechanisms, rather than on anticompetitive market structures. I next show, in Part II, that Professors Hemphill and Kahan are mistaken in their claim that every type of causal mechanism is either empirically untested or implausible (at least for index funds). Part III then shows that horizontal shareholders (including index funds and diversified active funds)

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[5] Note by the United States to OECD, Hearing on Common Ownership by Institutional Investors and Its Impact on Competition, OECD DAF/COMP/WD(2017)86, at ¶¶ 13, 15 (Dec. 6, 2017) [hereinafter "US OECD Note"]; Douglas H. Ginsburg & Keith Klovers, *Common Sense about Common Ownership*, CONCURRENCES REVIEW No 2-2018, at 4–5, www.concurrences.com; C. Scott Hemphill & Marcel Kahan, *The Strategies of Anticompetitive Common Ownership,* 129 YALE L.J. 1392, 1397–99, 1447–48 (2020); FTC Commissioner Noah Joshua Phillips, *Taking Stock: Assessing Common Ownership* at 5–6 (June 1, 2018), https://www.ftc.gov/public-statements/2018/06/taking-stock-assessing-common-ownership.

[6] Hemphill and Kahan, *supra* note 5, at 1399–1429, 1443–45. They acknowledge that one mechanism, selective omission, is plausible for some institutional investors and is at least consistent with the empirical evidence, *id.* at 1400, 1427–29, but they argue that it too has not been empirically established, *id.* at 1401, and they also argue it is implausible for the index fund families that are major horizontal shareholders, *id.* at 1444–45.

[7] *Infra* Part III.

[8] Lucian A. Bebchuk, Alma Cohen & Scott Hirst, *The Agency Problems of Institutional Investors*, 31 JOURNAL OF ECONOMIC PERSPECTIVES 89, 90, 108–109 (2017); Lucian Bebchuk & Scott Hirst, *Index Funds and the Future of Corporate Governance: Theory, Evidence, And Policy,* 119 COLUMBIA L. REV. 2029, 2037, 2041, 2052–59, 2131–33 (2019) [hereinafter Bebchuk & Hirst, *Index Funds*].

have strong incentives to influence corporate conduct in anticompetitive ways, contrary to the arguments of others, such as Professors Bebchuk, Cohen, and Hirst.

Part IV concludes by addressing a driving force behind these critiques: the fear that antitrust enforcement against horizontal shareholding would either greatly restrict diversification or discourage desirable institutional investor influence on corporate conduct.[9] This argument is more than a little ironic, given that its premise is that institutional investors can influence corporate conduct, which is inconsistent with the critics' claim that such influence is unproven or implausible. In any event, as I show, this argument also rests on a false premise that tackling the anticompetitive effects of horizontal shareholding requires restricting either diversification or desirable institutional investor influence. To the contrary, the natural remedy would just shift diversification to a different level and restricting horizontal shareholding would encourage, not discourage, investment fund influence to improve the efficiency of corporations.

I. THE AMPLE PROOF ON CAUSAL MECHANISMS

Although critics express befuddlement about the causal mechanisms by which common shareholders might influence corporate policy,[10] the mechanisms are neither surprising nor mysterious. They include all the ordinary mechanisms by which managers are incentivized to act in the interests of their shareholders: shareholding voting, executive compensation, the market for corporate control, the stock market, and the labor market. For decades, corporate law and economics scholarship has argued that although this combination of mechanisms cannot totally eliminate agency slack, it does assure managers are primarily influenced by the interests of their shareholders.[11]

When the interests of a firm's shareholders are changed by common shareholding, these same mechanisms indicate that managers will be primarily influenced by those altered shareholder interests. Horizontal shareholding alters those shareholder interests because it means those shareholders will to some extent be harmed by competition with rivals, which will lessen firm incentives to compete. As shown

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[9] Hemphill & Kahan, *supra* note 5, at 1396–97; Bebchuk & Hirst, *Index Funds, supra* note 8, at 2133; FTC Hearing on Competition And Consumer Protection In The 21st Century 31–32, 55–56, 109–110, 215–16 (Dec. 6, 2018), available at https://www.ftc.gov/news-events/events-calendar/ftc-hearing-8-competition-consumer-protection-21st-century..

[10] *See supra* sources cited in note 5.

[11] *E.g.*, Frank H. Easterbrook, *Managers' Discretion and Investors' Welfare: Theories and Evidence,* 9 DEL. J. CORP. L. 540, 543 (1984).

below in Section I.A, there is ample theoretical and empirical proof that common shareholders can and do exercise influence via these conventional mechanisms. None of these mechanisms require direct communications from horizontal shareholders. However, there is also ample evidence that such direct communications do occur, which can amplify the anticompetitive effects. Further, horizontal shareholding can decrease competition by simply reducing shareholders' incentives to pressure managers to compete.

In any event, the claim that antitrust enforcement requires stronger proof on causal mechanisms is misbegotten. As Section I.B explains, waiting for further proof of causal mechanisms before addressing the anticompetitive harm caused by horizontal shareholding is unjustified, just as it was when some argued that the empirical literature showing that smoking causes cancer did not justify regulating cigarettes until we had more evidence on the causal mechanisms. Nor are others correct that enforcement should focus on regulating particular causal mechanisms. Given that these causal mechanisms are the same ones used to desirably influence corporations to generally advance their shareholders' interests, banning any of these mechanisms would be overbroad. The alternative of banning only the anticompetitive use of any of these mechanisms would be ineffective, not only because evidence on that topic will generally be nonpublic or obscure, but because of substitution effects across mechanisms. Instead, as is generally the case in antitrust, enforcement should focus on changing anticompetitive market structures, not on behavioral remedies that are hard to police.

Finally, as Section I.C shows, it is not the case that the causal mechanisms cannot have anticompetitive effects because they conflict with the interests of non-horizontal shareholders and fiduciary duties to protect their interests. This argument is flawed because non-horizontal shareholders affirmatively benefit from the fact that horizontal shareholdings reduce competition at both their firm and rival firms simultaneously. This argument also ignores the business judgment rule and would, if accepted, imply that mergers that involve the acquisition of a controlling interest of less than 100% can never be anticompetitive, which is implausible and clearly rejected by antitrust law.

A. The Causal Mechanisms

An important factor that bears on the plausibility of all the causal mechanisms is just how much stock is held and voted by the institutional investors who have large common shareholdings. Much of the attention has focused on the "Big Three" index fund families (BlackRock, Vanguard & State Street), given that their index investing

across all firms in various categories definitely creates large common and horizontal shareholding.[12] But most common shareholdings are not in index funds, which accounted for only 29% of all institutional investor funds in 2015.[13] Instead, data shows that the rise in common shareholding is primarily driven not by the growth of the Big Three index fund families, but rather by the increased diversification of all institutional investors, including active funds.[14]

This has resulted in extremely high levels of common shareholding across the economy. One measure of common shareholding levels is the average weight that firms put on the profits of other firms, which ranges from 0 to 1, where 1 is the weight a firm would put on another firm it 100% owns.[15] Assuming that each shareholder's influence on a firm is proportional to its shareholdings, the average weight that each S&P 500 firm puts on the profits of other S&P 500 firms has increased in the U.S. from 0.2 in 1980 to 0.7 in 2017, and (more tellingly for horizontal shareholding) from 0.3 to 0.75 between S&P 500 firms in the same industry.[16] While this conclusion does depend on an assumption of proportional shareholder influence that has been debated,[17] it indicates that common shareholding levels are high and horizontal shareholding levels are even higher. Moreover, this study shows that the results are similar regardless of the assumption about shareholder influence, and increase if one assumes that larger shareholders are disproportionately influential,[18] which seems reasonable since not only are they more likely to vote, but their votes are more likely to be pivotal to outcomes given how many votes they cast.

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[12] *See* Bebchuk & Hirst, *supra* note 5, at 1233.

[13] Patricia Oey & Christina West, *Average Fund Costs Continue to Decline in 2015 But Investors Are Not Necessarily Paying Less*, MORNINGSTAR MANAGER RESEARCH 5 (April 26, 2016), https://www.morningstar.com/articles/750651/average-fund-costs-continue-to-decline-in-2015 [https://perma.cc/FKK9-77UY]. Moreover, this 29% figure excludes from the denominator individuals or firms like Berkshire Hathaway, which also hold considerable horizontal shareholdings. Jose Azar, Martin C. Schmalz & Isabel Tecu, *Anticompetitive Effects of Common Ownership*, 73 J. FIN. 1514, 1516 (2018).

[14] Matthew Backus, Christopher Conlon, & Michael Sinkinson, *Common Ownership in America: 1980-2017* at 3, 17, 22–23, 28, NBER Working Paper 25454 (Jan 2019), http://www.nber.org/papers/w25454.

[15] *Id.* at 12.

[16] *Id.* at 1–2, 23–24.

[17] Elhauge, *How Horizontal Shareholding, supra* note 1, at 232–34 (discussing the debate).

[18] Backus, Conlon, & Sinkinson, *supra* note 14, at 6, 15–16.

Institutional investors held 70% of shares in all publicly-traded firms in 2017.[19] Further, because they are much more likely to vote than individual shareholders, institutional investors cast 88% of the votes at publicly-held firms.[20] The clout of institutional investors is even greater at the S&P 500 firms that dominate our economy, with 80% of total market capitalization.[21] In 2017, institutional investors held 80% of the stock in S&P 500 firms,[22] and cast 93% of the votes at the S&P 500 firms.[23] Such dominant voting and shareholding certainly makes it plausible that such institutional investors would influence corporate behavior, so that changes in their incentives for exerting that influence (like growing horizontal shareholding) would change how they exert that influence.

Even if one focuses just on the Big Three index fund families (Vanguard, BlackRock, and State Street) that are even more likely to have large horizontal shareholdings, they alone are large enough to exert influence. In 2015, the Big Three alone held 17.6% of all stock in publicly-traded firms,[24] and cast 24.4% of votes at publicly-traded firms.[25] Among all S&P 500 firms, the percentages are even higher: in 2017, the Big Three held 20.5% of corporate stock (Vanguard 8.8%, BlackRock 7.1%, and State Street 4.6%) and on average cast 25.4% of the votes (Vanguard

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[19] ProxyPulse, 2018 Proxy Season Review (Oct. 2018), https://www.broadridge.com/proxypulse/ [https://perma.cc/6ZUJ-YYGV].

[20] Institutional investors voted 91% of their shares, while individual shareholders voted only 28% of their shares. *Id.* Thus, institutional investors vote (.91)(70%) = 63.7% of all publicly-traded shares, and individual investors vote (.28)(30%) = 8.4% of them, so 72.1% of all publicly-traded shares are voted, with 63.7%/72.1% = 88%. of those votes cast by institutional investors.

[21] S&P 500 Fact Sheet, https://us.spindices.com/indices/equity/sp-500 [https://perma.cc/YR27-GJCJ].

[22] Backus, Conlon, & Sinkinson, *supra* note 14, at 13.

[23] Given their voting rates, institutional investors vote (.91)(80%) = 72.8% of all S&P 500 shares, and individual investors vote (.28)(19%) = 5.3% of them, so 78.1% of all S&P 500 shares are voted, with 72.8/78.1 = 93% of those votes cast by institutional investors.

[24] Jonathan Lewellen & Katherina Lewellen, *Institutional Investors and Corporate Governance: The Incentive to Be Engaged* 1 (Nov. 4, 2018), https://ssrn.com/abstract=3265761; Jan Fichtner, Eelke M. Heemskerk & Javier Garcia-Bernando, *Hidden power of the Big Three? Passive index funds, re-concentration of corporate ownership, and new financial risk*, 19 BUSINESS & POLITICS 298, 313 (2017).

[25] While institutional investors in general vote 91% of their shares, large index fund families like BlackRock vote 100% of their shares. Jill Fisch, Assaf Hamdani, & Steven Davidoff Solomon, *The New Titans of Wall Street: A Theoretical Framework for Passive Investors*, 168 U. Pa. L. Rev. 17, 44, n.139 (2019). Assuming that 100% figure holds true for Vanguard and State Street as well, the Big Three vote 17.6% of all publicly-traded shares. Given that 72.1% of all publicly-traded shares are voted, *supra* note 24, the Big Three thus casts 17.6%/72.1% = 24.4% of votes at publicly-traded firms.

11.1%, BlackRock 8.7%, and State Street 5.6%).[26] It would be surprising if corporate managers were not influenced by the interests of three leading horizontal shareholders who typically vote 24-25% of corporate stock. Indeed, among Fortune 250 firms, the Big Three combined are the largest shareholder in 96% of firms, the Big Two (Vanguard and BlackRock) combined are the largest shareholder in 94.4% of firms and one of the three is the largest shareholder in 78% of firms, with Vanguard alone being the largest shareholder in 65.6% of them.[27] Further, given the average voting margin in shareholder proposals about corporate governance, the Big Three could determine the outcome of 65.2% of them, the Big Two in 50.5% of them, and Vanguard alone in 24.1% of them.[28] Moreover, even substantial minority support for a shareholder proposal often causes a corporate board to implement it.[29] The influence of the Big Three is likely to only grow since they are forecast to vote 40% of shares in S&P 500 firms by 2039.[30]

But what are the precise mechanisms by which large horizontal shareholdings and votes are likely to influence corporate management? They are several, as the following sections detail.

1. Board Elections. One obvious causal mechanism is that horizontal shareholders vote in elections for the board of directors. A recent economic proof shows that voting by horizontal shareholders will incline managers to lessen competition, as long as managers care either about their vote share or their odds of re-election.[31] Under either goal, the proof shows that corporate managers will maximize the weighted average of their shareholders' profits from all their stockholdings.[32] The goal just changes the weight put on each shareholder. If managers maximize their expected vote share, shareholders will be weighted proportionally to their voting shares, so increased horizontal shareholding will proportionally increase prices.[33]

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[26] Lucian Bebchuk & Scott Hirst, *The Specter of the Giant Three*, 99 B.U. L. REV. 721, 736 (2019) [hereinafter Bebchuk & Hirst, *Specter*].

[27] Caleb N. Griffin, *Margins: Estimating the Influence of the Big Three on Shareholder Proposals* , 73 SMU L. REV. 409, 419& Table 2(2020). At Fortune 250 firms, the Big Three held 20.1% of corporate stock (Vanguard 8.4%, BlackRock 7.3%, and State Street 4.4%) and on average cast 25% of the votes (Vanguard 10.6%, BlackRock 9.0%, and State Street 5.4%). *Id.* at 417 & Table 1. Thus, their share of stock and votes cast are similar at both Fortune 250 firms and at S&P 500 firms.

[28] *Id.* at 431–32 & Table 11.

[29] *See Id.* at 416.

[30] Bebchuk & Hirst, *Specter, supra* note 26, at 739.

[31] *See* José Azar, *Portfolio Diversification, Market Power, and the Theory of the Firm* at 3 (Aug. 23, 2017), https://ssrn.com/abstract=2811221.

[32] *Id.* at 12–14.

[33] *Id.* at 12–13.

This managerial goal thus provides a clear foundation for the assumption of proportional influence that is generally used to calculate the modified HHI (called MHHI) measure of horizontal shareholding concentration that has been used in empirical studies.[34] If corporate managers instead 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.[35] Because the largest shareholders typically are now horizontal shareholders, this managerial goal indicates that horizontal shareholding will increase prices even more than standard MHHI measures would predict. In such cases, one can calculate a Generalized HHI (called GHHI) measure that instead weights shareholders by the odds their votes will be pivotal.[36]

To be sure, one might question whether managers care solely about maximizing their vote share or re-election odds, but it seems hard to deny that vote share and re-election odds play significant roles in the decisionmaking function of managers. To whatever extent one thinks managers do pay attention to vote share or re-election odds, this new economic proof mathematically establishes that prices will be increased by high levels of horizontal shareholding across a set of firms that have collective market power.

Some assert that horizontal shareholding cannot adversely affect competition if the shareholders have varying levels of horizontal shareholding in different corporations.[37] But the new economic proof fully accounts for such variation, showing that it simply alters the precise weight managers put on each shareholder, and thus the predicted amount of price increase, without changing the basic result that higher horizontal shareholding levels cause an increase in prices.[38]

This economic proof that voting by horizontal shareholders will cause adverse price effects does not assume any communication between firms, between shareholders, or between managers and shareholders.[39] It thus directly rebuts the assumption of some that such communications are necessary for a causal mechanism.[40] However,

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[34] *E.g.*, Azar, Schmalz & Tecu, *supra* note 13, at 1522, 1525 (adopting this assumption).

[35] Azar, *supra* note 32, at 13–14.

[36] Duarte Brito, António Osório, Ricardo Ribeiro & Helder Vasconcelos, *Unilateral Effects Screens for Partial Horizontal Acquisitions: The Generalized HHI and GUPPI*, 59 INT'L J. INDUS. ORG. 127, 147–50 (2018).

[37] *See* Edward B. Rock & Daniel L. Rubinfeld, *Antitrust for Institutional Investors,* 82 ANTITRUST L.J. 221, 232–39 (2018); Menesh S. Patel, *Common Ownership, Institutional Investors, and Antitrust,* 82 ANTITRUST L.J. 279, 311–13 (2018).

[38] Azar, *supra* note 32, at 13–14.

[39] *Id.* at 14–15.

[40] *E.g.*, Phillips, *supra* note 5, at 5–6 (relying on such an assumption).

the economic proof also finds that such shareholder-manager communication can exacerbate the price effect by giving more weight to the shareholders who communicate. [41] Likewise, horizontal shareholding might increase communication between firms in a way that facilitates a coordination that exacerbates the anticompetitive effects, and new empirical studies find that in fact higher horizontal shareholding levels do increase firm disclosures of information that can help firms coordinate.[42] But the anticompetitive effects do not depend on such communications or coordination because the effect of shareholding voting on managerial incentives suffices to cause anticompetitive effects.

Some argue that shareholder voting on director elections is unlikely to influence corporate behavior because proxy statements do not reveal the business strategy of directors or because most corporate elections are uncontested.[43] Neither claim is persuasive.

It is true that proxy statements do not state directors' business strategies, but political ballots also do not state candidates' positions, and no one thinks that makes the positions of politicians irrelevant to their elections. Institutional investors can surely learn enough about the general competitive aggressiveness of the current board of directors to know whether it benefits or hurts them. Indeed, empirical studies show that, from 1993-2009, decisions to oust corporate managers from their jobs were driven almost as much by industry performance as by individual firm performance.[44] The prospect of being voted out of office thus gives managers powerful incentives to take industry performance into account in a way that keeps horizontal shareholders happy. Tellingly, empirical studies also indicate that, until sometime in the 1980s, managers were ousted from office based solely on individual corporate performance, with industry performance filtered out of dismissal decisions.[45] The shift from ousting managers based solely on individual firm performance to ousting managers based on a mixture of individual and industry performance thus coincides

[41] Azar, *supra* note 32, at 14–15.

[42] Andrea Pawliczek & A. Nicole Skinner, *Common Ownership and Voluntary Disclosure* at 1 (June 8, 2018), https://ssrn.com/abstract=3002075; Andrea Pawliczek, Ashley N. Skinner & Sarah L. C. Zechman, *Facilitating Tacit Collusion: A New Perspective on Common Ownership and Voluntary Disclosure* (May 3, 2019), https://ssrn.com/abstract=3382324; Jihwon Park et al, *Disclosure Incentives When Competing Firms Have Common Ownership,* 67 J. ACCOUNT. ECON. 387 (2019).

[43] Hemphill and Kahan, *supra* note 5, at 1415; Rock & Rubinfeld, *supra* note 37, at 239–40.

[44] Dirk Jenter & Fadi Kanaan, *CEO Turnover and Relative Performance Evaluation*, 70 J. FIN. 2155, 2164, 2166 (2015).

[45] *Id.* at 2158–59.

with the dramatic increase since 1980 in horizontal shareholdings, which give shareholders an increasing interest in industry performance.

It is also true that most corporate elections are uncontested. But empirical evidence shows that, even in uncontested elections, an increased share of votes withheld from directors significantly increases the odds that those directors will depart the board, lose key committee seats, and get fewer directorships at other firms.[46] Corporate managers thus have strong incentives to care if horizontal shareholders are withholding votes from them in uncontested board elections. Indeed, given that in such uncontested elections, the adverse effects on managers increase with the share of votes withheld, this empirical literature indicates that managers will have strong incentives to maximize their expected vote share.[47] This empirical literature thus indicates that in typical uncontested elections, managers are likely to have the election goal that leads them to weigh shareholders proportionally to their shareholdings, as the MHHI measure of horizontal shareholding generally assumes.[48]

Further, horizontal shareholders can influence who gets nominated for board election in the first place. For example, one empirical study shows that a higher percentage of index fund ownership results in a higher percentage of independent directors being nominated.[49]

In any event, such claims that shareholder voting on director elections is unlikely to influence corporate behavior are contrary to what institutional investors have themselves concluded. All of the Big Three use shareholding voting to oppose or support the election of particular board members.[50] BlackRock stresses, "The implicit sanction of a vote against management if a company is not responsive to shareholder concerns about corporate governance matters' has led to a series of

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[46] *See* Reena Aggarwal, Sandeep Dahiya & Nagpurnanand Prabhala, *The Power of Shareholder Votes: Evidence from Uncontested Director Elections* at 4–7, 21–30 (March 24, 2017), https://ssrn.com/abstract=2609532.

[47] *See id.* at 33–35 (highlighting the numerous negative effects directors face when they receive a lower vote share in uncontested elections).

[48] *See id.;* Azar, Schmalz & Tecu, *supra* note 13, at 1522, 1525 (adopting this assumption).

[49] Shenje Hshieh, Jiasun Li & Yingcong Tang, *How Do Passive Funds Act As Active Owners? Evidence From Mutual Fund Voting Records*, J. CORP. FINANCE (forthcoming) https://doi.org/10.1016/j.jcorpfin.2020.101692.

[50] Sarah Krouse, *At BlackRock, Vanguard and State Street, 'Engagement' Has Different Meanings*, WALL ST. J. (Jan. 20, 2018) , https://www.wsj.com/articles/at-blackrock-vanguard-and-state-street-engagement-has-different-meanings-1516449600 [https://perma.cc/HCS2-Q5JH].

serious changes in major companies."[51] State Street acknowledges that its ability to vote against management "ensures" that its "interests are given due consideration."[52] More generally, 53% of all institutional investors admitted in a survey that they tried to influence managers by voting against them.[53] Further, boards routinely consult with their major shareholders about whether to even put a director candidate forward for election.[54]

2. Executive Compensation. To the extent that corporate managers are not influenced by vote share or re-election odds, the most likely factor influencing their decisionmaking is their financial compensation. This leads to the next causal mechanism: shareholders vote on or otherwise influence executive compensation methods that in turn influence the behavior of corporate managers.

As Bengt Holmström's Nobel prizewinning work proved, efficient incentive-based compensation would be based solely on the performance of the executive's firm relative to other firms, and firms would adopt such compensation methods if each firm just maximized its own profits.[55] This raised a puzzle because in fact corporations use executive compensation methods that inefficiently reward executives in large part for industry performance.[56] For example, as Professors Bebchuk and Fried observed, firms generally compensate executives using measures (like stock options) that are driven 70% by industry performance and only 30% by individual firm performance.[57] Horizontal shareholding provides a ready answer to this puzzle: the more horizontal shareholders a firm has, the more its shareholders care about industry performance, rather than just the firm's own profits.

A recent article confirms this causal mechanism. The article first mathematically proved that increased levels of horizontal shareholding mean that overall shareholder profits are increased by executive compensation methods that are less sensitive to

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[51] Tim Wallace, *Index funds must use their huge power over companies, says BlackRock chief Larry Fink*, THE TELEGRAPH (April 29, 2018), https://www.telegraph.co.uk/business/2018/04/29/index-funds-must-use-huge-power-companies-says-blackrock-chief/ [https://perma.cc/N58J-XENU].

[52] Azar, Schmalz & Tecu, *supra* note 13, at 1557.

[53] Joseph A. McCahery, Zacharias Sautner & Laura T. Starks, *Behind the Scenes: The Corporate Governance Preferences of Institutional Investors*, 71 J. FIN. 2905, 2912–13 (2016).

[54] Azar, Schmalz & Tecu, *supra* note 13, at 1557.

[55] Bengt Holmström – Facts. NobelPrize.org. Nobel Media AB 2021. <https://www.nobelprize.org/prizes/economic-sciences/2016/holmstrom/facts/>; Bengt Holmström, *Moral Hazard in Teams*, 13 BELL J. ECON. 324, 325, 334–337 (1982).

[56] *See* LUCIAN BEBCHUK & JESSE FRIED, PAY WITHOUT PERFORMANCE: THE UNFULFILLED PROMISE OF EXECUTIVE COMPENSATION 3, 31 (2004).

[57] *Id.* at 138–43.

individual firm performance, because that gives managers weaker incentives to exert effort to lower firm marginal costs and the resulting higher marginal costs reduce competition with other firms owned by the horizontal shareholders in a way that increases shareholder profits across all firms.[58] Thus, horizontal shareholders have incentives not to oppose executive compensation methods that are less sensitive to individual firm performance. Corporate managers likewise have incentives to favor such lower-powered methods of compensation, not only because they want shareholders to vote for the managers and approve the compensation methods, but also because lower-powered methods of compensation give the managers windfalls unrelated to their effort or performance.[59] Corporate managers are simply more likely to succeed in obtaining the lower-powered methods of compensation that favor them when those methods are also in the interests of their firm's leading shareholders because of their horizontal shareholdings. The result is lower-powered compensation methods for firms with higher horizontal shareholdings, which increases their prices and lowers their output, resulting in higher market prices and lower output levels in markets with higher horizontal shareholding levels.[60]

This proof holds even though it assumes no communication or coordination between shareholders, managers or firms.[61] Nor does the proof depend on horizontal shareholders consciously calculating and actively pushing for the compensation method that would maximize their profits – it suffices that horizontal shareholders are simply less likely than other shareholders to oppose compensation methods that are less sensitive to individual firm performance.[62] The proof also holds even though it assumes managers do not know the ownership structure of their own firm or their competitors.[63] Finally, the proof assumes no market-level knowledge or interventions by shareholders or managers on setting prices, output or capacity.[64] Despite the lack of such market-level interventions, the new proof shows that less competitive effort by firms with more ownership by horizontal shareholders will

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[58] Miguel Antón, Florian Ederer, Mireia Giné & Martin C. Schmalz, *Common Ownership, Competition, and Top Management Incentives* 2–3, 6-30 (European Corp. Governance Inst., Working Paper No. 511/2017, Nov. 14, 2020), http://ssrn.com/abstract=2802332 [hereinafter "Antón, Ederer, Giné & Schmalz 2020"]. Although their main model focuses on costs, their analysis extends to any way in which managers might make firms more efficient in ways that negatively affect the profits of other firms owned by horizontal shareholders. *Id.* at 29.

[59] BEBCHUK & FRIED, *supra* note 56, at 144–46 (stressing that such compensation methods benefit managers).

[60] Antón, Ederer, Giné & Schmalz 2020, *supra* note 57, at 3, 21-24.

[61] *Id.* at 2, 16, 22.

[62] *Id.* at 15, 25-26.

[63] *Id.* at 3, 6, 16, 21, 26.

[64] *Id*, at 2-3, 10, 21-23, 26.

predictably raise prices and reduce output more in those markets with more horizontal shareholding.[65] The proof thus rebuts claims by critics that proving a causal mechanism by which horizontal shareholding could cause anticompetitive effects would require evidence of such communication, coordination, active horizontal shareholder calculation and influence, managerial knowledge of shareholdings across firms, and/or market-level interventions by shareholders or managers into pricing or output decisions.[66]

The article then confirmed the practical significance of this mathematical proof with a new cross-industry empirical study, which shows that (just as the mathematical proof predicts) in industries with higher horizontal shareholding levels, corporations adopt compensation methods that make changes in executive ***wealth*** less sensitive to their own firm's performance.[67] This new empirical evidence moots a conflict among older empirical studies that instead measured whether horizontal shareholding made executive ***annual pay*** less sensitive to their own firm's performance.[68] Although several critics have cited this conflict in the older studies on annual pay to argue that the issue is empirically uncertain,[69] the new empirical

[65] *Id.* at 2-3, 6-30.

[66] *See id.* at 27-29; *infra* Parts II-III; Phillips, *supra* note 5, at 5–6.

[67] *Id.* at 2–4, 38-44.

[68] Two studies found that higher horizontal shareholding made annual executive pay less sensitive to firm performance, including the 2016 version of Antón, Ederer, Giné & Schmalz 's paper, *see id.* at 5 n.8, as well as Lantian (Max) Liang, *Common Ownership and Executive Compensation* 1–2, 17, 25 (October 2016). Another study found that horizontal shareholding has no significant effect on annual executive pay. *See* Rebecca DeSimone, *Stealth Socialism? Common Ownership and Executive Incentives* 2 (Oct. 7, 2017) (unpublished manuscript) (on file with author). A fourth study found that horizontal shareholding made annual managerial pay more sensitive to own-firm performance, though this perverse finding may reflect the study's failure to correct the Thomson-Reuters database. Heung Jin Kwon, *Executive Compensation under Common Ownership* 1–2, 13 (Nov. 29, 2016) (referring to an uncorrected use of the Thomson-Reuter database for its findings); Backus, Conlon, & Sinkinson, *supra* note 14, at 6, 12–13 (discussing the need for corrections).

[69] Ginsburg & Klovers, *supra* note 5, at 2 n.7; Hemphill & Kahan, *supra* note 5, at 1413; Thomas A. Lambert & Michael E. Sykuta, *The Case for Doing Nothing About Institutional Investors' Common Ownership of Small Stakes in Competing Firms* 13 n.43, 22 n.78 (Dec. 11, 2018), https://ssrn.com/abstract=3173787; Daniel P. O'Brien & Keith Waehrer, *The Competitive Effects of Common Ownership: We Know Less than We Think*, 81 ANTITRUST L.J. 729, 762–63 (2017); Phillips, *supra* note 5, at 5 n.11; Rock & Rubinfeld, *supra* note 37, at 247; Committee on Capital Markets Regulation, *Common Ownership and Antitrust Concerns* 1–2, 6–7 (Nov. 2017) [hereinafter "Capital Markets Committee"].

study is undisputed and far more relevant since annual pay affects only 22% of executive wealth changes.[70]

The new study also moots concerns that endogeneity or other problems might have affected earlier studies finding that horizontal shareholding adversely affected executive compensation. Critics had claimed that the earlier studies might have been affected by their use of an MHHI measure of horizontal shareholding, which they argued was endogenous because it was partly affected by market shares.[71] The new study avoided this critique by using various measures of horizontal shareholding that were not affected by market shares, all of which resulted in the same negative correlation between horizontal shareholding and managerial incentives.[72] In response to concerns that horizontal shareholding levels themselves might be endogenous, the new study shows that when a non-index firm is added to the S&P 500 Index in a way that exogenously increases horizontal shareholding levels at index incumbents who compete with that added firm, executive compensation at those index incumbents becomes less sensitive to firm performance, an effect that increases over time following the index addition.[73] Likewise, the 2018 version confirmed its findings by using the exogenous effect on horizontal shareholding of a merger between two large institutional investors.[74] Finally, critics had charged that the earlier studies depended on their use of the dollar (rather than percentage) change in executive compensation.[75] But the new study found adverse effects on executive compensation using either method.[76]

In short, the new economic proof and new cross-industry empirical study establishes that higher horizontal shareholding levels lead to lower-powered compensation methods that lessen the incentives of corporate managers to compete.[77] This effect

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[70] *See* DeSimone, *supra* note 68, at 17–18.

[71] O'Brien & Waehrer, *supra* note 69, at 764; *see* Capital Markets Committee, *supra* note 69, at 6, 9.

[72] Antón, Ederer, Giné & Schmalz 2020, *supra* note 57, at 5 n.6, 33-37 & n.29, 39-42 & Tables 5-6.

[73] *Id.* at 4-5, 44-49, Table 9 & Figure 4.

[74] Miguel Antón, Florian Ederer, Mireia Giné & Martin C. Schmalz, *Common Ownership, Competition, and Top Management Incentives* 4, 25–27 (European Corp. Governance Inst., Working Paper No. 511/2017, June 6, 2018), https://core.ac.uk/display/288289397?recSetID= [hereinafter "Antón, Ederer, Giné & Schmalz, 2018"].

[75] O'Brien & Waehrer, *supra* note 69, at 763; Capital Markets Committee, *supra* note 69, at 9.

[76] Antón, Ederer, Giné & Schmalz 2020, *supra* note 58, at 31-32, 39-41, 43 & Tables 5, 7.

[77] Although the new model and empirical results focus on the connection to compensation methods that are generally less sensitive to firm performance, sometimes horizontal shareholders

on compensation incentives will predictably lessen competition without requiring any coordination or communication between firms, managers, and/or shareholders on competitive strategy, and without requiring any active influence by horizontal shareholders, any manager knowledge of firm ownership structure, or any market-level interventions by shareholders or managers on competitive strategy. Instead, horizontal shareholding produces less opposition to lower-powered executive compensation methods that directly incentivize less aggressive competition by horizontally-owned firms in a way that predictably raises prices in markets with more horizontal shareholding.

Some assert that choosing executive compensation methods that dilute managerial incentives is an implausible mechanism based on intuitive assertions that the adverse effects of generally diluting managerial incentives will likely exceed any anticompetitive profits.[78] But assertions based on intuition are hardly responsive to the formal proof showing that this intuition is mathematically incorrect or to the cross-industry empirical study showing that higher horizontal shareholding levels do actually lead to more diluted managerial incentives.

The cross-industry empirical study is also consistent with other empirical evidence. Because the extent to which horizontal shareholding (like horizontal mergers) can increase prices turns on the level of product market concentration,[79] one would expect that if horizontal shareholding reduces the compensation weight put on individual firm performance in order to lessen competition, the reduction will be greater in less competitive markets. Consistent with this, another empirical study found that the less competitive a firm's market, the less weight the firm's executive compensation method gives to individual firm performance.[80]

These empirical studies are also consistent with historical trends. Stock options that heavily rewarded managers for industry performance did not become an important method of management compensation until the 1990s.[81] This coincides with the

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directly influence firm competitive conduct or cause firms to expressly tie executive compensation to lower firm output, which would make the anticompetitive effects even worse. *Id.* at 26-27, 50-51.

[78] Hemphill and Kahan, *supra* note 5, at 1417; David I. Walker, *Common Ownership and Executive Incentives: The Implausibility of Compensation as an Anticompetitive Mechanism,* 99 B.U. L. REV. 2373, 2401 (2019).

[79] Elhauge, *How Horizontal Shareholding, supra* note 1, at 211, 225, 237–38, 248–49.

[80] Vicente Cuñat & Maria Guadalupe, *Executive Compensation and Product Market Competition* 4–5 (Feb. 2004), http://ssrn.com/abstract=562446.

[81] Alfred Rappaport, *New Thinking on How to Link Executive Pay with Performance*, HARV. BUS. REV., Mar.-Apr. 1999, https://hbr.org/1999/03/new-thinking-on-how-to-link-executive-pay-

period when horizontal shareholding levels really began to take off. The timing of this shift is, in contrast, inconsistent with other explanations, like the theory that executive compensation methods that underweigh firm performance just reflect the power of managers to obtain compensation methods that favor themselves.[82] If anything, increased levels of institutional investor ownership lowered managerial power over this time period.

Some argue that shareholders are unlikely to influence executive compensation because shareholder voting on compensation is either nonbinding or about high-level terms of compensation.[83] But empirical evidence establishes that, even in non-binding votes, higher levels of shareholder dissent on executive compensation lead to lower CEO pay.[84] And the high-level terms are precisely what determines the extent to which compensation is sensitive to firm performance. Further, given that 45% of passive investor engagements with corporations are about the structure of executive compensation, horizontal shareholders can influence which method of executive compensation is put up for a vote.[85] Moreover, because making compensation more sensitive to firm performance imposes additional effort costs on managers, adopting such compensation may require affirmative pressure by shareholders, so it can suffice if horizontal shareholders are simply less likely to exert pressure on management to propose such compensation.[86]

3. The Market for Corporate Control. Another plausible causal mechanism is the market for corporate control. Managers have strong incentives to keep horizontal shareholders happy to get their backing in the event of a control contest. For example, in 2015 there was a control contest over management of DuPont, whose main competitor was Monsanto.[87] The fifth largest shareholder of DuPont, the Trian Fund, had no significant shareholdings in Monsanto and launched a control contest

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with-performance [https://perma.cc/54H4-VEGW]; DeSimone, *supra* note 68, at 17–18; *see* Marshall E. Blume & Donald B. Keim, *Institutional Investors and Stock Market Liquidity: Trends and Relationships* 4–5 (Aug. 21, 2012) (working paper), http://papers.ssrn.com/abstract=2147757.

[82] BEBCHUK & FRIED, *supra* note 56, at 144–46. The theory that managerial power explains the use of industry performance metrics also conflicts with empirical evidence that increased executive power or tenure does not increase the use of industry performance to make ouster decisions. Jenter & Kanaan, *supra* note 44, at 2157–58, 2180–81.

[83] Rock & Rubinfeld, *supra* note 37, at 239–40.

[84] Martin J. Conyon, *Shareholder Dissent on Say-on-Pay Voting and CEO Compensation* 3, 19–20 (Mar. 16, 2016), https://ssrn.com/abstract=2748645.

[85] Azar, Schmalz & Tecu, *supra* note 13, at 1556.

[86] Antón, Ederer, Giné & Schmalz, 2020, *supra* note 57, at 15, 25-26.

[87] Francis J. Aquila, *DuPont's Victory in the Proxy Fight with Trian*, (May 20, 2015) https://corpgov.law.harvard.edu/2015/05/20/duponts-victory-in-the-proxy-fight-with-trian/ [https://perma.cc/22DF-BJKJ]; Elhauge, *Horizontal Shareholding, supra* note 4, at 1270–71.

designed to replace DuPont's managers with managers who would behave more competitively against Monsanto.[88] This control contest failed, with the decisive votes to defeat it being cast by the top four shareholders of DuPont (Vanguard, BlackRock, State Street, and Capital Research), who were horizontal shareholders whose financial stake in Monsanto was about twice as high as their financial stake in DuPont.[89] The defeat of the proxy contest caused a sharp decline in DuPont's stock price and a sharp increase in Monsanto's stock price, which cuts against any claim that the vote reflected only the shareholders' interests in the DuPont's profits, but is consistent with the claim that it also reflected the horizontal shareholders' interests in Monsanto's profits.[90]

This is not an isolated example. The empirical evidence shows that in control contests index funds are more likely than other institutional investors to support management and oppose hedge fund activists.[91] This makes sense because index funds by their nature are more likely to have horizontal shareholdings that give them incentives to oppose activist hedge funds that aim to make individual underperforming corporations more effective competitors. Further, the empirical evidence also indicates that this greater reluctance of index funds to support activist hedge funds in control contests also makes the latter less likely to launch such contests in the first place.[92] More generally, the empirical evidence shows that firms with horizontal shareholdings are less likely to be targeted by hedge fund activists, and that this effect is greater when the firms' industry has higher horizontal shareholding levels.[93]

The influence of horizontal shareholder voting on control contests has both *ex post* and *ex ante* effects. The *ex post* effects are, as the DuPont-Monsanto example illustrates, that voting against activists in control contests can directly prevent corporations from pursuing a more competitive strategy. The *ex ante* effects are two-fold. First, horizontal shareholding reduces a procompetitive pressure that would

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[88] Elhauge, *Horizontal Shareholding, supra* note 4, at 1270-71.

[89] *Id.* Their share of Monsanto stock was 19.8%, only slightly greater than their 19.4% share of DuPont, but since Monsanto had double the market capitalization, that meant their financial stake in Monsanto was double their financial stake in DuPont. *Id.*

[90] *Id.* at 1271.

[91] Alon Brav, Wei Jiang, Tao Li & James Pinnington, Picking Friends Before Picking (Proxy) Fights: How Mutual Fund Voting Shapes Proxy Contests 3 (European Corp. Governance Inst., Working Paper No. 601/2019, 2019), http://ssrn.com/abstract=3101473.

[92] *Id.* at 24–25; Ian R. Appel, Todd A. Gormley & Donald B. Keim, *Passive Investors, Not Passive Owners*, 121 J. FIN. ECON. 111, 114 (2016).

[93] Zhaoyang Gu & Chunqiu Zhang, *Living with the Frenemy: Common Ownership and Hedge Fund Activism* (Sept. 2020).

otherwise exist. Managers with high horizontal shareholdings not only will be less likely to face hedge fund activist pressure to increase firm competitiveness, but also can anticipate that if such activism occurs, it is less likely to result in managers losing such a contest if it occurs. Second, high horizontal shareholding gives managers affirmative incentives to act in ways that please the horizontal shareholders that they can expect may well be decisive in any future control contests. Because SEC rules require all institutional investors to disclose their holdings in competitors, managers will know which of their leading investors are horizontally invested and thus will know that those shareholders will enjoy increased profits on those horizontal investments if the managers behave less competitively.[94]

4. The Stock Market. The stock market is another plausible causal mechanism. A recent survey of institutional investors found that 56% of them tried to influence corporate managers by selling their shares to express dissatisfaction with corporate performance or governance.[95] Managers might reasonably fear that if they displeased their horizontal shareholders by competing too aggressively, those shareholders might sell their investments, which would depress the stock price and the value of executive stock options that are a major component of their compensation. For example, Southwest Airlines reportedly reduced capacity increases after being critiqued by investors who were urging all airlines to hold down capacity.[96] Southwest's managers might have reasonably thought that if they did not respond to their investors' critiques, those investors would likely sell their Southwest stock and depress its stock price.

To be sure, the stock market mechanism does not work for index funds, which cannot sell in reaction to corporate behavior they do not favor. But most horizontal shareholdings are not in index funds.[97] Further, the control contest mechanism works even better for index funds, because managers can be more confident those index funds will be voting in any future control contest, though even active funds are generally "closet indexers" who hold most of their stock for long periods.[98] The stock market and control contest mechanisms thus complement each other, with each mechanism working more strongly for different subsets of horizontal shareholders.

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[94] Elhauge, *Horizontal Shareholding*, *supra* note 4, at 1270.

[95] McCahery, Sautner & Starks, *supra* note 53, at 2906–07, 2913.

[96] Christopher Drew, "Airlines Under Justice Dept. Investigation Over Possible Collusion," N.Y. TIMES (July 1, 2015), https://www.nytimes.com/2015/07/02/business/airlines-under-justice-dept-investigation-over-possible-collusion.html [https://perma.cc/B37J-QYCT].

[97] *See supra* text accompanying note 13.

[98] Bebchuk, Cohen & Hirst, *supra* note 8, at 99.

5. The Labor Market. Yet another plausible mechanism is the labor market. Directors who want additional directorships at other corporations and executives who want a promotion to their next job at another corporation will be affected by how favorably disposed the leading shareholders will be at those other corporations. Given the prevalence of horizontal shareholding, the leading shareholders at those other corporations are likely to be the same large institutional investors who are horizontal shareholders at their current firm. Directors and executives who want higher odds of gaining directorships or promotions thus have incentives to please those horizontal shareholders with the increased returns that result from diminished competition. Consistent with this mechanism, empirical evidence shows that increasing the share of votes withheld from a director in one firm's election reduces the number of directorships that person gets at other firms.[99]

6. Direct Communications. Another plausible mechanism involves direct communications between horizontal shareholders and managers. Although such direct communications are not necessary for anticompetitive effects via any of the above causal mechanisms, this does not mean that such communications do not occur. Indeed, 63% of institutional investors admitted that they tried to influence corporate managers via direct discussions.[100] One institutional investor admitted that high on the list of topics in such direct communications was urging managers to raise prices rather than compete for market share.[101] Some of these direct communications are even public. In earnings calls, horizontal shareholders have criticized airlines for adding capacity that increased competition, with one horizontal shareholder calling this a lack of discipline that could jeopardize the airline's stock price and stressing that it was communicating the same point to the competing airlines.[102]

Direct communications are highly prevalent for the Big Three index fund families that have high horizontal shareholding levels. For example, BlackRock requires each of its portfolio companies to annually submit written information, including information on corporate strategy and executive compensation.[103] BlackRock then initiates private engagements (i.e., conversations) for companies that fail either to provide needed information or to follow through with their commitments.[104] In 2018, BlackRock had nearly 1,500 private engagements with firms that they held,

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[99] Aggarwal, Dahiya & Prabhala, *supra* note 46, at 5–6, 26–27.

[100] McCahery, Sautner & Starks, *supra* note 53, at 2906, 2911–12.

[101] Elhauge, *Horizontal Shareholding, supra* note 4, at 1269–70.

[102] Azar, Schmalz & Tecu, *supra* note 13, at 1555.

[103] John C. Wilcox, *Getting Along with BlackRock*, (Nov. 6, 2017) https://corpgov.law.harvard.edu/2017/11/06/getting-along-with-blackrock [https://perma.cc/APM2-TU52].

[104] *Id.*

representing 50.4% of its assets under management; Vanguard had 868, representing 59% of its assets, and State Street had 1533, representing 70% of its assets.[105] Thus, all of them had direct communications with firms that comprised over 50% of the total equity value they held.

BlackRock has indicated that it then votes against directors who either do not meet with BlackRock to explain their business strategy[106] or do not listen to BlackRock's recommendations.[107] BlackRock's CEO has added, "we are taking a more active dialogue with our companies and are imposing more of what we think is correct."[108] He even declared, "We can tell a company to fire 5,000 employees tomorrow."[109] More generally, executives at the Big Three index fund families have stated that they believe their direct communications succeed in influencing the conduct of their portfolio corporations.[110]

7. Reduced Pressure to Compete. A final causal mechanism is that horizontal shareholding ***reduces*** the incentives of shareholders to pressure managers to compete more vigorously. Competing harder with other corporations is hard work for corporate managers. It requires coming up with ways to lower costs, improve quality, or market more effectively.[111] Because competing vigorously is such hard work, managers are less likely to do it unless their shareholders are actively pressing them to compete. Horizontal shareholding can thus make managers less likely to compete simply because it makes those shareholders ***less*** willing to exert effort to pressure managers to compete.[112]

8. The Above Evidence More Than Suffices to Establish Plausible Causal Mechanisms. The above evidence establishes a combination of mechanisms that

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[105] Griffin, *supra* note 27, at 415.

[106] Wilcox, *supra* note 103.

[107] Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 24, at 318–19.

[108] *Id*. at 318.

[109] Antón, Ederer, Giné & Schmalz 2018, *supra* note 58, at 4 n.2.

[110] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2084–85 & nn.141–42 (noting that Vanguard states that "We regularly engage with companies on our shareholders' behalf and believe that engagement and broader advocacy, in addition to voting, can effect meaningful changes", and that "[Private engagement is] perhaps [the] more important . . . component of [Vanguard's] governance program; . . . [it] provides for a level of nuance and precision that voting, in and of itself, lacks", and Blackrock executives state that "Engagement is core to our stewardship program" and that "Engaging with boards and firm executives . . . can bring about change through incremental, non-confrontational means.").

[111] Azar, Schmalz & Tecu, *supra* note 13, at 1552.

[112] Schmalz, *supra* note 3, at 24; Azar, Schmalz & Tecu, *supra* note 13, at 1552–53 (discussing how "[d]iversified shareholders have little incentive to intervene [or]…to actively push for more aggressive product market behavior between portfolio firms").

more than suffices to make managers take into account the interests of horizontal shareholders in lessened market competition. Indeed, it is hard to see what additional evidence could reasonably be demanded. Some have suggested that they would be satisfied only by "direct evidence" that horizontal shareholders tried to influence corporate managers to act anticompetitively through one of these mechanisms and that such efforts succeeded in altering corporate decisions.[113] But an insistence on such direct evidence is unsound.

To begin with, these causal mechanisms are unlikely to generate direct evidence, certainly not in any systemic way. The mechanisms of lessened shareholder opposition to low-powered executive compensation and reduced shareholder pressure to compete generate no direct evidence at all, since they consist of the absence of action. There will also generally be no discoverable evidence about whether industry performance, rather than just individual firm performance, affects the positions of horizontal shareholders on board elections, executive compensation, control contests, stock market sales, or hiring decisions. Nor will there generally be discoverable evidence about whether corporate managers behave less competitively because their executive compensation is less focused on individual firm performance than it otherwise would be, or because they know horizontal shareholders make decisions on board elections, control contests, stock sales, or their future hiring at other firms. Instead, what motivates such decisions will lie largely within the minds of the investors and managers, and they have no incentives to admit such motives.

The only mechanism likely to generate discoverable direct evidence is direct communications between horizontal shareholders and managers. But as a practical matter it will be difficult to obtain such evidence, because it will be within the control of investors and managers, and they have no incentives to reveal such communications. When their communications are oral, their recollections are likely to be fuzzy. Even when their communications are in writing, enforcers will usually not know whether to subpoena them because they are secret. Anyway, a focus on direct communications is a red herring, given that they are unnecessary for any of the other six causal mechanisms that suffice to drive the anticompetitive effects.

Further, even if investors and managers would freely admit their motivations and reveal their direct communications, consciousness about such motives or expression of them in direct communications is hardly necessary for anticompetitive effects. For horizontal shareholders, it suffices if they tend to be less pleased by managers who compete aggressively with their other investments, or less willing to block methods of compensation that are less sensitive to firm performance, even if they do

[113] Hemphill and Kahan, *supra* note 5, at 1401, 1440–41, 1448.

not consciously link such tendencies to anticompetitive motives. For corporate managers, it suffices that the sorts of managers who may naturally behave less competitively do better in elections or control contests, or that managers tend to continue with whatever behavior gets better compensated, provokes fewer stock price declines, or tends to lead to better promotions, without necessarily thinking of such behavior as less competitive. Likewise, direct communications about horizontal shareholder views about what strategy the corporation should use need not ever express any anticompetitive motivation for such a strategy.

The demand for direct evidence is thus not a practical solution, but rather a recipe for blocking any realistic effort to deal with the anticompetitive problems raised by horizontal shareholding. It also conflicts with how antitrust law treats the similar issue of mergers. Antitrust law blocks horizontal mergers that are likely to lead to oligopoly or unilateral effects without requiring any direct evidence that corporate managers admit a merger would likely make them change their pricing behavior.[114] It suffices instead that the merger creates incentives to change their pricing behavior. Likewise, for horizontal shareholding, antitrust law should focus on the incentives created by market structure, rather than on direct evidence that shareholders or managers acted based on such incentives.

Taking a step back, the critics are effectively claiming that firm managers are entirely unaffected in their competitive decisions when their leading shareholders derive profits (often greater profits) from the firm's rivals. This claim is quite implausible. If the political boundaries of the United States were redrawn to include Canada, no one would doubt for an instant that this would make U.S. Presidents much more attentive to the interests of Canadians, even though political voters have diverging interests, massive information problems, and cannot vote on any specific Presidential decisions. Further, in political situations, the only source of accountability is voting by individuals on whom to elect to office. For corporations, the sources of voting accountability include not only election voting by large institutional investors (which each have a much higher share of the vote than political voters), but also voting on many specific corporate decisions. Moreover, the sources of accountability include not only voting, but also executive compensation incentives, control contests, stock markets, labor markets, direct communications, and even the absence of pressures to compete. It would be remarkable if those methods of accountability did not make firm managers pay attention to the profit interests of their leading shareholders, and those profit interests clearly change when those leading shareholders are also leading shareholders in the firm's competitors.

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[114] *See* HORIZONTAL MERGER GUIDELINES § 1–2 (U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N 2010).

B. Enforcement Does Not Require Stronger Proof on Causal Mechanisms

Even if one rejected the ample proof on causal mechanisms listed in the prior section, it would not matter because definitive proof on causal mechanisms is not necessary to make enforcement proper or desirable. The Clayton Act bans mergers and stock acquisitions that are likely to have anticompetitive effects regardless of whether the mechanism for those effects is known.[115] It suffices that we know that the relevant market structure is likely to lead to anticompetitive effects, regardless of whether we can be sure about the causal mechanism by which that structure is likely to produce those effects.

Nor is proof of causal mechanisms necessary to make enforcement desirable as a matter of policy. After all, the tobacco industry argued for decades that we should not act on the empirical evidence that smoking causes cancer because we did not have clear proof of the causal mechanism by which smoking causes cancer.[116] Delaying tobacco regulation for better proof on causal mechanisms is now generally understood to have been a mistake.

To be sure, one should ignore correlations as spurious when no plausible causal mechanism exists, such as for the correlation between margarine consumption and Maine divorce rates.[117] But when (as for smoking and horizontal shareholding) there are plausible causal mechanisms, it is hard to see why one should ignore fifteen statistical correlations between the conduct and serious societal harm that properly control for other possible reasons for the correlation and that show a less than 1% chance that the correlation is random, just because of claims that we do not yet have stronger proof on those causal mechanisms. As a policy matter, ignoring statistical correlations that have such low odds of being random results in enduring a risk of social harm that greatly exceeds the risk of harm from regulating the conduct.

Hemphill and Kahan argue we should wait for clearer proof on which of the causal mechanisms are most effective before taking enforcement action, in part because such proof might suggest enforcement targeted at only some of the causal mechanisms.[118] But their argument presumes that: (a) there is little social harm from

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[115] Scott Morton & Hovenkamp, *supra* note 4, at 2034–35.

[116] Tim Harford, *Cigarettes, damn cigarettes, and statistics,* FINANCIAL TIMES (April 10, 2015) (on file with the *Ohio State Law Journal*); Milberger, et al., *Tobacco manufacturers' defence against plaintiffs' claims of cancer causation: throwing mud at the wall and hoping some of it will stick*, 15(Suppl 4) Tobacco Control iv17, iv19 (Dec. 2006).

[117] Harford, *supra* note 116.

[118] Hemphill & Kahan, *supra* note 5, at 1398–99, 1447–48.

waiting; (b) only a limited subset of these causal mechanisms is effective; and (c) such a subset could be effectively policed. Unfortunately, none of those three premises are accurate.

1. The Evidence of Societal Harm Is Strong. As is amply shown by the statistical evidence, the societal harm from waiting to take action is vast.[119] Hemphill and Kahan assert that, given disputes about the empirical studies, we cannot be sure of the empirical connection until we know the causal mechanism.[120] But that does not follow: we knew smoking causes cancer long before we knew the causal mechanism and even though there were always empirical critiques.[121] Unless those empirical critiques are actually persuasive, they do not provide grounds for insisting on proof of causal mechanism.

Hemphill and Kahan argue the empirics are uncertain based in part on their assertion that only one paper (the initial airline study) has found a statistically significant relation between horizontal shareholding and prices.[122] But we actually now have at least fifteen papers proving that horizontal shareholding has a statistically significant relation to anticompetitive effects.[123] Hemphill and Kahan also stress certain methodological critiques of that initial airline study.[124] However, as I have shown elsewhere, those methodological critiques are quite flawed and in any event apply to only two of the fifteen empirical studies finding anticompetitive effects (and only to some parts of those two).[125] Further, two of the undisputed studies that do not raise the same methodological issues have confirmed horizontal shareholding has anticompetitive effects in the airline industry in particular.[126]

Hemphill and Kahan also argue that the empirical connection between horizontal shareholding and anticompetitive effects is unclear because some other empirical studies have not found such an empirical connection.[127] With one exception, I have already explained why those other empirical studies are flawed,[128] and Hemphill

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[119] *See generally,* Elhauge, *How Horizontal Shareholding, supra* note 1, at 213–55; *supra* text accompanying notes 1-2.

[120] *See* Hemphill & Kahan, *supra* note 5, at 1397-98 & n.14, 1407 n.44, 1447–48, 1450.

[121] Tim Harford, *Cigarettes, damn cigarettes, and statistics,* FINANCIAL TIMES (April 10, 2015).

[122] *See* Hemphill & Kahan, *supra* note 5, at 1447.

[123] *Supra* text accompanying notes 1-2.

[124] *See* Hemphill & Kahan, *supra* note 5, at 1397-98 & n.14, 1447.

[125] *See* Elhauge, *How Horizontal Shareholding, supra* note 1, at 213–55; text accompanying notes 1-2.

[126] See sources cited supra note 1.

[127] *See* Hemphill & Kahan, *supra* note 5, at 1397-98 & n.14, 1407 n.44

[128] *See* Elhauge, *How Horizontal Shareholding, supra* note 1, at 213-55.

and Kahan do not substantively respond to any of my critiques of those studies. The one exception is that Hemphill and Kahan also rely on the 2018 version of a study of the cereal industry.[129] I did not previously discuss that study because it stated on its title page: "PRELIMINARY AND INCOMPLETE: PLEASE DO NOT CITE OR CIRCULATE."[130] Since then, a citeable version of the cereal study has been published, but it does not disprove an empirical connection between horizontal shareholding and anticompetitive effects.[131] To begin with, no study limited to the cereal industry could disprove anticompetitive effects in other industries. Further, although the study finds that cereal pricing is not consistent with firms pricing based solely on the profit weights of horizontal shareholders, the study finds that cereal pricing is consistent with horizontal shareholder profit weights influencing up to 30% of pricing.[132] The cereal study is thus perfectly consistent with horizontal shareholding having significant anticompetitive effects.

Moreover, the cereal study has various limitations that likely explain its relatively weak results. First, the cereal study assumes that horizontal shareholding can affect prices only by affecting markups, without taking into account its effects on costs or entry.[133] This means the cereal study exclude by definition much of the posited anticompetitive effects, given that horizontal shareholding also increases prices by making firms less efficient or discouraging their entry.[134]

Second, the cereal study's measure of horizontal shareholding assumes that each shareholder's influence is proportional to its stock share.[135] That is generally an unproblematic assumption when corporations have a group of leading shareholders with relatively similar shares. But it is problematic for the cereal industry because Kellog, a firm whose 30% market share tied it for largest in the market, was dominated by two non-horizontal shareholders whose 27-37% share of Kellog stock (depending on the year) dwarfed the next biggest shareholder, who had at most 3-

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[129] *See* Hemphill & Kahan, *supra* note 5, at 1397-98 & n.14, 1407 n.44

[130] Matthew Backus, Christopher Conlon & Michael Sinkinson, Common Ownership and Competition in the Ready-to-Eat Cereal Industry (Sept. 6, 2018), https://www.semanticscholar.org/paper/Common-Ownership-and-Competition-in-the-Cereal-%E2%88%97-Backus-Conlon/d3d18b2e28816084f2302c9f2101b37917692733.

[131] Matthew Backus, Christopher Conlon, and Michael Sinkinson, *Common Ownership and Competition in the Ready-To-Eat Cereal Industry* 2, NBER Working Paper No. w28350 (Jan. 11, 2021), https://ssrn.com/abstract=3768263 [hereinafter Backus, Conlon & Sinkson, *Cereal Study*].

[132] *Id.* at 2.

[133] *Id.* at 1, 7.

[134] *See supra* I.A & *infra* III.B.1; sources cited *supra* notes 1; Elhauge, *How Horizontal Shareholding, supra* note 1, at 240-43.

[135] *Id.* at 12-13, 16 & n.24.

5% of its stock.[136] Such a dominant shareholder is likely to be disproportionately influential both because (1) their votes are more likely to be pivotal than other shareholders, and thus they have a disproportionate probability of affecting the outcome of corporate elections, and (2) they are far more likely to vote than small individual shareholders.[137] The cereal study assumes Kellog's pricing decisions place 8-20% weight on the profits of its rivals based on the smaller shares of its horizontal shareholders, and thus does not assume Kellog prices tremendously differently than would a firm maximizing its own pricing.[138] But given the dominance of Kellog's non-horizontal shareholders, the weigh it puts on rival profits would actually be closer to zero, and it would predictably behave nearly identical to a firm maximizing its own profits. It is unclear what the results of the cereal study would be if it made that assumption about Kellog, but it would not be surprising if the anticompetitive effects of horizontal shareholding are relatively weak when a market leader with 30% market share is dominated by non-horizontal shareholders who have incentives to undercut any anticompetitive market increase in markups.

Third, the cereal study misdefines the relevant markets and thus its empirical analysis uses the wrong prices, output, and market shares. Cereal companies sell in a national wholesale market, but the cereal study is not based on national wholesale prices, output, and market shares. Instead, the cereal study relies on retail prices, output, and market shares in its analysis and estimates all its elasticities and other model parameters based on that retail data.[139] The problem is, as the famous baby food merger case illustrated, there is no reason to think that prices, output, market shares, costs, or demand elasticities or cross-elasticities are the same at retail as at wholesale for goods sold in supermarkets.[140] The cereal study tries to justify its use of retail market data with an assumption that manufacturers directly set retail prices,[141] but it is not at all clear this is true, especially since vertical price-fixing agreements are still per se illegal in many states and would in any event require the agreement of the supermarkets.[142] Further, as the cereal study acknowledges, retailers charge slotting fees to manufactures to give them shelf space, which means that net wholesale prices reflect any variation in such slotting fees, which is typically

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[136] *Id.* at 15, 17.

[137] *See* Elhauge, *How Horizontal Shareholding, supra* note 1, at 216, 234; *supra* note 20 & *infra* Section III.B.5.

[138] Backus, Conlon & Sinkson, *Cereal Study, supra* note , at 17, 31.

[139] *Id.*at 5-7, 10, 18-20, 22, 25-26.

[140] ELHAUGE, U.S. ANTITRUST LAW & ECONOMICS 751-52 (3d ed. 2018) [hereinafter ELHAUGE, U.S. ANTITRUST].

[141] Backus, Conlon & Sinkson, *Cereal Study, supra* note , at 30-31.

[142] ELHAUGE, U.S. ANTITRUST, *supra* note , at 556.

how manufacturers compete for supermarket shelf space.[143] Thus, at wholesale, the relevant elasticities turn on the extent to which retail stores are willing to reallocate wholesale purchases and shelf space between brands in response to changes in those net wholesale prices, and consumer choices are in turn affected not only by the retail prices but also by those shelf space allocations.

Even if retail were the relevant level of competition, the cereal study wrongly assumes retail competition occurs in citywide geographic markets and thus relies on citywide retail prices, output, and market shares.[144] But, as in the baby foods merger case, this is probably incorrect because consumers choose the supermarket at which they shop at based on its offerings of thousands of products, and thus few consumers are likely to switch to other supermarkets in the city in response to higher prices for one brand of one product (whether that product is cereal or baby food). For the same reason, demand cross-elasticities between brands are likely to turn on what shelf space each supermarket allocates to which cereals and what retail prices the supermarket charges for each, and thus will vary by supermarket rather than by city.[145]

In short, the cereal study relies on citywide retail prices, output, and market shares, which it uses to estimate not only markups but all their model parameters (such as elasticities and horizontal shareholding levels).[146] But those citywide retail inputs and estimates correspond neither to the relevant wholesale competition (which is national) nor even to actual retail cereal competition (which is likely mainly within supermarkets). It is thus not surprising that, using the wrong market definition to calculate prices and horizontal shareholding levels, the study finds a relatively weak relation between them. The study also does not even measure all retail prices and output, but limits itself to a subset of supermarkets in six cities.[147] Further, the study assumes that each private label product is produced by a different manufacturer, but provides no basis for that assumption, which seems to conflict with the fact that Post was for years owned by a major producer of private label cereals and later purchased another producer that made 50% of all private label cereals, which at the time

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[143] Backus, Conlon & Sinkson, *Cereal Study, supra* note , at 31 n.52; ELHAUGE, U.S. ANTITRUST, *supra* note , at 752.

[144] Backus, Conlon & Sinkson, *Cereal Study, supra* note , a 4, 22.

[145] Even if the relevant retail market were citywide, a correct economic analysis would have to take into account the extent of market power and horizontal shareholding among supermarkets in each market, which the cereal study fails to do.

[146] *Id.* 5-7, 10, 25-26, 20.

[147] *Id,* at 19.

comprised about 16-18% of the market.[148] To be sure, there may well not be better data available in the cereal industry on the above inputs, but the combination of all these factors results in a lot of mismeasurement error that would predictably attenuate the study's results.

2. More than a limited subset of the causal mechanisms are likely effective. Banning some subset of mechanisms is unlikely to be effective, because a combination of all the above mechanisms is likely to influence corporate management. Indeed, even if one mechanism dominated now, banning only that mechanism would likely induce horizontal shareholders to shift to greater use of the other mechanisms in order to further their interests. Such substitution effects will undermine the effectiveness of any ban on a subset of mechanisms, even if such a ban could effectively prevent that subset from occurring.

3. The Law Is Unlikely to Be Able to Effectively Police a Subset of Mechanisms. It is unlikely that the law can effectively police a subset of the mechanisms. There are two possibilities for targeted regulation. The first possibility is categorically banning some mechanisms. But any categorical prohibition on allowing institutional investors to vote, influence executive compensation or hiring, take sides in control contests, sell stock, or communicate with managers would be overbroad and create more problems than it solves. After all, such mechanisms are generally used in order to improve corporate efficiency.[149]

The second possibility is selectively punishing only the anticompetitive use of some mechanisms. But that will raise insuperable enforcement difficulties because the relevant information will generally be nonpublic or obscure. A prohibition on anticompetitive shareholder communications would not be practical to enforce because those communications are usually not public and need not express any anticompetitive motivations.[150] Even less practical would be defining and enforcing an affirmative legal duty on horizontal shareholders to pressure managers to compete just as much as they would have without their horizontal interests. Nor does it seem feasible to define and enforce a legal ban on horizontal shareholders considering their horizontal interests when they vote on board elections or executive compensation methods, sell stock, weigh in on control contests, or make future hiring decisions. Similarly unfeasible would be a ban on managers considering the fact that greater competition may lead to stock sales, lower executive compensation, or make them less likely to receive horizontal shareholder support in future board

[148] *Id.* at 15, 22. Later, the cereal study treats all private label products as one single unified firm separate from other manufacturers, *id.* at 23, which is also an incorrect assumption.

[149] *See generally* Hemphill & Kahan, *supra* note 5.

[150] *Id.* at 1438.

elections, control contests, or job searches. Even if it were feasible to enforce such bans, such conscious considerations by horizontal shareholders or managers are not necessary for any of those mechanisms.[151] In contrast, the existence of high levels of horizontal shareholding in concentrated markets is public, easy to monitor, and easy to ban if the data indicates it has led to anticompetitive effects.

One could also imagine regulatory strategies in between categorical and selective punishment, such as presumptively condemning some mechanisms. But they raise the same basic tradeoff. Unless the presumption is strong, it will make enforcement against anticompetitive uses of mechanisms ineffectual; and if the presumption is strong, it will overinclusively sweep in desirable uses of the mechanisms by which shareholders influence corporations. Indeed, Hemphill and Kahan themselves recognize that it would be undesirable if an enforcement strategy generally discouraged institutional investors from trying to influence corporations.[152] But what they fail to recognize is that any effective effort to police mechanisms of influence will have precisely that effect. In contrast, banning anticompetitive market structures will leave institutional investors free to exercise influence when it does not create anticompetitive effects, and will indeed encourage shareholders to concentrate their holdings in one firm per product market in a way that makes such influence stronger.

In the end, the problem lies in the structural incentives created by horizontal shareholdings in concentrated markets, just as the problem with anticompetitive mergers and cross-shareholdings lies in the structural incentives they create. Behavioral remedies that try to target particular means or uses of horizontal shareholder influence are likely to be ineffective and hard to police. Indeed, they raise even greater enforcement difficulties than the behavioral remedies that antitrust agencies and scholars typically deem ineffective at policing anticompetitive mergers or cross-shareholdings.[153] Because horizontal shareholding in concentrated markets is a structural problem, the only effective remedy is preventing or undoing that anticompetitive structure.

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[151] *Supra* at Section I.A.8.

[152] Hemphill & Kahan, *supra* note 5, at 1396–97.

[153] *E.g.*, https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-keynote-address-american-bar (Nov. 16, 2017) (mergers) [https://perma.cc/LRP2-EV2C]; David Gilo, *The Anticompetitive Effect of Passive Investment*, 99 MICH. L. REV. 1, 45–46 (2000) (cross-shareholdings).

C. Non-Horizontal Shareholder Interests and Fiduciary Duties Do Not Prevent Anticompetitive Effects

Some argue that horizontal shareholders cannot cause corporations to behave less competitively because that would necessarily harm non-horizontal shareholders who will also influence managers[154] and whose interests managers have fiduciary duties to take into account.[155] The U.S. antitrust agencies cited this argument among the reasons not to yet take enforcement action.[156]

But this theoretical assertion conflicts with the empirical data showing that horizontal shareholding does have anticompetitive effects.[157] When a theoretical claim does not fit the facts, it indicates there must be some flaw in the theory. Consistent with the empirical evidence, there are in fact many theoretical flaws with this claim.

First, the causal mechanisms described above assume managers ***do*** take into account the interests of all their shareholders, horizontal and non-horizontal. What the proofs show is that taking all shareholder interests into account will encourage managers to compete less the more those shareholders are horizontally invested.[158]

Second, the anticompetitive effects of horizontal shareholdings are usually not harmful to non-horizontal shareholders. To be sure, non-horizontal shareholders at a firm may favor a different ***firm-specific*** strategy than the firm's horizontal shareholders. But that does not mean that the non-horizontal shareholders are harmed by horizontal shareholders, because horizontal shareholders ***also*** reduce the competitiveness of rival firms. Thus, horizontal shareholding generally increases profits for all the affected firms, which benefits non-horizontal shareholders as well as horizontal shareholders.[159] Non-horizontal shareholders therefore affirmatively benefit from the fact that horizontal shareholding reduces competition at both their firm and its rivals. One cannot separate horizontal shareholding's effect on one firm from its effect on the rival firms, because horizontal shareholders by definition are invested in both and profit from reducing competition at both.

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[154] Hemphill and Kahan, *supra* note 5, at 1426; Rock & Rubinfeld, *supra* note 37, at 232–35, 250–51.

[155] O'Brien & Waehrer, *supra* note 69, at 734, 765–66; Lambert & Sykuta, *supra* note 69, at 21–22.

[156] US OECD Note, *supra* note 5, at ¶¶ 4-5, 13, 15.

[157] *Supra* text accompanying notes 1-2-.

[158] *Supra* Section I.A.

[159] This was proven as far back as 1984. *See* Julio J. Rotemberg, *Financial transaction costs and industrial performance*, Working Paper, Alfred P. Sloan School of Management 1–2 (1984).

The situation is analogous to entering into a legally-enforceable cartel that increases the profits of all firms by lessening competition at all of them, or to an anticompetitive merger that involves one firm acquiring a majority interest in another firm and lessening competition at both firms in a way that increases the profits of both. In such cases, the shareholders in the cartel firms or the minority shareholders in the acquired firm would have no incentive to object because they profit from the reduced competition across all the involved firms. Likewise, non-horizontal shareholders have no more incentive to object to anticompetitive horizontal shareholding than they would to object to their firm entering a legally-enforceable cartel or anticompetitive merger.

Third, this claim misunderstands corporate law on fiduciary duty claims. Managerial judgments about competitive actions would be protected from any fiduciary duty claim by the business judgment rule.[160] As long as managers are exercising their business judgment when making competitive decisions, courts will not second-guess whether managers could have increased firm profits by taking some other course of action or even whether managers were actually motivated by firm profits.[161] Further, the business judgment rule is especially deferential when managers make decisions about output and pricing.[162] Managers thus face no serious risk of fiduciary duty liability for choosing to take less competitive action than they could have.

Fourth, even if the business judgment rule were not a bar, non-horizontal shareholders would have no incentives to bring a fiduciary duty claim when horizontal shareholding has anticompetitive effects that increase profits at all the horizontal competitors. Undoing the horizontal shareholding or preventing the horizontal shareholders from exerting influence would thus reduce the returns enjoyed by the non-horizontal shareholders. For this reason, when an anticompetitive merger involves one firm acquiring a majority interest in another firm, we do not typically see minority shareholders of the acquired firm bringing fiduciary duty claims to try to block a merger that anticompetitively increases the profits of both firms. Even if the non-horizontal shareholders brought suit despite their lack of incentives, they would for the same reason be unable to prove any injury or collect any damages.

Finally, this argument logically conflicts with well-established antitrust law deeming anticompetitive concerns to arise when one firm acquires a controlling interest of

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[160] Einer Elhauge, *Sacrificing Corporate Profits in the Public Interest,* 80 NYU. L. REV. 733, 770–774 (2005) (detailing the operational discretion provided by the business judgment rule).

[161] *Id.* at 770.

[162] *Id.* at 773.

less than 100% in a competitor.[163] If this argument were right, such acquisitions would raise no anticompetitive concerns because fiduciary duties to the non-controlling non-horizontal shareholders of the competitor would prevent the acquirer from ever using their control to lessen competition. The reality that antitrust law takes the opposite position means that it necessarily rejects the claim that fiduciary duties to non-horizontal shareholders suffice to prevent anticompetitive effects. It would thus be inconsistent to take a contrary position on horizontal shareholding.

II. THE TYPES OF MECHANISMS ARE NEITHER UNTESTED NOR IMPLAUSIBLE

Professors Hemphill and Kahan offer the most thoughtful critique of the causal mechanisms by which horizontal shareholding might cause anticompetitive effects.[164] But even though they claim to offer the first "systematic explication and assessment of the causal mechanisms",[165] they actually offer relatively little analysis of the theory and evidence underlying any of the causal mechanisms detailed in Part I. Instead, they focus on a typology that is based mainly on the various *effects* that the causal mechanisms might have, and on various claims that such effects are either unproven or implausible, as summarized next.

Hemphill and Kahan's typology defines three dimensions by which the causal mechanisms might vary. ***(1) Consensus v. Conflict:*** Some mechanisms produce a consensus between horizontal shareholders and other shareholders because their *effects* are profitable for all the firms with horizontal shareholdings, whereas others produce conflict because their effects profit some firms but harm others.[166] ***(2) Across-the-Board v. Targeted:*** Some mechanisms have an *effect* on the general tendency of a corporation's managers to compete across-the-board, whereas others have on effect on competitive decisions in targeted markets.[167] ***(3) Active v. Passive:*** Some mechanisms involve actively trying to influence corporate management, whereas other mechanisms involve the passive failure to influence.[168] Only the last dimension really relates to the process by which the causal mechanism works; the

[163] DOJ & FTC, Horizontal Merger Guidelines § 13 at 33 (2010) ("When the Agencies determine that a partial acquisition results in effective control of the target firm, . . . they analyze the transaction much as they do a merger.")

[164] *See generally* Hemphill and Kahan, *supra* note 5.

[165] *Id.* at 1398.

[166] *Id.* at 1399, 1401–03.

[167] *Id.* at 1399, 1409.

[168] *Id.* at 1399, 1420, 1427.

first two (which are the main focus of their analysis) are defined solely in terms of the effects that horizontal shareholding has, regardless of the causal mechanism.

Hemphill and Kahan then offer what they call their two major conclusions: (1) they claim that neither consensus nor across-the-board mechanisms have been empirically tested; and (2) they claim that active targeted mechanisms have been tested but are implausible given the required risk and knowledge, and that passive targeted mechanisms could be plausible, but have not been empirically tested and are implausible for the index fund families that are major horizontal shareholders.[169] They also conclude that even if horizontal shareholding has anticompetitive effects, its net effects are ambiguous because horizontal shareholders also have incentives to press for greater firm efficiency.[170]

The problem with their first main conclusion is that, as shown below in Sections II.A and II.B, both consensus and across-the-board mechanisms ***have*** been empirically tested. The problem with their second main conclusion is that, as detailed below in Section III.C, it depends not only on their false premise about consensus mechanisms, but also on dubious assessments of plausibility that conflict with the empirical evidence. Finally, Section III.D shows that their conclusion that the net effects are ambiguous ignores the mathematical proofs and empirical evidence to the contrary and misunderstands the incremental effects of horizontal shareholding.

A. Consensus Effects Have Been Empirically Proven

MHHI is usually measured using the assumption that shareholder influence turns on relative share, which has the implication that MHHI increases not only the more concentrated the horizontal shareholders are, but also the less concentrated the non-horizontal shareholders are.[171] Hemphill and Kahan argue that this and other studies that adopt a similar assumption therefore use a measure of MHHI that can test for conflict effects but cannot test for consensus effects.[172] They acknowledge that the fact that MHHI goes up with more concentrated horizontal shareholders is consistent with consensus effects.[173] But they claim that the fact that MHHI also goes up with less concentrated non-horizontal shareholders means MHHI should not be able to find consensus effects.[174] They reason that non-horizontal shareholders benefit from

[169] *Id.* at 1399–1429, 1444–45.
[170] *Id.* at 1400–01, 1445–47.
[171] Elhauge, *How Horizontal Shareholding, supra* note 1, at 232–34.
[172] Hemphill and Kahan, *supra* note 5, at 1401–09.
[173] *Id.* at 1405–1406.
[174] *Id.* at 1406–1409.

consensus effects, which they argue means there is no reason to think lowering their influence would increase the likelihood of consensus effects.[175] However, their argument is mistaken both theoretically and empirically.

First, Hemphill and Kahan's argument rests on a theoretical misunderstanding about the collective action problem that drives ordinary competitive behavior. It is always the case that all firms in all markets (and thus all shareholders of those firms) would ***collectively*** benefit if the firms could all simultaneously lessen competition among themselves in order to increase prices and profits.[176] But with ***separate*** ownership, economic models show that (absent agreement or successful coordination between the firms) each firm has ***individual*** incentives to undercut such noncompetitive pricing, and thus they will compete even though they collectively would be better off if they all competed less.[177] The higher the relative influence of the horizontal shareholders, the more those firm incentives to compete are lowered, because competition reduces the horizontal shareholders' profits in rival firms and thus increases the firm's effective marginal cost of taking sales from those rivals.[178] Likewise, if the relative influence of the horizontal shareholders is decreased by more concentrated non-horizontal shareholdings, that will decrease the firm's effective marginal cost of taking sales from rival firms and thus increase individual firm incentives to lower prices, even though that harms all shareholders, including the non-horizontal ones. Less concentrated non-horizontal shareholdings will thus predictably make consensus effects more likely. There is no inconsistency between that conclusion and the conclusion that non-horizontal shareholders nonetheless profit if the horizontal shareholders do successfully increase prices at all firms, just like the non-horizontal shareholders would profit if their firm could enter into a legally enforceable cartel with other firms, even though without such enforceability the non-horizontal shareholders would have incentives to cheat on the cartel price.

Hemphill and Kahan wrongly assume instead that consensus effects must be based on horizontal shareholders' ability to orchestrate ***coordination*** across firms.[179] But although empirical studies show that higher horizontal shareholding levels can increase the disclosure of information that might facilitate coordination,[180] none of the causal mechanisms for anticompetitive effects depend on such inter-firm coordination.[181] Instead, these causal mechanisms simply depend on the fact that

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[175] *Id.* at 1407.
[176] *See generally* MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION (1971).
[177] *Id.*
[178] Elhauge, *Horizontal Shareholding, supra* note 4, at 1269.
[179] Hemphill and Kahan, *supra* note 5, at 1408–09.
[180] *See supra* sources cited note 42.
[181] *Supra* Section I.A.

horizontal shareholding increases the costs to each firm's group of shareholders of competitively gaining sales, which in turn lessens the incentives of each firm's managers to compete aggressively.[182] Because this lessens competition at both the firm and its rivals simultaneously, it increases profits at both and benefits non-horizontal shareholders as well.[183]

Second, Hemphill and Kahan's argument ignores the reality that, despite their theoretical claim that ΔMHHI should not correlate to consensus effects, in fact the airline and banking studies found that higher ΔMHHI increased ***market*** prices, and thus did test and prove a ***consensus*** effect that would benefit horizontal and non-horizontal shareholders alike.[184] Likewise, other empirical studies have shown that higher ΔMHHI increased market prices for seeds, hospital services, and for hundreds of consumer goods, all of which are consensus effects.[185] Further, cross-industry studies have found that higher ΔMHHI (and other measures of horizontal shareholding) increased both the marketwide profit-investment gap and the use of executive compensation methods that lessened competition, again consensus effects.[186] Other empirical studies have further shown that when a firm's addition to the S&P 500 increases horizontal shareholdings levels, it increases stock prices and reduces executive compensation incentives to compete not only at the added firms, but at their product market rivals, which again are consensus effects.[187]

Instead of addressing the fact that many empirical studies show that higher ΔMHHI and other measures of horizontal shareholding do cause consensus effects, Hemphill and Kahan stress that two other empirical studies find that horizontal shareholding

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[182] *See id.*; Elhauge, *Horizontal Shareholding*, *supra* note 4, at 1268.

[183] *Supra* Section I.C.

[184] Azar, Schmalz & Tecu, *supra* note 13, at 1522–23, 1529–31, 1550; Azar, Raina & Schmalz, *Ultimate Ownership and Bank Competition* (May 4, 2019), http://ssrn.com/abstract=2710252; Park & Kyoungwon Seo, *supra* note 1.

[185] Mohammad Torshizi & Jennifer Clapp, *Price Effects of Common Ownership in the Seed Sector* 28–31 (February 20, 2019), https://ssrn.com/abstract=3338485, forthcoming 66 ANTITRUST BULLETIN, Issue 1 (2021); Hadiye Aslan, *Common Ownership, Creative Destruction, and Inequality: Evidence from U.S. Consumers* 2–3, 8–10 (Sep. 12, 2019), https://ssrn.com/abstract=3452765; Liu, *supra* note 1.

[186] Germán Gutiérrez & Thomas Philippon, *Investmentless Growth: An Empirical Investigation*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY 89, 92–93, 120, 126–131 (Fall 2017) (using MHHI and other measures); Antón, Ederer, Giné & Schmalz, 2018, *supra* note 75, at 2–4, 21–36 (using MHHI measure); Antón, Ederer, Giné & Schmalz 2020, *supra* note 57, at 5 n.6, 33-37 & n.29, 39-42 & Tables 5-6 (extending to non-MHHI measures).

[187] Lysle Boller & Fiona Scott Morton, *Testing the Theory of Common Stock Ownership* (July 2020),) NBER Working Paper No. w27515, https://ssrn.com/abstract=3649879; Antón, Ederer, Giné & Schmalz 2020, *supra* note 57, at 4-5, 44-49, Table 9.

between an incumbent drug firm and a potential generic entrant delays entry, which they argue creates a conflict because it harms the delayed entrant and thus its non-horizontal shareholders.[188] But that point does not apply to any of the studies discussed in the preceding paragraph, which did not find effects on entry that might raise conflicts, but rather found anticompetitive effects that would benefit all shareholders. Nor is it clear that the two generic entry studies involve conflict effects.[189] In any event, even if they do, there is no disagreement that (as in the DuPont control contest mentioned above[190]) horizontal shareholding sometimes can create anticompetitive effects that harm the non-horizontal shareholders and that ΔMHHI will correlate to such conflict effects. Where Hemphill and Kahan err is in concluding that the fact that ΔMHHI goes up with less concentrated non-horizontal shareholders means it cannot also test for consensus effects.[191] It can, for the reasons detailed above. Thus, ΔMHHI will predictably correlate with both anticompetitive conflict effects and anticompetitive consensus effects. If the generic entry studies do involve conflict effects, then the complete set of studies just confirms this theoretical prediction by showing that ΔMHHI does empirically correlate with both conflict effects and consensus effects.

Third, Hemphill and Kahan's critique of the ΔMHHI measure ignores the point that the empirical studies do not infer anticompetitive effects from ***a priori*** assumptions that ΔMHHI must affect prices or have other anticompetitive effects. Rather, those studies empirically test the ***hypothesis*** that horizontal shareholding, as measured by ΔMHHI, has those anticompetitive effects.[192] Thus, those studies ***validate*** the

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[188] Hemphill and Kahan, *supra* note 5, at 1403 n.32.

[189] One of those studies showed that higher horizontal shareholding between an incumbent brand and potential generic entrant increased the likelihood of reverse-payment patent settlements that delay generic entry. *See* Jin Xie & Joseph Gerakos, *The Anticompetitive Effects of Common Ownership: The Case of Paragraph IV Generic Entry* 110 AM. ECON. REV. P&P 569 (2020). But such settlements actually profit both firms by creating anticompetitive profits that are shared with the delayed entrant via the reverse payment. *See* Elhauge & Krueger, *Solving the Patent Settlement Puzzle*, 91 TEXAS LAW REVIEW 283 (2012). The other study found that increased horizontal shareholding between incumbent drug manufacturers and potential generic entrants reduced the odds of generic entry. *See* Newham, et al, *Common Ownership and Market Entry: Evidence from the Pharmaceutical Industry* (Sept 5, 2018), https://ssrn.com/abstract=3194394. But when (as is now typical) the drug manufacturers are incumbents in some markets and potential entrants in others, *see* Lemley et al, *Playing Both Sides*, 71 HASTINGS L.J. 307 (2020), such a general lessening of entry into each other's markets tends to anticompetitively profit both firms.

[190] *Supra* I.A.3.

[191] Hemphill and Kahan, *supra* note 5, at 1401-09.

[192] Azar, Schmalz & Tecu, *supra* note 13, at 1522-23; Azar, Raina & Schmalz, *supra* note 184, at 13-14, 17-19; Torshizi & Jennifer Clapp, *supra* note 185, at 37, 49; Aslan, *supra* note 185, at 1-4; Liu, *supra* note 1, at 19, 23, 25, 35-36, 40, 43-44.

ΔMHHI measure by showing that empirically it has highly statistically significant correlations with anticompetitive effects, despite manifold controls for other possible causes or endogeneity.[193] This means ΔMHHI is quite predictive, despite Hemphill and Kahan's theoretical claim that it should not be.[194] The reason is almost certainly that their theoretical claim is incorrect for the reasons detailed above.

But suppose, contrary to standard economic theory, that Hemphill and Kahan were right that consensus effects would be more likely to be correlated to a measure of MHHI that would rise with higher concentrated horizontal ownership but would not decrease with higher concentrated non-horizontal ownership. That would mean that the actual measure of MHHI used in these empirical studies was somewhat inaccurate, but that would simply create attenuation bias towards a zero coefficient and lower statistical significance.[195] Such an attenuation bias would make it even more remarkable that the studies nonetheless found substantial coefficients with high levels of statistical confidence, suggesting that the true effects are even larger. To be sure, such inaccuracies would also suggest that even better predictions could be made if MHHI were tweaked not to decrease with higher concentrated non-horizontal ownership. But Hemphill and Kahan provide no empirical evidence that such a tweaked measure of MHHI would better predict prices, and even if there were such evidence, it would not show that the initial method of measuring MHHI did not predict prices; it would merely show that the tweaked measure could predict prices even better.

B. Across-the-Board Effects Have Been Empirically Proven

Hemphill and Kahan assert that across-the-board mechanisms (i.e., those that affect the general tendency of a corporation's managers to compete, rather than competitive decisions in targeted markets) have not been empirically tested.[196] They also claim that many across-the-board effects are implausible.[197] But their reasoning is flawed for several reasons.

First, Hemphill and Kahan assert that across-the-board effects could not have been shown by the airline study because it found effects based on differences between

[193] Elhauge, *How Horizontal Shareholding, supra* note 1, at 222-42 (detailing the findings and controls in these papers).

[194] Hemphill and Kahan, *supra* note 5, at 1401-09.

[195] WOOLDRIDGE, INTRODUCTORY ECONOMETRICS 320-322 (5th ed. 2013).

[196] Hemphill and Kahan, *supra* note 5, at 1410-14.

[197] *Id.*

routes with different ΔMHHIs.[198] But it is not true that the airline study found effects based on ΔMHHI differences between routes. To the contrary, the airline study used fixed-effects variables for each route that controlled for all differences between routes that might affect prices.[199] Thus, the airline study's regression results are driven not by differences between routes, but rather by how changing ΔMHHI over time changes prices over time in all those routes.[200] The existence of a large number of routes created a large number of observations to better achieve statistical significance, and enabled the airline study to better control for differences in route characteristics, but the study did not rest on any assumption that anticompetitive influence was targeted at certain routes, rather than generally reducing the tendency of airlines to be competitive.[201] The same goes for the banking study, which also used local market fixed effects.[202] The premise of Hemphill and Kahan's analysis on this point is thus simply mistaken.

To the contrary, the airline study actually ran an alternative regression that used one variable for the average ΔMHHI across all routes in which an airline operates (which corresponds to horizontal shareholding's effect on the airline's general competitiveness) and another variable for the route-specific ΔMHHI (which corresponds to the effect on the airline's route-specific competitiveness).[203] Both had the effect of raising prices with a statistical confidence level of 99%, but the coefficient for the airline-wide ΔMHHI effect was nine times greater than the coefficient for the route-specific ΔMHHI effect.[204] Thus, far from failing to test for across-the-board mechanisms, the airline study found that 90% of the effect was across-the-board and only 10% was targeted.[205] Hemphill and Kahan's claim is thus factually incorrect.

Second, Hemphill and Kahan's claim is theoretically flawed as well. Hemphill and Kahan dismiss the fact that the airline study mainly found across-the-board effects based on their assertion that "average MHHIΔ across all routes lacks theoretical foundation as an explanation for route-level pricing."[206] But Hemphill and Kahan are incorrect in their theoretical premise that an across-the-board reduction in the

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[198] *Id.* at 1411-12.

[199] Azar, Schmalz & Tecu, *supra* note 13, at 1517, 1528-29.

[200] WOOLDRIDGE, *supra* note 195, at 485.

[201] Azar, Schmalz & Tecu, *supra* note 13, at 1550-51.

[202] Azar, Raina & Schmalz, *supra* note 184, at 4. 17, 33.

[203] Azar, Schmalz & Tecu, *Internet Appendix for "Anticompetitive Effects of Common Ownership,"* at 18, Table IA.VIII, https://doi.org/10.1111/jofi.12698.

[204] *Id.*

[205] *Id.*

[206] Hemphill and Kahan, *supra* note 5, at 1412 n.55.

competitiveness of firms with high horizontal shareholding levels could not have greater effects in local markets with higher MHHI levels.

One reason their theoretical premise is mistaken is that the extent to which an across-the-board effect on horizontally-owned firms lessens competition in each market will turn on the extent to which such firms are prevalent in that market. As proven in a recent paper by Antón, Ederer, Giné & Schmalz, if higher horizontal shareholding reduces the general competitiveness of firms with high horizontal shareholding levels, that would create greater effects on prices and output in local markets with higher horizontal shareholding levels, even if shareholders and managers engage in no market-specific interventions on prices or output.[207] The reason is that firms with high horizontal shareholding would be more prevalent in markets with higher horizontal shareholding levels, and their higher costs would thus have more impact on prices and output in such markets.[208] Because markets with a greater prevalence of firms with high horizontal shareholding levels have higher MHHI levels, an across-the-board reduction in the competitiveness of firms with high horizontal shareholding levels would naturally have greater impact on prices and output in markets with higher MHHI levels.

The other reason their theoretical premise is mistaken is that the extent to which an across-the-board effect on horizontally-owned firms lessens competition in each market also turns on whether those firm's market shares in that market collectively give them the market power to impact market outcomes. Because, given how MHHI is measured, markets where horizontally-owned firms have higher market shares have higher MHHI levels, an across-the-board reduction in the competitiveness of those horizontally-owned firms will thus naturally have greater impact on prices and output in markets with higher MHHI levels. Consider standard antitrust analysis of a pure horizontal merger between two airlines. No one would doubt that such a horizontal merger would lower their general willingness to compete with each other. But that will have different effects in different routes. It would not have any effect in routes in which both airlines were not present. Nor would it have any effect in routes where the market concentration was too low for the merger of those two airlines to affect prices. Thus, standard antitrust analysis would indicate that such a merger would thus clearly result in varying price increases in different routes, because of varying horizontal overlap and varying market concentration. Hemphill and Kahan's logic would instead wrongly conclude that these route-specific differences mean that horizontal mergers cannot affect the general willingness of merged firms to compete with each other.

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[207] Antón, Ederer, Giné & Schmalz 2020, *supra* note 57, at 2-3, 10, 21-24, 26.
[208] *Id.,*

In any event, it makes little sense to dismiss the airline study's empirical finding that there ***is*** an effect across all routes based purely on Hemphill and Kahan's theoretical priors that one should not see such an effect. The conflict between the empirical evidence and their theoretical priors is instead reason to conclude that their theoretical priors are wrong.

Third, although Hemphill and Kahan acknowledge that across-the-board effects could be shown by the cross-industry studies, they dismiss those studies on various unpersuasive grounds.[209] To begin with, they argue that the executive compensation studies yield no firm conclusion because they conflict with each other.[210] But as shown above, this conflict exists only on a measure of executive compensation that ignores 78% of the compensation that executives receive; the conflict in studies goes away if one considers a measure that considers all that compensation.[211] Next, they argue that the cross-industry studies should be ignored because they rely on ownership data that does not include non-institutional shareholders.[212] The lack of such data for cross-industry studies does create measurement error, but that just creates attenuation bias towards a zero coefficient and lower statistical significance, indicating that the true effects are likely even larger than these studies found.[213] Further, the new cross-industry executive compensation study does include the holdings of individuals who are directors or officers at the firms, and shows that holdings by other non-institutional investors are too small to substantially affect measures of horizontal shareholding.[214] Thus, neither argument provides a sound basis for ignoring the fact that the cross-industry studies did show across-the-board effects.

Fourth, Hemphill and Kahan assert that the passive subset of across-the-board mechanisms (i.e., lower shareholder pressure for greater general competitiveness) cannot be measured by the empirical studies because a shift from dispersed owners to concentrated horizontal owners increases ΔMHHI, which they argue cannot create any increase in passivity because the dispersed shareholders are passive already.[215] But the true mechanisms are likely to reflect a combination of active and passive mechanisms that would be accurately captured by ΔMHHI.[216] Moreover, because the share of stock held by dispersed stockholders is unlikely to vary much over time,

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[209] Hemphill and Kahan, *supra* note 5, at 1413-14.
[210] *Id.* at 1413.
[211] *Supra* Section I.A.2.
[212] Hemphill and Kahan, *supra* note 5, at 1413-14.
[213] WOOLDRIDGE, *supra* note 195, at 320-322.
[214] Antón, Ederer, Giné & Schmalz 2020, *supra* note 57, at 32-33.
[215] Hemphill and Kahan, *supra* note 5, at 1410-11.
[216] *Supra* Section I.A.

changes in ΔMHHI are mainly driven by shifts between concentrated horizontal and concentrated non-horizontal owners.[217] Thus, changes in ΔMHHI will predictably pick up even purely passive across-the-board effects that might result from the fact that concentrated horizontal shareholders are less likely to press for competitiveness than are concentrated non-horizontal shareholders.

Even if we thought that across-the-board effects were all purely passive and that tweaking ΔMHHI to consider the level of non-horizontal owners only when their shareholdings are large would better isolate those purely passive across-the-board effects, that would simply again indicate that the initial ΔMHHI measure is imprecise in a way that creates attenuation bias against the results, again making the real results likely larger.[218] But again, Hemphill and Kahan provide no empirical evidence that such a tweaked measure of ΔMHHI would better predict prices. Even if there were such evidence, it would not show that the method of measuring ΔMHHI used in prior studies did not predict prices; it would instead show that the tweaked measure could improve those price predictions.

Fifth, Hemphill and Kahan assert that some across-the-board mechanisms are implausible. Above, I already rebutted their casual claims that board elections or executive compensation are implausible mechanisms.[219] They also more generally argue that across-the-board strategies based on voting or passivity require a long-term time horizon that active funds often will not have.[220] Their premise that it takes years for voting or passivity to have an effect is, however, debatable. Declining to vote against managers who are not competitively aggressive immediately keeps them in office and gives them a higher vote share that will make them more inclined to continue their current business strategies. In any event, a long-term time horizon is hardly a problem for index funds, which are necessarily long-term holders, and even active funds are generally "closet indexers" who also hold most of their stock for long periods.[221] Even when active funds do sell stock, this gives them another mechanism of influence, namely affecting the stock price by selling in response to corporate actions they dislike.[222] Thus, the mix of mechanisms will differ for different investors, with index funds exerting more influence via the prospect they will later be key in resolving control contests, while active funds exert more influence via stock market sales.[223] But both index funds and active funds have

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[217] Hemphill and Kahan, *supra* note 5, at 1410.
[218] WOOLDRIDGE, *supra* note 195, at 320-322.
[219] *Supra* Section I.A.1.
[220] Hemphill and Kahan, *supra* note 5, at 1418-19.
[221] Bebchuk, Cohen & Hirst, *supra* note 8, at 99.
[222] *Supra* Section I.A.4.
[223] *Id.*

mechanisms available that can have across-the-board effects on the competitiveness of firms.

C. Targeted Mechanisms Are Plausible

Hemphill and Kahan concede that targeted mechanisms are well tested by the empirical literature, but they argue that active targeted mechanisms are implausible given the required risk and knowledge.[224] This leads them to conclude that the passive, targeted, conflict mechanism of selective omission is the only type of mechanism that is both plausible for some institutional investors and at least consistent with the empirical evidence.[225] But they conclude that this mechanism has not been empirically established[226] and is implausible for those horizontal shareholders who are index fund families.[227] Their arguments again have various flaws.

First, Hemphill and Kahan's arguments about why active targeted mechanisms are too risky assume that horizontal shareholding lowers the profits of the influenced firm in a way that creates a conflict with the firm's managers and non-horizontal shareholders.[228] That assumption reflects their premise that horizontal shareholding must involve conflict mechanisms, rather than consensus mechanisms, which is false for the reasons discussed in Section II.A.

Second, Hemphill and Kahan assume that across-the-board influence could not have market-specific effects. For the reasons discussed in the prior section, this is incorrect.

Third, although Hemphill and Kahan argue that horizontal shareholders could not plausibly acquire the market-specific knowledge necessary to employ an active targeted mechanism,[229] the evidence is to the contrary. The airline study provided direct evidence that, during airline earnings calls, horizontal shareholders have criticized airline decisions to add capacity to specific routes, and have even stressed that they were communicating the same critique to other airlines. [230] Hemphill and Kahan dismiss the point based on their assertion that the investors were just sell-side

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[224] Hemphill and Kahan, *supra* note 5, at 1412, 1419-26.

[225] *Id.* at 1400, 1427-29.

[226] *Id.* at 1401 ("The current empirical literature raises concerns that deserve significant attention but that are neither sufficient to establish that CCOs engage in selective omission").

[227] *Id.* at 1445-45.

[228] *Id.* at 1421-24, 1426.

[229] *Id.* at 1424-26.

[230] Azar, Schmalz & Tecu, *supra* note 13, at 1555-56.

analysts.[231] But in fact this example involved JP Morgan, which was one of the largest horizontal shareholders in airlines.[232]

Fourth, Hemphill and Kahan's premise that horizontal shareholders need market-specific knowledge to induce market-specific actions[233] is dubious. Horizontal shareholders could simply vote for managers who have the general tendency of taking into account the interests of horizontal shareholders, a general tendency that would cause those managers to act differently in routes with higher ΔMHHI. To draw an analogy, suppose federal voting rights were changed so that Puerto Rico could participate in the Electoral College that elects Presidents, and we asked ourselves whether this might affect federal responses to hurricanes. By the logic of Hemphill and Kahan, such voting rights could affect only the general responsiveness of Presidents to any area that suffers hurricanes, but could not differentially affect responsiveness to hurricanes in specific areas. But would anyone doubt that giving Puerto Rico these voting rights would result in Presidents becoming specifically more responsive to Puerto Rican hurricanes than they were previously?

Fifth, as Hemphill and Kahan concede, many empirical studies do prove targeted effects in particular markets.[234] The airline study shows that horizontal shareholding has an effect on prices in specific routes, with a statistical confidence level of 99%.[235] Although the size of this effect was smaller than the effect on general competitiveness, this finding confirms that there were route-specific effects.[236] Further, if horizontal shareholders were expending effort to influence competitiveness on specific routes, it makes sense that they would expend more effort on the larger routes where the anticompetitive gains would be larger. Consistent with this possibility, the airline study shows that the effect of ΔMHHI on prices was greater the larger the route.[237] Likewise, the banking study shows that horizontal shareholding has stronger effects on specific local markets where GHHI is high, the seeds study shows that horizontal shareholding across large conglomerates affects prices in specific seed markets, and the pharmaceutical studies show that horizontal shareholding has effects on settlements and entry that are specific to the markets in which horizontal shareholding is greater.[238] Given this conflict between so many empirical studies and their intuitions about the plausibility

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[231] Hemphill and Kahan, *supra* note 5, at 1420 n.90.
[232] Azar, Schmalz & Tecu, *supra* note 13, at 1555-56.
[233] Hemphill and Kahan, *supra* note 5, at1420, 1424-26.
[234] *Id.* at 1412, 1420.
[235] *Supra* Section II.B.
[236] *Id.*
[237] Azar, Schmalz & Tecu, *supra* note 13, at 1550.
[238] *Supra* Section II.A.

of targeted effects, one would think that one should doubt their logic about plausibility rather than dismiss the empirical evidence.

D. The Net Effects Are Not Ambiguous

Hemphill and Kahan argue that even if horizontal shareholders have incentives to lessen competition, they also have incentives to improve firm efficiency, which they claim makes the net effects of horizontal shareholding ambiguous.[239] But this informal argument ignores the formal mathematical proofs discussed in Section I.A, which already considered all the financial interests of horizontal shareholders, and nonetheless showed that increased horizontal shareholding would mean that lessened competition maximized overall shareholder interests. Indeed, the paper by Antón, Ederer, Giné & Schmalz proves that horizontal shareholders actually have greater incentives to allow executive compensation methods that make firms less efficient because that increase profits at the other firms they own.[240] The contrary informal theoretical argument of Hemphill and Kahan is flawed because the issue is not whether horizontal shareholders would derive any benefit from improved efficiency, but rather what incremental effect flows from greater horizontal shareholding. Horizontal shareholders benefit less from increased firm efficiency than they would if they were not horizontal shareholders, because the additional firm sales garnered by that improved efficiency come at the expense of the firm's competitors, in which the horizontal shareholders are also invested. This increases the marginal costs to them of any investment in improving firm efficiency, which will lead to less of that activity. Indeed, if they were prevented from having horizontal shareholdings, they would have to concentrate their investments in one firm in each product market, which would give them even stronger incentives to press for greater firm efficiency.

In any event, any conflict in theory is resolved by the empirics. If Hemphill and Kahan were right that higher horizontal shareholding improves firm efficiency in a way that offsets any anticompetitive effects,[241] then empirical studies would not show that greater horizontal shareholding increases prices, makes executive compensation less sensitive to firm performance, and increases the gap between corporate profits and investments. But that is what the empirical studies show,[242]

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[239] Hemphill and Kahan, *supra* note 5, at 1400-01, 1445-47.
[240] *See supra* Section I.A.2.
[241] *Id.* at 1400-01, 1445-47.
[242] *Supra* Section II.A.

thus confirming the anticompetitive theory and contradicting Hemphill and Kahan's contrary hypothesis.

III. HORIZONTAL SHAREHOLDERS HAVE STRONG INCENTIVES TO INFLUENCE CORPORATE CONDUCT IN ANTICOMPETITIVE WAYS

A different claim is that what makes the causal mechanisms implausible is that horizontal shareholders, especially index funds, lack incentives to employ any causal mechanism that reduces firm competition. One version of this claim is that such institutional investors have negative incentives that oppose the creation of anticompetitive effects. The other version is a claim that institutional investors have insufficient positive incentives for creating anticompetitive effects.

The negative incentives claim, discussed in Section III.A, is that any anticompetitive incentives from horizontal shareholdings are negated by those shareholders' investments in vertically-related corporations. As shown in that Section, this argument ignores not only the reality that horizontal shareholders (even index funds) generally are not equally invested in vertically-related firms, but also the point that, even when they are, such investments would create two layers of horizontal shareholdings that would compound, rather than negate, the anticompetitive effects. It also ignores the fact that vertical shareholdings can create their own anticompetitive effects.

The claim about a dearth of positive incentives, discussed in Section III.B, argues that index funds lack incentives to exert any affirmative effort to increase portfolio value by lessening competition or otherwise. In that Section, I show that, to the contrary, economic theory indicates that index funds have strong incentives to do so because their anticompetitive gains are vast, while the incremental effort costs are generally zero or negative. Further, horizontal shareholdings are generally not held by index funds and, even when they are, their shares are voted by fund families that also have active funds. Finally, I show that the argument that index funds lack incentives to exert effort to increase corporate valuations conflicts with copious empirical evidence, which indicates not only that index funds engage in extensive efforts to influence the corporations they hold, but that their efforts are highly effective.

A. Vertical Shareholdings Do Not Negate Anticompetitive Effects

Some argue that the interests of horizontal shareholders in anticompetitively increasing industry profits may be negated by their vertical common shareholdings,

which give them incentives to avoid anticompetitive harm to suppliers or customers of that industry in which the horizontal shareholders are also invested.[243] This hypothesis not only conflicts with the empirical studies showing that horizontal shareholding does have anticompetitive effects, but is theoretically unsound in its own right.

To begin with, there is no reason to think that horizontal shareholders will usually have similarly-sized investments in vertically-related corporations. Active funds may have no such investments at all. Index funds will be more likely to hold stock in some vertically-related corporations, but index funds are not the dominant horizontal shareholders.[244] Even for index funds, there is no reason to think their common shareholding will be equally weighted at each market level. Index funds for particular industries, for example, will have horizontal shareholdings across that industry, but by definition will not typically be invested in those who purchase from that industry. Even a large general index fund will tend to have shareholdings that are more horizontal than vertical, because the firms in which they invest will mainly have buyers and suppliers who either are not corporations or are corporations below the index's capitalization cutoffs.

Ginsburg and Klovers assert the contrary, arguing that it is plausible that an S&P 500 index fund would have no incentive to have the four major airlines that it holds raise prices, given that the anticompetitive effects of higher airline pricing would be visited on the other 496 corporations that the S&P 500 index holds.[245] But even their own hand-picked example of a large general index fund disproves their point. Because an S&P 500 index fund will have horizontal shareholdings across all four major airlines, the fund will derive 100% of the benefits from their higher airline prices.[246] In contrast, only 31% of airline passengers are business travelers,[247] and only 17% of business workers are employed by S&P 500 companies.[248] Multiplying 31% by 17%, this means that an S&P 500 index fund's vertical shareholdings will incur roughly just 5% of the higher airfares.

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[243] Capital Markets Committee, *supra* note 69, at 3; Hemphill & Kahan, *supra* note 5, at 1430-31; Lambert & Sykuta, *supra* note 69, at 19-20; Phillips, *supra* note 5, at 12-13 (same); Rock & Rubinfeld, *supra* note 37, at 236.

[244] *Supra* at text accompanying notes 13-14.

[245] Ginsburg & Klovers, *supra* note 5, at ¶¶ 36-37.

[246] *Id.* at ¶¶ 19, 36.

[247] John P. Heimlich, *Status of Air Travel in the USA* at 5 (April 23, 2016), *airlines.org/wp-content/uploads/2016/04/2016Survey.pdf.*

[248] Bob Bryan, *America's Smaller Businesses Are Huge*, BUSINESS INSIDER (June 8, 2015), http://www.businessinsider.com/sp-500-employment-vs-smaller-businesses-2015-6 [https://perma.cc/K6XT-CJ4K].

Lambert and Sykuta stress that an S&P 500 index fund will also own some upstream suppliers,[249] but it is implausible that negative upstream effects on them will offset the profits from higher downstream prices that are 95% externalized outside the S&P 500. To begin with, most input costs are supplied by labor or by businesses not within the S&P 500.[250] Even to the extent that other upstream suppliers are within the S&P 500, the upstream effects of heightened downstream market power would be some combination of a lower upstream price per upstream unit (which is just a transfer payment from seller to buyer that has offsetting benefits and costs for a vertical shareholders) and lower upstream output (which is no different than what a vertically-integrated monopolist would suffer and thus is clearly not enough to discourage monopoly pricing).

An S&P 500 index fund would thus have every incentive to facilitate airfare overcharges that gain the corporations they hold twenty times the fraction of that overcharge that they incur. For other horizontal shareholders that are not large general index funds, the percentage of higher prices that they would externalize onto buyers or suppliers that they own is likely to be far less than 5%. Such vertical investments thus would generally fail to negate the incentives of horizontal shareholders to favor increased airline prices.

Even to the extent that horizontal shareholders ***were*** equally invested vertically in the sellers and buyers of some product, the relevant corporate purchasers are likely to externalize much of the overcharge on to consumers further downstream. Indeed, if horizontal shareholders are equally invested in vertically-related markets, they will

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[249] *See* Lambert & Sykuta, *supra* note 69, at 19-20.

[250] 62.6% of airline expenses are clearly not supplied by S&P 500 firms, consisting of labor, professional services, employee business expenses, landing fees, or non-aircraft rents (mainly for airport terminals). *See A4A Passenger Airline Index (PACI)*, AIRLINES FOR AMERICA http://airlines.org/dataset/a4a-quarterly-passenger-airline-cost-index-u-s-passenger-airlines/. [https://perma.cc/88LQ-A4G7]. Another 20.9% of operating expenses are for things that are mainly supplied by non-S&P 500 firms, including for example fees to regional air carriers, utilities, and office supplies. *See id.* The remaining 16.5% of airline operating expenses are for jet fuel and the cost of owning or renting aircraft, *see id.*, and even in these categories only two of the top five jet fuel supplies (Exxon and Chevron) are in the S&P 500, *see Technavio Announces Top Five Vendors in the Global Aviation Fuel Market from 2016 to 2020*, BUSINESS WIRE (July 25, 2016), https://www.businesswire.com/news/home/20160725005404/en/Technavio-Announces-Top-Vendors-Global-Aviation-Fuel, [https://perma.cc/J24D-QNZQ], only 40% of aircrafts are supplied by firms (namely Boeing) in the S&P 500, *see* AviationDaily (June 20, 2016), and none of the 3 largest aircraft leasing companies are in the S&P 500, *see* Joseph Cafariello, *Comparing the 3 Largest Aircraft Leasing Companies*, SEEKING ALPHA (Feb. 17, 2015), https://seekingalpha.com/article/2923476-comparing-the-3-largest-aircraft-leasing-companies. [https://perma.cc/9GNU-GN25].

by definition also be horizontal shareholders in the vertically-related markets, and thus they will have incentives to impose an additional anticompetitive markup in the downstream market, inflating the overcharge further. The situation would have the same economics as the successive monopolies problem.[251] Thus, even when horizontal shareholders are equally invested in vertically-related firms, their shareholdings will create multi-level horizontal shareholding that will likely compound the anticompetitive incentives, rather than offset them.

The argument that the anticompetitive effects of horizontal shareholding will be negated by vertical shareholdings also ignores the fact that vertical shareholdings can actually affirmatively create their own anticompetitive effects. Vertical shareholdings can induce one of the vertically-related corporations to refuse to deal with rivals of the other or to charge those rivals higher prices, thus raising anticompetitive concerns similar to vertical mergers.[252] For example, when assessing a recent merger, Portugal's competition authority found that vertical common shareholding exacerbated the anticompetitive effects of horizontal shareholding.[253] Indeed, economic models prove that vertical foreclosure of rivals can actually be ***more*** profitable with partial ownership than with a full vertical merger.[254]

This is not to deny that perhaps in some specific case horizontal shareholders may be able to show that their specific pattern of vertical shareholdings negated any adverse price effect. Such a case-specific showing should negate antitrust liability even if the MHHI and ΔMHHI were high.[255] But neither theory nor empirical evidence provides any sound grounds to believe that vertical shareholdings will generally negate anticompetitive effects from horizontal shareholding.

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[251] *See generally* EINER R. ELHAUGE, UNITED STATES ANTITRUST LAW AND ECONOMICS 320 (3rd ed. 2018).

[252] Note, *Vertical Shareholding*, 133 HARV. L. REV. 665, 666 (2019); *Cf.* United States v. E. I. du Pont de Nemours & Co., 353 U.S. 586, 605–07 (1957) (condemning one firm's minority shareholding in a vertically-related firm because of foreclosure concerns).

[253] Note by Portugal to OECD, Hearing on Common Ownership by Institutional Investors and Its Impact on Competition, OECD DAF/COMP/WD(2017)76, at ¶¶ 35-37 (Dec. 1, 2017)

[254] Roger D. Blair, James M. Fesmire, & Richard E. Romano, *A Note on Vertical Market Foreclosure,* 5 REV. INDUS. ORG. 31, 36 (1990); Nadav Levy, Yossi Spiegel, & David Gilo, *Partial Vertical Integration, Ownership Structure, and Foreclosure*, 10 AMER. ECON. J.: MICROECONOMICS 132, 133 (1980); Note, *Vertical Shareholding*, 133 HARV. L. REV. 665, 672–73 (2019).

[255] *See* Elhauge, *How Horizontal Shareholding, supra* note 1, at 255, 258.

B. Index Fund Incentives Do Not Prevent Anticompetitive Effects

Some scholars argue that horizontal shareholding is unlikely to have anticompetitive effects because one prominent set of horizontal shareholders, namely index funds, lack sufficient incentives to exert effort to influence corporations to behave anticompetitively. These scholars base this argument on claims that an increase in portfolio value: (a) cannot make an index fund perform better than other similar index funds, and thus will not induce additional investment flow; and (b) will reap additional index fund fees that they claim are too small to induce any significant effort on increasing portfolio value.[256] I focus on the analysis of Bebchuk, Cohen, and Hirst, both because they provide the most complete and sophisticated critique and because the U.S. antitrust agencies relied on them to conclude that it was premature to take enforcement action.[257]

Given their premise that improving corporate valuations cannot attract additional investment flow into index funds, Bebchuk, Cohen, and Hirst argue that an index fund will exert effort to increase corporate value only if $\alpha\Delta V > C + IC$, where α is the percentage fee the fund charges, ΔV is the increase in corporate value the fund can create, C is the direct cost of the effort, and IC is the indirect cost that results if index fund efforts aggravate corporate managers and cause them to divert their corporation's 401(k) or pension assets to other funds.[258] Bebchuk, Cohen, and Hirst state that the average index fund fee is 0.12% of assets, and argue that this fee is insufficient to induce adequate effort.[259] For example, they say that even if an index fund earning 0.12% could increase the value of their investment in an individual corporation by $1 million, it would not exert the effort to do so unless the cost of that effort was below $1,200, and even then it might forego the effort to avoid the indirect costs of annoying corporate management.[260] They then leap from that premise to the conclusion that their "analysis suggests that it is implausible to expect

[256] Bebchuk, Cohen & Hirst, *supra* note 8, at 90, 96-102, 108-109; Bebchuk & Hirst, *Index Funds, supra* note 8, at 2037, 2041, 2052-59, 2131-33; Hemphill & Kahan, *supra* note 5, at 1400, 1429-34, 1443-45. Some only make point (a), ignoring the additional fees. Rock & Rubinfeld, *supra* note 37, at 236; Lambert & Sykuta, *supra* note 69, at 19, 26-27; O'Brien & Waehrer, *supra* note 69, at 764-65.

[257] US OECD Note, *supra* note 5, at ¶13 & n.30, ¶ 15; Phillips, *supra* note 5, at 11.

[258] Bebchuk, Cohen & Hirst, *supra* note 8, at 96-97, 101-102.

[259] *Id.* at 94, 97.

[260] *Id.* at 97, 102.

that index fund managers would seek to facilitate significant anticompetitive behavior."[261] This leap is unjustified, for the following reasons.

1. The Incremental Costs of Lessening Competition Are Generally Zero or Negative. An index fund generally faces no incremental cost for encouraging less competitive behavior. As Bebchuk, Cohen, and Hirst acknowledge, investment funds have legal requirements to incur the costs of voting in an informed manner.[262] Those costs are thus mandatory, and it costs the same to vote either way. Thus, Bebchuk, Cohen, and Hirst admit that "when investment managers decide how to cast a vote or what position to take in interactions with corporate managers," their actions do "not involve additional cost," which means $C = 0$ and fund managers will vote or advocate for whichever position increases corporate value (i.e, for whichever corporate choice has $\Delta V > 0$).[263] Given that voting and interactions with corporate managers are the main mechanisms by which institutional investors influence corporations, this means effort costs create no disincentive to influence corporations in an anticompetitive direction that increases portfolio value. When making decisions on voting or interacting on executive compensation, board elections, control contests, stock sales, or hiring, it takes no more effort for index funds to favor than oppose decisions that lessen competition, so index funds have clear incentives to favor such decisions in order to increase their profits.

Indeed, *C* is probably ***negative*** when it comes to shareholder influence on competitive behavior. Because competing vigorously is hard work for managers, they are less likely to do it unless their shareholders are actively incentivizing or pressing them to compete.[264] Horizontal shareholdings can thus induce less competitive corporate behavior by encouraging horizontal investors to expend ***less*** effort on encouraging greater competition or incentivizing cost reductions than they would have exerted if they invested in only one of the competing corporations. Such diminished shareholder efforts would actually save them costs, thus resulting in negative *C*, but still create anticompetitive effects relative to the competition that would have existed without the horizontal shareholding.

Hemphill and Kahan argue that the costs of horizontal shareholder influence would be positive and substantial because of the risk of reputational effects or liability.[265]

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[261] *Id.* at 109. *See also* Bebchuk & Hirst, *Index Funds*, *supra* note 8, at 2041, 2133 (making similar assertions that their analysis somehow shows that anticompetitive concerns are "unwarranted" and a "red herring").

[262] Bebchuk, Cohen & Hirst, *supra* note 8, at 95.

[263] *Id.* at 96.

[264] *Supra* Section I.A.2 & I.A.7.

[265] Hemphill & Kahan, *supra* note 5, at 1434-40.

But their arguments about reputation risks depends on their claims about liability: otherwise, a reputation for increasing portfolio value would only help the institutional investor reap additional investment flow. And if Hemphill and Kahan's recommendation were followed, there would be no antitrust enforcement against horizontal shareholders for the anticompetitive effects created by the structural incentives that result from horizontal shareholding.[266] Thus, unless their position is rejected, there would thus be no antitrust liability risk for the fact that voting, executive compensation, control contests, stock market sales, labor market hiring, and the absence of pressure can have anticompetitive effects.[267]

Hemphill and Kahan's argument instead wrongly presupposes that the only causal mechanism is direct communications urging managers to lessen competition, which they argue might be regarded as a vertical agreement in restraint of trade or might even subject the institutional investor to hub-and-spoke liability for organizing a horizontal conspiracy among the firms who listen to those communications.[268] But such direct communications are not a necessary causal mechanism, so without them horizontal shareholding would still have anticompetitive effects. Nor are courts likely to find such direct communications a vertical agreement in restraint of trade, given that nothing specific is likely to be agreed on and shareholder communications recommending a specific corporate strategy have never been deemed a vertical restraint of trade. Such direct communications are even less likely to lead to hub-and-spoke liability, because antitrust law infers the requisite horizontal conspiracy among the corporations only if the corporations have no independent incentives to listen to the urging of their leading shareholders.[269] That is decidedly not the case, because each corporate management has ample independent incentives to stay on the good side of their leading shareholders.

Hemphill and Kahan also claim the direct communications might create a risk of fiduciary duty liability.[270] But that claim fails because exercising such influence increases the value of all the involved firms and funds, and thus does not create any fiduciary duty liability.[271] To the contrary, when an index fund holds horizontal competitors, the fund families' fiduciary duties to investors in that fund creates

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[266] *See id.* at 1396, 1401, 1450.

[267] *Supra* Section I.A.

[268] Hemphill & Kahan, *supra* note 5, at 1436-37.

[269] *See* Theatre Enterprises v. Paramount Film Distributing, 346 U.S. 537 (1954) (cannot infer an agreement among film distributors not to deal with a suburban theater from the fact that each distributor independently preferred to deal with a downtown theater that was demanding exclusive rights in the area).

[270] Hemphill & Kahan, *supra* note 5, at 1437-38.

[271] *Supra* Section I.C.

additional incentives (over and above fees and investment flow) to facilitate anticompetitive increases in corporate value whenever that benefits the economic owners, who will reap 100% of the gain in corporate value.[272] This fiduciary duty to fund investors makes it more costly for funds not to vote or exert influence in a manner than reaps anticompetitive profits for those investors.

The direct costs of influencing corporate managers to lessen competition are thus likely zero or negative. Nor is there any reason to think that the indirect costs of influencing less competitive corporate behavior are positive. As just noted, corporate managers are more likely to be pleased than annoyed by being allowed to exert less effort on competition, and voting to re-elect managers who have not competed vigorously will only please those managers more. Moreover, as discussed above, one of the main mechanisms for encouraging less competitive behavior is for shareholders to allow executive compensation methods that make executive compensation less sensitive to firm performance.[273] Corporate managers are hardly likely to object to horizontal shareholders favoring executive compensation methods that pay the corporate managers more when they exert less competitive effort. To the contrary, they are likely to be pleased since they will share in the anticompetitive profits while working less hard.

Thus, *IC* is likely at worst zero. Indeed, corporate managers are likely to affirmatively appreciate index funds that vote for executive compensation that pays the corporate managers more for less competitive effort, making those managers more likely to direct their corporation's 401(k) or pension assets to those funds. Voting for more competitive behavior and executive compensation is thus more likely to incur indirect costs, meaning that *IC* is likely ***negative*** when institutional investors vote for less competitive behavior and executive compensation.

In contrast, the hypotheticals that Bebchuk, Cohen, and Hirst offer to illustrate why index funds are unlikely to exert the effort necessary to improve corporate value instead involve situations where investor effort would increase the corporate value of only ***one individual*** corporation.[274] Bebchuk and Hirst further acknowledge that their theoretical analysis claims to show only that index fund families will under-invest in efforts that require "***company-specific*** information" and "have inadequate incentives to engage in stewardship aimed at enhancing the value of ***particular***

[272] Index funds have a fiduciary duty to vote shares in a manner consistent with the best interests of investors in the fund. *See* Exchange Act Release No. 47,304.

[273] *Supra* Section I.A.2.

[274] *See* Bebchuk, Cohen & Hirst, *supra* note 8, at 96-97, 99; Bebchuk & Hirst, *Index Funds, supra* note 8, at 2055.

companies."[275] The empirical evidence they point to likewise shows that index funds exert little effort to address financial underperformance by specific firms.[276]

Such efforts to improve the operations of one particular firm would by definition make that firm ***more*** competitive with other corporations. Bebchuk, Cohen, and Hirst are likely right that index funds have less incentive to engage in such company-specific efforts. Coming up with methods to make a particular corporation more efficient and making sure those methods are implemented properly are activities that will take significant effort that can only be recouped from the increased value of that particular corporation. Such efforts are also more likely to ruffle corporate manager feathers, thus meaning the index fund would incur more direct and indirect costs to pursue such efforts.

As a result, the above-noted theory and evidence that Bebchuk, Cohen, and Hirst point to does not undermine the concern that horizontal shareholdings will have anticompetitive effects, but to the contrary affirmatively supports it. We would expect index funds with large horizontal shareholdings to engage in less effort to improve the performance of particular firms, precisely because doing so would make them more competitive with other portfolio firms. That is in fact a key causal mechanism for anticompetitive effects.[277] Not only (for reasons detailed above) do index funds have ***ample incentives*** to engage in the costless activity of exercising their votes and influence in ways that favor ***less competitive*** managers and executive compensation methods, but index funds also (in part for the reasons Bebchuk, Cohen, and Hirst stress) have far ***weaker incentives*** to press corporations to ***increase*** their individual competitiveness.

In short, although (assuming no effect on investment flow) an index fund will exert effort to increase corporate value only if $\alpha\Delta V > C + IC$, both C and IC are likely zero or negative when it comes to influencing corporations to behave less competitively, even though they are likely to be positive when it comes to trying to pressure or incentivize corporations to behave more competitively. Thus, index funds will have incentives to exercise their votes and influence in ways that encourage less competition by their portfolio corporations whenever $\alpha\Delta V > 0$, which is always true because the value of their shareholdings will increase with greater anticompetitive profits.

2. Even When Effort Costs Are Positive, They Are Small Relative to the Anticompetitive Gains. Even if one assumes there is some positive cost to using

[275] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2084, 2133 (emphasis added).
[276] *Id.* at 2095-97.
[277] *See supra* Sections I.A.2 & 7.

index fund influence to encourage lessened competition, any cost is likely to be small compared to $\alpha\Delta V$. For example, suppose one thinks it does take some incremental cost C for an index fund to figure out that it should decide to approve (or at least not oppose) executive compensation methods that lessen competitive incentives. That cost hardly seems high. Further, the index fund can apply any such decision on executive compensation methods to its voting across all owned corporations and thus spread that cost C across all the index fund portfolio. Index funds enjoy similar economies of scale for any governance issue that comes up across all corporations.[278]

Not only can an index fund spread such costs across its investments in many corporations, it can also spread those costs across a long time horizon.[279] Because index funds cannot exit investments in firms that are in the index, index funds know that any effort they exert to figure out how to improve corporate profits will reap gains for years and decades to come.[280]

Further, index funds generally do not vote their own shares: instead, their shares are voted at the fund family level (e.g., by BlackRock, Vanguard and State Street for all their respective funds), rather than separately by each index fund.[281] As a result, although these fund families have many index funds, their votes are 99.99% consistent at Vanguard, 99.98% consistent at BlackRock, and 99.8% consistent at State Street.[282] They can thus spread any effort costs across all the funds in the fund family. The Big Three fund families can further lower their costs by following the advice of proxy advisors or active investors that have aligned incentives.

Bebchuk and Hirst now acknowledge that because of the above sorts of economies of scale, "some stewardship activities of the Big Three that are not very expensive may produce benefits in a large number of companies, generating a relatively large

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[278] *See* John Coates, *The Future of Corporate Governance Part I: The Problem of Twelve* 2, 15-16 (Sept 20, 2018), https://ssrn.com/abstract=3247337; Fisch, Hamdani, & Solomon, *supra* note 25, at 38.

[279] *See* Fisch, Hamdani, & Solomon, *supra* note 25, at 37-38.

[280] *See id.*

[281] Schmalz, *supra* note 3, at 16 n.13; Hortense Bioy, Jose Garcia-Zarate, & Alex Bryan, *Passive Fund Providers and Investment Stewardship,* Harvard Law School Forum on Corporate Governance (Dec. 21, 2017), https://corpgov.law.harvard.edu/2017/12/21/passive-fund-providers-and-investment-stewardship/ [https://perma.cc/6HXU-4L66]; Wilcox & Sodali, *supra* note ____.

[282] Fichtner, et al, *supra* note 24, at 18. Other fund families that are focused on active funds, such as Fidelity, are somewhat more likely to allow their funds to vote differently. But active funds do not have the same alleged disincentives to exert influence as index funds, and even Fidelity's funds vote in parallel 97% of the time. *Id.*

impact for the amount spent."[283] They now just argue "that, in addition to the stewardship activities that can be undertaken at very low per-company cost, there are some value-enhancing stewardship activities that require consideration of detailed company-specific information."[284] But as discussed in the last section, stewardship is likely to require company-specific information when it involves increasing the competitiveness of an individual firm, whereas stewardship gets the benefit of economies of scale when it involves encouraging or allowing practices that lessen competition across all portfolio firms.

Although the Big Three also have large holdings in active funds, suppose we conservatively assume that they had 100% of their assets in identical index funds. Would $\alpha \Delta V$ give them insufficient incentives to exert much effort in influencing corporate behavior? The answer is no because both α and ΔV are much larger than Bebchuk, Cohen, and Hirst assume.

To begin with, even if the average index fund fee is a low percentage of asset value, this fee is repeated annually. Thus, if a fund earns fees of 0.12% and could increase asset value by $1 million, the gain is not $1,200, but rather is $1,200 *per year*. Assuming a typical 10% rate of return, this stream of fees would have a present value of $12,000. In other words, given the present value of the increased stream of fees, α at index funds is really ten times greater than the 0.12% that was supposed in Bebchuk, Cohen and Hirst's paper, as Bebchuk and Hirst's later paper now concedes.[285] Further, Bebchuk and Hirst later found that the largest of the Big Three, BlackRock, actually earns annual fees of 0.3%.[286] Thus, the present value of its expected gains from increases corporate value would be 3%.

Moreover, because we are talking about policies about how to vote on matters (like executive compensation methods) that affect competition across the portfolio of the fund families that hold these index funds, ΔV is massive. For example, as of

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[283] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2084.

[284] *Id.*

[285] This point about present value was missed in Bebchuk, Cohen & Hirst, *supra* note 8, at 97–98, and in earlier versions of Bebchuk and Hirst. *See* Bebchuk & Hirst, *Index Funds and the Future of Corporate Governance: Theory, Evidence, And Policy* 17–18 (March 15, 2019), https://ssrn.com/abstract=3282794 (emphasis added) [hereinafter "Bebchuk & Hirst March Version"]. But after I made this point in earlier versions of this article, see Einer Elhauge, *The Causal Mechanisms of Horizontal Shareholding* 44 (April 13, 2019), https://perma.cc/Q3HCPL7W [hereinafter Elhauge, *Causal Mechanisms* 2019 Version"], Bebchuk and Hirst acknowledged that such a present value analysis was necessary and would increase by ten-fold the expected gains to index funds from efforts to increase corporate profits. Bebchuk & Hirst, *Index Funds*, *supra* note 8, at 2053 & n.58.

[286] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2054–55.

December 31, 2020, Blackrock manages a total of $4.4 trillion in equity.[287] As a rough matter, anticompetitive effects seem likely in markets with a high MHHI (over 2500) and high ΔMHHI (over 200),[288] and the data suggests that 60% or more of U.S. stock is in such markets.[289] Another rough estimate is that in markets with such high levels of concentration and horizontal shareholding, corporate profit margins are doubled or more.[290]

Thus, if BlackRock can figure out how to vote its shares to increase its horizontal interest in diminished competition, the total gain to it could be as high as (3%)($4.4 trillion)(60%)(50%) = $40 billion. Potential gains of $40 billion provide plenty of incentive to incur whatever incremental costs there might be to figuring out how to vote or interact in ways that favor the sorts of managers or executive compensation methods that best advance those horizontal interests. Of course, this is a very rough back-of-the envelope calculation. But even if the actual expected gain were only ***one-hundredth*** as large, it would still provide a strong incentive of $400 million. One can buy a lot of effort for that kind of money.

Bebchuk and Hirst argue that incentives must be low because the Big Three do not spend much on trying to influence corporate conduct, with their estimate being that

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[287] BlackRock, *BlackRock Reports Full Year 2020 Diluted EPS of $31.85, or $33.82 as Adjusted* 2 (Jan 14, 2021), https://ir.blackrock.com/financials/quarterly-results/default.aspx.

[288] Elhauge, *Horizontal Shareholding, supra* note 4, at 1303.

[289] One study indicated that, in 2013, 64% of industries had an HHI over 2500, which likely understates the percentage of markets that are highly concentrated because the industries are generally larger than markets. *Id.* at n.50. Another study found that, in 2013, the average HHI and ΔMHHI respectively exceeded 2500 and 200 in eight out of 9 industry categories (all of them other than agriculture). Anton, et al, 2018, *supra* note 58, at Table 2, Panel B. Further, these levels are likely higher today given that over the last few decades the U.S. trend has been increasing horizontal shareholding, *id.* at Figure I; *supra* Part I, and increasing market concentration, *see* Gustavo Grullon, Yelena Larkin, & Roni Michaely., *Are US Industries Becoming More Concentrated?* 23 REVIEW OF FINANCE 697, 697 (April 23, 2019); Germán Gutiérrez & Thomas Philippon, *How EU Markets Became More Competitive Than Us Markets: A Study Of Institutional Drift* at Figures 1-–6-6 (June 2018), http://www.nber.org/papers/w24700.

[290] The airline study found that horizontal shareholding increased prices by 3–7% in the direct regressions and 10–12% in the instrumental variable study that controlled for endogeneity. Azar, Schmalz & Tecu, *supra* note 13, at 1517–18, 1541, 1559. These price effects are substantially larger than the average airline profit margin over this time, which more than doubled from 1-2.4% in 2008 to 4% in 2015. *See* IATA, *Air travel demand*, IATA Economics Briefing at 7 (2008); IATA, *Airline profitability strengthens further*, IATA Press Release at 1 (2015). This period from 2008 to 2015 coincided with a period when average HHIs in airline markets were relatively flat but average MHHI was growing rapidly, suggesting that the profit increase was related to higher horizontal shareholding rather than to higher market concentration. Azar, Schmalz & Tecu, *supra* note 13, at 1526–27.

for example BlackRock spends only $13.5 million a year on stewardship staff.[291] But that is a large sum to spend annually, with the capitalized present value being $135 million, assuming again a 10% rate of return. In any event, those cost levels reflect the reality that, as detailed above, it costs little to use voting and other powers to influence corporate conduct. Thus, such cost levels do not prove index funds have little incentive to influence corporations. After all, even if a fund has powerful incentives to influence corporate conduct, it would not have any incentive to inefficiently expend unnecessary costs to do so.

Likewise, Bebchuk and Hirst argue that the Big Three cannot be exerting significant influence because annually they spend less than 4 person-days per billion-dollar investment and average private engagements with less than 12% of their portfolio companies.[292] But as shown above, although annual private engagements are with a minority of companies, those companies comprise the majority of the equity value of those portfolios.[293] Further, Bebchuk and Hirst's claim that 4 person-days cannot be enough wrongly assumes that the Big Three can increase corporate value only by doing a time-consuming ***individuated*** analysis of each portfolio company.[294] As noted above, that is likely true for efforts to encourage procompetitive cost reductions at a specific firm, but it is not true for figuring out a general strategy for voting or setting executive compensation across all the firms in a way that increases portfolio value by lessening competition. Bebchuk and Hirst's statistics about private engagements also exclude the letters that the Big Three send to all portfolio companies, which they use to efficiently narrow the number of companies who need private conversations.[295] Such efficiency does not show a lack of influence. To the contrary:

> Even if the out-of-pocket cost of an engagement is quite low, the impact of the information provided during the engagement have important effects on portfolio companies . . . because the engagements provide important signals to managers as to how the investors will behave should votes come up, on issues, or on other matters, including control contests, ... [which] "provides a powerful incentive to portfolio

[291] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2077–78.
[292] *Id.* at 2079–80 & 2086–87.
[293] *Supra* at Part I.A.6.
[294] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2081–84.
[295] *See Supra* Section I.A.6.

company managers to respond to the desires, however economically expressed, of the index provider agents."[296]

3. ***Index Fund Families Do Have Incentives to Compete for Investment Flow.*** The above shows that even if improving corporate valuations did not increase the flow of investment to index fund families, they would have ample incentives to exercise their influence in ways that increased corporate valuations by lessening corporate competition. But another flaw with the critique lies in its mistaken premise that increasing corporate valuations cannot help attract additional investment flow into index fund families.

The reasoning that critics offer for this premise assumes that index fund families can attract additional investment flow only by competing with other similar index funds.[297] They further reason that because any increase in corporate value will similarly improve the performance of other index funds with the same method of indexing, such an increase in corporate value cannot provide index funds with any competitive advantage over a similar index fund. But their reasoning is mistaken on both premises: (1) index funds do not compete only with similar index funds for investor flow; and (2) index funds do have incentives to compete with other index funds based on portfolio performance.

First, index funds do not compete only with other index funds: index funds also compete with active funds for investment flow.[298] Indeed, index funds do so quite successfully. In 2015, the net flow from active to index funds was $575 billion.[299] Index funds also compete with the alternative of investors personally investing in stocks of their own choosing.[300]

Empirical studies show that if index funds can increase the performance of the corporations they hold by 1%, that increases the investment flow they get in competition with active funds and personal investments by 1.3%.[301] Suppose that, by lessening competition, index funds can increase by 10% the profits of their

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[296] Coates, *supra* note 278, at 16; *see also supra* Section I.A.6 (collecting sources reporting that Big Three fund families regard those private conversations as highly effective and vote against executives who do not listen).

[297] Bebchuk, Cohen & Hirst, *supra* note 8, at 97–98; Lambert & Sykuta, *supra* note 69, at 19, 26-27; Rock & Rubinfeld, *supra* note 37, at 236.

[298] Fisch, Hamdani, & Solomon, *supra* note 25, at 32–35.

[299] Patricia Oey & Christina West, *Average Fund Costs Continue to Decline in 2015 But Investors Are Not Necessarily Paying Less*, MORNINGSTAR MANAGER RESEARCH at 5 (April 26, 2016).

[300] *See* Fisch, Hamdani, & Solomon, *supra* note 25, at 23.

[301] *Id.* at 23 & n.27.

portfolio of horizontally competing corporations. Because active funds will not hold the same portfolio of corporations with the same weights, there is no reason to think that the performance of the active funds will increase by the same percentage, which can create a competitive advantage for the index funds. Further, even to the extent that active funds on average benefit by the same 10% increase in corporate valuation, the increase in performance at the active funds will be less because they will deduct additional fees, on average charging 0.79% compared to the average 0.12% for index funds.[302] Thus, even a uniform 10% increase in corporate valuation would increase index fund performance by 9.88% (10% minus 0.12%), while increasing active fund performance by only 9.21% (10% minus 0.79%).

A similar or higher performance for less fees is indeed the major lure of index funds that has made them so successful in competing with active funds. Given their higher fees, the only way that active funds can win such a competition is by offering a higher performance than index funds. But any increase in performance across the portfolio held by index funds leaves less room for active funds to increase performance any further. Indeed, to the extent that index funds and other horizontal shareholders increase performance by lessening competitive behavior across the portfolio, that can affirmatively preclude the possibility that active funds could gain any performance edge by trying to invest in particular corporations that they think could outcompete other firms or by trying to influence particular corporations to be more competitive. In short, given that index funds charge lower fees than active funds, encouraging lessened competition that increases profits across all the firms held by index funds will tend to give those index funds a higher net rate of return than active funds can offer with their alternative of higher fees and efforts to overweight firms they think are competitive winners.

Nor do collective action problems among index fund families prevent them from exercising effort to increase the net performance of index funds relative to active funds. In 2016, the Big Three controlled 95% of all index fund assets, with BlackRock holding 39%, Vanguard 33%, and State Street 23%.[303] Suppose that the increased performance from anticompetitive profits across the index fund portfolios is responsible for half the $575 billion that competitively flowed from active funds to index funds in 2015. Suppose further that the amount of that flow that goes to each index fund family is proportional to their share of all index fund assets. Then that increased performance will reap additional annual investments of $112 billion at BlackRock, $95 billion at Vanguard, and $66 billion at State Street. The annual

[302] Bebchuk, Cohen & Hirst, *supra* note 8, at 94–95.

[303] Fichtner, Heemskerk & Garcia-Bernardo, et al, *supra* note 24, at 304 Table 1.

fees are 0.30% at BlackRock, 0.09% at Vanguard, and 0.17% at State Street.[304] Thus, those additional annual investments will increase the present value of fees by 3% of $112 billion at BlackRock, or $3.36 billion, 0.09% of $95 billion at Vanguard, or $0.855 billion, and 1.7% of $66 billion at State Street, or $1.12 billion. Further, that increased investment flow might be expected to recur in future years, so the total present value of the increased flow could be as high as $33.6 billion at BlackRock, $8.55 billion at Vanguard, and $11.2 billion at State Street. Such an increased flow provides ample incentive to invest in efforts to figure out how to vote or interact in ways that lessen competition.

Indeed, when one combines the increased investment flow and the increased fees on any given investment amount, BlackRock has potential gains of over $70 billion if it can figure out how to vote and interact in ways that lessen competition. And Vanguard and State Street have potential gains of over $15 billion each for doing the same, for a total of over $100 billion. Again, these are just rough back-of-the envelope calculations, but even if the expected gains were only ***one-hundredth*** of these potential gains, they would still provide strong incentives that exceed $150 million for each of the Big Three and $1 billion for them combined. The fact that the Big Three do not spend that much reflects the fact that (as discussed above) the costs of exerting influence are low, not a lack of incentives. There is thus no sound basis for the assertion that it is implausible that index funds would have any incentives to vote or interact in ways that lessen competition among the corporations that they hold in their portfolios.

Second, Bebchuk and Hirst are mistaken that index fund managers have "precisely zero" incentive to compete with other index funds for investment flow by increasing corporate returns.[305] Index fund families have at least two sources of incentives to compete with each other's index funds based on overall portfolio performance.

To begin with, the argument that index funds have zero incentive to engage in such competition assumes that their index funds are identical. But in fact, many index funds are customized in ways that are unique to particular fund families.[306] Indeed, remarkably, there are now more indexes than there are publicly-traded stocks![307] If an index fund family can facilitate a lessening of competition among the firms belonging to their particular array of index funds, that will increase the performance

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[304] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2054–55.

[305] Bebchuk & Hirst, *Index Funds*, *supra* note 8, at 2057.

[306] SEC, *Investor Bulletin: Smart Beta, Quant Funds and other Non- Traditional Index Funds* (Aug. 6, 2018) https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_smartbeta [https://perma.cc/YL2X-MWJA]

[307] Fisch, Hamdani, & Solomon, *supra* note 25, at 31.

of their set of index funds relative to the performance of other index fund families, which will have a different array of index funds that may not hold all the same firms or may hold them in smaller proportion given different methods of indexing.

Further, if a fund family can develop a general brand reputation for having funds with higher rates of return, such a reputation can help that index fund family win investment flows against other index fund families, even when an investor is choosing between identical sorts of index funds. This brand-wide effect on investment flow is supported by empirical evidence that high-performing funds increase the growth of other funds in the same fund family.[308]

4. *Index Funds Are Not the Main Horizontal Shareholders and Are Voted by Fund Families That Also Have Active Funds.* Bebchuk, Cohen, and Hirst assume that the concern about anticompetitive horizontal shareholding is limited to index funds.[309] But most horizontal shareholdings are not in index funds, but rather in active funds.[310] Such active funds have even greater percentage incentives than index funds to expend effort, not only because active funds earn higher fees, but also because active funds can attract greater investment flow if their funds perform better than others.[311] Bebchuk, Cohen, and Hirst argue that active funds' investment flow incentives may be limited if their holdings overlap with those of index funds, but they acknowledge it does provide active funds with incentives to increase corporate performance to the extent that the fund family holding the active funds is overweight in the corporations whose value would be increased by effort.[312] Further, Bebchuk, Cohen, and Hirst agree that activist hedge funds have strong incentives to exert effort to increase corporate value, and such hedge funds often have horizontal shareholdings as well.[313]

Lewellen and Lewellen calculate that the average institutional investor, including both index and active funds, gains $143,100 per year (through a combination of increased fees and investment flow) if it can increase the value of ***one*** firm in its portfolio by 1%.[314] Assuming a discount rate of 10%, that $143,100 increase in annual cash flow has a present value of $1,431,000. Further, the typical stockholding is 1.67% of the portfolio of the average institutional investor.[315] If, given the figures

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[308] Lewellen & Lewellen, *supra* note 24, at 10–11 (collecting literature).
[309] Bebchuk, Cohen & Hirst, *supra* note 8, at 108.
[310] *Supra* text accompanying notes 13-14.
[311] Bebchuk, Cohen & Hirst, *supra* note 8, at 94–95, 97–99.
[312] *Id.* at 99.
[313] *Id.* at 104-106.
[314] Lewellen & Lewellen, *supra* note 24, at 3, 29.
[315] *Id.*

noted above, we assume that 60% of their stock is in markets where anticompetitively increasing profits by 100% is feasible,[316] that means the average institutional investor could gain $1,431,000 times 60/1.67 times 100 = $5.1 billion, if it can figure out how to vote in a way that reduces competition. Again, $5.1 billion would fund enormous effort, and even if this figure is 100 times too high, it would mean that the average institutional investor would reap $51 million in profits from figuring out how to use its influence to reduce competition among its portfolio firms, which would more than suffice to fund sufficient effort levels. The incentives are even higher to reduce competition among large firms held by institutional investors, because their average institutional investor gains $377,700 in annual cash flow if large firm value increases by 1%.[317]

Moreover, while the Big Three have 80% or more of their equity in index funds, they also have hundreds of billions of dollars in active funds, including hedge funds.[318] Further, because the active fund fees are so much higher, fund families like BlackRock earn about as much in fees from their active funds as from their passive funds.[319] Being coupled with index funds only increases the incentives of the active funds to exert effort to increase corporate value, because their efforts will be more effective, given that the fund family can vote not only the active fund shares, but also the index fund shares.[320] Further, empirical evidence indicates that there is no significant difference between the voting behavior of Big Three active and index

[316] *Supra* Section III.B.2.

[317] Lewellen & Lewellen, *supra* note 24, at 4.

[318] *See* Fichtner, Heemskerk & Garcia-Bernardo , *supra* note 24, at 304 Table 1; BlackRock, *Hedge Funds*, https://www.blackrock.com/institutions/en-us/strategies/alternative-strategies/hedge-funds [https://perma.cc/ZG9C-GPQ3]; Hufford, April 2, 2017, WSJ https://www.wsj.com/articles/state-street-hurt-by-hedge-fund-outflows-1493208070 [https://perma.cc/7WDU-8CY5].

[319] Fisch, Hamdani, & Solomon, *supra* note 25, at 29–30. Hemphill and Kahan stress that this difference in fees can cut the other way when the active funds are not horizontally invested. Hemphill & Kahan, *supra* note 5, at 1431–32. But active funds have most of the horizontal investments, and MHHI calculations already take into account the level of both horizontal and non-horizontal shareholding that the various investors may have. To be sure, this argument might suggest that perhaps MHHI measures should be fine-tuned to take into account the greater fees earned by active funds in both their horizontal and non-horizontal shareholdings. Elhauge, *How Horizontal Shareholding*, *supra* note 1, at 235-36. But a lack of such fine-tuning would simply attenuate the empirical results from current MHHI measures and indicate that even stronger effects would likely be found with such fine-tuning. *Id*.

[320] *Supra* Section III.B.2.

funds.[321] Thus, voting active funds with index funds will only add to the incentives the fund family has to increase fees and flow for its index funds. Consistent with this logic, Lewellen and Lewellen conclude that the average large institutional investor, including both index and active funds, gains $335,900 per year (through increased fees and investment flow) if it can increase the value of one firm in its portfolio by 1%.[322]

To be sure, if an institutional investor has horizontal shareholdings that are highly overweighted toward one firm relative to rival firms, then that institutional investor could increase its profits by ***reducing*** value at the rival firms ***if*** the reduction in fees on that rival firm stock is lower than the increased investment flow that results from increasing the performance difference with other institutional investors that hold more stock in those rival firms.[323] However, even in this case the institutional investor gains less from encouraging competition by the one firm than it would if it did not have the horizontal shareholdings in rival firms, so those horizontal shareholdings still predictably lessen competition. Further, the average distribution of horizontal shareholdings across firms in concentrated industries is not sufficiently unbalanced to give the average institutional investor incentives to reduce the value of rival firms.[324] For example, Lewellen and Lewellen show that, in industries with 6-10 firms, the average institutional investor in one firm gains $73,400 per year if the value of all the rival firms increases by 1%.[325] This is less than the $100,800 per year that the average institutional investor gains if it increases the value of their mainly-held firm by 1%,[326] but encouraging reduced competition would increase the performance of that firm as well as the rival firms.

Lewellen and Lewellen themselves draw the inference that this mix of fee and flow incentives gives institutional investors weak incentives to encourage diminished competition.[327] But their analysis rests on an implicit premise that institutional investors face an unavoidable tradeoff between procompetitively increasing the value of the main firm by 1% and anticompetitively increasing the value of rival firms by 1%.[328] If so, then the average institutional investor in an industry with 6-10

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[321] Hshieh & Tang, *supra* note . Shenje Hshieh, Jiasun Li & Yingcong Tang, *How do passive funds act as active owners? Evidence from mutual fund voting records*, J. CORP. FINANCE (forthcoming) https://doi.org/10.1016/j.jcorpfin.2020.101692.

[322] Lewellen & Lewellen, *supra* note 24, at Abstract, 4.

[323] *Id.* at 8.

[324] *Id.* at 4, 25–28.

[325] *Id.* at 4.

[326] *Id.* at 4.

[327] *Id.* at 25–28

[328] *See id.* at 4.

firms would choose the former because the net gains are $100,800 - $73,400 = $27,400. But the actual choice of institutional investors is between either encouraging that procompetitive conduct or encouraging a lessening of competition that increases value by 1% across ***all*** the firms in the industry. The latter choice would gain $100,800 + $73,400 = $174,200 and thus dominate the former choice.[329]

Moreover, to the extent that institutional investors are highly overweighted in one firm relative to the rival firms, their horizontal shareholdings will contribute little to MHHI. The reason is that such high overweighting means their shares in the rival firms will be very low relative to the shares of other institutional investors, which means that the MHHI measure will calculate that the overweighted investors have very little influence over the rival firms.[330] Thus, markets with high ΔMHHI levels are far less likely to exhibit the sort of highly unbalanced horizontal shareholdings that could create flow incentives strong enough to make leading shareholders want the value of the rival firms they hold to actually decrease.

5. ***What Matters Is Relative Shareholder Influence, Not Whether Fund Effort Levels Are Fully Optimal for Their Investors.*** Bebchuk, Cohen, and Hirst's argument explicitly rests on comparing the likely effort level of index funds with the effort level of a sole owner of the fund's portfolio of stock, which they say equals the fully optimal level of effort that would maximize investor value.[331] Their benchmark argument is flawed for two reasons.

First, Bebchuk, Cohen, and Hirst are mistaken in how they characterize the optimal effort benchmark. Bebchuk, Cohen, and Hirst argue that their sole-owner benchmark means that it would be optimal for the fund to expend total effort costs of up to the resulting increased value of their portfolio.[332] For example, they say that if fund efforts could increase the value of the fund's investments in a particular corporation by $1 million, it would be optimal for the fund to spend up to $1 million to achieve that increase in corporate value.[333] But if the fund spent $1 million to increase the value of the fund's investment by $1 million, then it would not achieve any net gain.

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[329] Moreover, even if there were no anticompetitive option, this average level of horizontal shareholdings reduces the gains from the procompetitive conduct from $100,800 to $27,400, thus giving the average institutional investor only 27% of the incentives to expend effort to encourage such corporate conduct as it would have had without the horizontal shareholding. Such horizontal shareholdings will thus predictably reduce the amount of effort institutional investors exert to encourage procompetitive conduct.

[330] *Supra* Section II.A.

[331] Bebchuk, Cohen & Hirst, *supra* note 8, at 95–96; Bebchuk & Hirst, *Index Funds, supra* note 8, at 2051–52, 2055–56.

[332] Bebchuk, Cohen & Hirst, *supra* note 8, at 96.

[333] *Id.*

To maximize value for their investors, index funds would instead want to maximize the ***total difference*** between increased investment value and any incurred effort costs. This total difference is maximized by exerting additional effort only if the ***marginal*** improvement in investment value exceeds the ***marginal*** cost of such effort. This total difference is not maximized if a fund expends effort as long as the ***total*** investment gain exceeds the ***total*** cost of effort. Indeed, given that additional efforts will have diminishing marginal returns (e.g., the initial hour spent studying an issue to figure out how to vote has greater incremental value than subsequent hours), the optimal level of effort will result in a large difference between the total gain in investment value and total effort cost.

The above point about marginal gains and costs from effort was missed in Bebchuk, Cohen & Hirst's article and in earlier versions of Bebchuk and Hirst.[334] But after I made the point in earlier versions of this article,[335] Bebchuk and Hirst acknowledged that proper analysis should compare marginal gains and marginal costs of effort.[336] Despite this acknowledgement, however, they continue to incorrectly use ***total*** expenditures and effort levels throughout their paper to argue that the Big Three Index Fund must have insufficient incentives to exert effort.[337]

Second, however we define the optimal effort benchmark, falling short of it would not make it implausible that horizontal shareholding has anticompetitive effects. To assess whether horizontal shareholding leads to anticompetitive effects, the relevant baseline for comparison is not a world in which the stock held by each institutional investor had a 100% sole owner. The relevant baseline is instead a world with the same mix of investors as we actually have, but with them prohibited from having large horizontal investments when that creates anticompetitive effects. The fact that the horizontal institutional investors we have now would expend less effort than they would if they were sole owners of their portfolios just means that horizontal ownership by sole owners would be even more anticompetitive than current horizontal shareholding, which is as unsurprising as it is irrelevant. As long as the actual horizontal shareholders have enough influence to facilitate anticompetitive effects relative to a world where they were not horizontally invested, then it is worth prohibiting those horizontal shareholdings. Indeed, to the extent those horizontal shareholdings are prohibited, then index funds and other investors will have to concentrate their investments in one of the firms in each product market, which will

[334] Bebchuk, Cohen & Hirst, *supra* note 8, at 97–98; Bebchuk & Hirst March Version, *supra* note 285, at 17–18.

[335] See Elhauge, *Causal Mechanisms* 2019 Version, *supra* note 285, at 52–53.

[336] Bebchuk & Hirst, *Index Funds*, *supra* note 8, at 2051.

[337] *Id.* at 2077–80 & 2086–87.

actually increase their incentives to expend efforts to make those firms more efficient and competitive.

Whether horizontal shareholding has anticompetitive effects thus does not turn on whether horizontal shareholders fall short of the effort level that would be fully optimal for their investors. It turns instead on the influence of horizontal shareholders relative to other shareholders. Thus, any shortfall in the effort levels of horizontal shareholders would affect the predicted anticompetitive effects only if the shortfall were so severe that the horizontal shareholders had much less influence than other shareholders. But Bebchuk, Cohen, and Hirst provide no evidence or reason to think that is the case,[338] and it seems clear that the contrary is true. Even though institutional investors with horizontal shareholdings lack incentives to expend the fully optimal level of effort, small non-horizontal shareholders have far less incentive, given that their small shareholdings mean that they get a smaller percentage of any increase in corporate value and that they cast too few votes to have significant odds of affecting the outcome. Thus, small non-horizontal shareholders are likely to make even lower investments in effort.[339]

Accordingly, institutional investors are typically regarded as far more informed and influential than individual shareholders.[340] Indeed, individual shareholders are generally deemed to be rationally apathetic about voting,[341] and in fact vote far less frequently than institutional investors.[342] Thus, nonvoting by smaller shareholders strongly increases the relative influence of institutional investors with horizontal shareholdings, and indicates that ΔMHHI figures (which are based on shareholdings rather than share of votes cast) likely understate the influence of horizontal shareholders.[343]

Further, large institutional investors have greater incentives to exert effort than smaller institutional investors. This is true even though smaller investors are more

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[338] *See* Bebchuk, Cohen & Hirst, *supra* note 8; Bebchuk & Hirst, *Index Funds, supra* note 8.

[339] *See* Coates, *supra* note 278, at 2 (noting that the 'sole owner' benchmark can be misleading. "Indexed owners are typically displacing not sole owners but dispersed owners -- individuals and institutions with incentives that are as weak or weaker than those of indexed funds.")

[340] *See, e.g.,* Bernard S. Black, *Agents Watching Agents: The Promise of Institutional Investor Voice*, 39 UCLA L. REV. 811, 871-72 (1992); Mark J. Roe, *A Political Theory of American Corporate Finance*, 91 COLUM. L. REV. 10, 11 (1991).

[341] *See, e.g.,* ROBERT CLARK, CORPORATE LAW 390-93 (1986); Frank H. Easterbrook & Daniel R. Fischel, *The Corporate Contract*, 89 COLUM. L. REV. 1416, 1443 (1989).

[342] *Supra* note 20.

[343] *See* Elhauge, *How Horizontal Shareholding, supra* note 1, at 234.

likely to be overweight in a particular firm in a way that gives them a higher percentage gain from increasing firm value. The reason is that, given the size of the large institutional investors, they gain much more from any given percentage increase in firm value. Thus, while small institutional investors with high percentage gains on average reap an increased annual cash flow of $22,300 if a firm they hold increases in value by 1%, a large institutional investor on average gains $335,900 in annual cash flow from the same 1% increase in value.[344] As Lewellen and Lewellen point out, "the largest institutional investors—*because* of their size—actually have stronger incentives to be engaged that [sic] many activist investors."[345]

More generally, many factors indicate that, if anything, index funds are likely to exert more effort relative to other shareholders. (a) Unlike other investors, index funds cannot exit firms, which increases their incentives to exert the effort necessary to exercise voice.[346] This can give index funds greater incentives to exert effort than active funds, which might simply sell their shares rather than exert any effort. (b) The index fund families that vote index fund shares have much larger shareholdings than other investors, which means that the marginal gains from effort are likely to be much larger for index fund families because they have more power to influence corporate behavior.[347] (c) Unlike individual investors, index funds have fiduciary duties to vote their shares knowledgeably.[348] The law thus requires them to expend efforts that other shareholders may simply skip. (d) Unlike other investors, index funds can usually apply any effort to arrive at a position on common governance issues (like executive compensation methods) across many more corporations, which means that index funds will incur less effort cost per stockholding than other investors.[349]

After I made the above points in an earlier version of this paper,[350] Bebchuk and Hirst altered their analysis to acknowledge that because they only showed that index funds exert less than the level that would maximize investor value, their analysis did not show that index funds would exert little effort or have little influence on corporate behavior. In the initial version of their paper, they argued that given their analysis "the index fund manager would ***not*** have an incentive to employ a team of

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[344] Lewellen & Lewellen, *supra* note 24, at 3‑4.
[345] *Id.* at 17.
[346] *See* Appel, Gormley & Keim, *supra* note 92, at 113.
[347] *See Id.*; Fisch, Hamdani & Solomon, *supra* note 25, at 27, 41.
[348] *See* Appel, Gormley & Keim, *supra* note 92, at 113.
[349] *See Id.*; Fisch, Hamdani & Solomon, *supra* note 25, at 41.
[350] Elhauge, *Causal Mechanisms* 2019 Version, *supra* note 285, at 53‑55.

professionals to spend ***significant*** time on stewardship for that company."[351] But in the final version of their paper, they changed their analysis to acknowledge:

> that even though . . . the investment level [in effort] that best serves the private interests of the index fund manager, is lower than the level that is desirable for the beneficial investors, . . . the level of investment that would serve the interest of the index fund manager ***might well be significant*** in many cases. This is the case even though the fractional share [of gain that the fund gets] is small, because the gain for the portfolio, . . . will be very large for an index fund that has very large amounts of assets under management—as do each of the Big Three.[352]

Bebchuk and Hirst likewise now state that "our analysis agrees with those academic commentators engaging with our work who argue that the large stakes the Big Three managers hold in many portfolio companies give them ***meaningful*** incentives to invest in stewardship," and they now claim only that those incentives would "generally be ***insufficient*** to induce the level of stewardship investment that would best serve the interests of beneficial investors**."**[353] Bebchuk and Hirst similarly altered their earlier conclusion that "index fund managers have ***weak*** incentives to engage in stewardship"[354] to a conclusion that "index fund managers have ***inadequate*** incentives to engage in stewardship."[355] Indeed, Bebchuk and Hirst now acknowledge that their paper provides no evidence that index funds exert any less influence than active funds or dispersed individual investors, and they affirmatively concede that index funds exert considerably more influence than the latter.[356] They further concede that the Big Three index funds have "significant influence on the outcome" of shareholder votes that "leads issuers and their advisors to pay close attention to the Big Three's positions and voting behavior."[357]

In short, Bebchuk and Hirst now concede that index funds with horizontal shareholdings have "meaningful" incentives to engage in "significant" efforts to influence corporations, which results in corporations paying "close attention" to their views and gives index funds "significant influence" that is as strong or stronger than other shareholders without similar horizontal shareholdings.[358] Given those concessions, their analysis provides no support for their conclusions that the claim

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[351] Bebchuk & Hirst March Version, *supra* note 285, at 18 (emphasis added).
[352] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2055-56 (emphasis added).
[353] *Id.* at 2056 (emphasis added on "meaningful" but in original for "insufficient").
[354] Bebchuk & Hirst March Version, *supra* note 285, at 65.
[355] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2133 (emphasis added).
[356] *Id.* at 2042-43, 2118.
[357] *Id.* at 2073-74.
[358] See the quotes of the preceding paragraph.

that institutional investors with horizontal shareholdings could influence corporations in anticompetitive ways is "unwarranted", "unlikely," a "red herring", and "implausible."[359]

6. Empirical Evidence Shows That Index Fund Families Do Exert Effort and Influence. In any event, Bebchuk, Cohen, and Hirst's theoretical argument that index funds lack incentives to exert enough effort to influence corporations[360] is simply inconsistent with the empirical evidence. This includes the empirical evidence on effort levels, successful influence, and common shareholding effects.

First, the evidence shows that the Big Three exert large and increasing efforts to influence corporations. As noted above, the evidence indicates that they try to influence corporations through voting and extensive private communication and believe such efforts do influence corporate actions.[361] Further, staff for voting and stewardship have recently expanded by 65% at BlackRock, 110% at Vanguard, and 38% at State Street.[362] More generally, a survey of institutional investors shows that 63% of them talk with corporate managers, 53% of them try to influence managers by voting against them, and only 19% make no efforts to influence corporate management.[363] And, as just noted, Bebchuk and Hirst themselves admit that the Big Three index funds not only have "significant influence" over voting outcomes, but that firms "pay close attention" to their positions and votes.[364]

Notwithstanding this strong influence on voting outcomes, Bebchuk and Hirst argue that index funds have incentives to be excessively deferential to managers and that this explains why the Big Three are less likely than active funds to vote against management on executive compensation or in contested board elections.[365] But, as detailed above, two of the main causal mechanisms by which horizontal shareholders ***encourage*** less competitive firm behavior are (1) approving pro-management executive compensation methods that are less sensitive to firm performance and (2) supporting management in control contests when activist hedge funds press for more competitive management.[366] Thus, Bebchuk and Hirst's observation that index funds (which are more likely to have horizontal shareholdings) vote more often with

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[359] *Id.* at 2041, 2133; Bebchuk, Cohen & Hirst, *supra* note 8, at 109.

[360] Bebchuk, Cohen & Hirst, *supra* note 8, at 90, 96-102, 108-109; Bebchuk & Hirst, *Index Funds, supra* note 8, at 2037, 2041, 2052-59, 2131-33

[361] *See supra* Section I.A. A. The Causal Mechanisms

[362] *See* Bioy, *supra* note 281.

[363] McCahery, Sautner & Starks *supra* note 53, at 2906, 2911‑13.

[364] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2073‑74.

[365] *Id.* at 2039, 2091‑95 & n.167.

[366] *See supra* Sections I.A.2-3..

management on executive compensation and control contests does not at all undermine the claim that horizontal shareholding can have anticompetitive effects. To the contrary, it confirms that claim because that voting pattern is precisely what the anticompetitive theory of horizontal shareholding would predict, and the fact that such voting by index funds has significant influence on the outcomes means it will make such anticompetitive outcomes significantly more likely. Further, Bebchuk and Hirst ignore evidence that for other types of management proposals, empirical studies show that increased ownership by index funds is associated with a statistically significant ***increase*** in votes against managers.[367] The voting evidence is thus inconsistent with any general deference to managers, and it is instead consistent with selective deference that applies when managerial interests are aligned with the index fund interest in lessened competition among portfolio firms. Moreover, another study found that index funds are no more likely than active funds to vote for management or against governance reforms, with the exception that (only at fund families smaller than the Big Three) index funds are more likely to favor the renewal of poison pills.[368]

Bebchuk and Hirst also stress that the Big Three index funds fail to submit their own shareholder proposals.[369] However, a recent empirical study found that index funds often exert influence not by how they vote, but through behind-the-scenes influence on what proxy items get on the ballot, so that high index fund ownership increases the likelihood of many corporate governance proposals being made.[370] Further, other empirical studies show that increased ownership by index funds is associated with a ***greater*** number of shareholder proposals being made, supported by shareholders, and successfully adopted.[371] This evidence shows that the Big Three have great influence on which and whether shareholder proposals are made and adopted, even if they themselves do not make the proposals. Bebchuk and Hirst argue that the Big Three could be even more influential if they made their own shareholder proposals.[372] But it is not clear why that is better than influencing which proposals get made, Even if it were, it would at most show that index funds exert less effort than might be optimal for their investors; it would not rebut the empirical

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[367] Appel, Gormley & Keim, *supra* note 92, at 114. 127-28.

[368] Hshieh & Tang, *supra* note .

[369] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2101–05.

[370] Hshieh & Tang, *supra* note .

[371] Appel, Gormley & Keim, *supra* note 92, at 114, 127-28; Harford, Kecskés, & Mansi, *Do Long-Term Investors Improve Corporate Decision Making?* at 20, 48-49 tbl. 2 (Nov. 25, 2017), https://ssrn.com/abstract=2505261.

[372] Bebchuk & Hirst, *Index Funds, supra* note 8, at 2102–04.

evidence of significant influence on the making and adoption of shareholder proposals.

Finally, Bebchuk and Hirst argue that index funds must not have much incentive to influence corporations because the Big Three never formally nominate directors and the examples of private engagements they disclose in their Stewardship Reports do not describe any suggestions about who should be nominated.[373] However, there is an obvious reason why index funds do not formally nominate directors or disclose private conversations suggesting such nominations: doing so not only would trigger an obligation to make onerous Schedule 13D filings,[374] but also would lose them their passive investor filing exemption under antitrust law, subjecting them to large fines.[375] The fact that informal suggestions on nominations are not publicly revealed does not mean they do not occur. There is evidence that boards routinely vet their nominees with their major shareholders before nominating them.[376] Further, to the extent such communications about nominations are deterred by legal penalties, that would fail to disprove either the incentive to exert influence or the evidence that index funds actually exert influence in a myriad of other ways. Such deterrence would not even disprove influence over nominations because, even if index funds do not directly communicate about who should be nominated, management has incentives to nominate the sort of candidates for whom index funds are likely to vote. Indeed, the empirical evidence indicates that higher index fund ownership is associated with a higher percentage of independent directors being nominated.[377] This shows that index funds must be influencing which nominations get made, despite the lack of formal nominations or disclosed discussions.

Second, many empirical studies confirm that index fund influence is in fact very effective at changing corporate conduct. Increased ownership by index funds has statistically significant correlations with increased board independence and experience, higher executive turnover, weakened takeover defenses, increased corporate disclosure, and reduced executive misbehavior.[378] This evidence is not

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[373] *Id.* at 2097–101.

[374] *Id.* at 2065–66, 2099.

[375] Elhauge, *Horizontal Shareholding*, *supra* note 4, at 1311 (noting the filing exemption is automatically lost if an investor nominates a director and has been ruled lost if a fund even asks individuals if they might want to be a board candidate).

[376] Azar, Schmalz & Tecu, *supra* note 13, at 1557.

[377] Hshieh & Tang, *supra* note .

[378] Appel, Gormley & Keim, *supra* note 92, at 114, 124-126; Audra L. Boone & Joshua T. White, *The Effect of Institutional Ownership on Firm Transparency and Information Production*, 117 J. FIN. ECON. 508, 510 (2015); Harford, Kecskés, & Mansi, *supra* note 371, at 3–6, 20–22, 47-53 tbls 2–4.

consistent with a conclusion that index funds exert so little effort that they are unlikely to influence corporations. The empirical literature also shows that institutional investors influence corporate policies ranging from CEO pay, investments, takeovers, board structure, and output prices.[379] This empirical literature conflicts with Bebchuk, Cohen, and Hirst's conclusion that neither index funds nor typical active funds significantly influence corporate conduct.[380]

Most strikingly, empirical studies show that increased ownership by index funds is associated with a statistically significant increase in corporate rates of returns and profits with lower risk.[381] This directly contradicts the Bebchuk, Cohen, and Hirst claim that it is implausible that index funds would exert any significant effort to increase the performance of their portfolio of firms.[382] Indeed, this statistical finding suggests not only that index funds must be doing something to increase the performance of the corporations they hold, but that they must actually be doing it better than other investors.

Some commentators acknowledge that the empirical evidence shows that index funds and other institutional investors do influence corporations to increase corporate value by making corporations more efficient or better governed, but simultaneously rely on an argument that their insufficient incentives to increase corporate value means they cannot be influencing corporations to increase corporate value in anticompetitive ways.[383] However, those positions are internally inconsistent because the arguments for why index funds and other institutional investors supposedly lack incentives to increase corporate value apply whether that increased value comes from enhanced efficiency or decreased competition.[384] The empirical evidence that they in fact do increase corporate value in efficient ways thus shows that something must be wrong with the insufficient incentives argument.

Third, the Bebchuk, Cohen, and Hirst claim conflicts not only with the fifteen empirical studies finding anticompetitive effects from horizontal shareholding, but also with the dozens of studies that more generally show that common shareholding

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[379] Lewellen & Lewellen, *supra* note 24, at 5, 22‑23 (collecting literature).

[380] Bebchuk, Cohen & Hirst, *Index Funds, supra* note 8, at 99.

[381] Appel, Gormley & Keim, *supra* note 92, at 114, 129-130; Harford, Kecskés, & Mansi, *supra* note 371, at 5‑6, 27‑33, 54‑61 tbls 9‑13. Increased index fund ownership is also associated with lower corporate investment, increased innovation, lower debt, and higher dividends and share repurchases. *Id.* at 4‑6, 23‑26, 62‑70 tbls 5‑8.

[382] Bebchuk, Cohen & Hirst, *supra* note 8, at 90, 96-102, 108-109; Bebchuk & Hirst, *Index Funds, supra* note 8, at 2037, 2041, 2052-59, 2131-33.

[383] Lambert & Sykuta, *supra* note 69, at 19, 26‑27, 50-54; Phillips, *supra* note 5, at 11‑12.

[384] Bebchuk, Cohen & Hirst, *supra* note 8, at 90, 95-98.

affects corporate behavior.[385] At some point, theoretical claims that it is implausible that common shareholding could affect corporate behavior must give way to the dozens of empirical studies showing that it does just that.

In short, even if one thought that the theoretical points discussed above did not cut clearly in one direction or the other, the empirical evidence firmly resolves the theoretical debate against Bebchuk, Cohen, and Hirst's claims. That empirical evidence not only disproves their premise that index fund families lack incentives to exert sufficient effort to influence corporate decision-making, but also directly refutes their inference from that premise that horizontal shareholding could not plausibly influence corporations to increase profits by lessening competition.[386]

The existing anticompetitive effects from horizontal shareholding would only be exacerbated by Bebchuk and Hirst's proposal that the law should be changed to allow competing index funds to jointly monitor each company in their indexes.[387] Such a legal change would enable horizontal collusion among index funds on how to exercise their otherwise separate horizontal shareholdings, thus giving them even more power to influence corporations in anticompetitive ways.

IV. TACKLING HORIZONTAL SHAREHOLDING DOES NOT REQUIRE RESTRICTING DIVERSIFICATION OR INSTITUTIONAL INVESTOR INFLUENCE

Those who argue that the causal mechanisms linking horizontal shareholding to anticompetitive effects are either unproven or implausible stress that one of their motivations is the fear that antitrust enforcement against horizontal shareholding will either greatly restrict diversification or discourage desirable institutional investor influence on corporate governance and conduct.[388] This argument is internally inconsistent, because it is based on a premise that institutional investors ***can*** influence corporate conduct, which contradicts their claims that institutional investors have insufficient incentives to exert such influence. In any event, antitrust enforcement designed to prevent anticompetitive horizontal shareholder influence would encourage, not discourage, desirable institutional investor influence and would not require abandoning the diversification benefits of index funds.

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[385] *See supra* text accompanying notes 1-3.

[386] Bebchuk, Cohen & Hirst, *supra* note 8, at 108‑09.

[387] *Id.* at 2121.

[388] *See* Hemphill & Kahan, *supra* note 5, at 1397, 1401; Bebchuk & Hirst, *Index Funds, supra* note 8, at 2133; FTC Hearing, *supra* note 9, at 31–32, 55–56, 109–110.

To begin with, antitrust enforcement would penalize high levels of horizontal shareholding only in concentrated markets when it has anticompetitive effects.[389] Such enforcement would have no effect at all on institutional investor holdings or influence in unconcentrated product markets.

Even in concentrated markets, discouraging horizontal shareholding would affirmatively *encourage* desirable exercises of influence by institutional investors. As detailed above, horizontal shareholding by institutional investors encourages them to allow low-powered executive compensation methods that make managers less aggressive about increasing efficiency and competitiveness.[390] The reason is that lowering individual firm efficiency increases the profits of all the competing firms in their portfolio. As Antón, Ederer, Giné & Schmalz put it:

> In other words, good governance—in the sense of measures that promote efficiency and shareholder returns from the perspective of an individual firm—imposes an externality on product market rivals. Therefore, common owners of product market rivals may optimally provide reduced levels of governance interventions, even though they lead to lower productivity, higher costs, and reduced operating performance of any individual firm… [O]ur theoretical analysis suggests that there is no conflict in objectives between corporate governance and competition policy.[391]

Likewise, such horizontal shareholding encourages institutional investors to allow other corporate policies or governance choices that make individual firms less efficient[392] or to allow the re-election (during board elections or proxy contests) of managers less prone to increase individual firm efficiency and competitiveness.[393] Finally, such horizontal shareholding discourages institutional investors from exerting any affirmative effort to make individual firms more efficient.[394] With less horizontal shareholding, institutional investors would thus have greater incentives to favor improvements in corporate governance and conduct that improve firm efficiency.

Further, index funds and other institutional investors could avoid any risk of antitrust penalties by, for example, deciding to invest in only one firm in each concentrated market, so they would not have horizontal shareholdings.[395] Concentrating their

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[389] Elhauge, *Horizontal Shareholding*, *supra* note 4, at 1303.
[390] *See supra* Section I.A.2.
[391] Antón, Ederer, Giné & Schmalz 2020, *supra* note 57, at 28.
[392] *Id.* at 29 (stressing that their analysis applies equally to any such choices).
[393] *See supra* Sections I.A.1&3.
[394] *See supra* Sections I.A.7; III.B.1.
[395] *Id.* at 1314-15.

investments in one firm in each market would increase each investor's share of voting power in those firms and thus ***increase*** institutional investor influence over corporations in a way that fosters corporate efficiency while avoiding anticompetitive incentives. Randomly picking one firm in each market would also achieve 99% of the diversification benefits of investing in all of them.[396]

Moreover, individual investors could achieve 100% of the diversification benefits by investing across index funds that each hold one firm in each concentrated market. This would not create horizontal shareholding effects because the institutional investors that would own and vote those shares would not be horizontally invested, and they would have incentives to exercise their votes and influence to enhance the performance of their own funds to increase their fees and investment flow. Even to the extent that individual investors might be able to control the exercise of their fractions of each of their funds' shareholdings in the relevant firms, their relative shares would be low compared to the large leading non-horizontal shareholders, which means they would not result in any significant ΔMHHI levels or trigger any reasonable thresholds for likely anticompetitive effects.[397]

Indeed, individuals could even invest in an array of such index funds at the same fund family, as long as those funds' managers were incentivized to maximize only the value of their fund and the fund family allowed each fund manager to vote separately, rather than, as they now do, voting all the shares held by their funds at the fund family level. Because such an array of separately voting index funds could be in the same fund family, it would not require sacrificing any economies of scale that may result from large fund families either.

It is thus quite possible to avoid the large anticompetitive effects created by institutional investors having large horizontal shareholdings in concentrated markets without impeding the efficiency of large institutional investors and the combination of monitoring, diversification, and scale that they currently offer. To the contrary, with lower horizontal shareholding, institutional investors would more incentive to exercise their influence to root out inefficient corporate governance and conduct. Further, the most natural response to the risk of antirust liability would be to increase institutional investor influence over corporations by concentrating their investments in one firm per product market. This response would not reduce diversification, but rather would just shift diversification across horizontal competitors to a different level for which the horizontal investors would lack the dominant voting power they now enjoy.

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[396] Posner, Morton & Weyl, *supra* note 4, at 710‑11, 714‑15, 717‑21.

[397] *Supra* Section II.A.

V. CONCLUSION

The claim that we should delay antitrust enforcement against anticompetitive horizontal shareholding until we have clearer proof on causal mechanisms is misguided. We have ample proof on causal mechanisms, and anyway the empirical evidence on anticompetitive effects justifies enforcement without requiring definitive proof on causal mechanisms. Nor should antitrust law focus on policing particular causal mechanisms, rather than on breaking up anticompetitive market structures.

Some have claimed that every type of causal mechanism that might produce anticompetitive effects is either empirically untested or implausible. Others have claimed that horizontal shareholders lack sufficient incentives to influence corporations to increase portfolio value by lessening competition or otherwise. As this article shows, such claims are analytically unsound and conflict with the empirical evidence.

Finally, those who favor delaying antitrust enforcement stress a fear that it will discourage desirable institutional investor influence on corporate conduct and greatly restrict diversification. I show that neither is true. Lowering horizontal shareholding would increase desirable institutional investor influence on the efficiency of corporate conduct and need not reduce diversification.