ISSN 1936-5349 (print)
ISSN 1936-5357 (online)

HARVARD

JOHN M. OLIN CENTER FOR LAW, ECONOMICS, AND BUSINESS

HOW HORIZONTAL SHAREHOLDING HARMS OUR ECONOMY—AND WHY ANTITRUST LAW CAN FIX IT

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Discussion Paper No. 982
Revision

05/2019

Harvard Law School
Cambridge, MA 02138

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Harvard Law School Program on Corporate Governance

HOW HORIZONTAL SHAREHOLDING HARMS OUR ECONOMY—AND WHY ANTITRUST LAW CAN FIX IT

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April 11, 2019

* Some portions of this paper were presented to the OECD Competition Committee. See http://www.oecd.org/daf/competition/common-ownership-and-its-impact-on-competition.htm. I am grateful for helpful comments on prior versions of this paper from José Azar, Jan Fichtner, Phil Malone, Doug Melamed, Barry Nalebuff, William Page, Martin Schmalz, Danny Sokol, and Anna Tzanaki, as well as from oral participants at the OECD conference, my Heath Lecture at the University of Florida, the Harvard Law Faculty Workshop, and the Harvard Law School Corporate Law Policy Workshop. I am grateful for funding for this work from Harvard Law School.

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HOW HORIZONTAL SHAREHOLDING HARMS OUR ECONOMY—AND WHY ANTITRUST LAW CAN FIX IT

Abstract. *New economic proofs and empirical evidence establish that, even when horizontal shareholders individually have minority stakes, horizontal shareholding in concentrated markets often has anticompetitive effects. The new economic proofs show that, without any need for coordination or communication, horizontal shareholding will cause corporate managers to lessen competition to the extent they care about their vote share or re-election odds and will cause executive compensation to be less sensitive to firm performance. The new empirical evidence includes two new cross-industry studies which confirm that, just as the proofs predict, increased horizontal shareholding reduces the sensitivity of executive compensation to firm performance and increases the gap between corporate profits and investment. The new empirical evidence also includes three new market-level studies that extend to seed and pharmaceutical markets the two prior market-level studies finding that horizontal shareholding had anticompetitive effects in airline and banking markets. I also provide new analysis demonstrating that critiques of the airline and banking market-level studies either conflict with the evidence or, when taken into account, increase the estimated adverse price effects from horizontal shareholding. Finally, I provide new legal theories for tackling the problem of horizontal shareholding. I show that when horizontal shareholding has anticompetitive effects, it is illegal not only under Clayton Act §7, but also under Sherman Act §1. In fact, the historic trusts that were the core target of antitrust law were horizontal shareholders. I further show that anticompetitive horizontal shareholding also constitutes an illegal agreement or concerted practice under EU Treaty Article 101, as well as an abuse of collective dominance under Article 102. I conclude by showing that horizontal shareholding not only lessens the market concentration that traditional merger law can tolerate, but also means that what otherwise seem like non-horizontal mergers should often be treated as horizontal. Those implications for traditional merger analysis become even stronger if we fail to tackle horizontal shareholding directly.*

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INTRODUCTION

When the leading shareholders of horizontal competitors overlap, horizontal shareholding exists.[1] In my initial *Harvard Law Review* article on horizontal shareholding, I showed that economic theory and two empirical studies of airline and banking markets indicated that high levels of horizontal shareholding in concentrated product markets can have anticompetitive effects, even when each individual horizontal shareholder has a minority stake.[2] I argued that those anticompetitive effects could help explain longstanding economics puzzles, including executive compensation methods that inefficiently reward executives for industry performance, the sharp rise in the gap between corporate profits and investment, and the growing increase in economic inequality.[3] I also showed that when horizontal shareholding has likely anticompetitive effects, it can be remedied under Clayton Act §7.[4] I recommended that antitrust agencies should investigate any horizontal stock acquisitions that have resulted or would result in an ΔMHHI (a measure of horizontal shareholding levels) that exceeds 200 and an MHHI (a measure of product market concentration level with horizontal shareholding) that exceeds 2500, in order to determine whether those horizontal stock acquisitions raised prices or were likely to do so.[5] I also stressed that antitrust agencies should, at a minimum, consider the impact of horizontal shareholding when assessing the likely effects of proposed corporate mergers.[6]

My claims have all been hotly contested. However, as I show in Part I, new proofs and empirical evidence strongly confirm my economic claims. One new economic proof establishes that, if corporate managers maximize either their expected vote share or re-election odds, they will maximize a weighted average of their shareholders' profits from all their stockholdings and thus will lessen competition the more that those shareholdings are horizontal, even if each horizontal shareholder has a minority stake. Another new economic proof shows that with horizontal shareholding, corporations maximize their shareholders' interests by making executive compensation less sensitive to their own firm's performance because that reduces competition between firms in a way that increases shareholder profits.

[1] Although the literature often refers to this as "common ownership," horizontal shareholding is a subset of common ownership because, like mergers, common shareholding can also be vertical (between firms related in supply chain) or conglomerate (between firms that are not horizontal competitors or vertically related).

[2] Elhauge, *Horizontal Shareholding*, 129 HARVARD LAW REVIEW 1267, 1267-78 (2016).

[3] *Id.* at 1278-1301.

[4] *Id.* at 1301-1316.

[5] *Id.* at 1303.

[6] *Id.*

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Neither new proof requires any communication or coordination between different shareholders, between different managers, or between shareholders and managers. Thus, any absence of such communication or coordination does not indicate the absence of anticompetitive effects.

These new economic proofs have been confirmed by two new cross-industry empirical studies and three new market-level studies. One cross-industry study shows that increased horizontal shareholding does make executive compensation less sensitive to their own firm's performance, just as the economic proof predicts. The other new cross-industry study shows not only that the recent historically large gap between corporate investment and profits is mainly driven by horizontal shareholding levels in concentrated markets, but also that within any industry, the investment-profit gap is mainly driven by those firms with high horizontal shareholding levels. The three new market-level studies find that horizontal shareholding increases seed prices and both reduces and delays competitive entry into pharmaceutical markets.

I further provide new analysis rebutting various critiques of the earlier studies of airline and banking markets. While a few of these critiques are valid, addressing those valid critiques actually ***increases*** the estimated price effects. The other critiques are all mistaken. For example, some rest on endogeneity claims that are flatly contradicted by the evidence. Another critique uses purported proxies for horizontal shareholding that are actually negatively correlated with horizontal shareholding and uses market models that wrongly assume longer airline routes have lower costs. Other critiques erroneously measure horizontal shareholdings without aggregating the shares held by the same fund families, ignore actual market shares, exclude the transactions most likely to have price effects, and wrongly set many horizontal shareholding rights to zero.

Nor are the findings of anticompetitive effects undercut by a recent cross-industry study that purports to show that horizontal shareholding has no robust effect on profits or investments. This study actually finds that large increases in ΔMHHI ***do*** increase profits. It finds no statistically significant effect from smaller increases in ΔMHHI, but that is not surprising given that even for horizontal mergers, it takes a ΔHHI of at least 200 to make anticompetitive effects likely. Further, because virtually all of the many variables used in this study depend on industry definitions that do not accurately reflect antitrust markets, all if its regressions suffer from attenuation bias that leads it to underestimate effects. All its regressions also either fail to correct and aggregate the data on horizontal shareholding levels or use control variables that create problems of multicollinearity and reverse causality.

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In short, contrary to the claims of some, we do not have the sort of empirical uncertainty that justifies further delaying any enforcement actions against horizontal shareholding. The economic proofs are powerful, the critiques of the airline and banking studies are flawed, three new studies extend the findings of anticompetitive effects to seed and pharmaceutical markets, and two cross-industry studies generalize the empirical findings beyond the five market-level studies. Moreover, my proposal is simply that antitrust agencies investigate concentrated markets with high horizontal shareholding to ascertain whether anticompetitive effects exist in those markets, so any empirical uncertainty would be resolved in enforcement actions about specific markets. The dubious claims of empirical uncertainty hardly provide any justification for refusing to even investigate such cases.

In Part II, I turn to legal remedies. I first defend my conclusion that any horizontal shareholdings that have anticompetitive effects are prohibited by Clayton Act §7's ban on any stock acquisitions that have anticompetitive effects. In doing so, I respond to various new critiques, and I provide new analysis showing both why this legal remedy raises no insuperable administrability problems and why this interpretation is dictated by the legislative text, structure, and history.

In Part III, I provide new legal theories for tackling horizontal shareholding. I show that when horizontal shareholding has anticompetitive effects, it not only violates Clayton Act §7, but also violates Sherman Act §1. The very name of the legal field – anti*trust* law – comes from the fact that the Sherman Act aimed to prohibit certain pre-1890 trusts that were themselves horizontal shareholders in competing firms. It has thus always been the case that horizontal shareholding by a common shareholder is an agreement or combination covered by Sherman Act §1.

I further show that EU competition law can also tackle horizontal shareholding. Although EU merger control law is narrower than Clayton Act §7, I show that EU law's prohibition of anticompetitive agreements and concerted practices under Article 101 of the Treaty on the Functioning of the European Union (TFEU) is at least as broad as Sherman Act §1's prohibition of anticompetitive agreements, and is thus broad enough to condemn anticompetitive horizontal shareholding. Even broader is EU law on collective dominance and excessive pricing under TFEU Article 102, which provides a straightforward solution to the problem of horizontal shareholding.

Finally, I show in Part IV that even if courts or agencies misinterpret competition law not to apply to horizontal shareholding directly, such horizontal shareholding still alters traditional merger analysis. After all, such traditional analysis requires assessing whether mergers and cross-shareholdings have likely anticompetitive effects, and the likelihood of such effects is increased by horizontal shareholding in

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concentrated markets. Indeed, the less that our antitrust regimes do to directly tackle horizontal shareholding, the lower the concentration levels they can tolerate when doing traditional merger analysis. Horizontal shareholding can also mean that a merger that would otherwise be deemed non-horizontal (because the merging firms compete in different markets) should instead be deemed horizontal if the merger increases shareholder overlap between the merged firm and its competitors. Given these implications, rising levels of horizontal shareholding, especially if we continue to do nothing to directly tackle them, provide strong support for current antitrust movements that decry our increasing levels of national industrial concentration.

I. New Economic Proofs and Empirical Evidence

Economic models have long proved that when profit-maximizing firms are independent (i.e., have no interest in the profits of other firms) and compete by setting output, then the extent to which prices exceed marginal cost will equal the market HHI (a measure of market concentration) divided by the market demand elasticity.[7] Professors Bresnahan and Salop proved that when some of the firms were joint ventures in which some competitors had profit and/or control interests, then the extent to which market prices exceed marginal cost will instead depend on a modified HHI (or MHHI) that reflects those horizontal profit and/or control interests in competing firms.[8] O'Brien and Salop later extended this proof to consider not only joint ventures but also cross-shareholding s between firms, and to apply not only to markets in which firms compete by setting output, but also to differentiated markets in which firms compete by setting prices.[9] Their proofs showed that in both sorts of markets, the degree to which prices will exceed costs turns on the extent of horizontal profit and influence interests between the firms.

In their Appendix, O'Brien and Salop further generalized their proof in a way that made it broad enough to encompass horizontal shareholding.[10] However, they

[7] CARLTON & PERLOF, MODERN INDUSTRIAL ORGANIZATION 268 (3rd ed. 2000).
[8] Timothy F. Bresnahan & Steven C. Salop, *Quantifying the Competitive Effects of Production Joint Ventures*, 4 INT'L J. INDUS. ORG. 155 (1986).
[9] Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67 ANTITRUST L.J. 559, 594-602 (2000). When firms compete by setting output (i.e., in Cournot competition), they show prices are related to MHHI, whereas when firms compete by setting prices (i.e., in Bertrand competition), they show prices are related to the Price Pressure Index (PPI). *Id.* I focus on MHHI because it has been validated in the empirical literature, but in differentiated markets, PPI may offer a more accurate prediction of price effects, just as PPI may compared to HHI for judging simple market concentration.
[10] *Id.* at 608-14.

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provided no method for determining the degree of influence each shareholder had at each firm, which was necessary to calculate MHHIs.[11] Azar, Schmalz, and Tecu proposed calculating MHHIs using the common sense assumption that each shareholder's influence turned on its share of stock relative to other shareholders, noting that ΔMHHI (the difference between MHHI and HHI) would then provide a useful measure of common ownership concentration (i.e., the level of horizontal shareholding).[12] They also offered, and empirically confirmed, the hypothesis that, so measured, higher ΔMHHIs would lead to higher prices, by showing with a 99% level of statistical confidence that higher ΔMHHIs raised airline prices in markets with HHIs over 2500.[13] Azar, Raina, and Schmalz provided further confirmation, showing that in banking markets, where there is both significant horizontal shareholding by common investors and significant cross-shareholding among the banks themselves, a generalized measure (called GHHI) that took into account both horizontal shareholding and cross-shareholding had a statistically significant adverse effect on bank fees and rates.[14]

Although assuming that shareholders' influence turns on their shares of stock relative to other shareholders makes some intuitive sense, the use of this assumption to calculate MHHIs and GHHIs has been critiqued as not resting on any firm economic proof and for creating anomalies in certain hypotheticals.[15] Further, although the airline and banking studies did provide powerful empirical confirmation that the MHHI and GHHI measures do relate to anticompetitive effects,

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[11] *Id.* at 608-14; O'Brien & Waehrer, *The Competitive Effects of Common Ownership: We Know Less than We Think,* 81 ANTITRUST L.J. 729, 739, 742 (2017).

[12] Azar, Schmalz & Tecu, *Anticompetitive Effects of Common Ownership* 73 J. FIN. 1514, 1522, 1525 (2018) [hereinafter "Azar, Schmalz & Tecu, *Airline Study*"].

[13] *Id.* at 1522-23, 1529-31, 1550.

[14] Azar, Raina & Schmalz, *Ultimate Ownership and Bank Competition* (July 24, 2016), http://ssrn.com/abstract=2710252. While horizontal shareholding describes situations when the leading shareholders of horizontal competitors overlap, horizontal cross-shareholding describes situations when firms have minority shareholdings directly in their competitors. In markets with a mix of both horizontal shareholding and cross-shareholding, MHHI and PPI can be generalized into GHHI and GUPPI measures that take into account the fact that some shareholders can influence horizontal competitors not only through their own shareholdings in those competitors, but also indirectly through their shareholdings in intermediary corporations that have stock in the horizontal competitor. Brito, Osorio, Ribeiro & Vasconcelos, *Unilateral Effects Screens for Partial Horizontal Acquisitions: The Generalized HHI and GUPPI*, 59 INT'L J. INDUS. ORG. 127 (2018). In cases involving a mix of horizontal shareholding and cross-shareholding, my recommendation would be to investigate markets in which the ΔGHHI exceeded 200 and the GHHI exceeded 2500, in order to determine whether the combination of horizontal and cross-shareholding likely raised prices.

[15] O'Brien & Waehrer, *supra* note , at 760-61.

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those studies have been critiqued on various grounds, including that they might not generalize to other industries.

But we now have new economic proofs that mathematically establish the extent to which: (a) as discussed in Section *I.A,* corporate managers who want to win votes or re-elections will consider the interests of horizontal shareholders; and (b) as discussed in Section *I.B,* corporations will maximize the interests of their shareholders by adopting executive compensation methods that are less sensitive to firm performance the greater the horizontal shareholding level. We also now have new empirical studies confirming that, across all industries, higher horizontal shareholding levels in fact have the predicted effects: not only increasing the distortion of executive compensation, but also increasing, as shown in Section *I.C,* the gap between corporate investment and profits. Further, I provide new analysis in Section *I.D* that establishes that most of the critiques of the airline and banking studies are incorrect, and that addressing the subset of those critiques that are valid actually increases the estimated price effects. In addition, we now have three new market-level studies that find similar anticompetitive effects from horizontal shareholding in seed and pharmaceutical markets. Section *I.E* shows that a recent critical cross-industry study does not undercut the findings of anticompetitive effects, but rather shows that large increases in ΔMHHI ***do*** increase profits, and that its other results suffer from attenuation bias, data errors, multicollinearity, and reverse causality. Section *I.F* concludes that the empirical literature is thus not too uncertain to justify case-by-case enforcement in particular markets where horizontal shareholding is shown to have anticompetitive effects.

A. New Economic Proofs on Shareholder Voting Effects

New economic proofs have gone well beyond simply assuming that the extent to which firms consider the interests of each shareholder turns on its share of stock relative to other shareholders. New scholarship now mathematically proves that if corporate managers try to maximize either their expected share of votes or their probability of winning re-election, then managers will maximize a weighted average of their shareholders' profits from all their stockholdings.[16] For example, if all shareholders have equivalent horizontal holdings across all firms (such as with indexing), managers seeking to maximize either vote share or re-election odds will have each corporation price at monopoly levels despite nominal competition.[17]

[16] José Azar, *Portfolio Diversification, Market Power, and the Theory of the Firm* at 12-14 (Aug. 23, 2017), https://ssrn.com/abstract=2811221.
[17] *Id.* at 15-17.

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Some assert that similar results would not hold if shareholders have varying levels of horizontal shareholding in different corporations.[18] But the new proofs fully account for such variation, showing that it simply alters the precise weight managers put on each shareholder, without changing the basic result that the effects are to increase prices. If managers maximize their expected vote share, shareholders will be weighted proportionally to their voting shares, as the MHHI measure typically assumes, so increased horizontal shareholding will proportionally increase prices.[19] If managers maximize their probability of re-election, shareholders will be weighted by the odds that the particular shareholder's vote will be pivotal, which gives extra weight to the largest shareholders, who typically are now horizontal shareholders.[20] In such cases, one can calculate a GHHI measure that weights shareholders by the odds their votes will be pivotal.[21]

Some also assume that horizontal shareholding cannot have anticompetitive effects on prices unless shareholders either communicate with managers[22] or facilitate coordination among managers of different business corporations.[23] But the new proofs require no communication between firms, between shareholders, or between managers and shareholders. To be sure, the new proofs do find that shareholder-manager communication can exacerbate anticompetitive effects by giving more weight to the shareholders who communicate.[24] 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.[25] But the anticompetitive effects do not depend on such communications or coordination because the effect of shareholding voting on managerial incentives suffices for anticompetitive effects.

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[18] Rock & Rubinfeld, *Antitrust for Institutional Investors* , 82 ANTITRUST L.J. 221, 232-39 (2018) [hereinafter "Rock & Rubinfeld, *Antitrust*"]; Patel, *Common Ownership, Institutional Investors, and Antitrust,* 82 ANTITRUST L.J. 279, 311-13 (2018).
[19] Azar, *supra* note 17, at 12-13.
[20] *Id.* at 13-14.
[21] Brito, Osorio, Ribeiro & Vasconcelos, *supra* note .
[22] 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.
[23] Hemphill and Kahan, *The Strategies of Anticompetitive Common Ownership* at 15-16 (March 31, 2019), https://ssrn.com/abstract=3210373.
[24] Azar, *supra* note 17, at 14-15.
[25] Pawliczek & Skinner, *Common Ownership and Voluntary Disclosure* (June 8, 2018), https://ssrn.com/abstract=3002075; Park et al, *Disclosure Incentives When Competing Firms Have Common Ownership* (Nov. 2, 2018), https://ssrn.com/abstract=3271940.

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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 analysis mathematically proves that prices will be increased by high levels of horizontal shareholding across a set of firms that have collective market power.

B. New Proofs and Evidence on Executive Compensation Effects

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. Bengt Holmström's Nobel prizewinning work proved that it would be efficient for incentive-based compensation to be based only on the performance of the executive's firm relative to other firms, and that firms would do so if each firm just maximized its own profits.[26] This raised a puzzle because in fact corporations use executive compensation methods that inefficiently reward executives mainly for industry performance.[27]

What a new mathematical proof shows is that increased levels of horizontal shareholding mean that shareholder interests are maximized by executive compensation that is less sensitive to firm performance, because that gives managers weaker incentives to exert effort and lower costs, which reduces competition among the firms owned by the horizontal shareholders.[28] Importantly, this proof holds even though it assumes uncoordinated competition among the firms.[29]

This new economic proof was confirmed with a new cross-industry empirical study, which shows that (just as this 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.[30] This new empirical evidence moots a conflict among older empirical studies that instead measured whether horizontal shareholding made executive ***annual pay*** less sensitive

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[26] Bengt Holmström, *Moral Hazard in Teams*, 13(2) BELL J. ECON. 324-40 (1982).
[27] LUCIAN BEBCHUK & JESSE FRIED, PAY WITHOUT PERFORMANCE 138–43 (2004).
[28] Anton, Ederer, Gine & Schmalz, *Common Ownership, Competition, and Top Management Incentives* at 2-3, 8-14 (June 6, 2018), http://ssrn.com/abstract=2802332 [hereinafter "Anton, et al, 2018"].
[29] *Id.* at 8.
[30] *Id.* at 2-4, 21-36.

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to their own firm's performance.[31] Although several critics have cited this conflict in the older studies on annual pay to argue that the issue is empirically uncertain,[32] the new empirical study is undisputed and far more relevant since annual pay ignores 78% of the compensation that changes executive wealth.[33]

Moreover, while critics had claimed that the earlier studies finding that horizontal shareholding adversely affected executive compensation depended on certain methodological choices, the new wealth-based compensation study rebutted those claims. Critics had charged that the earlier studies depended on their use of the dollar (rather than percentage) change in executive compensation.[34] But the new study found adverse effects on executive compensation whether it used the absolute or percentage change in compensation.[35] Critics had also 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 depended on market shares.[36] But the new study found adverse effects whether it used MHHI or an alternative measure of horizontal shareholding that did not depend on market shares, and also confirmed that finding using the exogenous effect on horizontal shareholding of a merger between two large horizontal shareholders.[37]

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[31] Two studies found that it did. Anton, Ederer, Gine & Schmalz, *Common Ownership, Competition, and Top Management Incentives* (August 15, 2016), http://ssrn.com/abstract=2802332; Lantian (Max) Liang, *Common Ownership and Executive Compensation* (October 2016). Another study found that horizontal shareholding has no significant effect on annual executive pay. Rebecca DeSimone, *Stealth Socialism? Common ownership and executive incentives* 2 (Oct 7, 2017). A fourth study found that horizontal shareholding made annual managerial pay more sensitive to own-firm performance, though this perverse finding may reflect the fact that the study calculated horizontal shareholding levels from the Thomson-Reuters database without making the necessary corrections. Kwon, *Executive Compensation under Common Ownership* at 13 (April 13, 2017); *infra* at __ (describing the necessary corrections).

[32] *See* Douglas H. Ginsburg & Keith Klovers, *Common Sense about Common Ownership*, CONCURRENCES REVIEW No 2-2018, at ¶ 2 n.7, www.concurrences.com; Hemphill and Kahan, *supra* note , at 19; Lambert & Sykuta, *The Case for Doing Nothing bout Institutional Investors' Common Ownership of Small Stakes in Competing Firms* 13 n.43, 22 n.78 (Dec. 11, 2018), https://ssrn.com/abstract=3173787; O'Brien & Waehrer, *supra* note , at 762-63; Phillips, *supra* note , at 5 n.11; Rock & Rubinfeld, *Antitrust, supra* note , at 247; Committee on Capital Markets Regulation, *Common Ownership and Antitrust Concerns* 1-2, 6-7 (Nov. 2017) [hereinafter "Capital Markets Committee"].

[33] Simone, *supra* note , at 17-18.

[34] O'Brien & Waehrer, *supra* note , at 762-63; Capital Markets Committee, *supra* note , at 9.

[35] Anton, et al, 2018, at 22, 24.

[36] O'Brien & Waehrer, *supra* note , at 764; Capital Markets Committee, *supra* note , at 8.

[37] Anton, et al, 2018, at 3-4, 23-28.

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In short, the new economic proof and new cross-industry empirical study establishes that higher horizontal shareholding levels lead to compensation methods that lessen the incentives of corporate managers to compete. This effect on compensation incentives will predictably lessen competition without requiring any shareholder communications on competitive strategy.

C. New Empirical Evidence on the Investment-Profit Gap

New empirical studies also confirm my prediction that horizontal shareholding can help explain the rapid increases over recent decades both in the gap between corporate profits and investment and in economic inequality.[38] This new literature shows that we had a sharp rise in horizontal shareholding from 1999 to 2014, with the probability of two competing firms in the S&P 1500 having a large horizontal shareholder increasing from 16% to 90% over that period.[39] This sharp rise in horizontal shareholding coincides with the fact that the recent large divergence between corporate profits and investment began in 2000.[40] It also coincides with the period during which we have had the highest growth in corporate profits and greatest decline in labor's share of national income since World War II.[41]

Standing alone, such parallel timing could be a coincidence and reflect economic factors other than horizontal shareholding that changed during the same time period. But a new cross-industry empirical study has directly found that the gap between corporate investment and profitability is mainly driven by the level of horizontal shareholder ownership in concentrated markets.[42] Further, the new study found that, within any industry, the investment-profit gap is mainly driven by those firms with high horizontal shareholding levels.[43] This new empirical evidence now affirmatively establishes a link between anticompetitive horizontal shareholding and the economy-wide lack of corporate investment that has contributed to low economic growth in recent decades.

This new empirical evidence also indicates that the main cause of the investment-profit gap cannot be general macroeconomic, technological, or policy trends, such as recessions, increased automation, decreased productivity, a slowdown in

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[38] Elhauge, *supra* note 2, at 1281-1301.
[39] Azar, *supra* note 17, at 2 & Figure 1.
[40] Germán Gutiérrez & Thomas Philippon, *Investmentless Growth: An Empirical Investigation*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY 89, 91, 95-101, 123-125 (Fall 2017).
[41] Azar, *supra* note 17, at 2 & Figure 2.
[42] Gutiérrez & Philippon, *supra* note , at 92-93, 120, 126-131.
[43] *Id.* at 93, 129-131.

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technological innovation, or government spending, taxes, or labor law changes. If such general trends were the main cause, they should result in a similar profit-investment gap across the economy, rather than a gap that is mainly driven by concentrated markets with high horizontal shareholdings. Even less can such general trends explain why, within any industry, the investment-profit gap is mainly driven by firms with high horizontal shareholding levels. If automation, technological factors, or government policies were the main driver of low investment, that should apply equally to all firms in an industry, not mainly to those firms with high levels of horizontal shareholding.

Although this new cross-industry study does not directly examine economic inequality, a connection to economic inequality is logically suggested by its proof of an empirical connection between horizontal shareholding in concentrated markets and a gap between high corporate profits and low corporate investment. The reason is that those high corporate profits go to shareholders who are disproportionately wealthy and reflect high prices that are disproportionately borne by the non-wealthy, and the lack of corporate investment depresses employment and wages in a way that further disproportionately harms the non-wealthy.[44]

Such a connection between horizontal shareholding and economic inequality would also be consistent with historical trends. Horizontal shareholding has steadily risen since 1980, likely because ERISA and tax rule changes spawned 401(k)s in 1980 and greatly expanded IRAs in 1981, which increased the growth of diversified institutional investors.[45] 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 owns. This average weight on other-firm profits has increased in the U.S. from 0.2 in 1980 to 0.7 in 2017, and the levels are even higher between firms in the same industry, rising from 0.3 to 0.75 over this same period.[46] This increase in the weight on other-firm profits coincides with an increase in average U.S. firm markups from 21% in 1980 to 61% in 2017, and economic models indicate that the predicted effects of increasing the weight on other-firm profits is large enough to explain 90% of this rise in firm markups.[47] This

[44] Elhauge, *supra* note 2, at 1292-97.
[45] *Id.* at 1298.
[46] Backus, Conlon, & Sinkinson, *Common Ownership in America 1980-2017* at 1-2, 23-24, NBER Working Paper 25454 (Jan 2019), http://www.nber.org/papers/w25454. While these particular figures assume control is proportional to shareholdings, the results are similar under varying assumptions about control weights and increase if one assumes that larger shareholdings are disproportionately influential, *id.* at 6, 15-16, which seems reasonable since their voting decisions are more likely to influence outcomes.
[47] *Id.* at 2, 30-32.

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does not prove that the rise in horizontal shareholding caused the rise in markups, but the parallel timing and magnitudes, coupled with all the empirical evidence that increased horizontal shareholding anticompetitively increases profits, is certainly suggestive.

The simultaneous rise in horizontal shareholding incentives and firm markups also coincides, as shown below, with the rise in economic inequality in the U.S. from 1980 to 2015. Again such parallel timing does not show the rise in horizontal shareholding caused the increase in economic inequality, but it does suggest such a connection when coupled with the empirical evidence that increased horizontal shareholding increases corporate profits and reduces corporate investment in a way that would logically increase economic inequality.

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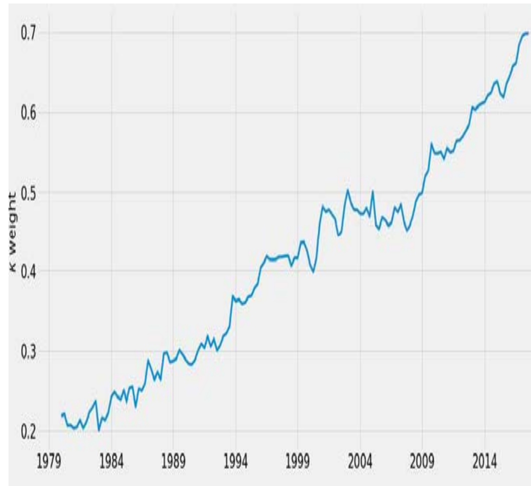
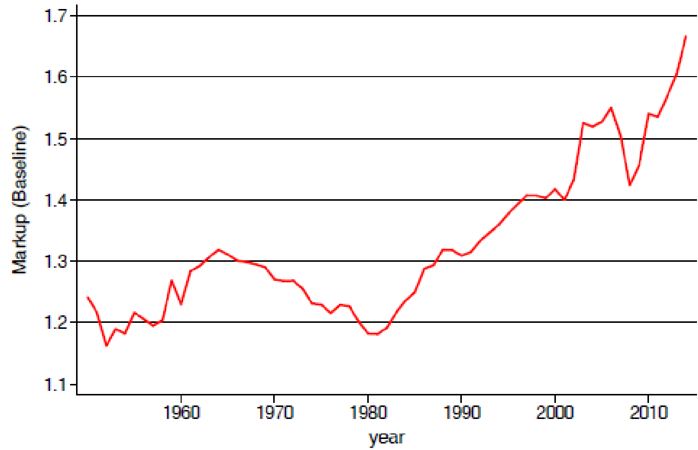
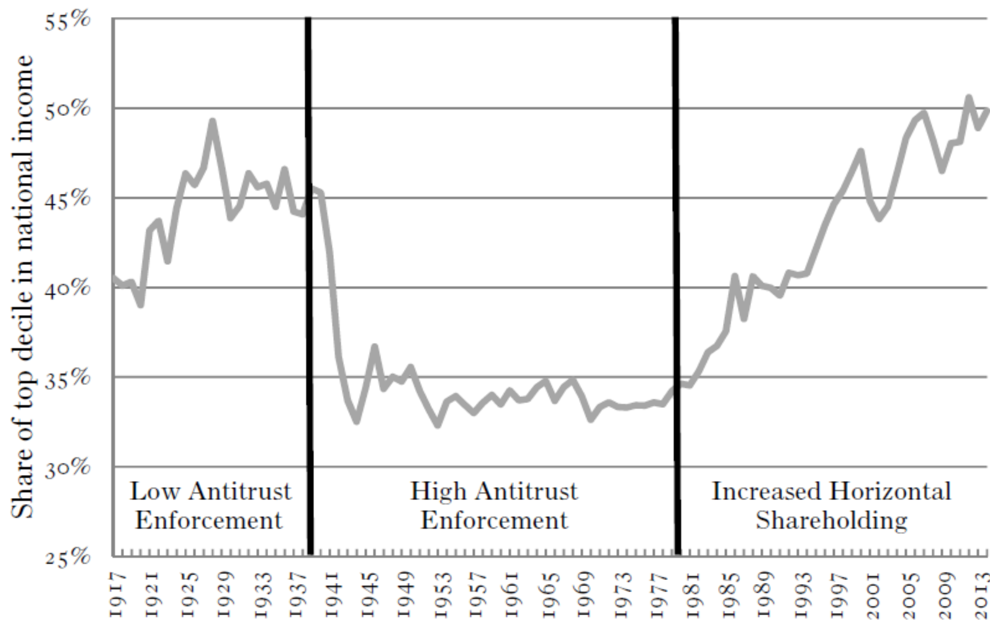
US Common Owner Profit Weights, 1980-2017[48]



Average US Firm Markups, 1950-2014[49]



US Income Inequality, 1917-2014[50]



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48 *Id.* at 2.

49 De Loecker & Eeckhout, *The Rise Of Market Power and The Macroeconomic Implications* at 9, NBER Working Paper 23687 (August 2017), http://www.nber.org/papers/w23687.

50 Elhauge, *supra* note 2, at 1292.

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D. The Airline and Banking Studies Have Proven Robust to Critiques and Extended to Other Product Markets

1. Methodological Critiques of the Airline Study. Various methodological critiques have been leveled against the Airline Study that empirically demonstrated that higher levels of horizontal shareholding raised prices in concentrated airline markets. But it turns out that their critiques were all either contradicted by the evidence or, when taken into account, actually increased the estimated price increase.

(i) Endogeneity. The main methodological critique has been that the correlation between ΔMHHI and prices might be endogenously driven by increased demand on certain airline routes affecting both ΔMHHI and prices.[51] Increased demand could independently increase prices, which could (a) affect airline entry or expansion in a way that alters market shares or (b) affect investments in a way that alters shareholding levels. Such alterations in market shares or shareholding levels could in turn affect the calculated ΔMHHI. The critics argue that the correlation between ΔMHHI and prices might thus reflect reverse causation, in which higher prices cause higher ΔMHHI, rather than vice versa. This is certainly a valid issue to investigate, but the concern turns out to be unfounded, for several reasons.

To begin with, to the extent that increased demand (or anything else) were independently increasing prices, any market entry or expansion encouraged by those higher prices is more likely to come from airlines with lower horizontal shareholding levels, and any investment induced by higher prices is more likely to come from the sort of active investors who invest selectively in some firms rather than horizontally across the airlines, both of which would mean that increased prices would predictably ***decrease*** MHHI levels.[52] Such endogeneity would thus likely create a negative correlation between prices and MHHI levels, which would mean that the positive correlation found in the Airline Study's main regressions conservatively ***under***estimated the adverse price effect from increases in horizontal shareholding.[53]

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[51] O'Brien & Waehrer, *supra* note , at 732-33, 753-55, 757-58; Rock & Rubinfeld, *Defusing the Antitrust Threat to Institutional Investor Involvement in Corporate Governance* at 13 (March 1, 2017), https://ssrn.com/abstract=2925855; Lambert & Sykuta, *supra* note , at 29-31; Capital Markets Committee, *supra* note , at 5-6.

[52] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1529.

[53] The same goes for O'Brien and Waehrer's related endogeneity argument that increased horizontal shareholding itself might raise prices in a way that disproportionately lowers the market share of dominant firms and thus lowers MHHI and ΔMHHI. O'Brien & Waehrer, *supra* note , at 744-46. To the extent that feedback effect occurs, it creates an offsetting negative correlation between prices and MHHI levels that means the Airline Study underestimated the price effects.

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As shown below, this prediction was confirmed by the fact that a test that eliminated the endogeneity concern increased the estimated price effect from 3-7% to 10-12%.[54]

The theory that the Airline Study's positive correlation between ΔMHHI and higher prices might be driven by increased demand also conflicts with copious evidence to the contrary. The Airline Study shows that increases in ΔMHHI are correlated not only with increased prices, but also with ***decreased*** output.[55] This is the opposite of what would occur if the price increase were driven by a demand increase, and instead is consistent with higher ΔMHHI causing a reduction in output that increased prices. The Airline Study even shows that the ratio of the output decrease to price increase matches prior calculations of demand elasticity that showed the extent to which decreasing airline output would increase ticket prices.[56] Lambert and Sykuta mistakenly argue that this negative correlation between output and ΔMHHI might arise if routes with fewer passengers have fewer airlines and thus higher market shares and ΔMHHI levels.[57] But in fact the Airline Study uses fixed effect variables for each route, and thus already controls for any intrinsic differences (like size) between different routes.[58] Accordingly, the effects measured by the Airline Study are driven by how changes over time in ΔMHHI change prices and output, not (as Lambert and Sykuta's critique supposes) by simply comparing prices and output in routes with higher ΔMHHI to those in routes with lower ΔMHHI.

Other evidence also contradicts the theory that the ΔMHHI-price correlation might be driven by demand (or anything else) independently increasing prices and those prices then increasing ΔMHHI. If price increases were causing increases in ΔMHHI, rather than vice versa, then higher prices should be correlated with later increases in ΔMHHI. But the evidence disproves such a correlation.[59] Indeed, it shows the opposite: increases in ΔMHHI are correlated with later increases in prices, indicating that the direction of causation runs from the horizontal shareholding to the high prices.[60] Further, if price changes were causing changes in market share that changed ΔMHHI mechanically in ways that did not correspond to changes in shareholder influence, then they should correlate even if one measured ΔMHHI using only smaller or short-term shareholders unlikely to exert influence. But

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Further, their argument presupposes that increased horizontal shareholding does increase prices, which is precisely the point that they try to deny.

[54] *See infra* at__.

[55] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1517, 1541, 1544.

[56] *Id.* at 1544.

[57] Lambert & Sykuta, *supra* note , at 31-32.

[58] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1517, 1528-29.

[59] *Id.* at 1535-36.

[60] *Id.*

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additional tests show there is no such correlation and that instead the correlation between prices and ΔMHHI is driven almost entirely by the large long-term shareholders that are likely to exert influence over corporate decision making.[61]

Finally, another part of the Airline Study used a merger between two large institutional investors, BlackRock and Barclay's Global Investors (BGI), to control for the possibility that airline ΔMHHI might be endogenously affected by changes in airline demand and prices.[62] Because both BlackRock and BGI had stock in some airlines but not others, their merger increased horizontal shareholding and ΔMHHI in some routes but not others. This effect on airline ΔMHHI levels was clearly exogenous, because it is implausible that the BlackRock-BGI merger was caused by changes in airline demand or prices, given that only a small fraction of the merging firm's portfolios was in airline stocks and that the merger arose out of a bidding contest for BGI's ETF funds, rather than out of any focus on the combination of BlackRock and BGI's airline shareholdings.[63] The Airline Study ran two regressions based on only the portion of ΔMHHI changes that were attributable to the merger.[64] The first was a differences-in-differences regression that compared airline routes where the merger raised ΔMHHI to those where the merger did not, and it found that prices were significantly higher in routes where the merger raised ΔMHHI.[65] The second regression used the portion of ΔMHHI change attributable to the merger in each route as an instrumental variable, finding that it had a statistically significant effect on route prices.[66]

Indeed, the estimated price effect in the instrument variable regression meant that the average ΔMHHI resulting from airline horizontal shareholding increases ticket prices by 10-12%, substantially higher than the 3-7% indicated in the main regression.[67] This confirms the theoretical prediction I noted above, that any endogeneity in the main regression would just make it conservative.

O'Brien and Waehrer critiqued the instrumental variable regression in the initial version of the Airline Study on the ground that, while it corrected for endogenous

[61] *Id.* at 1518, 1545.
[62] *Id.* at 1517-18, 1535-41.
[63] Id. at 1518, 1535. 1538.
[64] *Id.* at 1538.
[65] *Id.* at 1538-40. Similar to their critique of the main regression, Lambert and Sykuta argue that this result might also arise because of an intrinsic difference between routes with different numbers of passengers. Lambert & Sykuta, *supra* note , at 32 n.110. They again seemed to have missed the fact that the Airline Study controlled for this possibility by using a different fixed effect variable for each route. Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1539.
[66] *Id.* at 1540-41.
[67] *Id.* at 1517-18, 1541, 1559.

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effects on ΔMHHI, it failed to control for endogenous effects on the HHI variable that it also used.[68] This was a sound point, but as O'Brien and Waehrer themselves acknowledge, the final version of the Airline Study uses the *pre*-merger HHIs on each route.[69] O'Brien and Waehrer assert without explanation that this does not resolve their endogeneity concern,[70] but in fact using pre-merger HHIs controls for any endogenous effect of the BlackRock-BGI merger on HHI levels.

(ii) Miscellaneous Methodological Critiques. Rock and Rubinfeld have also offered various other methodological critiques. First, they critiqued the Airline Study for initially defining route markets by airport pairs, rather than by city pairs.[71] This was a good point. Competition for flights between LaGuardia and San Francisco airports are likely affected by flights between any New York area airport (LaGuardia, JFK, or Newark) and any Bay Area Airport (San Francisco or Oakland). But the final Airline Study shows that using city pairs actually makes the estimated harmful price effects ***larger***.[72] In response, Rock and Rubinfeld now say this issue is likely "minor".[73] But actually it is quite telling that increases in accuracy (from better defining markets or reducing endogeneity) increase the measured effect, because that is just what one would predict if the effect were real.

Second, Rock and Rubinfeld argue that the Airline Study might be affected by a panoply of other factors. They argue that prices might be lower in routes with lower ΔMHHI because of the presence of low-cost carriers like Southwest.[74] But the Airline Study's regressions explicitly control for the presence of Southwest and other low-cost carriers.[75] Rock and Rubinfeld also argue that the regressions focused on the effects of the BlackRock-BGI merger might be confounded by various airline mergers and the Great Recession.[76] But the Airline Study explicitly controls for those airline mergers and recession effects.[77] Rock and Rubinfeld further argue that the Airline Study results might be affected by changes in fuel costs or differences in

[68] O'Brien & Waehrer, *supra* note , at 756-58.
[69] *Id.* at 756 n.61.
[70] *Id.*
[71] Rock & Rubinfeld, *Defusing, supra* note , at 12.
[72] Changing the market definition from airport pairs to city pairs increased the relevant coefficient from .202 to .287, *see* Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1530, 1532, 1534, which, given that weighted average ΔMHHI was 2044, corresponds to a change in estimated price increase from 4.1% to 4.9%, *id.* at 1526, 1529.
[73] Rock & Rubinfeld, *Antitrust, supra* note , at 246.
[74] *Id.* at 244-45.
[75] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1529-32, 1536, 1540, 1542, 1547.
[76] Rock & Rubinfeld, *Antitrust, supra* note , at 243-44.
[77] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1539-40.

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route size.[78] But the Airline Study not only uses fixed effect variables that control for variations in fuel costs across routes and over time, but also adds an interaction variable to control for the possibility that changes in fuel costs might have different effects in routes with longer distances, and it showed that doing so ***increased*** the estimated price effects.[79] Thus, none of these methodological critiques proves telling.

(iii) Critiques of the MHHI measure. As noted above, the Airline Study measured MHHI on the assumption that each shareholder's influence turned on its share of stock ***relative to*** other shareholders.[80] This means that MHHI and ΔMHHI increase the more concentrated the horizontal shareholders are. For example, MHHI will be higher with four horizontal shareholders who hold 10% each in each firm than with forty horizontal shareholders who hold 1% each in each firm. It also means that MHHI and ΔMHHI will increase the less concentrated the non-horizontal shareholders are. For example, whether the 40% of horizontal shareholdings are held by four or forty shareholders, the MHHI will be higher if the other 60% in each firm is held by sixty non-horizontal shareholders with 1% each than if it is held by six non-horizontal shareholders with 10% each.

O'Brien and Waehrer critiqued this assumption that shareholder influence turns on relative shares on the ground that it produces allegedly counterintuitive implications in extreme cases.[81] Suppose that one horizontal shareholder has one percent of shares in all three firms competing in a market, and 10,000 non-horizontal shareholders hold equal amounts (i.e., .0099% each) of the other 99 percent in each firm. Then the MHHI measure will, because it is based on relative individual shares, indicate that the result will be near-monopoly pricing, which O'Brien and Waehrer find counterintuitive.[82]

However, it is not clear it is so counter-intuitive that near-monopoly pricing would result in such a hypothetical. To begin with, the non-horizontal shareholders have no incentive to fight horizontal shareholding that results in near-monopoly pricing at both their firm and rival firms, given that it increases profits for non-horizontal shareholders as well.[83] Nor is it clear that a leading shareholder with a small absolute

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[78] Rock & Rubinfeld, *Antitrust, supra* note , at 244.

[79] This change increased the relevant coefficient from .194 to .219, Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1517, 1528-30, which, given that weighted average ΔMHHI was 2044, corresponds to a change in estimated price increase from 4.0% to 4.5%, *id.* at 1526, 1529.

[80] *Supra* at text accompanying note ___.

[81] O'Brien & Waehrer, *supra* note , at 760-61.

[82] *Id.*

[83] Elhauge, *The Causal Mechanisms of Horizontal Shareholding* at Sections I.C & II.A (April 2018) [hereinafter Elhauge, *The Causal Mechanisms*].

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share cannot plausibly control a corporation when the remaining shareholders are trivially small. In one well-known corporate law case from the 1960s, a three percent shareholder was able to control seven out of ten seats on the board of directors.[84] We are not used to such scenarios nowadays, but that is because the growth of institutional investors today means that the remaining shareholders in publicly-traded corporations are never small enough for one shareholder to be able to dominate with 1-3 percent of shares. By 2015, on average 70 percent of the stock of publicly traded corporations was held by institutional investors, with 17.6 percent on average held by the big three index fund families alone.[85] Thus, a one percent shareholder could never dominate the typical modern publicly-traded corporation, in which many institutional investors will hold more than one percent of the corporate stock, with several holding between five and ten percent.

Which brings us to the next problem with this critique: it involves an extreme hypothetical that has little relevance to current reality. Even if one thought the MHHI measure broke down in extreme cases involving small horizontal shareholders when the remaining shareholders are trivially small, that limitation would not be relevant given the actual structure of modern shareholdings.[86] Indeed, given that institutional investors vote far more frequently than small shareholders, the MHHI measure probably, if anything, understates the influence of the large

[84] Caplan v. Lionel Corp., 246 N.Y.S.2d 913 (1964).

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

[86] Relatedly, Lambert and Sykuta critique the MHHI measure because in stylized hypotheticals it can lead to MHHIs way over 10,000. Lambert & Sykuta, *supra* note , at 15 n.51. But Lambert and Sykuta's concern is not relevant given actual horizontal shareholding levels, for which the maximum measured MHHI is 10,218. Azar, Schmalz & Tecu, *Airline Study, supra* note, at 1524. Part of the reason we do not observe actual MHHIs significantly over 10,000 may be that certain horizontal shareholding levels tend to conflict with certain market share distributions. For example, in Lambert and Sykuta's stylized hypothetical, five institutional investors have much bigger shares of three firms than a fourth firm, totally control the fourth firm, but nonetheless allow the fourth firm to have the same market share as the three firms in which they have much larger shares. Lambert & Sykuta, *supra* note , at 15 n.51. The assumptions in their hypothetical are internally inconsistent because if the institutional investors had much bigger shares in the three firms and totally controlled the fourth, they would have incentives to constrict the output of the fourth firm far below the output of the other three firms. In any event, a MHHI above 10,000 can be substantively accurate because while a monopolist produces in the most efficient way it can, horizontal shareholding that lessens competition might predictably keep substantial amounts of output at less efficient firms, thus resulting in even higher prices than pure monopoly pricing. Brito, Ribeiro & Vasconcelos, *Can Partial Horizontal Ownership Lessen Competition More Than a Monopoly?* (Dec. 3, 2018), https://ssrn.com/abstract=3295318..

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institutional investors that are usually the leading horizontal shareholders. While in 2017 individual shareholders held 30% of all shares in publicly-traded firms, they voted only 28% of their shares, whereas institutional investors voted 91% of their shares.[87] Accordingly, although institutional investors owned 70% of shares in all publicly-traded firms in 2017, they cast 88% of votes in those firms.[88]

In any event, the Airline Study affirmatively shows that relaxing the assumption that influence turns on relative share did not change its results. That study gets similar results if it includes only large shareholders or if it instead (as O'Brien and Waehrer suggested) weighs each shareholder by the probability that its vote will be pivotal.[89]

Some instead critique the fact that the MHHI measure used in the Airline Study aggregates the shares of the funds held within a single fund family.[90] These critiques depend on the mistaken premises that fund families do not control voting by their member funds or lack incentives to vote all the fund shares in ways that maximize the returns of the fund family.[91] Yet another critique complains that MHHI aggregates all fund family shareholdings ***equally***, rather than taking into account that those shareholdings are in index and active funds have varying fee levels and flow incentives.[92] But whether or not any individual fund is horizontally invested, fund families with high horizontal shareholding levels can decrease competition at firms held by both their index and active funds in a way that increases the value of both and thus increases fees and investment flow at both.[93]

In any event, all these critiques of the MHHI measure miss the point of the empirical analysis. The Airline Study does not infer anticompetitive effects from *a priori* assumptions that MHHI must affect prices. Rather, the Airline Study empirically tests the ***hypothesis*** that horizontal shareholding, as measured by ΔMHHI, increases prices.[94] Thus, the Airline Study ***validates*** its MHHI measure by showing that empirically it has a highly statistically significant correlation with higher prices, despite manifold controls for other possible causes or endogeneity.

To be sure, maybe we can develop more-refined measures of horizontal shareholding that have even greater statistical significance and explanatory power than MHHI

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[87] ProxyPulse, 2018 Proxy Season Review (Oct. 2018), https://www.broadridge.com/proxypulse/.
[88] (.91)(70%)/[(.91)(70%) + (.28)(30%)] = 88%.
[89] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1534, 1544-46.
[90] Ginsburg & Klovers, *supra* note , at ¶¶ 17-18; Lambert & Sykuta, *supra* note , at 23-29.
[91] Ginsburg & Klovers, *supra* note , at ¶¶ 13-16; Lambert & Sykuta, *supra* note , at 23-29. Those premises are disproven in Elhauge, *The Causal Mechanisms, supra* note , at III.B.
[92] Lewellen & Lewellen, *supra* note , at 8 & n.3; Hemphill and Kahan, *supra* note , at 33-36.
[93] Elhauge, *The Causal Mechanisms, supra* note , at III.B.4.
[94] Azar, Schmalz & Tecu, *Airline Study*, *supra* note , at 1522-23.

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does. For example, I and some co-authors have proposed an alternative method that avoids the implication that horizontal shareholders with a small total share generate near-monopoly pricing when the remaining shareholders are highly dispersed.[95] If critics are right that this implication is implausible and arises often enough to be practically significant, then future empirical testing should establish that this alternative method predicts firm prices even better than MHHI does. But that does not alter the reality that taking MHHI into account predicts prices better than ignoring horizontal shareholding altogether.

Likewise, perhaps methods of measuring MHHI and aggregating the shareholdings of fund families can be fine-tuned to take into account the fact that varying funds have varying fee levels and flow incentives. If such fine-tuning improves empirical accuracy, it should be adopted. But it is clear that measures of horizontal shareholding that respond to these sorts of complications by instead failing to aggregate fund family shareholdings at all turn out to have less or no statistical significance, thus indicating that their failure to aggregate misses a key effect that the MHHI measure does capture.[96] Further, to the extent that current MHHI measures are somewhat inaccurate because they do not incorporate such fine tuning, then such inaccuracy would simply create attenuation bias towards a zero coefficient and lower statistical significance.[97] That would indicate that the true effects are likely even larger than the Airline study found.

2. Critiques That Re-Run the Airline Study Using Different Assumptions. A couple of papers have purported to show that horizontal shareholding does not increase airline pricing by re-running the Airline Study using different assumptions. These papers actually at first replicate the Airline Study's finding that horizontal shareholding raises market prices, even using the critics' own re-construction of the data and different measures of horizontal shareholding. These papers are able to negate those price effects only by altering the regression in incorrect ways, such as by using an instrumental variable that is negatively correlated with horizontal shareholding or by setting many shareholding rights equal to zero.

(i) The ICI Paper. The first of these papers was funded by the Investment Company Institute (ICI), an association of institutional investors that for the

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[95] Brito, Elhauge, Ribeiro & Vasconcelos, *Modeling Horizontal Shareholding with Ownership Dispersion* (2018), https://ssrn.com/abstract=3264113 or http://dx.doi.org/10.2139/ssrn.3264113.
[96] *Infra* Parts I.D.2-3.
[97] WOOLDRIDGE, INTRODUCTORY ECONOMETRICS 320-322 (5th ed. 2013); STOCK & WATSON, INTRODUCTION TO ECONOMETRICS 2ND at 320-321.

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preceding three years was headed by the CEO of Vanguard.[98] This ICI paper first reconstructs the data from scratch and ***replicates*** the results of the Airline Study.[99] This part of the ICI paper thus affirmatively confirms that the results of the Airline Study are not an artifact of any data errors. The ICI paper next modifies the original airline study in three ways.

First, the ICI paper re-runs the Airline Study's main regression of prices on horizontal shareholding levels, but replaces actual MHHI and ΔMHHI with the paper's own "construction" of horizontal shareholder incentive terms.[100] Even using its own constructed measure of horizontal shareholding, the ICI paper finds that horizontal shareholding increases prices in a statistically significant way.[101] This part of the paper thus actually confirms that the results of the original airline study were ***not*** driven by the MHHI measure of horizontal shareholding that it used.

Second, the ICI paper re-runs the BlackRock-BGI instrumental variable regression, but the paper changes the instruments to (a) a dummy variable if the market was affected by the BlackRock-BGI merger at all and (b) the number of airlines in each market that are included in the Russell 1000 index.[102] The first change in instruments means that much of the modified study now compares routes unaffected by the merger to routes with trivial effects, which naturally reduces the measured effect and statistical power. Further the combination of modifications results in the ICI paper implausibly finding that higher horizontal shareholding has a large ***negative*** effect on prices. This implausible finding seems to reflect a flaw in the modified instruments that the ICI paper uses as a purported proxy for horizontal shareholding, because the paper's first stage results indicate that the BlackRock-BGI merger somehow had a significant ***negative*** effect on horizontal shareholding levels, which is impossible given that the merger clearly combined large horizontal shareholders.[103]

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[98] Kennedy, et al, *The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence* at n.* (July 2017), https://ssrn.com/abstract=3008331. The Investment Company Institute also funded O'Brien and Waehrer's methodological critique. *See* O'Brien & Waehrer, *supra* note , at 729 n.*.
[99] Kennedy, et al, *supra* note 99, at 10-14.
[100] *Id.* at 14-15.
[101] *Id.* at 16.
[102] *Id.* at 15.
[103] *Id.* at Table 6; Azar, Schmalz & Tecu, *The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence: Reply* at 4 (September 28, 2017), https://ssrn.com/abstract=3044908 [hereinafter "Azar, Schmalz, and Tecu, *Reply to Kennedy, et al.*"].

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In short, although the ICI paper claims a negative relation between horizontal shareholding and price, it does so only by using a purported proxy for horizontal shareholding levels that in reality is ***negatively*** related to actual horizontal shareholding levels. Not surprisingly, if one uses a proxy that is negatively related to horizontal shareholding, one finds that the proxy is negatively related to prices. But that just confirms that actual horizontal shareholding does increase prices.

Third, the ICI paper creates its own model of market demand and supply and estimates results using its own measure of horizontal shareholding.[104] This modification finds no statistically significant link between horizontal shareholding and prices, but its attempt to reconstruct market demand and supply is clearly erroneous because it finds that longer routes have ***lower*** marginal costs, which contradicts the physical reality that it takes more fuel to fly longer distances.[105] Also, this modification uses only one tenth of the actual data, which makes it far less likely to find an effect.[106]

In short, the ICI Paper actually replicates the Airline Study's finding that horizontal shareholding increases prices, even with their own reconstruction of the data and measure of horizontal shareholding levels. The ICI Paper eliminates statistically significant results only by incorrectly either using an instrumental variable that is actually negatively correlated with horizontal shareholding or using a market model that wrongly assumes that flying longer routes reduces marginal costs.

(ii) Dennis, Gerardi, and Schenone. Another article by Dennis, Gerardi, and Schenone purports to show that re-running the Airline Study using different assumptions affirmatively shows that horizontal shareholding has no anticompetitive effects on airline pricing.[107] However, their analysis has several flaws.

First, to measure horizontal shareholding levels, they simply use the raw shareholdings that large institutional investors report on 13F forms.[108] They thus often fail to aggregate the shareholdings of funds that are voted by a common fund family, which is necessary to accurately measure horizontal shareholding levels.[109]

[104] Kennedy, et al, *supra* note 99, at 5, 16-22.
[105] *Id.* at 22; Azar, Schmalz & Tecu, *Reply to Kennedy, et al.*, *supra* note , at 3, 5.
[106] Kennedy, et al, *supra* note 99, at 20-21; Azar, Schmalz & Tecu, *Reply to Kennedy, et al.*, *supra* note , at 3-5.
[107] Dennis, Gerardi, & Schenone, *Common Ownership Does Not Have Anti-Competitive Effects in the Airline Industry* (February 5, 2018), https://ssrn.com/abstract=3063465.
[108] *Id.* at 9 & n.13, 16.
[109] Azar, Schmalz & Tecu, *Reply to: Common Ownership Does Not Have Anti-Competitive Effects in the Airline Industry* 2-3 (April 24, 2018) [hereinafter "Azar, Schmalz & Tecu, *Reply to Dennis,*

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This error infects all of their analysis and reduces all their estimated price effects.[110] Their reliance on 13F data also means that their main analysis omits all individual shareholders, thus inaccurately measuring horizontal shareholding levels and further reducing their estimated price effects.[111] Even with their erroneous measures of horizontal shareholding levels, they find statistically significant adverse price effects from horizontal shareholding, albeit smaller ones than the original airline study.[112]

Second, Dennis, Gerardi, and Schenone argue that if one does not weight routes by the number of passengers, then the effects on average carrier prices are statistically significant only for the 5% largest routes and the effects on market prices are significantly reduced in size and are largest for the 5% largest routes.[113] However, these findings are an artifact of their inaccurate measure of horizontal shareholding levels. If one uses their inaccurate measure without changing the original airline study's weighting of routes, then one produces the similar result of reducing statistical significance, especially on the smallest routes.[114] Conversely, if one instead uses an accurate measure of horizontal shareholding levels but does not weight routes by the number of passengers, then the results remain statistically significant for all but the smallest markets, as in the original airline study.[115] Thus, their finding is driven by their inaccurate measurement of horizontal shareholding, not by their unweighting of routes. Moreover, weighting routes by passengers is preferable because failing to do so necessarily has the effect of overweighing price observations on routes with fewer passengers.

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et al."]; Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1525-26 & n.11; Lewellen & Lewellen, *supra* note , at 9.

[110] Dennis, Gerardi, & Schenone, *supra* note , at Tables III-IV (showing that their price coefficients are all smaller than the results in Azar, Schmalz, and Tecu).

[111] Correcting the omission of individual investors in three of their Appendix tables confirms that excluding individual investors from their main results does reduce estimated price effects. *Compare id.* at Tables III-V (main results excluding individual investors), *with* Tables A.XI-XIII (results including individual investors). The exclusion of individual investors thus biases their analysis against finding effects in their other tables, which they never correct to include individual investors. Further, their three Appendix tables that include individual investors are infected by their other error (discussed later in text) of setting shared voting rights equal to zero. *Id.* Appendix at 19.

[112] *Id.* at Tables III-IV.

[113] *Id.* at 13-15.

[114] Azar, Schmalz & Tecu, *Reply to Dennis, et al., supra* note , at 2-5.

[115] *Id.* at 6-9. Lambert and Sykuta are thus mistaken when they assert that Dennis, Gerardi, and Schenone showed that unweighting the regressions "alone either eliminated or drastically reduced" the effects. Lambert & Sykuta, *supra* note , at 33.

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In any event, even with both their erroneous measure of horizontal shareholding and their unweighting of routes, Dennis, Gerardi, and Schenone still find statistically significant (albeit smaller) adverse effects on market prices for routes both large and small.[116] Thus, it is hard to see why they believe this finding supports their title's claim to have proven that common ownership does not have anticompetitive effects in the airline markets.[117] Instead, they actually show that that the finding of anticompetitive effects can be ***replicated*** even if one uses their erroneous measure of horizontal shareholding levels and fails to weigh routes by the number of passengers.

Third, to account for the fact that some airlines operated in bankruptcy, Dennis, Gerardi, and Schenone set shareholders' profit and control rights equal to zero whenever an airline was in chapter 11.[118] They find that combining this method with their erroneous measure of horizontal shareholding levels eliminates any statistically significant effects.[119] But setting shareholder rights equal to zero when a firm is in chapter 11 is a mistake because, as they themselves acknowledge, shareholders generally retain shares after a chapter 11 reorganization.[120] Thus, while reorganizations are likely to reduce shareholders' expected profit and control rights, setting those rights equal to zero clearly understates shareholder influence. A neutral method would instead test whether the results are changed if one excludes those time periods when some airlines were in chapter 11, given that their shareholder profit and control rights become uncertain. The Airline Study shows that when that neutral method is used, it ***increases*** the estimated price effects.[121]

Fourth, when institutional investors report "shared" voting rights on their 13F forms, Dennis, Gerardi, and Schenone set their voting rights equal to zero.[122] They find that if one combines this method with their erroneous measure of horizontal shareholding levels and their erroneous treatment of chapter 11 airlines, then the estimated price effect is smaller and becomes statistically insignificant even for the largest markets.[123] But setting shared voting rights equal to zero is incorrect because having

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[116] Dennis, Gerardi, & Schenone, *supra* note , at 14-15 & Tables V-VI.
[117] *Id.* at 1.
[118] *Id.* at 15-16.
[119] *Id.* at 18 & Tables VII-VIII.
[120] *Id.* at 15.
[121] Excluding bankruptcy periods increased the estimated coefficient from .202 to .265, *see* Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1530-32, which, given that weighted average ΔMHHI was 2044, corresponds to a change in estimated price increase from 4.1% to 5.4%, *id.* at 1526, 1529.
[122] Dennis, Gerardi, & Schenone, *supra* note , at 17.
[123] *Id.* at 18 & Tables VII-VIII.

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shared voting rights simply means that an entity controls the voting of another entity and exercises those voting rights on important matters like contested elections.[124] Setting shareholding voting rights equal to zero in such cases clearly understates the voting influence of such entities, and thus compounds their erroneous measure of horizontal shareholding levels and treatment of chapter 11 airlines.

Fifth, Dennis, Gerardi, and Schenone modify the data to exclude all airline tickets other than nonstop coach itineraries.[125] They find that if one combines this exclusion of ticket data with their erroneous measure of horizontal shareholding levels, unweighting of routes by passengers, and setting of shared or bankruptcy control rights equal to zero, then there is no statistically significant correlation between horizontal shareholding and ticket prices.[126] Not only does this approach repeat the four errors pointed out in the preceding paragraphs, but excluding all but nonstop coach tickets further distorts the analysis because it excludes the higher-priced itineraries most likely to evince price effects. It also results in a sample 16% as large as the original Airline study,[127] which further attenuates the ability to find statistically significant effects.

Finally, Dennis, Gerardi, and Schenone modify the analysis to replace the airlines' actual market shares on the relevant routes with a proxy based on the airlines' share of all passengers going to or from each end point.[128] They find that if they combine this proxy for market share with their erroneous measure of horizontal shareholding levels and their restriction of the data to nonstop coach tickets, then they can eliminate any statistically significant effect of horizontal shareholding on prices.[129] But their proxy for market shares on any given route will predictably be distorted by airline shares on entirely different routes to or from those end points. For example, suppose two airlines each have a 50% share of flights from Boston to Martha's Vineyard, but those two airlines only have a 5% share of all flights going to or from Boston and to or from Martha's Vineyard. Dennis, Gerardi, and Schenone's

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[124] SEC, Division of Investment Management: Frequently Asked Questions About Form 13F, at Answer to Question 46 ("If you control another entity (or are controlled by another entity), you should report shared-defined investment discretion."), Answer to Question 50a ("If you vote on non-routine matters (e.g., contested election of directors, merger, sale of substantial assets, change in articles of incorporation effecting shareholders, change in fundamental investment policy), you have either sole or shared voting authority"), https://www.sec.gov/divisions/investment/13ffaq.htm.

[125] Dennis, Gerardi, & Schenone, *supra* note , at 4-5, 19-23.

[126] *Id.* at 5, 23-24 & Tables XI-XII.

[127] Azar, Schmalz & Tecu, *Reply to Dennis, et al., supra* note 84, at 9.

[128] Dennis, Gerardi, & Schenone, *supra* note , at 5, 24-25.

[129] *Id.* at 5, 25 & Table XIII.

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approach would wrongly treat the airlines as having only a 5% share of the Boston to Martha's Vineyard route, thus vastly understating market concentration. Or suppose two airlines had a 20% share of all flights going to or from Boston and Martha's Vineyard, but did not fly between Boston and Martha's Vineyard at all. Dennis, Gerardi, and Schenone's approach would wrongly treat these airlines as each having a 20% share of the Boston to Martha's Vineyard route, even though their actual market share on that route is 0%. Their distorted measure of market share thus compounds the problems created by their erroneous measure of horizontal shareholding levels and ticket data restriction.

In short, Dennis, Gerardi, and Schenone actually replicate the Airline Study's finding that horizontal shareholding increases market prices even with their erroneous non-aggregation of horizontal shareholdings and failure to weight routes by passengers. They eliminate statistically significant results only by incorrectly setting many horizontal shareholder rights equal to zero, excluding 84% of the ticket data, and using a distorted measure of market shares.

3. The Critique of the Banking Study. Gramlich and Grundl re-run the banking study using various modifications that lead them to find smaller and more mixed effects.[130] However, like the Dennis, Gerardi, and Schenone study just discussed in the preceding section, this critique simply uses the institutional shareholdings reported in the 13F data, and thus fails to aggregate shares voted by the same fund family.[131] Gramlich and Grundl also stressed that their empirical findings were preliminary due to known irregularities in the 13F data that they had not yet investigated and corrected.[132]

Further, Gramlich and Grundl's critique of the original banking study modifies the MHHI measure to exclude its market share and market concentration components: i.e., their measure just reflects average horizontal shareholding levels without considering market concentration levels.[133] As they point out, the advantage to their approach is that it eliminates any concern about endogenous effects on market concentration (i.e., on HHI).[134] But the downside is that this makes their measure

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[130] Gramlich & Grundl, *Estimating the Competitive Effects of Common Ownership* (April 21, 2017), http://dx.doi.org/10.17016/FEDS.2017.029r1.
[131] *Id.* at 4, 13.
[132] *Id.* at 1, 4. The need to correct the well-known inaccuracies in the 13F data by cross-checking against other sources has been repeated stressed in the literature. *See* Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1525-26 & n.11; Backus, Conlon, & Sinkinson, *Common Ownership in America*, *supra* note , at 6, 12-13; Dennis, Gerardi, & Schenone, *supra* note , at 9 n.13; Lewellen & Lewellen, *supra* note , at 9.
[133] Gramlich & Grundl, *supra* note , at 3, 8-9.
[134] *Id.* at 3, 30.

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far less relevant to anticompetitive effects. After all, prior empirical work had shown that adverse price effects depend not only on the horizontal shareholding levels that the critique measures, but also on the market concentration levels that the critique omits.[135] Likewise, economic theory indicates that even horizontal mergers between some firms in an unconcentrated market are unlikely to affect prices,[136] so that high horizontal shareholding levels between some firms in an unconcentrated market are *a fortiori* unlikely to affect prices. If a study of all horizontal mergers (whether or not in concentrated markets) found mixed effects on prices, no one would conclude that it proves that horizontal mergers in concentrated markets have no anticompetitive effect. Likewise, because high horizontal shareholding levels between some firms in an unconcentrated market are unlikely to affect prices, no one should conclude that a study like theirs, which studies the effect of average horizontal shareholding level without considering market concentration levels, proves that horizontal shareholdings in concentrated markets no anticompetitive effect.[137]

In short, the Gramlich and Grundl critique of the banking study not only relies on unreliable data about horizontal shareholding levels, but also considers only those horizontal shareholding levels without considering the impact of market concentration on likely price effects. Those flaws likely explain why the critique finds smaller and more mixed effects than the original banking study. The study thus actually provides strong grounds to instead use an MHHI measure that (1) measures horizontal shareholding levels in a way that corrects data errors and aggregates the shares held by a fund family and (2) incorporates the effect of market concentration, because that MHHI level is what has the statistically significant correlation to adverse price effects that the modified measure obscures.

4. New Studies on Seed and Pharmaceutical Markets Confirm that Horizontal Shareholding Sometimes Has Anticompetitive Effects. The proposition that

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[135] Elhauge, *supra* note 2, at 1276-77.

[136] DOJ & FTC, Horizontal Merger Guidelines (2010).

[137] Their average horizontal shareholding measure simply divides the sum of horizontal shareholding levels by the number of rivals in the market. Gramlich & Grundl, *supra* note , at 9. Suppose, for example, there are 10 firms each with 1% market share that have high horizontal shareholding levels among them, but there are another 9 firms with 10% market share each that have no horizontal shareholding. The Gramlich-Grundl measure would find an average horizontal shareholding level that was substantial, even though the lack of market concentration would predict no adverse price effects. Such cases would predictably create mixed effects for the correlation between the Gramlich-Grundl measure and adverse price effects, but that is because the Gramlich-Grundl measure less accurately measures what does affect prices, which is a combination of market concentration ***and*** horizontal shareholding levels.

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horizontal shareholding sometimes has anticompetitive effects has now also been confirmed by three new empirical studies on seed and pharmaceutical markets. Moreover, these new studies use alternative measures of horizontal shareholding levels that avoid the endogeneity concerns raised about ΔMHHI measures.

In seed markets, a new empirical study has found that increased horizontal shareholding levels have significantly increased seed prices. This new study avoids endogeneity concerns by using prices lagged one year after the explanatory variables and a variation of ΔMHHI that uses (instead of current market shares) the average market shares in the preceding years.[138] This eliminates not only the concerns that prices might be affecting ΔMHHI levels or that some omitted variable might be simultaneously affecting both prices and ΔMHHI levels, but also eliminates the possibility that changes in ΔMHHI might reflect changes in market concentration rather than changes in horizontal shareholding levels.[139] While admirably avoiding the endogeneity concerns raised by critics of the prior airline and banking studies, the seed study acknowledges that calculating ΔMHHI using average market shares conservatively underestimates price effects "if the anticompetitive effect in fact depends on an interaction between common shares and *current* market shares that is attenuated by the use of average market shares in calculation of MHHI delta."[140]

Even this conservative underestimate finds that increased horizontal shareholding explains 15% of the price increase for soy, corn, and cotton seeds from 1997-2017, which exceeds the price effect from either increased market concentration or the increased value of innovative seeds.[141] This rebuts the claim that adverse price effects from horizontal shareholding depend on endogeneity effects. Further, the price effect increases if (based on the premise that small shareholders are unlikely

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[138] Mohammad Torshizi & Jennifer Clapp, *Price Effects of Common Ownership in the Seed Sector* 28-31 (February 20, 2019), https://ssrn.com/abstract=3338485.
[139] *Id.*
[140] *Id.* at 48 (emphasis in original). For example, suppose (consistent with theory) that even to the extent that horizontal shareholding levels did not increase over time, increased market concentration increases prices more in markets with high horizontal shareholding levels than in markets with low horizontal shareholding levels. If so, higher horizontal shareholding levels do increase prices over and above any effect of increased market concentration, but that effect would not be picked up by the method of the seed study because it measures ΔMHHI based on average market shares over the study period. In contrast, regular ΔMHHI measures would pick up this effect because the increased market concentration would increase ΔMHHI more in markets with higher horizontal shareholding levels. Consistent with this possibility, the seed study finds that the price effect is 77% higher using lagged regular ΔMHHI than using their lagged average ΔMHHI measure. *Id.* at 39.
[141] *Id.* at 1, 4, 40-41 & Table 4.

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to influence the corporation) horizontal shareholding is measured just including larger shareholders, with the price effect doubling if shareholders with less than 1.5% stakes are excluded from the measure.[142] This tends to confirm the view that the normal MHHI measure probably understates the influence of the large institutional investors that are usually the leading horizontal shareholders.

Likewise, two new empirical studies have found that higher horizontal shareholding levels create anticompetitive effects in pharmaceutical markets. One study finds that increased horizontal shareholding between an incumbent brand and an entering generic not only increases by 12% the odds that they will enter into reverse-payment settlements that delay generic entry, but also produces a larger delay of entry.[143] Another study finds that increased common ownership between drug manufacturers and potential generic entrants reduces the odds of any generic entry by 9-13%.[144] Because these studies measure the effects on entry of horizontal shareholding levels between an incumbent and potential entrant, they neither use a measure of horizontal shareholding that is affected by market concentration levels nor raise any of the endogeneity concerns that increased prices might be affecting horizontal shareholding levels or that some omitted variable might be affecting prices and horizontal shareholding levels simultaneously.

E. A New Cross-Industry Study Does Not Undermine These Findings

A new cross-industry study by Koch, Panayides and Thomas concludes that higher industry horizontal shareholding levels have no robust positive effect on industry profits or prices, nor any robust negative effect on industry investment.[145] As discussed below, this study has several drawbacks that bias it against finding results. But even this study finds, in their "Structural Break" analysis, that a large (two-standard deviation) increase in ΔMHHI ***does*** result in statistically significant increases in profits within one year.[146] They dismiss this result for two reasons. (1) They do not find effects if they use measures of horizontal shareholding other than ΔMHHI.[147] But the other measures that they use do not consider market

[142] *Id.* at 4546.
[143] Jin Xie & Joseph Gerakosz, *Institutional Horizontal Shareholdings and Generic Entry in the Pharmaceutical Industr*y (Nov. 16, 2018), https://ssrn.com/abstract=3285161.
[144] Newham, et al, *Common Ownership and Market Entry: Evidence from the Pharmaceutical Industry* (Sept 5, 2018), https://ssrn.com/abstract=3194394.
[145] Koch, Panayides and Thomas, *Common Ownership and Competition in Product Markets* (March 2, 2019), https://ssrn.com/abstract=2965058.
[146] *Id.* at Table 3.
[147] *Id.* at 17 & Table 3.

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concentration levels.[148] Their regressions using those other measures are thus like a study asking whether mergers generally increase prices; they are unlike to produce results because it takes the combination of high market concentration and horizontal mergers/shareholding to increase prices.[149] Such regressions thus just confirm that ΔMHHI is a superior measure of horizontal shareholding because it captures an important causal feature that the other measures miss. (2) They do not find effects when they instead ask whether any statistically significant increase in ΔMHHI results in higher profits.[150] But that test is likely to include much smaller increases in ΔMHHI that are unlikely to increase profits. After all, antitrust guidelines indicate that, even for horizontal mergers, it takes an HHI increase of 200 to make anticompetitive effects likely.[151] In addition, all their Structural Break regressions understate the profit increase because they are limited to profit changes within one year. This is too short term to fully capture profit increases, given that their own analysis shows that the ΔMHHI change caused by institutional mergers does not result in statistically significant price increases until 2-3 years out, and the Airline Study likewise found that the Barclays-BGI merger took 3-5 years to create statistically significant price increases.[152]

Moreover, all of the Koch, Panayides and Thomas regressions have several other drawbacks that bias them against finding effects. ***First***, their analysis is based on "industries," which does not correspond to antitrust markets because industries can include many products or geographic regions that do not compete with each other. This naturally creates substantial measurement error in any variables that depend on industry definition. This is a large problem for them because industry definitions affect the measurement of all their dependent variables (industry profits, investment, or prices) and all their independent variables, including not only their independent variables of interest (ΔMHHI and other horizontal shareholding measures) but also 11 of their 12 control variables.[153] Even if we assume that the measurement errors are all unbiased (i.e., no more likely to overestimate than underestimate the variables), such measurement errors in their independent variables create attenuation bias towards a zero coefficient and lower statistical significance.[154] Because they

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[148] *Id.* at 12-14& Table 3.
[149] *Supra* Section I.D.3.
[150] Koch, Panayides and Thomas, s*upra* note, at 17 & Table 3. Their regression limited to concentrated markets likewise uses this test, and it does not report any results for ΔMHHI changes that exceed two-standard deviations. *Id.* at Table 4.
[151] Elhauge, *supra* note 2, at 1273,
[152] Koch, Panayides and Thomas, s*upra* note, at Table IA 5; Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1541.
[153] Koch, Panayides and Thomas, s*upra* note, at Appendix A & Table 5.
[154] WOOLDRIDGE, *supra* note , at 320-322.

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have this measurement error in almost all their independent variables, this problem is likely to be particularly severe and bias their regressions toward showing no effect. In addition, measurement error in their dependent variables adds further bias if it is systematically related to one or more of the independent variables.[155] That seems likely to be the case because the difference between industry profits/investment and true market profits/investment is likely larger the larger the industry, which is also true for many of their control variables. For example, their control variables include: "ln(Assets): The natural logarithm of the total assets for the industry," "Capital Intensity: Total industry assets divided by total industry sales." and "R&D Intensity: Total industry R&D expenditures divided by total industry assets."[156] The first variable is clearly larger the larger the industry, and the other two likely are as well.

Such measurement errors are not a problem for any of the five market-level studies finding anticompetitive effects. Such measurement errors are also much less of a problem for the prior cross-industry study that finds that increased horizontal shareholding does increase the profit-investment gap.[157] While some of the prior study's regressions use industry-level dependent and independent variables, it has other regressions that use only firm-level variables, including using the firm's level of quasi-indexer ownership as a proxy for horizontal shareholding levels.[158] Those purely firm-level regressions are thus not subject to this industry measurement error issue. The prior study's other firm-level regressions do include MHHI as an independent variable, which is affected by industry definitions, but in them the main explanatory variable remains firm-level quasi-indexer ownership, and they do not have a host of other control variables affected by industry definition.[159] Given this, and the fact that the results for these regressions match those of its purely firm-level regressions, these regressions do not seem seriously affected by measurement error bias. The prior study's industry-level regressions are more likely to suffer from measurement error bias, but likely less so since they do not use so many control variables that are likely related to the size of that error and their results match their purely firm-level regressions.[160] Further, to the extent that the industry measurement error does bias the other study's results, it creates attenuation bias against finding

[155] *Id.* at 320.
[156] Koch, Panayides and Thomas, s*upra* note, at Appendix A & table 5.
[157] *Supra* at Section I.C.
[158] Gutiérrez & Philippon, *supra* note , at 126-127.
[159] *Id.* at Table 6.
[160] *Id.* at Table 5.

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effects. Given that the other study finds effects, this suggests that the true effects are likely greater.[161]

Second, with one exception, all of Koch, Panayides and Thomas' regressions use 13F data without aggregating shares voted by the same fund family or correcting other well-known errors.[162] This failure to aggregate and correct means that all those regressions are systematically underestimating horizontal shareholding levels in a way that biases their results.

Third, the one regression for which they do run a version that corrects and aggregates the 13F data is their panel regression that finds that horizontal shareholding has no significant effect on profits.[163] However, all their panel regressions use control variables that create likely problems of multicollinearity and reverse causality. Multicollinearity problems are likely created by their control variables "Off Degree: The number of pair connections between firms that do not belong to the same four-digit NAICS industries owned by the common blockholders" and "Firms with Blocks: The fraction of firms in the industry that have at least one institution that owns more than five percent of the firm."[164] Both those controls are likely to correlate highly with horizontal shareholding levels in the industry, thus creating multicollinearity problems that could cause the regression to misattribute the effects of the horizontal shareholding to other variables.[165] Reverse causality problems are likely created by other control variables that relate to investment levels, such as industry Assets, Capital Intensity, R&D Intensity, as well as "Leverage Industry: total debt divided by the sum of total debt and total market equity."[166] If horizontal shareholding increases profits by inducing lower output and lower investment, then those effects on the dependent variables will in turn affect each of these control variables. This reverse causality will bias their results.

Fourth, their institutional investor merger analysis has additional problems. It does not correct and aggregate the 13F data. Also, although it finds that institutional

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[161] Similarly, in the executive compensation cross-industry regression, the dependent variable is firm-level, as are all of the independent variables except those for MHHI, HHI, and industry fixed effects. Anton, et al, 2018, at 3, 18, 24-27 & Table 4. It is thus less likely to be subject to measurement error bias, and to the extent it is, that just attenuates its results and suggests the true effects are larger.

[162] Koch, Panayides and Thomas, s*upra* note, at 11 & 19 n.17; *see also supra* Sections I.D.1 & I.D.3 (collecting sources on the need for such corrections and aggregations).

[163] Koch, Panayides and Thomas, s*upra* note, at 19 n.17 & Table 1A 7

[164] *Id.* at Appendix A & Tables 5 & IA 7.

[165] WOOLDRIDGE, *supra* note , at 102.

[166] Koch, Panayides and Thomas, s*upra* note, at Appendix A & Tables 5 & IA 7.

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investor mergers that increased ΔMHHI did not significantly increase profits,[167] most of these mergers were between institutional investors so small that they increased ΔMHHI in only 25% of cases, and even in those cases the ΔMHHI increase was very small, with 60% of the increases less than 7.4, 80% less than 24, and 92% less than 102.[168] Thus, almost all the merger-created ΔMHHI increases that they considered were below the 200 increase level normally deemed sufficient to create anticompetitive effects.

Fifth*,* their manufacturing price regression has other difficulties. It likewise does not correct and aggregate the 13F data. Moreover, although this regression included data on industry-specific costs, and thus considered any effect that cost inflation might have, they double-counted by also adjusting prices down for inflation.[169] Finally, this regression could also reflect reverse causality, because an increase in prices is likely to lead to entry and rival expansion that lowers ΔMHHI, thus reducing the regression's estimated effect of ΔMHHI on prices.[170]

Finally, even if (despite the above) one wrongly thought that Koch, Panayides and Thomas showed that horizontal shareholding levels did not systematically create anticompetitive effects across all industries, that would not alter the empirical reality that it does for many markets. It would at most suggest, as they say, that "if one argues that common ownership should be discouraged among a specific set of industries, there is a roughly equally sized set for which we should apparently encourage common ownership."[171] Such a conclusion would provide grounds not to promulgate regulations restricting horizontal shareholding in all industries, but it would provide no grounds not to pursue case-by-case enforcement to tackle horizontal shareholding in those markets where anticompetitive effects can be shown.

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[167] *Id.* at 22 & Table 9-10.

[168] *Id.* at 21 & Table 8. Koch, Panayides and Thomas regard the fact that institutional investor mergers reduce ΔMHHI in 5% of cases as showing some problem with the ΔMHHI measure. *Id.* at 21. But it simply reflects the fact that mergers between small undiversified institutional investors can simply increase the concentration of ***non-horizontal*** shareholdings, which reduces ΔMHHI because it turns on the ***relative*** shares of horizontal versus non-horizontal shareholders. *See supra* Section I.D.1(iii).

[169] Koch, Panayides and Thomas, s*upra* note, at 23-24.

[170] *See supra* Section I.D.1(i). The instrumental variable analysis they run does not avoid this problem because it uses a first-stage regression that makes the dependent variable price, rather than a predicted ΔMHHI. Koch, Panayides and Thomas, s*upra* note, at Table IA 5.

[171] Koch, Panayides and Thomas, s*upra* note, at 4.

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F. Conclusion: The State of the Empirical Literature Is Not Too Uncertain to Take Enforcement Action

Some (including the current U.S. antitrust agencies) have concluded that the anticompetitive effects of horizontal shareholding remain too empirically uncertain for enforcement action, claiming that we have studies finding such effects only in airline and banking markets and that those studies have been disputed.[172] But the claim that anticompetitive effects have been found only for airline and banking markets is no longer true. Similar results have now also been found not only in the three new empirical studies on seed and pharmaceutical markets, but also across all industries given the two new cross-industry studies.[173] The notion that horizontal shareholding never has any anticompetitive effects has thus now been rejected by five market-level studies and two cross-industry studies.

Nor can agencies and courts escape their responsibilities by throwing up their hands and saying the effects are unclear whenever dueling empirical studies exist. For most of these seven studies, there is no conflicting study. Even when a conflicting study does exist, agencies and courts have to engage the merits and reach judgments about which study used a better methodology to address the issue. Given the flaws identified in Sections I.D-E, the counter-studies provide no sound basis for concluding that the issue is empirically ambiguous in airline or banking markets, nor for concluding that high levels of horizontal shareholding in concentrated markets do not generally increase profits and decrease investment. Even if the results of the counter-studies were valid, they would not "disprove" effects, because all they show is that under their modified data or assumptions, their results are statistically insignificant and can reject neither the hypothesis of no effects ***nor*** the hypothesis of anticompetitive effects. For example, the anticompetitive effects found by the Airline Study are all within the standard error bounds of the counter-studies failing to find statistically significant effects. Thus, the latter cannot really disprove the former, because the results of the former are within the confidence interval of the latter. Further, in the banking industry, the only counter-study on the effects of horizontal shareholding expressly states that its findings are preliminary because it relies on 13F data with known irregularities that its authors have not yet investigated

[172] 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 ¶¶ 12, 15 (Dec. 6, 2017) [hereinafter "US OECD Note"]; Phillips, *supra* note , at 3-5; Ginsburg & Klovers, *supra* note , at ¶¶ 2, 6; Capital Markets Committee, *supra* note , at 1-2, 6-7. Some also argue that the causal mechanisms or horizontal shareholder incentives to create anticompetitive effects are unproven or implausible, but I debunk such claims in another article. *See* Elhauge, *The Causal Mechanisms, supra* note .
[173] *Supra* Part I.B-D.

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and corrected.[174] It is thus particularly surprising that those urging inaction on horizontal shareholding have claimed that this counter-study affirmatively supports their claim that horizontal shareholding has uncertain empirical effects on banking fees.[175]

Moreover, the agencies cannot really defend current enforcement practices based on empirical uncertainty because its current practices rest on an affirmative empirical premise. Current practices rely on HHIs when assessing mergers and stock acquisitions, but relying on HHIs is not neutral about whether horizontal shareholding has anticompetitive effects. To the contrary, HHI measures assume that horizontal shareholding has ***zero*** effect on competitive interactions. Likewise, when the agencies rely on merger simulation models, those models assume that horizontal shareholding has no effect on firm incentives. We certainly lack any theoretical or empirical basis for assuming that horizontal shareholding has zero effect, yet the agencies are effectively relying on that assumption all the time when they make predictions about the likely effects of mergers and stock acquisitions.

In any event, recall that my proposal is simply that antitrust agencies consider horizontal shareholding when assessing mergers and cross-shareholdings and investigate any markets with a sufficiently high level of horizontal shareholding (ΔMHHI > 200) and product market concentration (MHHI > 2500), in order to determine whether the horizontal shareholding has any anticompetitive effects in that market.[176] This proposed consideration and investigation would not result in enforcement actions unless the agency determined that anticompetitive effects likely did empirically exist in that market, and it could not result in antitrust liability unless the agency could prove those likely effects to a court of law. Thus any empirical uncertainty would be resolved in the enforcement actions anyway. Neither the flawed critiques of the airline and banking studies, nor the flawed study claiming no systematic effect across all industries, provide any justification for refusing to even consider or investigate whether horizontal shareholding has anticompetitive effects in any market.

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[174] *Supra* Part I.D.3; Gramlich & Grundl, *supra* note , at 1, 4.

[175] US OECD Note, *supra* note , at ¶ 12 & n.26, ¶ 15; Phillips, *supra* note , at 3-4 & n.6, Ginsburg & Klovers, *supra* note , at ¶ 2 & n.7, ¶ 6; Capital Markets Committee, *supra* note , at 8.

[176] Elhauge, *supra* note 2, at 1303. I thus propose the same sort of case-by-case approach that the US antitrust agencies have indicated they would take if and when they were convinced that specific horizontal shareholdings had anticompetitive effects. US OECD Note, *supra* note , at ¶ 3.

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II. THE REMEDY PROVIDED BY U.S LAW ON STOCK ACQUISITIONS

My argument that Clayton Act §7 bans any horizontal shareholding that has anticompetitive effects was straightforward.[177] Clayton Act §7 prohibits stock acquisitions that may substantially lessen competition. Thus, the stock acquisitions that create horizontal shareholdings are illegal whenever those horizontal shareholdings are shown to have created actual or likely anticompetitive effects. As I showed, the solely-for-investment "exception" is no obstacle for two reasons. First, a stock acquisition can be solely for investment only if the investor does not vote or otherwise influence corporate behavior at all, which is rarely the case for leading horizontal shareholders.[178] Second, even if a stock acquisition were solely for investment, that does not really create an exception, but rather merely changes the standard of proof from "may" substantially lessen competition to instead require evidence that the stock acquisition was intended to have anticompetitive effects or actually has or likely would have anticompetitive effects.[179] Because my recommendation was to bring enforcement actions when horizontal stock acquisitions were shown to have actually raised prices or be likely to do so, any such change in the standard of proof would not provide any obstacle.

Since then, the legal literature has gotten only stronger in support of my analysis. The Areeda-Hovenkamp antitrust law treatise now concurs with my conclusion that Clayton Act §7 condemns any stock acquisitions that create horizontal shareholdings that have actual or likely anticompetitive effects, notwithstanding the so-called solely-for-investment "exception."[180] Nonetheless, some have critiqued my analysis. I address administrability critiques in Section *II.A,* and I rebut legal critiques, in Section *II.B.*

A. The Legal Remedy Creates No Insuperable Administrability Problems

Posner, Scott Morton, and Weyl agree with my reading of the Clayton Act, but they have raised the administrability concern that my approach means the legality of one horizontal stock acquisition can turn on the existence of other, often later, horizontal stock acquisitions.[181] However, the Areeda-Hovenkamp treatise explicitly recognizes the validity of this approach, and this approach is the one traditionally used when anticompetitive effects turn on the collective effect of restraints of trade

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[177] Elhauge, *supra* note 2, at 1302-04.
[178] *Id.* at 1305-1307.
[179] *Id.* at 1305, 1307-09.
[180] AREEDA & HOVENKAMP, ANTITRUST LAW ¶¶ 1203c, 1204b (Sept. 2017).
[181] Posner, Scott Morton, & Weyl, *supra* note , at 677-78, 691-94.

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imposed by multiple suppliers, such as exclusive dealing or vertical price-fixing.[182] The underlying economic reality is that the anticompetitive effects of horizontal shareholdings turn on the collective impact of multiple horizontal stock acquisitions. Sensible legal regulation should thus take into account the fact that the competitive effects of one shareholder's horizontal stock acquisitions depend on the horizontal stock acquisitions of others. It is probably for this reason that the Posner-Scott Morton-Weyl proposal ultimately does make the legality of individual horizontal stock acquisitions turn on the existence of others.[183] At least one of the authors of Posner-Scott Morton-Weyl also now agrees that (1) when the aggregation of horizontal stock acquisitions from multiple institutional investors creates the relevant anticompetitive harm, the investors should all be sued rather than focusing on the more recent stock acquisitions; and (2) the legality of stock acquisitions (including horizontal shareholdings) depends on their effects at the time of trial, not the time of acquisition.[184]

After all, U.S. antitrust law is crystal clear that an initially legal stock acquisition becomes illegal if subsequent events mean that continuing to hold the stock would have anticompetitive effects. As the U.S. Supreme Court stressed in *ITT Continental Baking*:

> We need not go beyond the Clayton Act itself to conclude that 'acquisition' as used in § 7 of the Act means holding as well as obtaining assets. … Thus, the framers of the Act did not regard the terms 'acquire' and 'acquisition' as unambiguously banning only the initial transaction of acquisition; rather, they read the ban against 'acquisition' to include a ban against holding certain assets…. '[A]cquisition' can mean, and in the context of § 7 of the Clayton Act does mean, both the purchase of rights in another company and the retention of those rights… [T]here is a violation 'any time when the acquisition threatens to ripen into a prohibited effect.' ... Thus, there can be a violation at some later time even if there was clearly no violation—no realistic threat of restraint of commerce or creation of a monopoly—at the time of the initial acts of acquisition. Clearly, this result can obtain only because 'acquisition' under § 7 is not a discrete

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[182] AREEDA & HOVENKAMP, *supra* note , ¶¶ 1203e, 1204; FTC v. Motion Picture Advertising Service, 344 U.S. 392 (1953); Leegin Creative Leather Products v. PSKS, Inc., 551 U.S. 877, 897 (2007); EINER R. ELHAUGE, UNITED STATES ANTITRUST LAW AND ECONOMICS 343-46 (3rd ed. 2018) [hereinafter "ELHAUGE, US ANTITRUST"].

[183] Elhauge, *The Growing Problem of Horizontal Shareholding,* 3 ANTITRUST CHRONICLE 1, 15 (June 2017)

[184] Scott Morton & Hovenkamp, *supra* note , at 2037, 2044-47.

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transaction but a status which continues until the transaction is undone.[185]

Indeed, in *du Pont,* the U.S. Supreme Court considered minority stock acquisitions that were deemed benign when initially made, and the Court condemned them based on anticompetitive effects that arose nearly ***40 years*** after the stock was acquired.[186]

Administrability concerns have also been overblown based on an implicit premise that my approach would automatically make horizontal shareholding illegal whenever MHHI exceeds 2500 and ΔMHHI exceeds 200. It would not. Such levels of horizontal shareholding and market concentration would under my analysis instead simply trigger investigation to determine whether, in fact, those horizontal stock acquisitions had raised prices or were likely to do so.[187] Proving that those price effects would "substantially" lessen competition has always been understood to include some showing that the price effects would persist or had persisted over some significant period of time. Indeed, the very SSNIP test used to define markets in order to infer anticompetitive effects from a Clayton Act acquisition depends on the pricing power being "non-transitory."[188] Likewise, market power had always been understood to require some showing that the power to raise prices is durable rather than temporary.[189] Further, as a practical matter, proving anticompetitive effects from past horizontal stock acquisitions will usually be possible only when those horizontal shareholdings were sustained for long enough to be able to statistically measure their price effects.[190]

Thus, it is not true that under my approach horizontal stock acquisitions would shift rapidly from legality to illegality based on subsequent stock transactions and the mechanical application of an MHHI test. Illegality would require a showing that

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[185] United States v. ITT Continental Baking Co., 420 U.S. 223, 240-242 (1975). *See also* AREEDA & HOVENKAMP, *supra* note , ¶¶ 1203e, 1204 ("changed circumstances may render unlawful the continued holding of noncontrolling stock whose original acquisition was lawful…. [C]ontinued holding of stock violates §7 if a current acquisition would do so. This conclusion is clearest when the anticompetitive threat results from subsequent active use of the acquired stock, but it is not limited to that case.")

[186] United States v. E.I. du Pont de Nemours & Co., 353 U.S. 586. 588-589, 592, 597-598 (1957).

[187] Elhauge, *supra* note 2, at 1303.

[188] U.S. DOJ-FTC, Horizontal Merger Guidelines § 4.1.1 (2010).

[189] Reazin v. Blue Cross & Blue Shield of Kan., 899 F.2d 951, 968 (10th Cir. 1990) ("market power, to be meaningful for antitrust purposes, must be durable"); AREEDA & HOVENKAMP, *supra* note , ¶ 501 ("Market power need not trouble the antitrust authorities unless it is both substantial in magnitude and durable.")

[190] Indeed, the adverse price effects that were confirmed in the Airline Study come only from long-holding horizontal shareholders, with short-holding horizontal shareholders having no significant effect on prices. Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1546-47.

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horizontal shareholdings have adverse price effects for some significant time period, giving horizontal stockholders plenty of time to divest themselves of stockholdings that seem likely to contribute to such adverse effects.

B. The Legal Critiques Are Clearly Mistaken

Rock and Rubinfeld originally critiqued my legal analysis based on their claims that (1) Clayton Act § 7 only prohibits stock acquisitions that confer control and (2) the solely-for-investment exception immunizes an investor whenever it exercises influence through ordinary investor activities like voting their shares or communicating with management.[191] But their first claim conflicts with holdings by the U.S. Supreme Court that "A company need not acquire control of another company in order to violate the Clayton Act," and by the Sixth Circuit in *Dairy Farmers* that "We do not agree with the ... conclusion that a lack of control or influence precludes a Section 7 violation" because "even without control or influence, an acquisition may still lessen competition."[192] Their second claim conflicts not only with the above analysis about the solely-for-investment "exception", but also with the fact that Clayton Act § 7 expressly states that even stock acquisitions made solely for investment lose any exemption if the acquirer uses the stock "by voting or otherwise" to bring about anticompetitive effects.[193]

After I pointed out that both their claims were clearly incorrect,[194] Rock and Rubinfeld acknowledged that (given cases like *Dairy* Farmers) they now agree that "a stock acquisition that lessens competition is a prima facie violation of Section 7, whether or not it provides control or influence."[195] They claim that this proposition "is subject to the 'solely for investment' exemption, which was not at issue in *Dairy Farmers*."[196] But in fact *Dairy Farmers* specifically rejected the argument that "a lack of control over an acquiree corporation placed such acquisition in the 'solely for investment' exception" in a way that meant "control is a necessary requirement for a Section 7 violation."[197] The court cited this rejection of the claim that a lack of control immunized an acquisition under the solely for investment exception in order

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[191] Rock & Rubinfeld, *Defusing, supra* note , at 18-24.
[192] Denver & Rio Grande W. R.R. v. United States, 387 U.S. 485, 501 (1967); United States v. Dairy Farmers of Am., Inc., 426 F.3d 850, 859–60 (6th Cir. 2005); *see also* AREEDA & HOVENKAMP, *supra* note , ¶ 1203.
[193] 15 U.S.C. § 18 (2012).
[194] Elhauge, *The Growing Problem, supra* note , at 10-12.
[195] Rock & Rubinfeld, *Antitrust*, *supra* note , at 262.
[196] *Id.*
[197] *Dairy Farmers,* 426 F.3d at 860 n.3.

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to support the court's conclusion that "even without control or influence," an acquisition that had anticompetitive effects violated the Act, stressing that "[t]he key inquiry is the effect on competition, regardless of the cause."[198]

Indeed, Rock and Rubinfeld ultimately admit that if they were convinced that horizontal shareholding by institutional investors did have anticompetitive effects, then they would agree that it would be banned by Clayton Act § 7.[199] Their claim that the Clayton Act does not cover horizontal shareholding by institutional investors with individual stakes of less than 15% is thus not really a legal claim that such horizontal shareholding is immunized even when it has anticompetitive effects. It is rather an economic claim that such horizontal shareholding does not actually have such anticompetitive effects. Their economic claim is wrong for reasons detailed in Part I, but in any event their admissions means that they effectively concede that I am right on the legal conclusion that when horizontal shareholding ***does*** have anticompetitive effects, it violates Clayton Act § 7.

Ginsburg and Klovers raise various legal objections, none of which are valid. ***First***, they complain that my statutory analysis relies on the "plain meaning" or "literal meaning" of the statute.[200] This is an odd objection coming from Judge Ginsburg, who joined an opinion stressing that: "The plain meaning of legislation should be conclusive, except in the 'rare cases [in which] the literal application of a statute will produce a result demonstrably at odds with the intentions of its drafters.'"[201] Given that principle and their concession that statutory plain meaning supports my interpretation, they should have concluded that the statute does cover anticompetitive horizontal shareholding, given that they offer no evidence that this result is demonstrably at odds with the intentions of the Congress that enacted the Clayton Act.

Instead, Ginsburg and Klovers argue that the plain meaning rule does not apply to antitrust statutes.[202] They argue that the antitrust rule of reason violates the plain meaning rule because it reads the Sherman Act to condemn only unreasonable restraints, rather than every restraint of trade.[203] But the rule of reason is compatible with plain meaning because "the word 'restraint' inherently suggests some ***net*** restraint of trade, for trade could hardly be said to be restrained if it were

[198] *Id.* at 860.
[199] Rock & Rubinfeld, *Antitrust*, *supra* note , at 262.
[200] Ginsburg & Klovers, *supra* note , at ¶¶ 29, 30, 32, 47.
[201] Engine Mfrs. Ass'n, ex rel. Certain of its Members v. EPA, 88 F.3d 1075, 1088 (D.C.Cir.1996) (citations omitted).
[202] Ginsburg & Klovers, *supra* note , at ¶ 29.
[203] *Id.*

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increased."[204] Further, on the specific issue of which investors are covered by the Clayton Act § 7, binding Supreme Court authority stresses that the statute should be interpreted according to its "plain language."[205] Anyway, the proposition that antitrust laws should be read functionally, rather than formalistically, hardly supports reading formalistic limits into the Clayton Act to make it inapplicable even when horizontal stock acquisitions do have anticompetitive effects. Such a functional approach would instead interpret the Act to apply whenever stock acquisitions have anticompetitive effects.

Second, Ginsburg and Klovers argue that my argument should be rejected based on their mistaken premise that the U.S. antitrust agencies, as well as Rock and Rubinfeld, concluded that Clayton Act § 7 applies to cross-shareholding but not to horizontal shareholding.[206] Instead, the U.S. antitrust agencies stressed that if they were convinced that horizontal shareholding had anticompetitive effects, then they would consider bringing suit under the Act.[207] Likewise, as noted above, Rock and Rubinfeld ultimately conceded that horizontal shareholding would violate the Act if anticompetitive effects were proven.

Moreover, a deeper dive into the statutory language, structure, and legislative history clearly refutes Ginsburg and Klovers' interpretation that Clayton Act § 7 applies to cross-shareholding but not to horizontal shareholding. Clayton Act § 7 actually has two provisions, which provide:

> (1) "***No person engaged in commerce*** or in any activity affecting commerce shall acquire, directly or indirectly, the whole or any part of the ***stock*** … ***of another person engaged also in commerce*** or in any activity affecting commerce, where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition…."
>
> (2) "***No person*** shall acquire, directly or indirectly, the whole or any part of the ***stock***. . . of ***one or more persons engaged in commerce*** or in any activity affecting commerce, where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition, of such stocks or assets, or of the use of such stock by the voting

[204] ELHAUGE, US ANTITRUST, *supra* note , at 54.
[205] United States v. E.I. du Pont de Nemours & Co., 353 U.S. 586, 597-98 (1957).
[206] Ginsburg & Klovers, *supra* note , at ¶¶ 31, 33, 35.
[207] US OECD Note, *supra* note , at ¶¶ 4, 15.

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> or granting of proxies or otherwise, may be substantially to lessen competition…"[208]

One could perhaps argue that the first provision should be interpreted to apply to business cross-shareholding, but not to horizontal shareholding by a noncommercial investor in multiple business. However, this argument would not help in the typical case in which the horizontal shareholders are institutional investors, given that institutional investors are "engaged in commerce." In any event, even if one accepted that interpretation, the second provision expressly goes beyond any such limit to cover situations when any person (whether or ***not*** engaged in commerce) acquires stock in multiple commercial entities in a way that lessens competition among them. In short, the second provision explicitly extends the Act in a way that covers situations in which an investor's acquisition of shareholdings in horizontal competitors lessens competition among them. There would be no point to the second provision unless it meant to reject the position that the Act covers only cases where one commercial entity acquires stock in another. The structure of the statute thus clearly rejects the Ginsburg-Klovers assertion that the statute does not apply to horizontal shareholding even when anticompetitive effects are proven.

Ginsburg and Klovers argument to the contrary is that the statute should be interpreted to exclude horizontal shareholding because, in a 2017 OECD paper, the U.S. antitrust agencies stated that they had litigated cases involving cross-shareholding, but had not yet litigated any case involving horizontal shareholding.[209] But they are mistaken both in their premise about what the agencies stated and in their inference from that premise.

As to their premise, in fact the agencies were careful to say only that they had not yet "litigated a case involving common ownership ***by a single institutional investor***."[210] The agencies acknowledged that the DOJ had brought "a case ***against an individual*** under Section 7 for common ownership in Columbia Pictures and MGM Pictures."[211] The agencies noted that the DOJ lost that case,[212] but the reason it lost was not a legal ruling that such horizontal shareholding was not covered by the statute. Rather, the DOJ lost that case because the horizontal shareholder there effectively gave up his voting rights by committing to vote his stock as the other shareholders did, which the court concluded triggered the solely-for-investment

[208] Clayton Act § 7, 15 U.S.C. § 18 (emphasis added).
[209] Ginsburg & Klovers, *supra* note , at ¶ 33, 35.
[210] US OECD Note, *supra* note , at ¶ 3 (emphasis added).
[211] *Id.* at ¶ 3 n.4 (emphasis added).
[212] *Id.*

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exception.[213] The agencies also noted that the FTC had brought another case against horizontal shareholding by "***two*** private equity firms."[214] The agencies noted that in that case the two horizontal shareholders had strong influence over the corporations at issue,[215] but that goes to the distinct issue of what degree of influence is required. It does not alter the fact that in that case the FTC must have interpreted the statute to extend to horizontal shareholding, rather than be limited to cross-shareholding. Further, after the 2017 OECD paper, the FTC secured a 2018 settlement that required a divestiture to prevent a merger from resulting in anticompetitive horizontal shareholding.[216] Again, the FTC stressed the influence of the horizontal shareholders, but requiring such a divestiture necessarily implies an interpretation that the statute does cover horizontal shareholding.

In any event, even if the agencies have never previously brought cases against anticompetitive horizontal shareholding involving institutional investors, one cannot properly infer from that premise any legal immunity for such horizontal shareholding. Until recently, the anticompetitive potential of horizontal shareholding by institutional investors was not appreciated, and thus there would have been no motive to bring such a case. That hardly creates any precedent holding that the statute does ***not*** extend to such horizontal shareholding when it has anticompetitive effects. Even less does that show any demonstrable Congressional intent to deviate from the plain meaning of the statute, which does cover anticompetitive horizontal shareholding.

Third, Ginsburg and Klovers argue that the "solely for investment" provision of Clayton Act § 7 means the statute does not apply unless the stock acquirer intended to obtain influence or control from the time of the acquisition.[217] One initial problem with this claim is that it does not bear on whether the statute covers horizontal shareholding. It would rather, if valid, indicate a general requirement of having to prove an intent to influence for any stock acquisition, whether it involved horizontal shareholding or cross-shareholding . Nor is there any basis for Ginsburg and Klovers' apparent assumption that such a showing could typically not be made for horizontal shareholders. By definition, such shareholders are the leading shareholders at competing firms, and any large investor that acquires enough stock to be one of the leading shareholders at a firm necessarily knows that such

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[213] United States v. Tracinda Inv. Corp., 477 F. Supp. 1093, 1098 (C.D. Cal. 1979).
[214] US OECD Note, *supra* note , at ¶ 9 n.14 (emphasis added).
[215] *Id.*
[216] Red Ventures Holdco and Bankrate, In the Matter of (April 27, 2018)s, https://www.ftc.gov/enforcement/cases-proceedings/file-no-1710196/red-ventures-holdco-bankrate.
[217] Ginsburg & Klovers, *supra* note , at ¶¶ 33, 41-43.

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acquisition will give it influence, thus giving it the objective intent to obtain influence.

In any event, Ginsburg and Klovers are clearly mistaken in their claim that Clayton Act § 7 requires an intent to control or influence from the time of acquisition. The solely-for-investment provision states that Clayton Act § 7's prohibition does "not apply to persons purchasing such stock ***solely*** for investment ***and*** not using the same ***by voting or otherwise*** to bring about, or in attempting to bring about, the substantial lessening of competition."[218] Even if we (quite mistakenly) assumed that the "solely for investment" clause was satisfied whenever the acquirer lacked an intent to control or influence from the time of acquisition, the "and" clause makes perfectly clear that that would not suffice to establish the exception. Rather, the acquirer must ***also*** show that it did not use the stock to lessen competition substantially or to attempt to do so. If the acquirer actually uses the stock "by voting or otherwise" to have such anticompetitive effects, then the stock acquisition is illegal regardless of the initial intent for the acquisition. Because the anticompetitive effects of horizontal shareholding generally flow from the exercise of voting rights, this means the exception clearly does not apply to such cases. Moreover, the "or otherwise" clause means that the exception also does not apply even if the anticompetitive effects do not flow from the exercise of voting rights, but rather because the stock is used to reduce incentives to compete.

Consistent with my statutory interpretation, the U.S. Supreme Court in *du Pont* expressly held that: "***Even when*** the purchase is solely for investment, the plain language of § 7 contemplates an action ***at any time*** the stock is used to bring about, or in attempting to bring about, the substantial lessening of competition."[219] Thus, even if the initial acquisition was solely for investment, it becomes illegal if at any later time the use of the stock brings about a lessening of competition. The Supreme Court later confirmed in *Denver & Rio Grande* that the statute thus meant that: "A company need not acquire control of another company in order to violate the Clayton Act."[220] The Supreme Court also later confirmed in *ITT Continental Baking* that the statute also meant that: "there is a violation 'any time when the acquisition threatens to ripen into a prohibited effect.' ... Thus, there can be a violation at some later time even if there was clearly no violation—no realistic threat of restraint of commerce or creation of a monopoly—at the time of the initial acts of acquisition."[221] The

[218] 15 U.S.C. § 18 (emphasis added).
[219] United States v. E.I. du Pont de Nemours & Co., 353 U.S. 586. 588-589, 592, 597-598 (1957) (emphasis added).
[220] Denver & Rio Grande W. R.R. v. United States, 387 U.S. 485, 501 (1967).
[221] United States v. ITT Continental Baking Co., 420 U.S. 223, 240-242 (1975).

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Supreme Court has thus explicitly and repeatedly rejected not only Ginsburg and Klovers' claim that § 7 requires showing an intent to control or influence, but also their claim that it requires showing illegality at the time of the initial acquisition.

The fact that the statutory text plainly rejects Ginsburg and Klovers' interpretation is actually even more clear for horizontal shareholding than for cross-shareholding . The reason is that the second provision of Clayton Act § 7 expressly bans horizontal shareholding when "the effect of such acquisition**,** of such stocks or assets, ***or*** of the use of such stock by the voting or granting of proxies or otherwise, may be substantially to lessen competition."[222] In other words, the statute expressly applies to horizontal shareholding whenever the anticompetitive effect is caused by (1) the acquisition, (2) the stock itself, ***or*** (3) the use of the stock. This provision thus expressly rejects the proposition that the anticompetitive effects have to be traced to any intent to control or influence at the moment of acquisition or even to any subsequent use of the stock, by saying the effect could be from the holding of the stock itself. Thus, if the mere holding of the stock creates anticompetitive incentives that are likely to substantially lessen competition, then that suffices regardless of the intent or use of the stock to influence corporate decisionmaking. This is consistent with Supreme Court cases that interpret an illegal "acquisition" to include continuing to hold stock when that stockholding has anticompetitive effects.[223]

Ginsburg and Klovers' position also conflicts with the legislative history, which indicates that one of the aims of the 1950 Clayton Act amendments was to address stockholdings in multiple corporations arising from acquisitions going back to 1940 or earlier.[224] This legislative history indicates a Congressional intent to condemn the ongoing anticompetitive effects of common stockholdings that resulted from old stock acquisitions, rather than just to address the immediate effects of new or recent stock acquisitions.

Lower court decisions also conflict with Ginsburg and Klovers' statutory interpretation. The Sixth Circuit held in *Dairy Farmers* that: "We do not agree with the ... conclusion that a lack of control or influence precludes a Section 7 violation" because "even without control or influence, an acquisition may still lessen competition."[225] It thus flatly rejected Ginsburg and Klovers' claim that control or influence is required. In *Anaconda* and *Tracinda,* two federal district courts directly rejected Ginsburg and Klovers' claim that showing an acquisition is solely for investment suffices to exempt it the Act, holding instead that all such a showing did

222 Clayton Act § 7, 15 U.S.C. § 18 (emphasis added).
223 *Supra* Part II.A.
224 HR Rep 1191 at 2-3, 11-13, 81st Cong, 1st Session (1949).
225 United States v. Dairy Farmers of Am., Inc., 426 F.3d 850, 859–60 (6th Cir. 2005).

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was change the substantive standard of liability from "a reasonable probability of a lessening of competition" to "'using the (stock) by voting or otherwise to bring about, or in attempting to bring about, the substantial lessening of competition."[226]

In response, Ginsburg and Klovers argue that we should ignore the plain meaning of what the cases say,[227] just as they urge ignoring the plain meaning of what the statute says.[228] For different cases, they offer different reasons for ignoring what the cases say, none of which are convincing. For the *du Pont* and *Dairy Farmers* cases, they argue that their statements should be ignored as dicta, because in those cases the acquirers did have substantial influence and in the *du Pont* case intended to use it to reduce competition from the time of acquisition.[229] But the point of these cases is that they offer authoritative interpretations of what the statutory standard is, not whether the evidence in those cases happened to exceed that statutory standard. Nor is it clear how Ginsburg and Klovers leap from an observation that influence or an intent to influence was present in these cases to a conclusion that these cases support their claim that such influence or intent is required for liability, when the cases say precisely the opposite.

For the *Denver & Rio Grande* and *ITT Continental Baking* cases, Ginsburg and Klovers argue that we should ignore what they said because they "merely applied the logic of *DuPont*" and thus add nothing to it.[230] But what they add is that the statutory interpretation of *du Pont* was necessary to the holdings of *Denver & Rio Grande* and *ITT Continental Baking,* thus making clear that this statutory interpretation is not dicta, contrary to Ginsburg and Klovers' argument.

In *Denver & Rio Grande,* the question was whether the Interstate Commerce Commission (ICC) had to hold a hearing to consider the legality of an acquisition of 20% of a corporation's stock.[231] The appellees argued that because Interstate Commerce Act (ICA) § 5 allowed the ICC to approve acquisitions that conferred control, the ICC should not consider anticompetitive effects from partial stock acquisitions under the general public interest standard of ICA § 20.[232] The Supreme Court rejected this argument because the ICC had a statutory obligation to enforce Clayton Act § 7, which the Court stressed did condemn partial stock acquisitions

[226] Anaconda Co. v. Crane Co., 411 F. Supp. 1210, 1219 (S.D.N.Y. 1975); United States v. Tracinda Inv. Corp., 477 F. Supp. 1093, 1098-99 & n.5 (C.D. Cal. 1979).
[227] Ginsburg & Klovers, *supra* note , at ¶¶ 40-46.
[228] *Id.* at ¶¶ 29, 30, 32, 47.
[229] *Id.* at ¶¶ 43-44.
[230] Ginsburg & Klovers, *supra* note , at ¶ 45-46.
[231] Denver & Rio Grande W. R.R. v. United States, 387 U.S. 485, 487-488 (1967).
[232] *Id.* at 496.

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that conferred no control if they produced anticompetitive effects.[233] The interpretation that Clayton Act § 7 condemned stock acquisitions that conferred no control but had anticompetitive effects was thus necessary to the Court's holding that the ICC had to hold a hearing, and clearly not dicta.

Ginsburg and Klovers assert that "*ITT Continental Baking* did not concern § 7 at all."[234] But *ITT Continental Baking* involved a Clayton Act § 7 enforcement action that resulted in a consent decree that prohibited "acquiring" other companies, and the question was whether that decree penalized only the initial act of acquisition or also continuing to hold the stock.[235] The Supreme Court concluded that it had to assume that the parties used the term "acquiring" with the specialized meaning of antitrust law, which under Clayton Act § 7 included continuing to retain a stockholding that had anticompetitive effects.[236] The interpretation that Clayton Act § 7 condemned the retention of stockholdings that had anticompetitive effects was thus necessary to the Court's holding that such retention was subject to penalties, and clearly not dicta.

For *Anaconda,* Ginsburg and Klovers argue that the court held that what matters is the acquirer's intent to control or influence, not whether it actually used the stock to lessen competition, because the court credited the defendant's representation that it had no intention of acquiring control and then found no § 7 violation.[237] But in fact, the court did not rely solely on the defendant's intent to establish that the acquisition was solely for investment: the court also relied on the fact that a consent order prohibited the stock from being used to lessen competition.[238] Further, even after considering those intentions and consent order, the court stressed that there was "nevertheless" an issue about whether the exemption applied because even if the acquisition was solely for investment, it could be illegal if the stock was later used to lessen competition.[239] The court did not hold that any initial intent immunized the acquirer from such liability. Rather, the court indicated that it was premature to consider liability from the use of stock, given that the stock had not yet been acquired, and that any later use of the stock to lessen competition would be a Clayton Act violation.[240]

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[233] *Id.* at 493-494, 496-497, 501-502.
[234] Ginsburg & Klovers, *supra* note , at ¶ 46.
[235] United States v. ITT Continental Baking Co., 420 U.S. 223, 225-226 (1975).
[236] *Id.* at 240-244.
[237] Ginsburg & Klovers, *supra* note , at ¶ 42.
[238] Anaconda Co. v. Crane Co., 411 F. Supp. 1210, 1218 (S.D.N.Y. 1975).
[239] *Id.* at 1218-19.
[240] *Id.* at 1219 ("It may well develop at trial that Crane has noninvestment motives not known to this Court or that Crane is attempting to use its shares to lessen competition. But as the proof has

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For *Tracinda,* Ginsburg and Klovers argue that we should ignore its clear statement that even an acquisition that was made solely for investment would be illegal if the stock were later used to lessen competition, based on their claim that *Tracinda* stated that whether stock is used to lessen competition turns on whether an intent to control exists.[241] But *Tracinda* said nothing of the sort.[242] To the contrary, *Tracinda* stressed that establishing the exemption required satisfying "a 2-pronged test: (1) a factual determination of whether the acquisition was made solely for investment; and (2) a factual determination of whether the stock is being used by voting or otherwise to bring about or attempt to bring about a substantial lessening of competition."[243] It was only the first prong that the court said mainly turned on "whether the stock was purchased for the purpose of taking over the active management and control of the acquired company."[244] The court then separately concluded that "the second prong of the investment exemption test" was satisfied because there was "no actual or threatened lessening of competition since the acquisition."[245] The fact that the court felt obliged to assess that issue clearly indicates that it recognized that even if there were no intent to control, liability would still exist if the stock were later used to lessen competition.

In short, six courts have interpreted Clayton Act § 7 in a way that corresponds to my interpretation of it and flatly contradicts the interpretation of Ginsburg and Klovers. Ginsburg and Klovers also argue that their interpretation is supported by the fact that, in their OECD submission, the U.S. antitrust agencies stated that "the investment-only exception applies unless the acquiring party intends to seek control

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developed thus far, Anaconda has failed to make out its Section 7 claim. I find that at this stage there is neither a probability of success nor serious questions going to the merits sufficient to warrant the granting of a preliminary injunction.")

[241] Ginsburg & Klovers, *supra* note , at ¶ 41.

[242] Ginsburg and Klovers base their assertion on linking a quote about using stock on page 1098 of the opinion with another quote on page 1100 about the absence of proof of intent, *id.,* but the court never linked the two. *See Tracinda*, 477 F. Supp. at 1098, 1100.

[243] *Tracinda*, 477 F. Supp. at 1098.

[244] *Id.* at 1099.

[245] *Id.* at 1101-1102. Ginsburg and Klovers oddly think this plain holding is contradicted by the fact that the court rejected the government's position that the standard should be whether the acquisition may substantially lessen competition. Ginsburg & Klovers, *supra* note , at ¶ 41 & n.99. But the court's rejection simply reflected the fact that, under the statute's plain language, showing an acquisition is solely for investment changes the substantive standard from whether the acquisition may substantially lessen competition to whether it was actually used to lessen competition or attempted to be so used. *Tracinda*, 477 F. Supp. at 1098.

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or influence."[246] But that is a mischaracterization of what the agencies stated.[247] Indeed, this characterization of the agencies' position is flatly in conflict with the U.S. antitrust agencies' merger guidelines, which provide that when a partial stock acquisition lessens incentives to compete, it can violate Clayton Act § 7 "even if cannot influence the conduct of the target firm."[248] Ginsburg and Klovers dismiss this contradiction with their claim based on their assertion that, in their OECD submission, the agencies stated that this section of the merger guidelines "is concerned more directly with cross-ownership".[249] But that is selective quotation: the full quote from the agencies was, "Although the section is concerned more directly with cross-ownership, ***it has some relevance to acquisitions resulting in common ownership*****.**"[250] In any event, whether the focus was on cross-shareholding is besides the point. The important fact is that the agencies in formal guidelines rejected the proposition that stock acquisitions could be illegal only when they were intended to seek control or influence, which is was the mistaken claim that Ginsburg and Klovers made and that they applied to cases involving cross-shareholding as well as horizontal shareholding.[251]

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[246] Ginsburg & Klovers, *supra* note , at ¶ 33.

[247] Ginsburg and Klovers based their claim on two things. First, the agencies stated that the exception reflected "an underlying policy of broad support for investment through stock purchases, when such purchases are not part of an effort to control or influence management of the firm." Ginsburg & Klovers, *supra* note , at ¶ 33 (quoting US OECD Note, *supra* note , at ¶ 6). But a policy of broad support is not the same thing as an absolute exception for all such investments. Second, Ginsburg and Klovers characterize the agencies as stating that "the investment-only exception applies to purchases of shares below 10%—or 15% for institutional investors—unless the stock is acquired 'with the intent of seeking control.'" *Id.* But that is not what the agencies said. Instead, the agencies stated that acquisitions of less than 10-15% that were "solely for investment" were exempt only from filing "premerger notification." US OECD Note, *supra* note , at ¶¶ 7-8. The scope of the premerger notification exemption is far broader than the substantive exception, and it is a legal error to conflate the two. Elhauge, *supra* note 2, at 1305-10. Moreover, although the agencies stated that an "intent of seeking control" would surely ***suffice*** to lose the premerger notification exemption, US OECD Note, *supra* note , at ¶ 7, the agencies never said such an intent to seek control was ***necessary*** to lose the premerger notification exemption.

[248] U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER Guidelines § 13 (Aug. 19, 2010)).

[249] Ginsburg & Klovers, *supra* note , at ¶ 29 n.67, ¶ 33.

[250] US OECD Note, *supra* note , at ¶ 9 (emphasis added).

[251] Ginsburg & Klovers, *supra* note , at ¶¶ 41-43.

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III. NEW LEGAL THEORIES

I now lay out some new legal theories for tackling horizontal shareholding. These new legal theories are useful for two reasons. First, as discussed in Part II, doubts have been raised about whether Clayton Act §7 can tackle horizontal shareholding, either because of the solely-for-investment exception or because of arguments that it cannot address old stock acquisitions. Although I showed in Part II that those doubts are misplaced, I show below in Section *III.A* that even if they were valid, horizontal shareholding that has anticompetitive effects can be tackled under the Sherman Act as an ongoing contract or combination that restrains competition.[252] Indeed, the historic trusts that motivated the creation of antitrust law were horizontal shareholders. Second, even if Clayton Act §7 provides a remedy for horizontal shareholding in the U.S., it would not do so in the EU or many other nations, which have more narrow merger control laws. Section *III.B* thus lays out some new legal theories for how to tackle horizontal shareholding under EU competition law. I show that while EU merger control law could be interpreted to cover a subset of anticompetitive horizontal shareholding, horizontal shareholding can more fully be addressed as an agreement or concerted practice under TFEU 101 or as collective dominance that leads to excessive pricing under TFEU 102.

A. Tackling Horizontal Shareholding under the Sherman Act

Sherman Act § 1 applies to any "contract, combination in the form of trust or otherwise, or conspiracy" that imposes a net restraint on competition.[253] The "contract" element is clearly met because horizontal shareholding involves formal contracts between corporations and common investors. Those contracts are what give horizontal shareholders rights to vote for corporate management and a share of corporate profits. Of course, shareholder-corporate contracts ordinarily do not restrain competition. But they are contracts that clearly meet the statute's agreement requirement, and if the shareholder-corporate contracts between horizontal shareholders and competing corporations incentivize those corporations to behave less competitively, they impose a net restraint on competition. Thus, whenever horizontal shareholdings have anticompetitive effects, they constitute contracts in restraint of trade that violate Sherman Act § 1.

This conclusion holds even though each individual shareholder-corporate contract would not, standing alone, restrain competition. It suffices that the horizontal

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[252] In my earlier article, I briefly noted this possibility, without elaborating the basis for this legal theory. Elhauge, *supra* note 2, at 1304.

[253] 15 U.S.C. § 1; ELHAUGE, US ANTITRUST, *supra* note , at 54-55.

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shareholders have contracts with competing firms and that the effect of the voting and profit rights in those contracts is to lessen competition between those firms. Antitrust has long judged the anticompetitive effects of multiple contracts based on their aggregate impact, such as when it judges exclusive dealing contracts based on cumulative foreclosure or vertical price-fixing contracts based on whether they are sufficiently widespread to facilitate oligopolistic coordination.[254]

Indeed, the reason that the Sherman Act was called an anti*trust* law was that it aimed to prohibit certain trusts, and thus trusts were horizontal shareholders. These pre-Sherman Act trusts were formed by having the stockholders of the competing firms transfer their stock to the trust, in exchange for a trust certificate entitling each stockholder to a share of the trust's income.[255] The trusts then used their horizontal shareholdings to elect directors of each firm that would refrain from competition. The firms paid their profits as dividends to the trust, which then distributed those profits to the holders of trust certificates. The shareholder-corporate contracts between the trust and each individual corporation did not, standing alone, restrain competition. But because the trust was a horizontal shareholder that had such contracts with competing corporations, those contracts did restrain competition. The same is true when institutional investors are the horizontal shareholders that have shareholder-corporate contracts with competing corporations.

The statute also applies to any "combination in the form of trust or otherwise."[256] This text clearly indicates that the statute deems trusts one form of "combination" between the competing firms. It does so even though the only thing combining the firms is the fact that their shareholder rights are held by a common horizontal investor, namely the trust. Likewise, if the shareholders in two competing firms exchange their shares in those firms for shares in a holding corporation that becomes a controlling horizontal shareholder in the two competing firms, then even if the arrangement is not a "trust", it constitutes a "combination" in restraint of trade that is covered by Sherman Act § 1.[257] Thus, antitrust treatment of both trusts and holding corporations establishes that showing a horizontal agreement or combination does not require proving a direct agreement between two competing firms, but rather can be proven through shareholder contracts between each firm and

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[254] FTC v. Motion Picture Advertising Service, 344 U.S. 392 (1953); Leegin Creative Leather Products v. PSKS, Inc., 551 U.S. 877, 897 (2007); ELHAUGE, US ANTITRUST, *supra* note , at 343-46.

[255] *See* Sherman Anti-Trust Act (1890), available at https://www.ourdocuments.gov/print_friendly.php?flash=true&page=&doc=51&title=Sherman+Anti-Trust+Act+%281890%29.

[256] 15 U.S.C. § 1; ELHAUGE, US ANTITRUST, *supra* note , at 54-55.

[257] Northern Sec. Co. v. United States, 193 U.S. 197, 325-27 (1904).

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common horizontal shareholders that indirectly link those two competing firms. Accordingly, when a common set of institutional investors are leading shareholders at competing firms, the shareholder contracts between those firms and their common horizontal shareholders also satisfy the contract or combination requirement of Sherman Act § 1.

One might mistakenly think that, although horizontal shareholdings meet the contract or combination requirement, they would not constitute anticompetitive restraints of trade unless they also exercised control and specified particular firm prices or conduct. But that does not follow. Although the pre-Sherman Act trusts did tend to engage in that level of anticompetitive micromanagement, the statute banned trusts whether they did so or not. Such specific control is not required for an anticompetitive restraint. For example, agreements to exchange certain sorts of information or engage in other practices that facilitate oligopolistic coordination have long been illegal, even though they do not control or specify any particular price.[258]

Nor is it necessary that the agreement either specify or coordinate prices, as long as the agreement has some other anticompetitive effect, such as diminishing incentives to compete. Consider the following hypothetical. Suppose competing firms both contracted with a third entity, let's call it the competition referee. Under each of their separate contracts with the referee, each firm agrees that if it takes a sale away from another firm that contracts with the referee, then the firm's owners must pay a fine to the referee. In exchange, the referee agrees that if a sale is taken away from the first firm, the referee will pay the firm's owners the fine paid by the owners of the firm that took away that sale. The referee would not control either firm nor specify any particular price that either should charge. But there is no doubt that this creates a horizontal agreement that discourages, and thus restrains, ordinary competitive behavior and would thus be covered by Sherman Act § 1.

Horizontal shareholdings have the same restraining effect as such referee contracts, because they mean that firms acting on behalf of their shareholders will realize that, when they take away sales from a rival firm, their owners effectively pay a fine equal to the profits that those horizontally-invested owners lose from the rival firm when it loses a sale.[259] This effect will restrain the incentives of both firms to compete, even if their managers never discuss specific prices or conduct with each other.

Ginsburg and Klovers oddly assert that my showing that the agreements involved in horizontal shareholding decrease incentives to compete ***without*** requiring any

[258] ELHAUGE, US ANTITRUST, *supra* note , at 628, 661-703.
[259] Elhauge, *supra* note 2, at 1269-70; *supra* Part I.

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coordination among firms somehow implicitly rests on a claim that mere coordination (i.e., conscious parallelism) is illegal.[260] In fact, my point is precisely the opposite: the agreements restrain incentives to compete (much like a merger agreement might) ***even without*** any post-agreement coordination, and thus are restraints of trade whether or not such coordination is shown. Further, even if the agreements involved in horizontal shareholding ***did*** create harm by facilitating coordination, Ginsburg and Klovers mistakenly ignore the clear doctrine that agreements to facilitate oligopolistic coordination are illegal, even when pure coordination itself would not be.[261]

To be sure, horizontal shareholdings by institutional investors do differ from pre-Sherman Act trusts and my referee contracts in one important respect. Namely, those trusts and referee contracts involve horizontal agreements with no plausible procompetitive justification, and thus are illegal per se. In contrast, horizontal shareholdings by institutional investors do provide investment capital and diversification benefits, and thus they should be reviewed under the rule of reason, rather than condemned per se. Because those potential benefits suffice to trigger rule-of-reason review, anticompetitive effects must be established for illegality and defendants get a chance to prove that any anticompetitive effects are offset by procompetitive benefits.

However, under the rule of reason, these potential procompetitive benefits are unlikely to actually justify otherwise anticompetitive horizontal shareholding. After all, non-horizontal shareholding can almost always provide the same investment capital. Further, even if restrictions on horizontal shareholding meant that institutional investors could no longer be fully diversified across firms in the same product markets, individual investors could still achieve full diversification benefits by simply investing in multiple institutional investors.[262] That would be a clear less restrictive alternative for achieving any diversification benefits without the anticompetitive effects that result when institutional investors are leading shareholders at horizontal competitors.

Ginsburg and Klovers argue that individual investments across multiple institutional investors who are not horizontal shareholders is not a less restrictive alternative because any individual investors who chose to make such investments would indirectly have horizontal shareholdings in the underlying firms.[263] But the shares would be voted by institutional investors who are not horizontally invested. Further,

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[260] Ginsburg & Klovers, *supra* note , at ¶ 55.
[261] ELHAUGE, US ANTITRUST, *supra* note , at 628, 661-703.
[262] Posner, Scott Morton, & Weyl, *supra* note , at 711.
[263] Ginsburg & Klovers, *supra* note , at ¶¶ 48-49.

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even if individual investors could control the exercise of their fraction of each of their funds' shareholdings in the relevant firms, it would add little to ΔMHHI levels given that individual shares would be small relative to the size of institutional investor shareholdings.[264] This alternative would thus be much less restrictive of competition than horizontal shareholding by institutional investors that results in high ΔMHHI levels and likely anticompetitive effects. Ginsburg and Klovers' argument to the contrary fails to even consider the alternative's different effect on ΔMHHI levels or likely anticompetitive effects, but instead rests on their mistaken formalistic premise that avoiding anticompetitive effects requires banning any individual investor from ever making any investments in multiple institutional investors that result in indirect horizontal shareholdings.[265]

Even if one incorrectly thought that diversification benefits had to be achieved through investments at diversified institutional investors, any diversification benefits those institutions would lose from having to invest in only one competitor in each concentrated market have been shown to be small in relation to the anticompetitive harm.[266] Any diversification benefits would also be offset by the fact that investing in one competitor per market would increase the institutional investors' share of voting power in the firms in which they invest, thus reducing the separation of ownership and control in a way that lowers managerial agency costs.[267] Nor, under antitrust law, can any net benefits from horizontal shareholding to investors in the investment market legally offset any anticompetitive harm to consumers in the relevant product market.[268]

In short, even if one thought wrongly that horizontal shareholding could not be condemned under Clayton Act § 7, such horizontal shareholdings still form an ongoing contract or combination that triggers rule of reason review under Sherman Act § 1. Horizontal shareholdings would accordingly violate Sherman Act § 1

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[264] *Supra* Section I.D.1(iii); Elhauge, *The Causal Mechanisms, supra* note , at Part IV.
[265] Ginsburg & Klovers, *supra* note , at ¶¶ 49-50.
[266] Elhauge, *The Causal Mechanisms, supra* note , at Part IV.
[267] *Id.*
[268] Lambert and Sykuta argue that this proposition applies under Clayton Act §7, but not under Sherman Act §1. Lambert & Sykuta, *supra* note , at 36 n.131. However, the principle that procompetitive effects in one market cannot justify anticompetitive effects in another market was extended to the Sherman Act in United States v. Topco Associates, Inc., 405 U. S. 596, 610-611 (1972); *see also Ohio v. American Express Co,* 138 S.Ct. 2274 (2018) (allowing procompetitive effects to cardholders to offset anticompetitive effects to merchants only after holding they were in the same two-sided market). For both statutes, the principle is supported by the judicial inadministrability of making incommensurable tradeoffs between harms to one market and benefits to another market.

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whenever they are proven to create anticompetitive effects that are not offset by procompetitive benefits to the same product market.

B. Tackling Horizontal Shareholding under EU Competition Law

In the EU, concerns have been raised that there may be a regulatory gap that limits the ability of EU competition law to remedy horizontal shareholding, even when it does have significant anticompetitive effects. This perceived gap rests largely on the fact that the EU Merger Regulation is limited to acquisitions that confer control, defined as "the possibility of exercising decisive influence" over business activities,[269] which makes it narrower than Clayton Act § 7, which bans any stock acquisition likely to substantially lessen competition.[270] However, EU competition law is far from impotent to deal with anticompetitive horizontal shareholding. To begin with, the EU merger regulation is not as narrow as it might seem. More important, EU law on agreements and concerted practices is at least as broad as US law on agreements, and thus it can reach the agreements that create horizontal shareholdings whenever they have anticompetitive effects. Further, far broader than US law is EU law on collective dominance and excessive pricing, which provides a natural legal solution to anticompetitive horizontal shareholding that does not require proving any ongoing set of agreements.

1. EU Merger Regulation. Although the EU merger regulation is narrower than the Clayton Act, it does cover acquisitions that give a set of minority shareholders joint de facto control because of strong common financial interests.[271] This regulation could be interpreted to mean that, if a series of acquisitions gave a set of horizontal shareholders enough shares that they might collectively exercise decisive influence over business activities, perhaps in part because other shareholders are dispersed, then the acquisitions that conferred that potential collective influence are subject to the merger regulation.[272] If (under such an interpretation) horizontal stock

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[269] DAF/COMP(2017)10 at 43 n.7 (Oct. 30, 2017); Commission Consolidated Jurisdictional Notice under Council Regulation 139/2004 on the control of concentrations between undertakings, [2008] OJ C 95/1, at ¶¶ 7, 16.

[270] *See supra* Part II.

[271] Commission Consolidated Jurisdictional Notice, *supra* note 125, at ¶ 76 ("collective action can occur on a *de facto* basis where strong common interests exist between the minority shareholders").

[272] If an acquisition does confer the necessary change in joint control, then the Commission can order the divestiture of the prior minority shareholdings as well. *See* ANNA TZANAKI, THE REGULATION OF MINORITY SHAREHOLDINGS AND OTHER STRUCTURAL LINKS BETWEEN COMPETING UNDERTAKINGS UNDER EU COMPETITION LAW: A LAW & ECONOMICS ANALYSIS 47-48 (2017)(collecting cases).

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acquisitions create a potential collective influence sufficient to trigger jurisdiction under the merger regulation, their substantive assessment need not turn on any exercise of control, but rather can be based on anything that might result in anticompetitive effects, including any effect the horizontal shareholdings might have on firm incentives to compete.[273] Thus, if horizontal stock acquisitions potentially give horizontal shareholders a collective decisive influence, those acquisitions could be enjoined based on evidence that the horizontal shareholding would diminish incentives to compete, even if joint control is never actually exercised.[274] The German Monopolies Commission has suggested such an interpretation, arguing that when institutional investors are equally diversified across a market, they have parallel interests that would justify aggregating their shareholdings.[275]

To be sure, such an interpretation does face some obstacles. First, the European Commission has stated that, "In general, a common interest as financial investors (or creditors) of a company in a return on investment does not constitute a commonality of interests leading to the exercise of de facto joint control."[276] But to state that something "in general" is not the case is to acknowledge that sometimes it ***is*** the case, and horizontal shareholdings by institutional investors that lead to anticompetitive effects merit being treated as an exceptional case. Moreover, anticompetitive horizontal shareholdings are not actually covered by this statement, because with such horizontal shareholdings the common interest is not just in a return on investment in "***a*** company", but is rather in anticompetitive profits across ***multiple*** competing firms. The fact that the shareholdings cover multiple firms give them far more anticompetitive potential, which supports treating them differently.

Second, the European Commission has also stated that "the possibility of changing coalitions between minority shareholders will normally exclude the assumption of joint control."[277] But "normally" is not always, and again anticompetitive horizontal shareholdings merit being treated as the exceptional case. Indeed, anticompetitive horizontal shareholdings are probably not covered by the statement, because such anticompetitive effects indicate the existence of a stable coalition among the

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[273] *Id.* at 49-50, 56-57 (collecting cases).

[274] Commission Consolidated Jurisdictional Notice, *supra* note 125, at ¶ 16 ("Control is defined by Article 3(2) of the Merger Regulation as the possibility of exercising decisive influence on an undertaking. It is therefore not necessary to show that the decisive influence is or will be actually exercised.")

[275] Germany, *Common Ownership by Institutional Investors and Its Impact On Competition*, DAF/COMP/WD(2017)87, at ¶ 21 (Nov. 29, 2017), http://www.oecd.org/daf/competition/common-ownership-and-its-impact-on-competition.htm.

[276] Commission Consolidated Jurisdictional Notice, *supra* note 125, at ¶ 79.

[277] *Id.* ¶ 80.

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horizontal shareholders in favor of diminished competition, given the structural incentives created by their shareholdings in other firms.

Granted, interpreting EU merger regulation to cover the de facto joint control of horizontal shareholders would require a change in prevailing enforcement practice, because so far the cases finding joint control have involved more direct links between the shareholders. But given the economic proofs and empirical evidence that high levels of horizontal shareholding in concentrated markets often have strong anticompetitive effects,[278] such a change in enforcement practice would be merited. After all, EU competition law has a history of sensibly interpreting its merger regulation to prevent anticompetitive effects rather than leave regulatory gaps. The original merger regulation prohibited only concentrations that created or strengthened a dominant position, thus seeming to leave a regulatory gap for acquisitions that created or strengthened oligopolies.[279] But EU tribunals solved this problem by first concluding that oligopolies constituted a collective dominant position when there were contractual or structural links among the oligopoly firms, and then later extending the concept to oligopolies for which no such contractual or structural links existed.[280] Likewise, while current enforcement practice has challenged de facto joint control only in cases where there are some contractual or direct links among the shareholders, a parallel interpretation could easily extend the concept to cases where no such contractual or direct links between the shareholders exist.

The best argument against such an interpretation is that it might not be needed to address the problem of anticompetitive horizontal shareholding, because other EU competition laws offer a better solution. After all, even with the above interpretation, EU merger law could remedy only those horizontal stock acquisitions that changed control by potentially giving the horizontal shareholders decisive joint influence over business activities. Although this would capture some cases of anticompetitive horizontal shareholding, horizontal shareholding can also have anticompetitive effects for structural reasons that do not depend on such collective decisive influence.[281] EU merger law thus cannot remedy all the horizontal shareholdings that have anticompetitive effects. Luckily, TFEU Articles 101 and 102 can remedy any anticompetitive horizontal shareholding, as I show next.

2. EU Law on Anticompetitive Agreements or Concerted Practices. TFEU Article 101 prohibits "agreements" or "concerted practices" between undertakings that have

[278] *Supra* Part I.
[279] ELHAUGE & GERADIN, GLOBAL ANTITRUST LAW & ECONOMICS 992-993, 1045 (3d ed. 2018).
[280] *Id.* at 1045-1047.
[281] *Supra* Part I.

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the effect of restricting competition. Article 101's ban on anticompetitive "agreements" is just as broad as the Sherman Act's ban on anticompetitive "contracts" or "combinations."[282] As detailed in Part III.A, such a ban on anticompetitive agreements readily applies to horizontal shareholding because it involves contractual agreements between institutional investors and competing corporations that have anticompetitive effects. The same logic should apply in every other nation with a competition law that bans anticompetitive agreements.

Indeed, in *Philip Morris*, the European Court of Justice already specifically held that acquiring a minority stockholding in a corporation is an agreement that can violate TFEU Article 101, even if it appears to be a "passive investment", if the agreement to buy the stock "has the object or effect of influencing the competitive behaviour of the companies on the relevant market."[283] The particular theory of influence raised in that case was that the stock might be voted in a way that would anticompetitively influence the target corporation's actions, on which the Court deferred to the Commission's findings that such anticompetitive influence was unlikely.[284] But that reasoning at a minimum indicated that if voting the stock were likely to have an anticompetitive influence on corporate behavior, then it would fall within TFEU Article 101. Further, the general statement of the Court was broader, treating the stock acquisition as an agreement that could be illegal whenever it has the "effect of influencing the competitive behaviour of the companies."[285] This language covers any influence the stock might have, including the fact that shareholdings and profit interests might alter the incentives of either company to compete with the other. *Philip Morris* thus allows horizontal shareholdings to be condemned as agreements under TFEU Article 101 whenever those shareholdings have or are likely to have adverse effects on firm competition for any reason.

Moreover, TFEU Article 101 extends beyond agreements to also capture "concerted practices".[286] The European Court of Justice has explained that the purpose of this "concerted practices" provision "is to bring within the prohibition of [Article 101] a form of coordination between undertakings which, without having reached the stage where an agreement properly so-called has been concluded, knowingly substitutes

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[282] ELHAUGE & GERADIN, supra note , at Chapter 6 (showing in detail that U.S. and EU competition law cases are quite parallel on what they consider an agreement covered by Sherman Act § 1 or TFEU Article 101).
[283] British American Tobacco v Commission (Philip Morris), [1987] E.C.R. 4487, at ¶ 45.
[284] *Id.* ¶¶ 46-64.
[285] *Id.* ¶ 45.
[286] ELHAUGE & GERADIN, supra note , at 892.

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practical cooperation between them for the risks of competition".[287] The European Court of Justice has also stressed:

> "The criteria of coordination […] must be understood in the light of the concept inherent in the provisions of the Treaty relating to competition that each economic operator must determine *independently* the policy which he intends to adopt on the common market … Although it is correct to say that this requirement of independence does not deprive economic operators of the right to adapt themselves intelligently to the existing and anticipated conduct of their competitors, it does however strictly preclude any direct or *indirect* contact between such operators, the object or effect whereof is … to influence the conduct on the market of an actual or potential competitor…."[288]

This concept of concerted practices applies readily to horizontal shareholding, which causes firms to no longer behave independently because they are indirectly linked through their common shareholders in a way that influences their competitive behavior. Such horizontal shareholding thus suffices to create a concerted practice among the competing firms. The same would be true in other nations like China and Taiwan that also ban "concerted action" that has anticompetitive effects.[289]

EU cases have also held that when one firm acquires a minority stockholding in a competing firm, that can constitute an abuse of dominance under TFEU Article 102 if one of the firms has a dominant position and the shareholding results "at least in some influence" on a firm's commercial conduct.[290] EU caselaw has even held that sufficient influence can exist despite a lack of voting rights and the existence of a covenant not to exert any influence on the corporate board, as long as the firm would naturally take the interests of its shareholder into account.[291] For present purposes, this holding is mainly interesting because it confirms a broad view of what constitutes "influence" that is not limited to exercising voting rights and could be met even for passive horizontal shareholders, given that managers will naturally also take their interests into account. But this is not the abuse of dominance theory that is interesting for horizontal shareholding, which usually does not involve investments in or by a firm that alone has a dominant position. Instead, the

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[287] ICI v. Commission, [1972] E.C.R. 619, at ¶ 64.
[288] Suiker Unie [1975] ECR 1663, at ¶¶ 173-174.
[289] China Anti–Monopoly Law Art. 13; Taiwan Fair Trade Act Art. 7.
[290] *Philip Morris*, [1987] E.C.R. 4487, at ¶65; Warner-Lambert/Gilette, [1993] OJ L 116/21, at ¶24.
[291] Warner-Lambert/Gilette, [1993] OJ L 116/21, at ¶ 25.

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interesting abuse of dominance theory for horizontal shareholding is that it creates a collective dominant position that leads to excessive pricing, as discussed next.

3. EU Law on Collective Dominance and Excessive Pricing. Unlike Sherman Act § 2, TFEU Article 102 also applies to collective dominance[292] and bans abusing that dominance through excessive pricing.[293] To be sure, there has not been much enforcement of the ban on excessive pricing by a dominant firm or set of firms. But such nonenforcement reflects the fact that monopoly or oligopoly pricing should not be deemed an anticompetitive abuse for good substantive reasons, none of which apply to horizontal shareholding. Single-firm monopoly pricing should not be regarded as an abuse of a dominant position not only because the offense cannot be meaningfully defined, but also because when such monopoly power is obtained legitimately, the profits from monopoly pricing are an affirmatively desirable reward for making procompetitive investments that enable a firm to offer a product that is so much better than rival options that it enjoys monopoly power.[294] Oligopoly pricing should not be regarded as an abuse of a collective dominant position because such price interdependence arises from the unavoidable act of offering prices, an act that is necessary to compete at all, and thus it is impossible to define the illegal conduct that the price-coordinating firms are supposed to avoid.[295]

None of those substantive reasons provides any obstacle to applying TFEU Article 102 to condemn horizontal shareholding when it creates a collective dominance that produces excessive pricing. Unlike with monopoly pricing, the profits from anticompetitive horizontal shareholding do not reflect a desirable reward for procompetitive investments. To the contrary, they reflect a diminution of competition between firms that economic proofs and empirical studies show affirmatively lowers output and investment.[296] Unlike with oligopoly pricing, horizontal shareholding does not reflect an unavoidable act, like pricing. Holding leading shares in horizontal competitors is easily avoidable conduct and hardly necessary for market competition. The offense can thus readily be defined in a way that lets investors know what sort of conduct they need to avoid.

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[292] TFEU Article 102 (banning "Any abuse by one *or more* undertakings of a dominant position"); ELHAUGE & GERADIN, supra note , at 307-308.

[293] TFEU Article 102(a) (banning the abuse of imposing "unfair … prices"); United Brands v. Commission, [1978] E.C.R. 207.

[294] ELHAUGE & GERADIN, supra note , at 305, 441-442; Elhauge, *Disgorgement as an Antitrust Remedy*, 76 ANTITRUST LAW JOURNAL 79, 89-90 (2009); Elhauge, *Defining Better Monopolization Standards*, 56 STANFORD LAW REVIEW 253, 331-32 (2003).

[295] ELHAUGE & GERADIN, supra note , at 308, 893, 942.

[296] *Supra* Part I.

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When horizontal shareholding has anticompetitive effects, it is because it creates contractual and structural links between competing firms that diminish those firms' incentives to compete with each other.[297] Even if those links did nothing other than facilitate oligopolistic coordination among those firms, it would create a collective dominant position under EU competition law.[298] But anticompetitive horizontal shareholding is even worse because it creates contractual and structural links that, even without any coordination, anticompetitively reduce the incentives of each firm to compete with each other and thus allow them to collectively exercise a market power to raise prices. Even before EU competition law concluded that pure oligopolistic coordination could constitute a collective dominant position, it clearly concluded that when contractual or structural links reduce competition and raise prices, those links create a collective dominant position.[299] Under this theory, showing any ongoing agreement among the firms on pricing or other business conduct would not be necessary. It would suffice that the horizontal shareholding created a collective dominance among the competing firms that led to anticompetitive pricing.

Indeed, applying TFEU Article 102 to horizontal shareholding might finally provide an answer to the puzzle of what to do with Article 102's ban on abusing a dominant position through excessive pricing. The current lack of enforcement of this provision is something of an embarrassment because the provision must have been meant to have ***some*** impact, so effectively reading the provision out of the Treaty hardly seems faithful to its text. Using the provision to prohibit horizontal shareholding when it creates a collective dominance that leads to anticompetitive pricing would finally give the provision meaning, while remedying a serious anticompetitive problem.

Tackling horizontal shareholding as collective dominance that leads to excessive pricing is also possible in other nations such as China, Russia, Taiwan, and Turkey, which (like the EU) have abuse of dominance statutes that apply to collective dominance[300] and treat excessive pricing as an abuse of dominance.[301]

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[297] *Supra* Parts I & III.A.

[298] Gencor Limited v. Commission, [1999] E.C.R. II–753; Airtours v. Commission, [2002] E.C.R. II–2585, at ¶ 61.

[299] France v. Commission (Kali & Salz), [1998] E.C.R. I–1375, at ¶¶ 171, 221.

[300] China Anti-Monopoly Law Arts. 17 & 19; Russia Competition Law Arts. 4(10), 5; Taiwan Fair Trade Act, Arts. 5 & 5–1; Turkey Competition Art. 6.

[301] China Anti-Monopoly Law Art. 17(1) (banning a firm in dominant market position from "selling at unfairly high prices or buying at unfairly low prices"); Russia Competition Law Art. 6(1) (prohibiting a "monopolistically high price"); OECD, Predatory Foreclosure 247 (2005)

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IV. THE IMPLICATIONS OF HORIZONTAL SHAREHOLDING FOR TRADITIONAL MERGER ANALYSIS

Suppose one concluded (incorrectly, given my analysis above) that anticompetitive levels of horizontal shareholding either are not illegal, have no administrable legal remedy, or should be permitted because any harms are the unavoidable byproduct of large diversified institutional investors whose benefits outweigh those anticompetitive harms. Even then, the anticompetitive effects of horizontal shareholding in concentrated markets have important implications for traditional analysis of ordinary mergers or cross-shareholdings between corporations. Namely, those implications reduce the market concentration levels that we can tolerate under traditional merger analysis, as discussed in Section *IV.A*, and mean that what now look like non-horizontal mergers should often be treated as horizontal, as explained in Section *IV.B*. Indeed, those implications for traditional analysis become ***more*** important the more that antitrust law fails to directly tackle horizontal shareholding.

A. Allowing Horizontal Shareholding Lowers Tolerable Concentration Levels

High horizontal shareholding levels increase the anticompetitive effects that one would predict from the market concentration levels produced by ordinary mergers or cross-shareholdings. Now that this higher level of predicted anticompetitive effects is known, agencies and courts should take it into account when assessing whether ordinary mergers or cross-shareholdings are likely to substantially lessen competition. For example, had horizontal shareholding levels been considered, the agencies might not have approved airline mergers that apparently appeared benign to the agencies on their assumption that each firm considered only its own profits, but that actually raised prices when one considers the combined impact of increased market concentration and horizontal shareholding levels. More generally, the failure to consider horizontal shareholding levels in past merger analysis may help explain why merger retrospectives have repeatedly found that agencies and courts, despite their best efforts, have approved many mergers that (contrary to agency or court predictions) actually raised prices.[302]

(Taiwan); Belko Decision, No. 01–17/150–39 (Turkey Competition Commission 2001) (banning excessive pricing by a dominant firm).

[302] Orley Ashenfelter, Daniel Hosken & Matthew Weinberg, *Did Robert Bork Understate the Competitive Impact of Mergers? Evidence from Consummated Mergers*, 57 J.L. & ECON. S67, S76–S78 (2014); John Kwoka, *The Structural Presumption And The Safe Harbor In Merger Review*, 81 ANTITRUST L.J. 837 (2017).

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Further, agencies and courts should take into account whether horizontal shareholding means that mergers between institutional investors should, even if they create no likely anticompetitive effects on investment markets, be blocked because they increase horizontal shareholdings that create anticompetitive effects in an affected product market. For example, had horizontal shareholding levels been considered, perhaps the Blackrock-BGI merger discussed in Part I.D should have been blocked, whether or not it created anticompetitive effects in any investment market, on the grounds that it increased horizontal shareholdings that created anticompetitive effects in airline markets.

Considering horizontal shareholding levels when assessing mergers or cross-shareholding raises none of the legal or administrability issues discussed above. It raises no legal issues because no one denies that mergers or cross-shareholdings are illegal if they have likely anticompetitive effects. The horizontal shareholding levels just change the prediction of whether such anticompetitive effects are likely, which not only can, but legally must, be taken into account. Nor does considering horizontal shareholding levels in traditional merger analysis raise any new administrability problem, because it just triggers the same remedy we already use—deciding whether to disapprove the merger or cross-shareholding. Considering horizontal shareholding levels would just result in more accurate applications of that existing remedy.

Even if one concluded that we should not directly tackle horizontal shareholding for reasons of policy, such as if one mistakenly concluded that allowing horizontal shareholding was necessary to produce investment benefits (such as diversification) that outweigh any anticompetitive harm,[303] horizontal shareholding levels still have strong implications for traditional merger analysis. In this scenario, we would have decided to allow unrestricted horizontal shareholding for reasons of policy, but that would not alter the fact that, having permitted such horizontal shareholding, a greater fraction of mergers and cross-shareholdings are likely to have anticompetitive effects that are illegal.

In short, there is an unavoidable tradeoff: the less we directly address horizontal shareholding, the lower the market concentration we can allow in traditional merger analysis. Indeed, allowing large institutional investors to grow and increase horizontal shareholding levels unimpeded would not necessarily create any anticompetitive effects ***if*** all product markets were unconcentrated. The reason is that so far the empirical evidence establishes anticompetitive effects from horizontal

[303] I show why that conclusion is mistake above in Section III.A, as well as in Elhauge, *The Causal Mechanisms, supra* note , at Part IV.

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shareholding only in markets with an HHI level above 2500.[304] Thus, a laissez faire attitude toward horizontal shareholding might be compatible with antitrust law and the prevention of anticompetitive effects if it were coupled with rigorous merger enforcement that prevented any market concentrations with HHIs above 2500. Doing so would require more rigorous merger enforcement than we currently have in the U.S., which often allows mergers with HHIs of 3000-4000, [305] and perhaps in other nations. But that is the tradeoff: if we are going to continue to allow unimpeded horizontal shareholding, we can avoid anticompetitive effects only by allowing less market concentration.

Indeed, if our legal regime allows unimpeded horizontal shareholding, then allowing mergers that create high concentration levels could create likely anticompetitive effects even when ***current*** horizontal shareholding levels in the relevant product market are low, given that such a regime by definition would do nothing to prevent post-merger stock acquisitions that would worsen horizontal shareholding levels. Thus, if a regime allows unimpeded horizontal shareholding, mergers that create high concentration levels with no immediate anticompetitive effects would fail prophylactic merger analysis whenever it seemed likely that ***post***-merger horizontal stock acquisitions would combine with that concentration level to create anticompetitive effects.

Continuing to allow unimpeded horizontal shareholding would thus provide strong support for those who currently argue that antitrust law should be far more aggressive about preventing market concentration. Horizontal shareholding also has important implications for those who believe that current concentration levels reflect efficiencies, because it means we would have to sacrifice some of those efficiencies for the supposed benefits of allowing unimpeded horizontal shareholding. After all, past mergers were presumably approved on the grounds that the agencies predicted their effects would be procompetitive (without considering the implications of horizontal shareholding). Allowing unimpeded horizontal shareholding will often change those predictions and require blocking those mergers, thus losing the procompetitive benefits that could have been produced by the mergers if horizontal shareholding levels were constrained. The policy tradeoff is thus not just whether we are better off allowing horizontal shareholding rather than preventing it when it is anticompetitive. The tradeoff is whether we are better off allowing unimpeded horizontal shareholding, even though that requires prohibiting more mergers, including mergers that would be efficient without the horizontal shareholding.

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304 Elhauge, *supra* note 2, at 1276, 1301-02.
305 ELHAUGE, US ANTITRUST, *supra* note , at 740.

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To be sure, considering horizontal shareholding only when assessing mergers or cross-shareholdings is clearly just a second-best solution. Such an approach would do nothing to undo all the anticompetitive horizontal shareholding we already have. Nor would it prevent new horizontal stock acquisitions that create anticompetitive effects in already concentrated markets. And in at least some markets, such an approach would result in a combination of high horizontal shareholding with low market concentration even when it would be more efficient to avoid anticompetitive effects with the opposite combination of lower horizontal shareholding and higher market concentration. Thus, it would be far more preferable to directly tackle horizontal shareholding, given that the law clearly does directly ban horizontal stock acquisitions when they have anticompetitive effects and that in such cases any anticompetitive horizontal shareholdings can be undone under current law without losing any meaningful diversification benefits.[306] But horizontal shareholding does lower the concentration levels that traditional merger analysis should tolerate, and the less the law does to directly tackle horizontal shareholding, the more it lowers those tolerable concentration levels.

B. Horizontal Shareholding Often Changes Whether Mergers Should Be Deemed Horizontal and Which Concentration Measures to Worry About

Horizontal shareholding also often means that what otherwise seem like non-horizontal mergers should be treated as horizontal. The reason is that even if the merging firms compete in different markets (making the merger non-horizontal under traditional merger analysis), the merger can increase shareholder overlap between the merged firm and its competitors in a way that increases horizontal shareholding levels and predictably lessens horizontal competition.

For example, suppose market *A* has four firms, each of which has a market share of 25% (resulting in an HHI of 2500), and one of those firms is acquired by a firm that is currently only in market *B*. Under traditional merger analysis, this would be treated as a conglomerate merger, rather than a horizontal merger, and thus would not be deemed to raise market concentration in market *A* at all, other than perhaps in the U.S. in rare cases.[307] But suppose the leading shareholders of the other three

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[306] *Supra* Parts II-III; Elhauge, *The Causal Mechanisms, supra* note , at Part IV.

[307] Those rare cases are limited to situations where the acquiring firm was already committed to enter market *A* or would likely enter rapidly in response to a small price increase without incurring significant sunk costs. If the acquiring firm met those standards, then under the U.S. merger guidelines, the agencies would project a market share in market *A* for the acquiring firm and treat the merger as horizontal. ELHAUGE & GERADIN, supra note , at 1187-88. But so far we do not have any U.S. Supreme Court authority treating mergers between such potential competitors as

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firms in market *A* overlap with the leading shareholders of the acquiring firm, but have little overlap with the leading shareholders of the acquired firm. In that case, such a merger raises horizontal shareholding levels in market *A* in a way that would significantly raise MHHI in market *A* and could immediately reduce horizontal competition in market *A*, even if the acquiring firm was never in market *A* or likely to enter it. Thus, a merger that significantly increases MHHI in a concentrated market should be treated as a horizontal merger even if the merging firms are not actual competitors nor likely potential competitors.

For related reasons, horizontal shareholding also changes the ***type*** of market concentration relevant to general concerns about concentration in our economy. For example, consider the current debate about rising national concentration levels in many industries. Some argue that that these rising national concentration levels raise significant anticompetitive concerns that require increased antitrust enforcement.[308] But others reject this claim on the grounds that defining these industries as national does not correspond to the relevant antitrust markets because those markets are local, stressing that out of the three industries for which we do have evidence on local market HHIs over time, there has been no increase in average local market HHIs for two of those industries: namely, airlines and banking.[309] Their claim that airline and banking markets have had no increase in HHI is a bit overstated: average local market HHIs have increased about 10% for both airlines and banking, with the airline HHIs going from 5000 to 5500 from 2001-2014,[310] and the banking HHIs going from 2000 to 2200 from 2002-2013.[311] Still, critics of the focus on national concentration trends are right that in these industries the increase in local HHI levels has been far less dramatic than the rise in national concentration levels.

However, consider what it means to say that mergers in these industries have sharply increased national concentration without sharply increasing local concentration. It means that, roughly speaking, we have gone from having 2-5 different firms in each local market to having the same 2-5 large national firms in each local market. Contrary to those who focus only on local market HHIs, this change does raise anticompetitive concerns, because those large national firms are more likely to have leading shareholders who overlap, given that large national firms have large capitalizations that make it more likely that their leading shareholders are

horizontal, *id.* at 1190-97, nor any authority doing so in the EU or in other nations, *id.* at 1197-98, 1235-36.

[308] *E.g,* https://concentrationcrisis.openmarketsinstitute.org/industry/e-commerce/.

[309] Werden & Froeb, *Don't Panic: A Guide to Claims of Increasing Concentration* 9-10 (Oct. 22, 2018), https://ssrn.com/abstract=3156912.

[310] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1526-27.

[311] Azar, Raina & Schmalz, *supra* note, at Figure VI.

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institutional investors and that those firms will be in index funds like the S&P 500.[312] In short, the combination of increasing national concentration with relatively stable local market concentration generally implies higher horizontal shareholding levels. Consistent with this, from 2011-2004, average *MHHI* levels on local airline routes increased from around 6700 to 8000.[313] Likewise, from 2002 to 2013, average GHHI in local banking markets increased from 3200 to 4800.[314] And for both airlines and banking we have empirical evidence that this increase in MHHI and GHHI levels has had anticompetitive effects on prices.[315]

Of course, one obvious lesson is that we should focus on MHHI levels rather than HHI levels, given that HHIs wrongly assume without any theoretical or empirical basis that horizontal shareholding has zero effect. But we already knew that from Part I. The less obvious lesson concerns the implications for public debate about national industry concentration levels when one considers the reality that, for most industries, data is not publicly available to calculate either HHIs or MHHIs for properly defined antitrust markets. The lesson is that, until such data is made publicly available, public policy should rightly be concerned about widespread increases in national industry concentration levels, even if they do not correspond to properly defined antitrust markets, because such increases in national concentration likely indicate rising horizontal shareholding levels in whatever the properly defined markets might be. Public policy thus has good reason to be concerned about increases in national concentration levels, and those concerns only get greater if we continue to do nothing to directly tackle horizontal shareholding itself.

V. CONCLUSION

Horizontal shareholding poses the greatest anticompetitive threat of our time, mainly because it is the one anticompetitive problem we are doing nothing about. This enforcement passivity is unwarranted.

As I showed above, new economic proofs and empirical evidence now firmly establish that high levels of horizontal shareholding in concentrated markets often

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[312] There are also other possible antitrust concerns raised by the shift from having local markets dominated by different firms to having them dominated by the same set of national firms. Namely, the latter market structure may be more likely to either discourage potential entry by those national firms into local markets (since they are already in them) or encourage coordination by those national firms across those local markets (since they are now in more of them).
[313] Azar, Schmalz & Tecu, *Airline Study, supra* note , at 1527.
[314] Azar, Raina & Schmalz, *supra* noter, at Figure VI.
[315] *Supra* Part I.

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has anticompetitive effects. These new proofs and evidence also powerfully show that such horizontal shareholding explains not only inefficient methods of executive compensation, but also much of the recent increase in the investment-profit gap and perhaps the recent rise in economic inequality. Indeed, the new empirical studies indicate that horizontal shareholding is the main explanation for the gap between corporate investments and profits that is restraining economic growth. Empirical critiques of the initial studies of airline and banking markets have proven to be unfounded, and the results of those initial studies have been extended not only to seed and pharmaceutical markets, but also in two new cross-industry studies.

In the U.S., anticompetitive horizontal shareholding can be tackled under Clayton Act § 7. But I provide new legal theories that extend the analysis. I show that anticompetitive horizontal shareholding can also be tackled under Sherman Act § 1, which moots claims about whether Clayton Act might be limited by the solely-for-investment provision or by a purported inability to tackle old stock acquisitions. I further show that although EU merger regulation can tackle only some anticompetitive horizontal shareholdings, they can be fully addressed under TFEU Article 101 as anticompetitive agreements or concerted practices or under Article 102 as collective dominance that leads to excessive pricing. The same holds in other nations that have parallel provisions to either the U.S. or EU.

Under any of these legal theories, administrability concerns with legal enforcement rest on the straw man claim that horizontal shareholdings would leap in and out of illegality, depending on whether changing levels met certain mechanical thresholds. In reality, regardless of the legal theory, enforcement would be based on evidence of durable adverse price effects, which ameliorates any concerns about administrability. Nor need enforcement impede the diversification or monitoring benefits from institutional investor ownership.

In any event, administrability concerns can raise no obstacle to considering, when deciding whether to approve mergers or cross-shareholdings, that they are more likely to have anticompetitive effects when horizontal shareholding levels either are high or are likely to become high post-merger. To the contrary, the more we allow unimpeded horizontal shareholding, the lower the concentration levels we can tolerate under traditional analysis of mergers and cross-shareholdings. Further, the implications of horizontal shareholding can also change which mergers should be deemed horizontal and which concentration levels are most relevant.

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