

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

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Empirical evidence that horizontal shareholding has created anticompetitive effects in airline and banking markets have produced calls for antitrust enforcement. In response, others have critiqued the airline and banking studies and argued that antitrust law cannot tackle any anticompetitive effects from horizontal shareholding. I show that new economic proofs and empirical evidence, ranging far beyond the airline and banking studies, show that horizontal shareholding in concentrated markets often has anticompetitive effects. 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 Based on economic theory and empirical studies of airline and banking markets, many scholars have argued that high levels of horizontal shareholding in concentrated product markets can have anticompetitive effects that should be redressed by antitrust law.² Others have been skeptical of these claims, based largely on critiques of the airline and banking studies, as well as on arguments that existing antitrust law cannot tackle horizontal shareholding.³ I show that new proofs and empirical analysis strongly support the view that horizontal shareholding can have anticompetitive effects and that new legal analysis establishes that antitrust law can tackle those anticompetitive effects.

As I show in Part I, new proofs and empirical evidence, ranging far beyond the original airline and banking studies, have confirmed that high levels of horizontal shareholding in concentrated product markets can have anticompetitive effects, even when each individual horizontal shareholder has a minority stake. 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. Neither new proof requires any communication or coordination between different shareholders, between different firms, 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, three new market-level studies, a massive cross-market study of hundreds of consumer goods, a study of common ownership

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 a supply chain) or conglomerate (between firms that are not horizontal competitors nor vertically related).

² See, e.g., Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267, 1267–78 (2016); Eric A. Posner, Fiona Scott Morton & E. Glen Weyl, *A Proposal To Limit The Anticompetitive Power of Institutional Investors*, 81 ANTITRUST L.J. 669, 669 (2017); Scott Morton & Herbert Hovenkamp, *Horizontal Shareholding and Antitrust Policy*, 127 YALE L.J. 2016, 2034–35 (2018).

³ See, e.g., Edward B. Rock & Daniel L. Rubinfeld, *Antitrust for Institutional Investors*, 82 ANTITRUST L.J. 221, 236 (2018) [hereinafter Rock & Rubinfeld, *Antitrust*]; Daniel P. O'Brien & Keith Waehrer, *The Competitive Effects of Common Ownership: We Know Less Than We Think*, 81 ANTITRUST L.J. 729, 764–65 (2017); Douglas H. Ginsburg & Keith Klovers, *Common Sense about Common Ownership*, CONCURRENCES REV. (2018).

by venture capitalists, and a study of entry into the S&P 500. 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. The cross-market study of hundreds of consumer goods not only found that higher levels of horizontal shareholding raised prices, but also found that the price effect was higher on products catering to lower-income households, thus exacerbating the negative effect on economic inequality. The venture capitalist study finds that horizontal ownership by venture capitalists makes startups less likely to compete with each other. The study of entry into the S&P 500 shows that when such entry increases horizontal shareholding, it increases the stock market price of both the entrant and its product market rivals, just as the anticompetitive theory of horizontal shareholding would predict.

I further provide new analysis rebutting various critiques of the earlier studies of airline and banking markets. Some of these critiques are valid, but addressing them actually *increases* the estimated adverse effects. For example, some critiques stress the valid concern that these studies use a measure of horizontal shareholding levels (MHHI or GHHI) that turns on ownership levels and market shares, which might themselves be endogenously affected by price. However, both theory and evidence indicate that endogeneity issues mean that the airline and banking studies, if anything, understate the anticompetitive effects. That conclusion is confirmed by the fact that if one eliminates endogeneity issues by using an exogenous change that affected horizontal shareholding levels, the airline and banking studies show greater adverse effects. (Further, all the other studies mentioned in the preceding paragraph found anticompetitive effects even though they used different measures of horizontal shareholding levels that were not subject to these endogeneity concerns.) Other critiques pointed out that the airline study incorrectly defined markets as routes rather than city pairs, lacked an interaction variable for fuel costs, and assumed shareholders did not lose any rights in bankruptcy, but when one corrects each of those issues, it increases the estimated adverse price effects.

Other critiques of the airline and banking studies rely on methodologies that are biased against finding adverse effects. Some critiques try to address the endogeneity concern by using a proxy for shareholding levels that is negatively correlated with actual horizontal shareholding levels. Other critiques use proxies for market shares whose inaccuracies are biased toward finding a negative price effect. They both find that higher horizontal share-

holding reduces prices, but that just reflects their use of negatively biased proxies. If one instead proxies market shares more neutrally by assuming each firm has a share equal to $1/N$, where N is the number of firms in the market, the airline and banking studies continue to show adverse price effects, albeit lower effects given the attenuation bias that results from not using real market shares. One critique even assumes longer airline routes have lower costs, which conflicts with the physical reality that it takes more fuel to fly a longer distance.

Others critique the MHHI measure of horizontal shareholding because it assumes that shareholder influence turns on relative shareholdings, aggregates shareholdings at the fund family level, or fails to assume that the financial incentives of institutional investors equal only 1% of owned stock value. These critiques are mistaken on theoretical grounds, but more generally miss the point that whether MHHI levels affect prices is a hypothesis that the studies empirically tested and validated. To the extent that alternative measures fail to predict price effects as well as MHHI levels do, it suggests that those alternative measure are failing to include an important feature of horizontal shareholding that MHHI picks up. In any event, even if one uses a measure of horizontal shareholding that does not assume relative influence or aggregate shareholding, the studies continue to show adverse price effects.

Finally, several critiques find that the effects of horizontal shareholding are weaker in less concentrated markets or become weak, mixed, or statistically insignificant if one tries to measure the effect of horizontal shareholding across all markets, concentrated and unconcentrated. However, the same is true of horizontal mergers, since standard antitrust economics finds that they can create anticompetitive effects only in concentrated markets. No one would think that the proposition that horizontal mergers can cause anticompetitive effects would be disproven if those effects were weaker in less concentrated markets or if the effects of all horizontal mergers (including those in unconcentrated markets) were weak, mixed, or statistically insignificant. Horizontal shareholdings cannot create anticompetitive effects when even horizontal mergers could not, so it is not surprising that the same propositions apply to horizontal shareholding.

Nor are the findings of anticompetitive effects undercut by two recent cross-industry studies that purport to show that horizontal shareholding has no robust effect on profits or investments. Both of these studies define markets using industry definitions that are vastly larger than actual markets, creating a mismeasurement bias toward finding no effect because it means they are systematically understating levels of horizontal shareholding and market concentration. Both also make various other choices that bias their regressions toward finding no effect. Moreover, both focus on testing whether any increase in horizontal shareholding has anticompetitive effects, when the relevant anticompetitive theory is actually that *large* increases in horizontal shareholding in *concentrated* markets have anticompetitive effects. Remark-

ably, despite all these problems, both of these studies actually do confirm anticompetitive effects from horizontal shareholding in some of their regressions, but they dismiss those findings on erroneous grounds.

In Part II, I turn to legal remedies. I first provide new analysis to support the claim that any horizontal shareholdings that have anticompetitive effects are prohibited by Clayton Act §7's ban on any stock acquisitions, showing that this interpretation is dictated by the legislative text, structure, and history. I also explain why this legal remedy is administrable.

In Part III, I then show that horizontal shareholding can also be tackled under new legal theories. I show that when horizontal shareholding has anticompetitive effects, it also violates Sherman Act §1. Indeed, the very name of the legal field – *antitrust* 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 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.⁴ 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.⁵ O'Brien and Salop later extended this proof to consider not only joint ventures but also cross-shareholdings 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.⁶ 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.⁷ However, they provided no method for determining the degree of influence each shareholder had at each firm, which was necessary to calculate MHHIs.⁸ 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).⁹ Their Airline Study 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

⁴ DENNIS W. CARLTON & JEFFREY M. PERLOF, *MODERN INDUSTRIAL ORGANIZATION* 268 (3d ed. 2000).

⁵ Timothy F. Bresnahan & Steven C. Salop, *Quantifying the Competitive Effects of Production Joint Ventures*, 4 INT'L J. INDUS. ORG. 155, 155 (1986).

⁶ 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 do so compared to HHI when judging simple market concentration.

⁷ *Id.* at 608–14.

⁸ *Id.* at 608–14; O'Brien & Waehrer, *supra* note 3, at 738–39, 741–42 (emphasizing that their measure was consistent with any possible assumption about the degree of shareholder influence, including the assumption that shareholders have zero influence).

⁹ José Azar, Martin C. Schmalz & Isabel Tecu, *Anticompetitive Effects of Common Ownership*, 73 J. FIN. 1514, 1522, 1525–28 (2018) [hereinafter Azar, Schmalz & Tecu, *Airline Study*].

in markets with HHIs over 2500.¹⁰ Azar, Raina, and Schmalz provided further confirmation, showing in their Banking Study that a generalized measure called GHHI, which takes into account both horizontal shareholding and cross-shareholding, has a statistically significant adverse effect on bank fees and rates.¹¹

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.¹² Further, although the Airline Study and Banking Study did provide powerful empirical confirmation that the MHHI and GHHI measures do relate to anticompetitive effects, 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 A, corporate managers who want to win votes or re-elections will consider the interests of horizontal shareholders; and (b) as discussed in section 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 C, the gap between corporate investment and profits. Further, I provide new analysis in section D that establishes that while some critiques of the Airline and Banking Studies are valid, addressing them actually *increases* the estimated adverse effects, and the other critiques rely on methodologies that are biased against finding adverse effects or are otherwise misguided. In addition, we now have three new market-level studies that find similar anticompetitive effects from hori-

¹⁰ *Id.* at 1522–23, 1529–31, 1550–51.

¹¹ José Azar, Sahil Raina & Martin C. Schmalz, Ultimate Ownership and Bank Competition (May 4, 2019) (unpublished manuscript) (available at <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. Duarte Brito, Osorio António, Ricardo Ribeiro & Helder Vasconcelos, *Unilateral Effects Screens for Partial Horizontal Acquisitions: The Generalized HHI and GUPPI*, 59 INT'L J. INDUS. ORG. 127 (2018). For example, if a shareholder has horizontal shareholdings of X% in firm A and Y% in firm B, but firm A also has a Z% cross-shareholding in firm B, then MHHI needs to be adjusted to GHHI to take into account the fact that the shareholder's X% in firm A gives it an indirect interest in firm B on top of its Y% holding in firm B.

¹² O'Brien & Waehrer, *supra* note 3, at 760–61.

zonal shareholding in seed and pharmaceutical markets. We also now have a massive cross-market study that finds similar anticompetitive effects across hundreds of consumer goods markets. We have a new study that extends the finding of anticompetitive effects to horizontal ownership of startups by venture capitalists. Finally, we have a new study across all product markets that shows that when entry into the S&P 500 increases horizontal shareholding, it increases stock market prices not only for the entering firm but also its product market rivals, consistent with anticompetitive effects. Section E shows that two recent cross-industry studies do not undercut all these findings of anticompetitive effects. They actually confirm that horizontal shareholding does cause anticompetitive effects. Their other statistically insignificant results suffer from econometric problems, such as market mis-measurement bias or sample selection bias. They also often rest on mistaken economic premises, such as the premise that the anticompetitive theory is that any horizontal shareholding increases prices, no matter how small it is and how unconcentrated the market, or that it increases prices only for the horizontally-held firms and not for other firms in the same market. Section 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.¹³ 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.¹⁴

Some assert that similar results would not hold if shareholders have varying levels of horizontal shareholding in different corporations.¹⁵ 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 hori-

¹³ José Azar, *Portfolio Diversification, Market Power, and the Theory of the Firm* 12–14 (IESE Bus. Sch., Working Paper No. 1170, 2017), <https://ssrn.com/abstract=2811221>.

¹⁴ *Id.* at 15–17.

¹⁵ Rock & Rubinfeld, *Antitrust*, *supra* note 3, at 232–39; Menesh Patel, *Common Ownership, Institutional Investors, and Antitrust*, 82 *ANTITRUST L.J.* 279, 311–13 (2018).

zonal shareholding will proportionally increase prices.¹⁶ 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.¹⁷ In such cases, one can calculate a GHHI measure that weights shareholders by the odds their votes will be pivotal.¹⁸

Some also assume that horizontal shareholding cannot have anticompetitive effects on prices unless shareholders either communicate with managers¹⁹ or facilitate coordination among managers of different business corporations.²⁰ 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.²¹ 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.²² 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.

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 decision-making 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 decision-making is their financial compensation. Bengt Holmström's Nobel prizewinning

¹⁶ Azar, *supra* note 13, at 12–13.

¹⁷ *Id.* at 13–14.

¹⁸ Brito et al., *supra* note 11.

¹⁹ Noah Joshua Phillips, Commissioner, U.S. Fed. Trade Comm'n, Taking Stock: Assessing Common Ownership, Prepared Remarks at The Global Antitrust Economics Conference (June 1, 2018).

²⁰ C. Scott Hemphill & Marcel Kahan, *The Strategies of Anticompetitive Common Ownership* 1, 15–16 (European Corporate Governance Institute (ECGI), Working Paper No. 423/2018, 2019), <https://ssrn.com/abstract=3210373>.

²¹ Azar, *supra* note 13, at 14–15.

²² Andrea Pawliczek & A. Nicole Skinner, Common Ownership and Voluntary Disclosure 1–54 (June 8, 2018) (unpublished manuscript) (available at <https://ssrn.com/abstract=3002075>); Jihwon Park et al., *Disclosure Incentives When Competing Firms Have Common Ownership*, 67 J. OF ACCOUNTING & ECON. 387, 387–415 (2018).

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.²³ This raised a puzzle because in fact corporations use executive compensation methods that inefficiently reward executives mainly for industry performance.²⁴

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.²⁵ Importantly, this proof holds even though it assumes uncoordinated competition among the firms.²⁶

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.²⁷ This new empirical evidence moots a conflict among older empirical studies that instead measured whether horizontal shareholding made executive *annual pay* less sensitive to their own firm's performance.²⁸ Although several critics have cited this conflict in the older studies on annual pay to argue that the issue is empirically uncertain,²⁹ the new

²³ Bengt Holmström, *Moral Hazard in Teams*, 13 BELL J. ECON. 324, 324–40 (1982).

²⁴ LUCIAN BEBCHUK & JESSE FRIED, PAY WITHOUT PERFORMANCE 138–143 (2004).

²⁵ Miguel Anton, Florian Ederer, Mireia Gine & Martin Schmalz, *Common Ownership, Competition, and Top Management Incentives* 1, 2–3, 8–14 (European Corporate Governance Institute (ECGI), Working Paper No. 511/2017, 2018), <http://ssrn.com/abstract=2802332>.

²⁶ *Id.* at 8.

²⁷ *Id.* at 2–4, 21–36.

²⁸ Two studies found that it did. Anton et al., *supra* note 25; Lantian (Max) Liang, *Common Ownership and Executive Compensation* 1–25 (Oct. 2016) (unpublished manuscript) (available at https://acfr.aut.ac.nz/_data/assets/pdf_file/0008/58085/43082-L-Liang-Common_ownership_V2.pdf). 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) (unpublished manuscript) (on file with author). A fourth study found that horizontal shareholding made annual managerial pay more sensitive to own-firm performance, though this perverse finding may reflect the fact that the study calculated horizontal shareholding levels from the Thomson Reuters database without making the necessary corrections. Heung Jin Kwon, *Executive Compensation under Common Ownership* 13 (Nov. 29, 2016) (unpublished manuscript) (available at <http://fmaconferences.org/Boston/ExecutiveCompensationunderCommonOwnership.pdf>); see *infra* Part I.D. (describing the necessary corrections).

²⁹ See Ginsburg & Klovers, *supra* note 3, at 2 n.7; Hemphill and Kahan, *supra* note 20, at 19; Thomas Lambert & Michael Sykuta, *The Case for Doing Nothing About Institutional Investors' Common Ownership of Small Stakes in Competing Firms*, 13 n.43, 22 n.78 (U. Mo. Sch. L. Legal Stud., Working Paper No. 2018-21, 2018), <https://ssrn.com/abstract=3173787>; O'Brien & Waehrer, *supra* note 3, at 762–63; Phillips, *supra* note 19, at 5 n.11; Rock & Rubinfeld, *Antitrust*, *supra* note 3, at 247; Committee on Capital Markets Regulation, *Common Ownership and Antitrust Concerns* 1–2, 6–7 (2017) [hereinafter Capital Markets Committee].

empirical study is undisputed and far more relevant since annual pay ignores 78% of the compensation that changes executive wealth.³⁰

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.³¹ But the new study found adverse effects on executive compensation whether it used the absolute or percentage change in compensation.³² 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.³³ 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.³⁴

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 indicate 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. 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.³⁵ This sharp rise in horizontal shareholding coincides with the fact that the recent large divergence between corporate profits and investment began in 2000.³⁶ 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.³⁷

³⁰ DeSimone, *supra* note 28, at 17–18.

³¹ O'Brien & Waehrer, *supra* note 3, at 762–63; Capital Markets Committee, *supra* note 29, at 9.

³² Anton et al., *supra* note 25, at 22, 24.

³³ O'Brien & Waehrer, *supra* note 3, at 764; Capital Markets Committee, *supra* note 29, at 8.

³⁴ Anton et al., *supra* note 25, at 3–4, 23–28.

³⁵ Azar, *supra* note 13, at 2, 42.

³⁶ Germán Gutiérrez & Thomas Philippon, *Investmentless Growth: An Empirical Investigation*, BROOKINGS PAPERS ON ECON. ACTIVITY 89, 91, 95–101, 123–25 (2017).

³⁷ Azar, *supra* note 17, at 2, 43.

Standing alone, such parallel timing could be a coincidence and reflect economic factors other than horizontal shareholding that changed during the same time period. However, 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.³⁸ Further, the new study found that, within any industry, the investment-profit gap is mainly driven by those firms with high horizontal shareholding levels.³⁹ While parts of the study used MHHI measures of horizontal shareholding, others avoided any concerns that MHHI might reflect endogenous effects on market share by instead using the firm's level of quasi-indexer ownership as a proxy for horizontal shareholding levels.⁴⁰ 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 technological innovation, or changes in government spending, taxes, or labor law. 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.⁴¹

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

³⁸ Gutiérrez & Philippon, *supra* note 36, at 92–93, 120, 126–31.

³⁹ *Id.* at 93, 129–131.

⁴⁰ *Id.* at 126–27.

⁴¹ Elhauge, *supra* note 2, at 1292–97.

spawned 401(k)s in 1980 and greatly expanded IRAs in 1981, which increased the growth of diversified institutional investors.⁴² 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.⁴³ 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.⁴⁴ This 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.

Finally, the theory that rising horizontal shareholding has increased economic inequality has been confirmed by a massive new cross-market study of hundreds of consumer goods. This study found that horizontal shareholding not only increased prices, but increased prices more for products that cater to lower-income households.⁴⁵

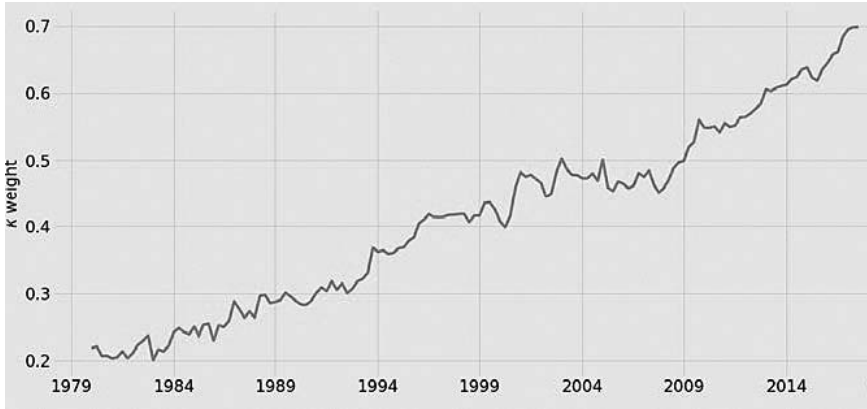
⁴² *Id.* at 1298.

⁴³ Matthew Backus, Christopher Conlon, & Michael Sinkinson, *Common Ownership in America 1980-2017* 1–2, 23–24, (Nat'l Bureau of Econ. Res., Working Paper No. 25454, 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.

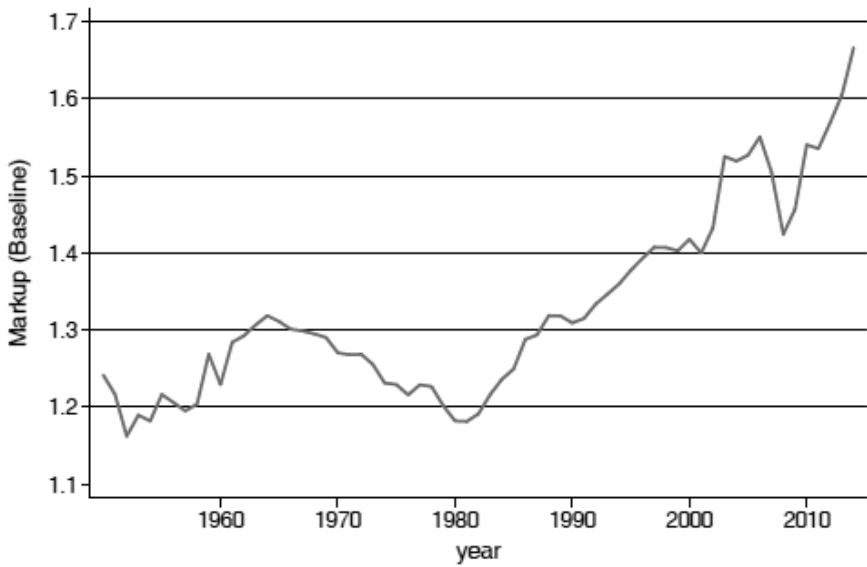
⁴⁴ *Id.* at 2, 30–32.

⁴⁵ *Infra* Part I.D.4.

US COMMON OWNER PROFIT WEIGHTS, 1980-2017⁴⁶

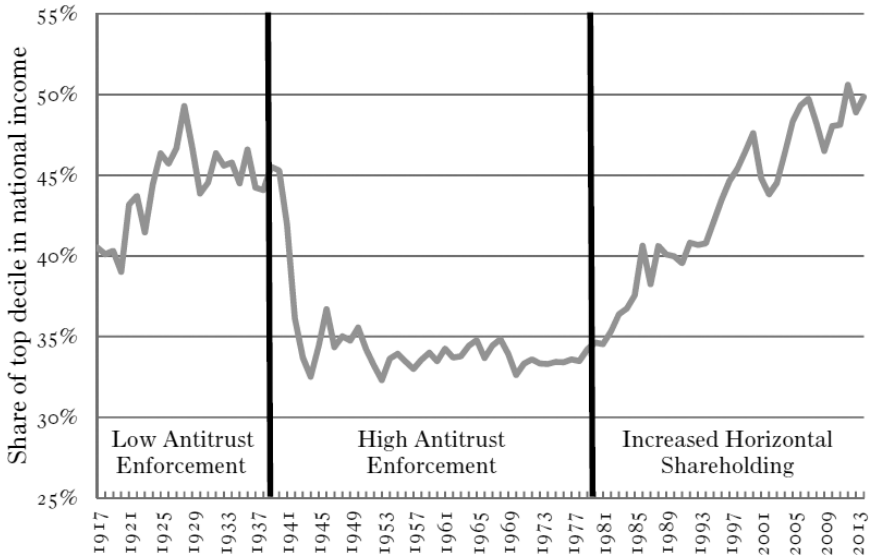


AVERAGE US FIRM MARKUPS, 1950-2014⁴⁷



⁴⁶ Backus, *supra* note 43, at 2.

⁴⁷ Jon De Loecker & Jon Eeckhout, *The Rise of Market Power and the Macroeconomic Implications* at 9, (Nat'l Bureau of Econ. Res., Working Paper No. 23687, 2017), <http://www.nber.org/papers/w23687>.

US INCOME INEQUALITY, 1917-2014⁴⁸

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

1. Methodological Critiques of the Airline Study

In response to the empirical literature finding that horizontal shareholding in concentrated markets can have anticompetitive effects, critics have focused almost exclusively on the Airline Study. Even those critics acknowledge that if they reconstruct the data on their own, they replicate the results of the Airline Study using the same regressions.⁴⁹ These critics have thus

⁴⁸ Elhaage, *supra* note 2, at 1292.

⁴⁹ See Patrick Dennis, Kristopher Gerardi, & Carola Schenone, Common Ownership Does Not Have Anti-Competitive Effects in the Airline Industry 2, 5, 8–10, 39 (Aug. 12, 2019) (unpublished manuscript) (available at <https://ssrn.com/abstract=3063465>); Eglund et al., Reassessing Common Ownership: Corrections to Azar, Schmalz, and Tecu 8–9 (Oct. 10, 2019) (unpublished manuscript) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3463231); Pauline Kennedy et al., *The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence* 10–14 (July 26, 2017) (unpublished manuscript) (available at <https://ssrn.com/abstract=3008331>); Eric Lewis & Randy Chugh, *Common Ownership and Airlines: Evaluating an Alternate Ownership Data Source* 5–8, 12 (Economic Analysis Group Discussion Paper, 2019), <https://www.justice.gov/atr/page/file/1181681/download>.

These replications all calculate ownership stakes using the same Thomson Reuters dataset that was used in the Airline Study. Lewis and Chugh find that if one instead uses a different Thomson Reuters dataset, the magnitude of the estimated price effect either drops in size or becomes statistically insignificant, depending on the method they use to calculate aggregate shareholdings. Lewis & Chugh, *supra*, at 4, 9, 13. However, they fail to take into account the fact that this different dataset drops all delisted companies, which means it omits data for any

affirmatively confirmed that the results of the Airline Study are not an artifact of data construction errors. Instead, critics have stressed various methodological critiques of the Airline Study's regressions. While some of these critiques are valid, addressing them actually increases the estimated price increase, and the other critiques rely on methods that are either biased toward finding negative price effects or are otherwise misguided.

a. Endogeneity

(1) The Airline Panel Regressions.

The main methodological critique has been that endogeneity might affect the Airline Study's panel regressions, which find a positive statistically significant correlation between ΔMHHI and prices. Some argue that increased demand on certain airline routes might affect both ΔMHHI and prices.⁵⁰ 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 . Other critics simply note that prices can affect the market shares that are used as an input to calculate ΔMHHI , without explaining what effect they have in mind.⁵¹ All these critics argue that, given this endogeneity, the correlation between ΔMHHI and prices might reflect reverse causation, in which higher prices cause higher ΔMHHI , rather than vice versa. This endogeneity concern is certainly a valid issue to investigate, but further investigation revealed it is 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

airline that later went bankrupt or merged into another firm, even data during the time before its bankruptcy or merger. Because so many airlines went bankrupt or merged during the Study's time period, dropping their data mismeasures both market concentrations and horizontal shareholding levels. This likely explains why using this different data set increases the volatility and range of measured ΔMHHI . *Id.* at 9. Using this different dataset also results in higher ΔMHHI , other than for the one version of their analysis that confirms adverse (albeit smaller) price effects. *See id.* at 11, 13. Mismeasuring and overestimating ΔMHHI would naturally reduce the statistical significance of any correlation between true ΔMHHI and prices.

⁵⁰ O'Brien & Waehrer, *supra* note 3, at 732–33, 753–55, 757–58; Edward Rock & Daniel Rubinfeld, *Defusing the Antitrust Threat to Institutional Investor Involvement in Corporate Governance* 13 (NYU L. & Econ. Research Paper No. 17-05) (Mar. 1, 2017), <https://ssrn.com/abstract=2925855> [hereinafter Rock & Rubinfeld, *Defusing*]; Lambert & Sykuta, *supra* note 29, at 29–31; Capital Markets Committee, *supra* note 29, at 5–6.

⁵¹ Dennis, Gerardi, & Schenone, *supra* note 49, at 2–3, 10–11; Eglund et al., *supra* note 49, at 3–4.

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 *underestimated* the adverse price effect from increases in horizontal shareholding.⁵³ 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 Δ MHHI and higher prices might be driven by increased demand also conflicts with copious evidence to the contrary. The Airline Study shows that increases in Δ MHHI 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 Δ MHHI 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 Δ MHHI might arise if routes with fewer passengers have fewer airlines and thus higher market shares and Δ MHHI 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 Δ MHHI change prices and output, not (as Lambert and Sykuta's critique supposes) by simply comparing prices and output in routes with higher Δ MHHI to those in routes with lower Δ MHHI.

Other evidence also contradicts the theory that the Δ MHHI-price correlation might be driven by demand or anything else independently increasing prices and those prices then increasing Δ MHHI. If price increases were causing increases in Δ MHHI, rather than vice versa, then higher prices should be correlated with later increases in Δ MHHI, but the evidence disproves such a correlation.⁵⁹ Indeed, it shows the opposite: increases in Δ MHHI are correlated with later increases in prices, indicating that the direction of causation

⁵² Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, 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 Δ MHHI. O'Brien & Waehrer, *supra* note 3, 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. 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 I.D.1.a(2).

⁵⁵ Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1517, 1541, 1544.

⁵⁶ *Id.* at 1544.

⁵⁷ Lambert & Sykuta, *supra* note 29, at 31-32.

⁵⁸ Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1517, 1528-29.

⁵⁹ *Id.* at 1535-36.

runs from the horizontal shareholding to the high prices.⁶⁰ Further, if independently caused 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. However, 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

A recent paper by Dennis, Gerardi and Schenone presents analysis that they claim shows the Airline Study's panel regressions correlating ΔMHHI and prices are driven not by horizontal shareholding, but rather by the endogenous effect of prices on market shares.⁶² But their claims are based on three modifications to the regression, none of which support their conclusion. First, rather than allowing ΔMHHI to vary with changing ownership over time, they run a modified regression that fixes ownership levels at whatever level exists in one month and allows ΔMHHI to vary over time only with changing market shares.⁶³ They find that with this modification the regression still usually has statistically significant results, which they conclude shows that the Airline Study results are not coming from variation in horizontal shareholding over time.⁶⁴ This does not follow. With their modification, the regression results are generally smaller and less statistically significant.⁶⁵ Their finding is thus consistent with the Airline Study's empirical finding that adverse price effects depend on a *combination* of horizontal shareholding levels and market concentration.⁶⁶ Given that reality, a constant level of horizontal shareholding would be expected to have greater anticompetitive impact the more concentrated the market becomes, but failing to take into account variations in horizontal shareholding levels would fail to pick up further anticompetitive effects. This is hardly surprising. After all, it is well recognized that the anticompetitive effects of horizontal mergers depend on market concentration levels.⁶⁷ No one would reasonably conclude that because the anticompetitive effects of horizontal mergers are greater with greater market concentration, that means that the horizontal mergers themselves are not having anticompetitive effects. The same follows for horizontal shareholdings, which are essentially a weaker form of horizontal mergers.

⁶⁰ *Id.*

⁶¹ *Id.* at 1518, 1545.

⁶² Dennis, Gerardi & Schenone, *supra* note 49, at 2, 5.

⁶³ *Id.* at 12–14. They call their measure $\text{HHI}\Delta$, but it is the same as what other empirical work calls ΔMHHI . *Id.* at 2.

⁶⁴ *Id.* at 13–14.

⁶⁵ *Id.* at 39–41.

⁶⁶ Elhauge, *supra* note 2, at 1276–77.

⁶⁷ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (2010).

Second, they run a regression that allows ΔMHHI to vary with changes in ownership over time, but fixes each firm's market share as 1 divided by N_{\max} , which is the maximum number of airlines that was ever present in that market during the covered time period.⁶⁸ They find that with this modification, the regression results are either negative or statistically insignificant, from which they conclude shows that the Airline Study results are coming from variations in market shares rather than from variations in common ownership.⁶⁹ But their conclusion is unwarranted because the $1/N_{\max}$ proxy that they use produces a systematic bias toward negative price correlations. They do not explain why they do not instead use $1/N$ as a proxy for market shares, where N is the actual number of firms in the market at any given time. Such a $1/N$ proxy would still attenuate findings because it inaccurately treats all firms as having the same market share and thus deviates from actual market concentration levels, which do alter the anticompetitive effects of horizontal shareholdings, just like market concentration does for horizontal mergers. However, a $1/N$ proxy would avoid any endogenous price effects on market share while at least relating to the actual number of firms in the market and avoiding the systematic negative bias created by the $1/N_{\max}$ proxy. That bias exists because $1/N_{\max}$ understates true market concentration more the lower N is.⁷⁰ Because lower N tends to increase prices, their proxy will understate market concentration more the higher prices are. Thus, not only is their proxy less accurate than $1/N$, but its inaccuracies are systematically biased toward finding a negative price correlation that would tend to offset any true positive price effects, which explains why using that biased proxy results in insignificant or negative price correlations. If one instead eliminates endogenous effects on market share by using $1/N$ as a proxy for market share, the regression continues to produce the positive statistically significant correlations found by the Airline Study, though they are somewhat smaller given the attenuation problem noted above.

Third, they modify the Airline Study panel regression by both adding endpoint price trend variables (for the average prices at origin and destination airports) and replacing the airlines' actual market shares on the relevant routes with an endpoint share proxy (based on the airlines' share of all passengers going to or from each endpoint).⁷¹ When using both these modifications, they find that the coefficient remains positive but is no longer statistically significant, which they conclude shows that the Airline Study's panel regression was driven by an endogenous relation between price and market share.⁷² But both their modifications are highly problematic. The problem with their endpoint price trend proxy is that, if greater horizontal

⁶⁸ Dennis, Gerardi & Schenone, *supra* note 49, at 14–15.

⁶⁹ *Id.* at 42.

⁷⁰ For example, if N varies from 2 to 10 over time on a route, then $1/N_{\max}$ is $1/10$. This is 100% of true $1/N$ when N is 10, but only 20% of true $1/N$ when N is 2.

⁷¹ Dennis, Gerardi & Schenone, *supra* note 49, at 16–18.

⁷² *Id.* at 19, 42.

shareholding in concentrated markets does increase prices along certain routes, that price increase will tend to increase average prices at the endpoints. Thus, their endpoint price trend variables will tend to correlate with route horizontal shareholding levels, creating a multicollinearity problem that could cause the regression to misattribute the effects of the horizontal shareholding to the endpoint price trend variables.⁷³ A major problem with their endpoint market share proxy is that it will predictably deviate from actual route market shares based on airline shares on entirely different routes to or from those endpoints. For example, suppose two airlines each have a 50% share of flights between Boston and Martha's Vineyard, but have only a 5% share of all flights going between Boston and anywhere else and between Martha's Vineyard and anywhere else. Then their endpoint market share proxy would treat the airlines as having only a 5% share of the Boston-Martha's Vineyard route, vastly understating actual route market concentration. This systematic mismeasurement of actual route market shares will at a minimum create attenuation bias towards a zero coefficient and lower statistical significance.⁷⁴ Worse, it creates a negative bias because their proxy will tend to understate true market concentration more the higher actual market concentration is. Because higher actual market concentration tends to increase prices, their endpoint market share proxy will understate true market concentration more the higher prices are, creating a bias toward finding a negative price correlation.

Their endpoint market share proxy also has the confounding effect of miscalculating horizontal shareholding levels. For example, suppose the two airlines in the prior example had horizontal shareholders, but each airline did not otherwise fly in or out of the endpoints and their shareholders did not overlap with the other endpoint airlines. Then their proxy would deem the Boston-Martha's Vineyard route's horizontal shareholding level to be trivial even though it is high, and if the actual high horizontal shareholding level increased prices on that route, their regression would fail to pick that up. Or suppose two other 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. Then their proxy would inaccurately treat these airlines as each having a 20% share of the Boston-Martha's Vineyard route. If horizontal shareholdings between those airlines failed to increase market prices on the Boston-Martha's Vineyard route, their proxy would wrongly treat that as evidence that horizontal shareholding does not increase prices, when instead it simply means these airlines are not in the relevant market. This mismeasurement of horizontal shareholding levels at a minimum creates attenuation bias. Worse, it creates a negative bias because their proxy will tend to

⁷³ JEFFREY M. WOOLDRIDGE, *INTRODUCTORY ECONOMETRICS* 102 (3d ed. 2006); ABA SECTION OF ANTITRUST LAW, *ECONOMETRICS* 68 (2005).

⁷⁴ JEFFREY M. WOOLDRIDGE, *INTRODUCTORY ECONOMETRICS* 320–322 (5th ed. 2013); STOCK & WATSON, *INTRODUCTION TO ECONOMETRICS* 320–321 (2d ed. 2007).

understate true route horizontal shareholding levels more the higher they actually are. Indeed, even when horizontal shareholding levels are higher on endpoints than on routes, their endpoint share proxy will create a negative bias because of an interaction with their endpoint price trend variables. Higher horizontal shareholding at the endpoints will tend to increase endpoint prices, which will increase the endpoint price trend variable, thus making route prices lower relative to the price trend variable. This will lower route prices relative to the trend variable precisely when the proxy is overstating route horizontal shareholding levels, thus creating another bias toward finding a negative price correlation.

In short, Dennis, Gerardi and Schenone's modifications to the Airline Study panel regression use proxies that create a combination of multicollinearity, attenuation bias, and negative bias. Those problems with their proxies could easily explain why their modifications cause the panel regression results to become statistically insignificant.

(2) The BlackRock-BGI Merger Regression.

The most definitive refutation of the endogeneity concerns comes from another part of the Airline Study, which used a merger between two large institutional investors, BlackRock and Barclay's Global Investors (BGI), to control for the possibility that airline Δ MHHI might be endogenously affected by changes in airline demand and prices.⁷⁵ Because both BlackRock and BGI had stock in some airlines but not others, their merger increased horizontal shareholding and Δ MHHI in some routes but not others. This effect on airline Δ MHHI 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.⁷⁶ The Airline Study ran two regressions based on only the portion of Δ MHHI changes that were attributable to the merger.⁷⁷ The first was a differences-in-differences regression that compared airline routes where the merger raised Δ MHHI to those where the merger did not, and it found that prices were significantly higher in routes where the merger raised Δ MHHI.⁷⁸ The second regression used the portion

⁷⁵ AZAR, SCHMALZ & TECU, *Airline Study*, *supra* note 9, at 1517–18, 1535–41.

⁷⁶ *Id.* at 1518, 1535, 1538.

⁷⁷ *Id.* at 1538.

⁷⁸ *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 29, 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 9, at 1539.

of Δ MHHI change attributable to the merger in each route as an instrumental variable, finding that it had a statistically significant effect on route prices.⁷⁹

Indeed, the estimated price effect in the instrument variable regression meant that the average Δ MHHI resulting from airline horizontal shareholding increases ticket prices by 10-12%, substantially higher than the 3-7% indicated in the main regression.⁸⁰ This confirms the theoretical prediction I noted above, that any endogeneity in the panel regressions would just make it conservative.

A paper funded by institutional investors critiqued the Airline Study's initial instrumental variable regression of the BlackRock-BGI merger on the ground that, while it corrected for endogenous effects on Δ MHHI, it failed to control for endogenous effects on the HHI variable that it also used.⁸¹ This was a sound point, but as this paper acknowledges, the final version of the Airline Study uses the *pre*-merger HHIs on each route.⁸² This paper asserts without explanation that this does not resolve the endogeneity concern,⁸³ but in fact using pre-merger HHIs controls for any endogenous effect of the BlackRock-BGI merger on HHI levels.

Another paper funded by institutional investors 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.⁸⁴ 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 this 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 this paper uses as a purported proxy for horizontal shareholding, given that the paper's first stage regression somehow finds that the BlackRock-BGI merger had a significant *negative* effect on horizontal shareholding levels, which is impossible given that the merger clearly combined large horizontal shareholders.⁸⁵ In short, although this 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.

⁷⁹ AZAR, SCHMALZ & TECU, *Airline Study*, *supra* note 9, at 1540-41.

⁸⁰ *Id.* at 1517-18, 1541, 1559.

⁸¹ O'BRIEN & WAEHRER, *supra* note 3, at 756-58; *id.* at 729 n.* (acknowledging funding from the Investment Company Institute, an association of institutional investors).

⁸² *Id.* at 756 n.61.

⁸³ *Id.*

⁸⁴ *Id.* at 15; *id.* at 1 n.* (acknowledging funding from the Investment Company Institute).

⁸⁵ *Id.* at Table 6; Azar, Schmalz & Tecu, *The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence: Reply 4* (Sept. 27, 2018) (unpublished manuscript) (available at <https://ssrn.com/abstract=3044908>) [hereinafter "Azar, Schmalz, and Tecu, *Reply to Kennedy, et al.*"].

Not surprisingly, if one uses a proxy that is negatively related to horizontal shareholding, one finds that the proxy is negatively related to prices. However, that just confirms that actual horizontal shareholding does increase prices.

b. Market Definition, Bankruptcy, and Other Miscellaneous Methodological Critiques

Critics have also offered various other methodological critiques. First, Rock and Rubinfeld critiqued the Airline Study for initially defining route markets by airport pairs, rather than by city pairs.⁸⁶ 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). However, the final Airline Study shows that using city pairs actually makes the estimated harmful price effects *larger*.⁸⁷ In response, Rock and Rubinfeld now say this issue is likely “minor.”⁸⁸ 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 Δ MHHI because of the presence of low-cost carriers like Southwest.⁸⁹ But the Airline Study’s regressions explicitly control for the presence of Southwest and other low-cost carriers.⁹⁰ 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.⁹¹ But the Airline Study explicitly controls for those airline mergers and recession effects.⁹² Rock and Rubinfeld further argue that the Airline Study results might be affected by changes in fuel costs or differences in route size.⁹³ 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

⁸⁶ Rock & Rubinfeld, *Defusing*, *supra* note 50, at 12.

⁸⁷ 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 9, at 1530, 1532, 1534, which, given that weighted average Δ MHHI was 2044, corresponds to a change in estimated price increase from 4.1% to 4.9%, *id.* at 1526, 1529.

⁸⁸ Rock & Rubinfeld, *Antitrust*, *supra* note 3, at 246.

⁸⁹ *Id.* at 244–45.

⁹⁰ Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1529–32, 1536, 1540, 1542, 1547.

⁹¹ Rock & Rubinfeld, *Antitrust*, *supra* note 3, at 243–44.

⁹² Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1539–40.

⁹³ Rock & Rubinfeld, *Antitrust*, *supra* note 3, at 244.

that doing so *increased* the estimated price effects.⁹⁴ Thus, none of these methodological critiques proves telling.

Third, two articles (one funded by BlackRock) have critiqued the Airline Study's initial regression for assuming that, when various airlines were in bankruptcy, shareholdings matched the last observed value for shareholdings before bankruptcy.⁹⁵ This is another good point. While a firm is in Chapter 11, shareholders retain the right to vote for directors, but creditors gain significant control rights.⁹⁶ Creditors generally become the first residual claimants and thus gain cash flow rights as well.⁹⁷ Further complicating matters, shareholders sometimes (but not always) get shares after a Chapter 11 reorganization, and some creditors are also shareholders. Moreover, index funds tend to automatically sell their shares during bankruptcy, but then predictably rebuy those shares after a firm exits bankruptcy,⁹⁸ and corporate managers have incentives to consider not only their current shareholders, but also their expected long-run shareholders, when they make decisions during bankruptcy. It is thus erroneous to assume (as the Airline Study originally did) that shareholders during bankruptcy have 100% of the influence and financial interest that they had before bankruptcy. However, the solution that these two papers offer to this problem errs in the opposite direction. They set shareholders' profit and control rights equal to zero whenever an airline was in Chapter 11, finding that this modification makes the price effects smaller and often statistically insignificant.⁹⁹ Setting those rights equal to zero understates those shareholders' influence and interests since, as these papers acknowledge, shareholders can have some control and cash rights during bankruptcy or emerge with them after bankruptcy.¹⁰⁰

A more neutral approach would instead assume that, during bankruptcy, participants expect shareholders to get the shareholding levels they actually end up with at the end of bankruptcy. The paper that was not funded by BlackRock acknowledges that, if one uses that approach, the price effect

⁹⁴ This change increased the relevant coefficient from .194 to .219, Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1517, 1528–30, which, given that weighted average Δ MHHI was 2044, corresponds to a change in estimated price increase from 4.0% to 4.5%, *id.* at 1526, 1529.

⁹⁵ Dennis, Gerardi & Schenone, *supra* note 49, at 25; Eglan et al., *supra* note 49 at 6–7. Each author of the latter paper acknowledges funding by BlackRock, a major horizontal shareholder. *Id.* at 1 n.1–2.

⁹⁶ Dennis, Gerardi & Schenone, *supra* note 49, at 24–25.

⁹⁷ *Id.*

⁹⁸ Eglan et al., *supra* note 49, at 7, 18.

⁹⁹ Dennis, Gerardi & Schenone, *supra* note 49, at 25–26; Eglan et al., *supra* note 49, at 10–11. The latter paper funded by BlackRock in text reports only the carrier-level regression results that are statistically insignificant, Eglan et al., *supra* note 49, at 11, 18, but their Internet Appendix admits that even assuming zero shareholder rights during bankruptcy, the results remain positive and statistically significant for the market-level regressions, Eglan et al., *supra* note 49, at 20.

¹⁰⁰ Dennis, Gerardi, & Schenone, *supra* note 49, at 25–26; Eglan et al. *supra* note 49, at 10–11.

remains statistically significant, albeit somewhat smaller.¹⁰¹ It further acknowledges that their approach understates Δ MHHI relative to this approach.¹⁰² While using post-bankruptcy shareholdings is an improvement over assuming shareholders have 0% or 100% of the rights they had pre-bankruptcy, it is not ideal because the post-bankruptcy results will often vary from expectations during bankruptcy, which creates a mismeasurement in the independent variable that leads to some attenuation bias towards a lower price effect.¹⁰³ A better method would avoid the mismeasurement issue altogether by simply excluding from the regression any time periods during when some airlines were in Chapter 11. The Airline Study shows that when that better method is used, it *increases* the estimated price effects.¹⁰⁴

c. 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.¹⁰⁵ This means that MHHI and Δ MHHI 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 Δ MHHI 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.¹⁰⁶ 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 of shares 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.¹⁰⁷

¹⁰¹ Dennis, Gerardi, & Schenone, *supra* note 49, at 26.

¹⁰² *Id.* at 27, 53.

¹⁰³ JEFFEREY M. WOOLDRIDGE, *INTRODUCTORY ECONOMETRICS: A MODERN APPROACH* 320–322 (5th ed. 2013); JAMES H. STOCK & MARK W. WATSON, *INTRODUCTION TO ECONOMETRICS* 320–321 (2d ed. 2006).

¹⁰⁴ Excluding bankruptcy periods increased the estimated coefficient from .202 to .265, *see* Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1530–32, which, given that weighted average Δ MHHI was 2044, corresponds to a change in estimated price increase from 4.1% to 5.4%, *id.* at 1526, 1529.

¹⁰⁵ *Supra* at text accompanying note 9.

¹⁰⁶ O'Brien & Waehrer, *supra* note 3, at 760–61.

¹⁰⁷ *Id.*

However, it is not clear it is so counterintuitive 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.¹⁰⁸ Nor is it clear that a leading shareholder with a small absolute 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.¹⁰⁹ 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.¹¹⁰ 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.¹¹¹ Indeed, given that institutional investors vote far more fre-

¹⁰⁸ Einer Elhauge, *The Causal Mechanisms of Horizontal Shareholding* 21–23, 25–28 (unpublished manuscript) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3370675) [hereinafter Elhauge, *The Causal Mechanisms*].

¹⁰⁹ *Caplan v. Lionel Corp.*, 246 N.Y.S.2d 913 (1964).

¹¹⁰ Jonathan Lewellen & Katharina Lewellen, *Institutional Investors and Corporate Governance: The Incentive to Be Engaged* 1 (Tuck Sch. of Bus. Dartmouth C., Working Paper No. 3265761, 2018), <https://ssrn.com/abstract=3265761>; Jan Fichtner et al., *Hidden power of the Big Three? Passive index funds, re-concentration of corporate ownership, and new financial risk*, 19 BUS. & POL. 298, 313 (2017).

¹¹¹ 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 29, 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 9, 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 29, 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

quently than small shareholders, the MHHI measure probably, if anything, understates the influence of the large 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.¹¹² Accordingly, although institutional investors owned 70% of shares in all publicly-traded firms in 2017, they cast 88% of votes in those firms.¹¹³

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.¹¹⁴

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.¹¹⁵ 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.¹¹⁶ 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 that have varying fee levels and flow incentives.¹¹⁷ 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.¹¹⁸

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 Δ MHHI, increases prices.¹¹⁹ 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. Moreover, even critics have confirmed

firms, thus resulting in even higher prices than pure monopoly pricing. Duarte Brito, Richardo Ribeiro & Helder Vasconcelos, *Can Partial Horizontal Ownership Lessen Competition More Than a Monopoly?*, 176 *ECON. LETTERS* 1 (2018).

¹¹² 2019 *Proxy Season Review*, PROXYPULSE, <https://www.broadridge.com/proxypulse/>.

¹¹³ $(.91)(70\%)/[(.91)(70\%) + (.28)(30\%)] = 88\%$.

¹¹⁴ Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1534, 1544–46.

¹¹⁵ Ginsburg & Klovers, *supra* note 3, para. 17–18; Lambert & Sykuta, *supra* note 29, at 23–29.

¹¹⁶ Ginsburg & Klovers, *supra* note 3, at para. 13–16; Lambert & Sykuta, *supra* note 29, at 23–29. Those premises are disproven in Elhauge, *The Causal Mechanisms*, *supra* note 108, at 38–57.

¹¹⁷ Lewellen & Lewellen, *supra* note 110, at 8 & n.3; Hemphill and Kahan, *supra* note 20, at 33–36.

¹¹⁸ Elhauge, *The Causal Mechanisms*, *supra* note 108, at 48–51.

¹¹⁹ Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1522–23.

that the results of the Airline Study are not changed by whether or not one aggregates ownership at the fund family level.¹²⁰

To be sure, maybe we can develop more-refined measures of horizontal shareholding that have even greater statistical significance and explanatory power than MHHI does. For example, I and some co-authors have proposed an alternative measure that avoids the implication that horizontal shareholders with a small total share generate near-monopoly pricing when the remaining shareholders are highly dispersed.¹²¹ 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 measure predicts firm prices even better than MHHI does. However that does not alter the reality that taking MHHI into account predicts prices better than ignoring horizontal shareholding altogether.¹²²

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 to the extent that current MHHI measures are somewhat inaccurate because they do not incorporate such fine tuning, such inaccuracy would simply create attenua-

¹²⁰ Dennis, Gerardi, & Schenone, *supra* note 49, at 19–22. Prior versions of their article that did not aggregate fund family shareholdings had claimed that the Airline Study panel regression lost statistical significance if one did not weight routes by the number of passengers or if one set shared voting rights equal to zero. But the updated article acknowledges that the results remain statistically significant even if one makes those modifications. *Id.* at 28–34. In any event, both of those other modifications are mistaken. Weighting routes by passengers is preferable because failing to do so necessarily has the effect of overweighing price observations on routes with fewer passengers. Setting shared voting rights equal to zero is incorrect because having 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. See *Frequently Asked Questions About Form 13F, Answers to Questions 46 & 50a*, SEC, <https://www.sec.gov/divisions/investment/13ffaq.htm> (last visited Mar. 25, 2020).

¹²¹ Duarte Brito, Einer Elhauge, Ricardo Ribeiro & Helder Vasconcelos, *Modeling Horizontal Shareholding with Ownership Dispersion* (Oct. 31, 2018) (unpublished manuscript) (available at <https://ssrn.com/abstract=3264113>).

¹²² A paper funded by institutional investors re-runs the Airline Study's main regression of prices on horizontal shareholding levels, but replaces actual MHHI and Δ MHHI with the paper's own "construction" of horizontal shareholder incentive terms. Kennedy, et al., *supra* note 49, at 14–15. However, even with their own measure of horizontal shareholding, they find that horizontal shareholding increases prices with a statistical confidence of over 99.9%. *Id.* at 16, 31. Although they estimate a smaller size of price effect with their measure of horizontal shareholding, they provide no evidence that their measure better predicts prices.

Another part of this paper re-runs the regression using not only their own measure of horizontal shareholding, but also their own model of market demand and supply, finding no statistically significant link between horizontal shareholding and prices. *Id.* at 5, 16–22. But their reconstruction of 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. *Id.* at 22; Azar, Schmalz & Tecu, *Reply to Kennedy, et al., supra* note 85, at 3, 5. Also, their reconstruction uses only one tenth of the actual data, which makes it far less likely to find an effect. Kennedy, *supra* note 49, at 20–21; Azar, Schmalz & Tecu, *Reply to Kennedy, et al., supra* note 85, at 3–5. Nor do they provide any evidence that combining their reconstruction and data limitations with their own measure of horizontal shareholding better predicts prices.

tion bias towards a zero coefficient and lower statistical significance.¹²³ That would indicate that the true effects are likely even larger than the Airline study found.

A paper funded by BlackRock (a major horizontal shareholder) notes that asset managers generally average annual fees in the neighborhood of 1% of assets under management, and re-runs the Airline regression assuming that the financial incentives of asset managers equal 1% of reported shares, finding that this makes the results statistically insignificant.¹²⁴ But this analysis fails to take into account that: (1) asset managers have fiduciary duties to manage their investment fund to maximize the interests of the underlying investors; (2) an annual fee of 1% implies a present value of 10% of firm value; (3) asset managers value not only their annual fees, but the effect on investment flow from having greater returns than other funds; (4) large institutional investors have large shareholdings and thus a greater likelihood of affecting corporate results than smaller shareholders.¹²⁵

Moreover, the general problem with the BlackRock paper approach is that they are relying on a purely theoretical claim about what they believe *should* affect corporate performance and then showing that an independent variable that adopts their theoretical assumptions has no statistically significant effect. The fact that a measure that uses their assumptions is less predictive of price effects than the standard MHHI measure indicates that their measure is missing something that the MHHI picks up, and thus indicates there is something wrong with their alternative measure and its underlying theory.

2. The Critique of the Banking Study

Gramlich and Grundl re-run the Banking Study's panel regression using various modifications that lead them to find smaller and more mixed effects.¹²⁶ However, their critique simply uses the institutional shareholdings reported in the 13F data, and thus fails to aggregate shares voted by the same fund family.¹²⁷ They also stressed that their empirical findings were preliminary due to known irregularities in the 13F data that they had not yet investigated and corrected.¹²⁸ Thus, even if their modifications were sensible, their study fails to disprove adverse effects.

¹²³ WOOLDRIDGE, *INTRODUCTORY ECONOMETRICS* 320–322 (5th ed. 2013); STOCK & WATSON, *INTRODUCTION TO ECONOMETRICS* 320–321 (2d ed. 2016).

¹²⁴ Eglund et al., *supra* note 49, at 5, 9–10.

¹²⁵ See Elhauge, *The Causal Mechanisms*, *supra* note 108, at 38–57.

¹²⁶ Jacob Gramlich & Serafin Grundl, *Estimating the Competitive Effects of Common Ownership*, (Wash. Bd. Of Governors of the Fed. Res. System, 2017) <http://dx.doi.org/10.17016/FEDS.2017.029r1>.

¹²⁷ *Id.* at 4, 13.

¹²⁸ *Id.* at 4. The need to correct the well-known inaccuracies in the 13F data by cross-checking against other sources has been repeatedly stressed in the literature. See Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1525 n.11; Backus, Conlon & Sinkinson, *Common*

But in fact their modifications are problematic because they change the Banking Study's GHHI measure to exclude its market share components altogether. Instead, they use a measure that just reflects average horizontal shareholding levels by dividing the sum of horizontal shareholding levels by the number of rivals in the market.¹²⁹ They do so to eliminate any concern about the endogenous effects of pricing on market shares and market concentration.¹³⁰ But the problem is, as noted above, that the anticompetitive effects of horizontal shareholding turn on market concentration levels, just as do the effects of horizontal mergers.¹³¹ Thus, their measure bears far less connection to the relevant anticompetitive effects. 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.

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.

To draw an analogy, suppose one did an empirical study showing that Body Mass Index (BMI), which considers both weight and height, is highly correlated with diabetes. Suppose a critic argues that one should just consider weight and does an empirical study showing that weight alone has no significant correlation with diabetes. The correct conclusion would be that BMI is a better predictor of diabetes and thus the better variable to use. One would not say that the critics' study shows that BMI or fatness in general is irrelevant to diabetes. GHHI is like BMI in that it considers two relevant factors (horizontal shareholding levels and market concentration), whereas the Gramlich-Grundl measure considers only one relevant variable (average horizontal shareholding level). The fact that GHHI better predicts price effects just shows it is a better measure of the relevant phenomenon. In both

Ownership in America, *supra* note 43, at 13; Dennis, Gerardi & Schenone, *supra* note 49, at 9 n.13; Lewellen & Lewellen, *supra* note 110, at 9.

¹²⁹ Gramlich & Grundl, *supra* note 126, at 3, 8–9.

¹³⁰ *Id.* at 3, 29.

¹³¹ See *supra* Part I.D.1.a(1).

cases there is an obvious theoretical reason to explain why: BMI does better because the same weight implies different fatness depending on height, and GHHI does better because the same horizontal shareholding implies different price effects depending on market concentration levels. But even if one were otherwise inclined to dispute the pure theoretical argument, the empirical result confirms that the two-factor variable (BMI or GMHHI) is a better variable because it better predicts effects and thus must capture something affecting the relevant concern that is not captured by the one-factor variable (weight or average horizontal shareholding levels).

This does not necessarily mean that BMI is the best measure of fatness that correlates to diabetes. Perhaps waist-to-hip ratio or percentage body fat would be better predictors. One would have to run an empirical study and see if they offer better predictions. If one could displace BMI with a measure that correlates better to diabetes rates, one should. But one should not abandon BMI because other measures (like just weight) do not correlate to diabetes rates. Likewise, GHHI (like MHHI) might well be displaced by a measure that is shown to be a better price predictor.¹³² But that provides no reason for abandoning GHHI because a study shows that some other measure (say a GHHI that does not consider market share or aggregate fund family shareholdings) offers no useful price prediction.

If one wanted to eliminate any endogenous effect of prices on banking market shares, a better approach would be to continue to use GHHI but use $1/N$ as a proxy for market shares, where N is the actual number of firms in the relevant banking market at any given time. Because this would deviate from actual market shares, it would still predictably attenuate the findings, but at least $1/N$ is likely to have some correlation to actual market concentration levels. The Banking Study in fact ran an alternative regression that used the $1/N$ proxy and found that the adverse effects on bank CD rates and checking account maintenance fees and fee thresholds remained statistically significant, albeit smaller as one would expect given the attenuation bias caused by not using actual market shares.¹³³ It is not clear whether the difference between these results and Gramlich and Grundl's results reflect the difference in how they measured GHHI, or instead the fact that Gramlich and Grundl failed to correct the 13F data and aggregate shares held by the same fund family. But these results indicate that if one does correct and aggregate the shareholding data, adverse effects from horizontal shareholding on bank fees and rates can be established even with an exogenous proxy for market share. To the extent the difference reflects the fact that Gramlich and Grundl failed to aggregate fund family shareholdings, that would indicate that ag-

¹³² See *supra* Part I.D.1(c).

¹³³ Azar, Raina & Schmalz, *supra* note 11, at 10 n.20, 77–78. Using the $1/N$ proxy eliminated statistical significance for the adverse effects on money market fees, fee thresholds, and interest rates, but that is not surprising since attenuation bias also tends to reduce statistical significance. See *id.* at 77–78.

gregating fund family shareholdings captures a key statistically significant effect that would otherwise be missed.

Moreover, the Banking Study performed other analysis that provided more definitive refutations of any endogeneity concerns. First, they ran a regression that used the level of index fund ownership of banks in each local market as an instrumental variable for GHHI in each market.¹³⁴ The growth of index funds is a useful instrument because it affects ownership in some banking markets more than others (because some banks are in indices and others, such as private banks, are not) in a way that reflects larger market forces that are unlikely to be affected by differences in prices in local banking markets. They found that using this method the adverse effects on banking fees and rates were much *larger*.¹³⁵ This is consistent with the similar showing in the Airline Study that endogeneity is, if anything, likely to attenuate findings because higher prices are more likely to induce market entry or expansion from firms with low horizontal shareholding levels and to induce investment from active investors who invest selectively rather than horizontally. Second, to deal with the somewhat strained endogeneity concern that maybe prices in particular markets might affect which banks are included in the indices, they did two types of analysis. They lagged the index fund ownership instrument by one year, which should have decreased the price effect if there were an endogeneity concern, and found that instead it increased the price effect.¹³⁶ Next they ran a differences-in-differences regression, that held index ownership of local banks constant at its 2003 level, and found that it still had a statistically significant effect on bank prices a decade later.¹³⁷ Given all these multiple checks, there are no plausible grounds to think that the adverse effect of horizontal shareholding on bank rates and fees reflects endogeneity.

3. New Studies Show that Horizontal Shareholding Has Anticompetitive Effects in Seed and Pharmaceutical Markets

The proposition that 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 Δ MHHI 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 Δ MHHI that uses (instead of current

¹³⁴ *Id.* at 3–4, 23–25.

¹³⁵ *Id.* at 27. *Compare id.* at 21–22, 47–49, with *id.* at 26–27, 50–52.

¹³⁶ *Id.* at 28.

¹³⁷ *Id.* at 4, 29–33.

market shares) the average market shares in the preceding years.¹³⁸ This eliminates not only the concerns that prices might be affecting Δ MHHI levels or that some omitted variable might be simultaneously affecting both prices and Δ MHHI levels, but also eliminates the possibility that changes in Δ MHHI 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 Δ MHHI 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 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

¹³⁸ Mohammad Torshizi & Jennifer Clapp, Price Effects of Common Ownership in the Seed Sector 27-29 (unpublished manuscript) (Apr. 24, 2019) (available at <https://ssrn.com/abstract=3338485>).

¹³⁹ *Id.*

¹⁴⁰ *Id.* at 43 (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 Δ MHHI based on average market shares over the study period. In contrast, regular Δ MHHI measures would pick up this effect because the increased market concentration would increase Δ MHHI 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 Δ MHHI than using their lagged average Δ MHHI measure. *Id.* at 35.

¹⁴¹ *Id.* at 4, 36-37.

¹⁴² *Id.* at 41-42.

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.

4. A New Cross-Market Study of Hundreds of Consumer Goods Confirms that Higher Horizontal Shareholding Increases Prices and Economic Inequality

The findings of the five preceding market-level studies have been further confirmed by a massive cross-market study of hundreds of consumer goods.¹⁴⁵ Unlike the cross-industry studies, it measured market shares, HHIs, and MHHIs by product markets, and thus avoided the imprecision resulting from the fact that industry definitions do not match market definitions. But unlike the market-level studies, it was able to compare different product markets, rather than just different geographic markets, to show how horizontal shareholding might affect prices.

This study found that higher levels of horizontal shareholding in consumer goods markets resulted in a statistically significant increase in prices.¹⁴⁶ Not surprisingly, given that the study defined markets, shares, and horizontal shareholding by manufacturer product market, it found that the increase resulted from increases in manufacturer prices, not from increased markups by wholesalers or retailers.¹⁴⁷

Moreover, this study controlled for all the possible causes of endogeneity that have been raised by critics of the Airline Study. It controlled for the possibility that differences in demand might explain the correlation by using product-firm and firm-time fixed effects that controlled for all differences in demand between firms or within firms over time.¹⁴⁸ It controlled for the possibility that horizontal shareholders might selectively invest in markets for which they expect prices to rise both by (a) creating an instrument for local MHHI levels using changes in nationwide horizontal share-

¹⁴³ Jin Xie & Joseph Gerakosz, *Institutional Horizontal Shareholdings and Generic Entry in the Pharmaceutical Industry* (Tuck Sch. Of Bus. Working Paper No. 3285161, 2018), <https://ssrn.com/abstract=3285161>.

¹⁴⁴ Melissa Newham et al. *Common Ownership and Market Entry: Evidence from the Pharmaceutical Industry* (DIW Berlin Discussion Paper No. 1738, 2019), <https://ssrn.com/abstract=3194394>.

¹⁴⁵ Hadiye Aslan, *Common Ownership, Creative Destruction, and Inequality: Evidence from U.S. Consumers 8-10* (Sep. 12, 2019) (unpublished manuscript) (on file with author).

¹⁴⁶ *Id.* at 3.

¹⁴⁷ *Id.* at 4, 11, 22-24.

¹⁴⁸ *Id.* at 3, 14.

holding and (b) measuring only the exogenous effects of institutional investor mergers on horizontal shareholding levels.¹⁴⁹ Finally, it controlled for possible endogenous effects on the market shares used to calculate MHHI by using an instrument for market share derived from exogenous changes in nationwide age and income distributions.¹⁵⁰ Even with all those controls, the study consistently found that higher horizontal shareholding levels increased prices.

Finally, this study showed that horizontal shareholding directly increased economic inequality because it raised prices higher for products catering to lower-income consumers.¹⁵¹ This finding suggests that, because lower-income consumers spend proportionally more on necessities, higher prices are more likely to affect lower-income consumers on necessities for which their price elasticity is low. This study thus indicates that horizontal shareholding increases economic inequality over and above the general mechanism that any increase in product prices is disproportionately borne by those with lower income (because they spend a higher percentage of their income on consumption) and disproportionately benefits those with higher income (because they are more likely to own stock in the businesses selling at higher prices).¹⁵²

5. A New Study Finds Horizontal Ownership by Venture Capitalists Reduces Competition Between Startups

Another new study finds that horizontal ownership by venture capitalists makes pharmaceutical startups less likely to compete with each other.¹⁵³ Specifically, it finds that if one startup's drug proceeds to Phase II clinical trials, the likelihood of other startups proceeding to Phase II with a competing drug drops significantly if they share a common venture capitalist owner.¹⁵⁴ The drop is so large that it is as high as the unconditional odds of a startup proceeding to Phase II at all.¹⁵⁵ The study avoided any endogeneity concerns about MHHIs by instead just using the existence of a common venture capitalist. The study also addressed any concern about any endogenous effects on whether venture capitalists made horizontal investments by using the startups' geographic proximity as an instrumental variable to predict such horizontal investments, finding that this control for endogeneity made the anticompetitive effect larger.¹⁵⁶

¹⁴⁹ *Id.* at 3, 17–22.

¹⁵⁰ *Id.* at 3, 15.

¹⁵¹ *Id.* at 5, 28–29.

¹⁵² Elhauge, *supra* note 2, at 1298.

¹⁵³ Xuelin Li et al., Do Venture Capitalists Stifle Competition? (Mar. 3, 2020) (unpublished manuscript) (available at <https://ssrn.com/abstract=3479439>).

¹⁵⁴ *Id.* at 2–3, 15–18.

¹⁵⁵ *Id.* at 3, 15–16.

¹⁵⁶ *Id.* at 2, 16–17.

The study found that common ownership had this effect only when the startups' drugs were close technological substitutes and the relevant product markets were uncrowded.¹⁵⁷ This pattern of effects is thus consistent with an anticompetitive motive to kill off competing projects and inconsistent with an explanation based on the common owners having insufficient resources to continue financing two projects. They also found that the effect exists only when the common owners have invested more than the median venture capitalist in the startup.¹⁵⁸ This pattern is thus consistent with other evidence that horizontal ownership has anticompetitive effects only when the horizontal owners are among the leading owners at the firm, which is necessary to make horizontal ownership levels high under the usual Δ MHHI measure, given that it turns on the relative stakes of horizontal versus nonhorizontal owners.¹⁵⁹ Both these limits fit well with the anticompetitive theory of horizontal ownership because (a) even horizontal mergers have anticompetitive effects only in concentrated product markets and (b) if the leading shareholders are nonhorizontal, they are more likely to drive firm decisions. Thus, the study provides more evidence for the conclusion that horizontal ownership has anticompetitive effects only when both horizontal shareholding levels and market concentration are high, which is why I limit my enforcement recommendation to investigating such markets.¹⁶⁰

6. A New Study Shows that When Entry into the S&P 500 Index Increases Horizontal Shareholding, It Raises Rival Stock Prices

Another new study has found that when a firm's entry into the S&P 500 increases horizontal shareholding levels, it increases the stock prices of not only the entering firm, but also its product market rivals.¹⁶¹ Because a firm's entry into the S&P 500 increases demand for its own stock in a way that would increase its own stock price regardless of any anticompetitive effects, the study focuses instead on the fact that such entry increases the stock market prices of product market rivals that are already in the index.¹⁶² A firm's

¹⁵⁷ *Id.* at 4, 22–25.

¹⁵⁸ *Id.* at 4, 25–26

¹⁵⁹ See *supra* Part I.D.1(c).

¹⁶⁰ See Elhauge, *supra* note 2, at 1276–77, 1303; *infra* Part I.F.

¹⁶¹ Lysle Boller & Fiona Scott Morton, *Testing the Theory of Common Stock Ownership* 5 (Oct. 24, 2019), <https://www.semanticscholar.org/paper/Testing-the-Theory-of-Common-Stock-Ownership-Boller-Morton/af0dd1b4550df5fca8620a2066aa10b5478fd764>.

¹⁶² *Id.* at 2–5, 14, 21. Others have dismissed S&P 500 entry studies because entry has endogenous effects on the stock market price of the firm entering the S&P 500, but did not consider the effect of such entry on the entering firm's rivals. See Katherina Lewellen & Michelle Lowry, *Does common ownership really increase firm coordination?* 6, 26 (Tuck. Sch. Of Bus. Working Paper No. 3336343, 2020), <https://ssrn.com/abstract=3336343>. Lewellen and Lowry also object to S&P 500 entry studies on the grounds that a firm's entry increases its total institutional ownership and decreases its block ownerships of more than 5%, which could influence the entering firm's policies. *Id.* at 6, 26–27. However, both those changes are simply manifestations of the increase in horizontal shareholding, which puts more ownership

entry into the S&P 500 is exogenous from the perspective of those product market rivals,¹⁶³ and if anything somewhat reduces demand for those rivals' stock because adding the index entrant causes a reweighting that requires selling index incumbents.¹⁶⁴ Further, the study shows that when entry into the S&P 500 does not create the same jump in horizontal shareholding levels (such as when the entering firm already belonged to another S&P index or when its product market rivals were not in the S&P 500), it does not increase the stock price of product market rivals.¹⁶⁵ The fact that entry into the S&P 500 increases the stock market price of product market rivals only when it results in a jump in horizontal shareholding levels (and does so despite the offsetting reduction in stock demand for rival stock) indicates that increased horizontal shareholding strongly increases the expected profitability of product market rivals, just as the anticompetitive theory of horizontal shareholding would predict.¹⁶⁶

*E. Two New Cross-Industry Study Do Not Undermine
All the Above Findings*

Two new cross-industry studies purport to find that horizontal shareholding has no robust effect on firm profits or investment. However, properly understood, these studies actually confirm that horizontal shareholding does cause anticompetitive effects. Their other statistically insignificant results suffer from econometric problems, including creating a huge mis-measurement bias by defining markets using industry definitions that are vastly greater than the relevant markets. Both also fail to focus on testing the relevant anticompetitive theory, which is that *large* increases of horizontal shareholding in *concentrated* markets can have anticompetitive effects on those markets. Instead, they mistakenly focus on testing whether any increase in horizontal shareholding has anticompetitive effects and (for one of them) on whether it increases prices more for the horizontally-held firms than for other firms in the same market.

in the hands of horizontally-diversified institutional investors and less in the hands of nonhorizontal blockowners. If that changes the firm's policies, that is precisely what horizontal shareholding theory predicts. Moreover, unless those changes in firm policy are anticompetitive, it is unclear why such changes should increase the stock market price of both the firm and its rivals.

¹⁶³ Boller and Scott Morton show that the S&P 500 index adds new entrants when some existing index firm exits for unrelated reasons (like acquisitions, going private, or bankruptcy), and that the new entrants are chosen in an unpredictable way (that is unrelated to the product market of the exiting firms) from a pool of possible entrants that would satisfy S&P 500 criteria. Boller & Scott Morton, *supra* note 161, at 18, 21–24.

¹⁶⁴ *Id.* at 2 n.1, 14–15.

¹⁶⁵ *Id.* at 5, 24–26, 32–35, 52.

¹⁶⁶ To identify product market rivals, Boller and Scott Morton not only use the industry classifications of GICS and Hoberg and Phillips, which may be overbroad for reasons discussed in the next section, but also manually exclude firms in the same industries that were not clearly product market competitors. *Id.* at 19–20. All the classifications produce similar findings of effects. *Id.* at 34.

1. Lewellen and Lowry

Professors Lewellen and Lowry run a study of mergers between financial institutions.¹⁶⁷ Their treatment group consists of firms for which such a merger created common ownership of more than 5% between two firms in the same industry.¹⁶⁸ Their initial control group consists of firms that are not in the treatment group because they were in a different industry, but were owned 5% or more by one of the merging financial institutions.¹⁶⁹ Lewellen and Lowry run a difference-in-difference regression that compares changes in operating income and R&D investment in their treatment group to their control group.

One major problem with their approach is that their regression does not actually measure when financial institutional mergers create a major horizontal shareholder of two firms in the same market. The reason is that they define common ownership to exist when the merged institution owns two firms that have the same *3-digit SIC industry code*, not when they are in the same market.¹⁷⁰ There are only 416 industries with 3-digit SIC codes in the entire economy, and it has been shown that even the more-refined 4-digit SIC codes (which define 1005 industries) produce industry definitions that are many times greater than the relevant markets.¹⁷¹ For example, the biggest part of Lewellen and Lowry's treatment group (15% of it) is in the "drugs" industry (SIC 283).¹⁷² This industry is defined to include not only all pharmaceuticals, but also all vitamins, vaccines, and diagnostic substances, whether for human or veterinary use, and clearly few of them compete with each other.¹⁷³ Given this definition, a firm making statins, a firm making Vitamin C, and a firm making pregnancy tests are all in the same industry, but common shareholding among them will not lessen competition because they do not compete in the same product market. Moreover, firms in the same industry are often in different geographic markets, and thus not horizontal competitors. This is not much of an issue for drugs, which probably are generally sold in national markets, but is an issue for many industries, where competition occurs in local markets.¹⁷⁴

To be sure, firms in the same industry must be somewhat more likely to be horizontal competitors than are firms in different industries. But because so many firms in the same industry will not be in the same market, treating

¹⁶⁷ Lewellen & Lowry, *supra* note 162, at 3–4, 13–14.

¹⁶⁸ *Id.* at 14.

¹⁶⁹ *Id.* at 14–15.

¹⁷⁰ *Id.* at 14.

¹⁷¹ See Gregory Werden & Luke Froeb, *Don't Panic: A Guide to Claims of Increasing Concentration*, Antitrust Mag. (2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3156912; *What is a SIC Code?*, SICCODE, <https://siccode.com/page/what-is-a-sic-code> (last visited Mar. 26, 2020).

¹⁷² Lewellen & Lowry, *supra* note 162, at 22.

¹⁷³ *SIC Code 283 – Drugs*, SICCODE, <https://siccode.com/sic-code/283/drugs> (last visited Mar. 26, 2020).

¹⁷⁴ Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT'L J. INDUS. ORG. 714, 726 (2018).

them all as horizontal competitors creates mismeasurement bias. Even if these measurement errors were all unbiased (i.e., no more likely to overestimate than underestimate the variables), such measurement errors would create attenuation bias towards a zero coefficient and lower statistical significance.¹⁷⁵ But here the problem is worse because the mismeasurement errors are themselves biased, in that the industry definitions are systematically broader than market definitions, so their method will systematically be biased towards errors that mistakenly treat firms as horizontal competitors when they are not. That will create an even stronger bias toward lower coefficients and lower statistical significance.

This problem does not apply to any of the five market-level studies finding anticompetitive effects or to the cross-market consumer goods study. This new study's market mismeasurement bias seems particularly likely to explain the difference in results from the cross-market study of consumer goods, which also studied the effects of financial institution mergers and found that they did result in a statistically significant increase in prices, when markets were properly defined rather than using overbroad industry definitions.¹⁷⁶ This new study's prior market mismeasurement problem also does not apply to parts of the cross-industry study finding that increased horizontal shareholding increases the profit-investment gap, because some of its regressions use only firm-level variables, including using the firm's level of quasi-indexer ownership as a proxy for horizontal shareholding levels.¹⁷⁷ The market mismeasurement problem does create attenuation bias for other regressions in that prior study that use industry-level dependent and independent variables, but since those regressions found effects despite such attenuation bias, this does not undercut their findings of effects, but rather suggest that the true effects are likely greater.¹⁷⁸

Indeed, remarkably enough, despite the enormous mismeasurement bias created by defining firms to be competitors when they are in the same 3-digit SIC industry code, Lewellen and Lowry actually found that the financial institution mergers did result in an increase in operating income and decrease in R&D investment for firms in their treatment group compared to those in their first control group, with a statistical confidence level of 99%.¹⁷⁹ This suggests that, for the subset of firms in the same industry that were in

¹⁷⁵ Wooldridge, *supra* note 74, at 320–22.

¹⁷⁶ Aslan, *supra* note 145, at 19–22.

¹⁷⁷ Gutiérrez & Philippon, *supra* note 36, at 126–27. The prior cross-industry study's other firm-level regressions do include MHHI as an independent variable, which is affected by industry definitions, so the problem does apply to those regressions, but less so since in them the main explanatory variable remains firm-level quasi-indexer ownership. *Id.* at 37.

¹⁷⁸ 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, *supra* note 25, at 3, 18, 24–27, 42. 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.

¹⁷⁹ Lewellen & Lowry, *supra* note 162, at 5, 21, 41.

the same market, the financial mergers created a substantial horizontal shareholder that anticompetitively increased those firm's profits and decreased their R&D spending by a large enough amount to show up in the overall regression results, even though those firms were lumped in with firms in the same industry that were not horizontal competitors at all.

Which brings us to the next major problem with Lewellen and Lowry's approach: they dismiss their initial finding of statistically significant effects for two erroneous reasons. First, they reject that finding because they find that if they instead use a second control group that consists of firms that *are* in the same industry, then there is no longer a statistically significant difference between their treatment and control groups.¹⁸⁰ But if horizontal shareholding raises prices and profits, it will raise prices and profits for firms throughout the affected market because by definition all product offerings in that market are close substitutes for each other.¹⁸¹ Accordingly, to the extent that (as is necessary for the initial finding) firms in the same industry are in the same market, then any higher profits for the firms that now have a new major horizontal shareholder will also apply to other firms in that industry. Thus, if horizontal shareholding has anticompetitive effects, one would expect to see precisely the lack of statistically significant difference between their treatment group and their second (same-industry) control group that they find.¹⁸²

Second, Lewellen and Lowry reject their initial finding of statistically significant effects because they find that if they exclude financial institution mergers during the 2008-09 financial crisis period, the results are no longer statistically significant.¹⁸³ But the reason they give for excluding this period is that, during this time, the treatment group had larger increases in operating income and decreases in R&D investment than the control group.¹⁸⁴ Given that their key dependent variables are operating income and R&D spending, this means that they are selecting their data sample based on a fact affecting the value of the dependent variable, which creates a severe endogenous sample selection bias.¹⁸⁵ When one engages in such "endogenous sample selection . . . , bias always occurs."¹⁸⁶ Moreover, their endogenous sample

¹⁸⁰ *Id.* at 5, 15, 21, 41.

¹⁸¹ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 4 (2010).

¹⁸² Lewellen and Lowry stress that operating income and R&D investment trends track each other for their treatment and second control group, but not for their treatment and first control group. Lewellen & Lowry, *supra* note 162, at 21-22, 39. However, such trends just confirm that the former are more likely to be in the same market and thus subject to common market trends.

¹⁸³ *Id.* at 5, 21, 40.

¹⁸⁴ *Id.* at 22, 39.

¹⁸⁵ Wooldridge, *supra* note 74, at 325.

¹⁸⁶ *Id.*

selection likely has a large effect because it drops half of their treatment group sample.¹⁸⁷

Lewellen and Lowry try to justify their dropping of the 2008-09 mergers on the ground that they think the differential effects of the Blackrock-BGI merger during this period just reflect the fact that the treatment and control groups came from different industries that experienced different abilities to increase profitability coming out of the financial crisis.¹⁸⁸ But that still means that they are engaged in endogenous sample selection, and their claim that the effects of the Blackrock-BGI merger just reflect inherent differences in the affected industries conflicts with the Airline Study finding that the Blackrock-BGI merger had a differential effect *within* the airline industry.¹⁸⁹ Further, their failure to find statistically significant effects when excluding the years 2008-09 could reflect the combined effects of halving their sample size and the mismeasurement bias from defining industries to be markets.

The final major problem is that Lewellen and Lowry also make various other choices that bias all their regressions against finding statistically significant effects. To begin with, they delete from their sample any firm in which the two financial institutions both held blocks over 5% before their merger.¹⁹⁰ But if both institutions had blocks over 5% in a firm and at least one of them had a block of over 5% in another firm, then the increase in horizontal shareholding is even greater, so this deletion selectively excludes the firms likely to experience the largest anticompetitive effects. Further, this selection is likely to selectively exclude firms affected by a financial merger involving the sort of large diversified funds most likely to already own 5% blocks in both firms. This deletion thus creates a sample selection bias against finding effects.

Further, Lewellen and Lowry's regressions do not test whether a major increase in marketwide horizontal shareholding levels creates anticompetitive effects in concentrated markets. Their regressions test only whether a financial institution merger that creates one major common shareholder among two firms in the same industry creates anticompetitive effects, regardless of whether it causes any significant change in marketwide horizontal shareholding levels and regardless of whether the relevant market is concentrated. Even horizontal mergers among firms are not deemed likely to create anticompetitive effects unless the Δ HHI exceeds 200 and the resulting HHI exceeds 2500.¹⁹¹ The anticompetitive theory of horizontal shareholding thus does not predict that horizontal shareholding would be likely to create anticompetitive effects unless Δ MHHI exceeds 200 and MHHI exceeds

¹⁸⁷ Lewellen & Lowry, *supra* note 162, at 4, 16.

¹⁸⁸ *Id.* at 22–23.

¹⁸⁹ See *supra* Part I.D.1.(a)(2).

¹⁹⁰ Lewellen & Lowry, *supra* note 162, at 14.

¹⁹¹ See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 5.3 (2010).

2500, and the empirical studies support the conclusion that anticompetitive effects require both substantial levels of horizontal shareholding and concentrated markets.¹⁹²

In contrast, the set of financial mergers considered by Lewellen and Lowry on average increase firm-level common shareholding levels (which they call the C-Index) by only 2-4 points out of 10,000.¹⁹³ Further, they admit “that effects at the industry level would be commensurately smaller. This suggests that the financial institution merger setting is more likely to detect effects working through pair-level channels (such as cooperation or mergers) rather than industry-wide shifts in competition.”¹⁹⁴ But their acknowledgement that these financial institution mergers have too small an effect on horizontal shareholding to have industry-wide effects on competition effects mean that they are acknowledging that their set of financial mergers cannot test the relevant anticompetitive theory.¹⁹⁵ It is like trying to test whether taking two aspirins reduces headaches by testing whether taking 1/100th of one aspirin reduces headaches.

2. Koch, Panayides and Thomas

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.¹⁹⁶ The pervasive problem with all their regressions is that, like Lewellen and Lowry, they assume that firms are in the same market if they share the same industry code, when in fact their industry definitions are vastly larger than market definitions. Koch, Panayides and Thomas’s primary analysis uses 4-digit NAICS codes, rather than 3-digit SIC codes.¹⁹⁷ But there are only 311 4-digit NAICS codes, so they yield industry definitions that are generally even larger than the 413 industry definitions yield by 3-digit SIC codes.¹⁹⁸ Indeed, it has been shown that even the more-refined 6-digit NAICS codes (which define 1057 industries) produce industry definitions that are many times greater than the relevant markets.¹⁹⁹ Thus, like the Lewellen and Lowry study, the use by Koch, Panayides and Thomas’s of

¹⁹² See Elhauge, *supra* note 2, at 1276–77, 1303; *supra* Part I.D.5.

¹⁹³ See Lewellen & Lowry, *supra* note 162, at 19, 47.

¹⁹⁴ *Id.* at 19–20.

¹⁹⁵ Even if they tried to analyze whether significant increases in their measure of industry-level horizontal shareholding had anticompetitive effects, their measure has the problem that it does not (unlike MHHI) consider the fact that the influence of horizontal shareholders turns on their concentration relative to the concentration of nonhorizontal shareholders. See *id.* at 12; *supra* Parts I.D.1(c) & I.D.5. Nor does it limit the analysis, as it should, to concentrated markets.

¹⁹⁶ Koch, Panayides & Thomas, *Common Ownership and Competition in Product Markets* (Feb. 6, 2020), <https://ssrn.com/abstract=2965058> (forthcoming J. FIN. ECONOMICS).

¹⁹⁷ *Id.* at 12.

¹⁹⁸ See Werden & Froeb, *supra* note 166, at 3.

¹⁹⁹ See *id.* at 3–6.

these broad industry definitions creates a serious mismeasurement bias problem, especially since these mismeasurements are themselves biased toward defining markets too broadly, and thus towards understating Δ MHHI and any other measure of horizontal shareholding.

In fact, the mismeasurement bias concerns are worse for Koch, Panayides and Thomas's study because it affects not only their independent variables of interest (Δ MHHI and other horizontal shareholding measures) but also the measurement of 11 of their 12 control variables and of all their three dependent variables, each of which is defined at industry levels.²⁰⁰ The measurement error in their dependent variables adds further bias if it is systematically related to one or more of the independent variables.²⁰¹ 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."²⁰² The first variable is clearly larger the larger the industry, and the other two likely are as well. In contrast, in the prior cross-industry study that found that increased horizontal shareholding does increase the profit-investment gap, its industry-level regressions did not use so many control variables that were related to the size of the market mismeasurement error, and that prior study confirmed that its industry-level results matched purely-firm level regressions that were not subject to that error.²⁰³ The greater statistical significance of the industry-level regressions in that prior study thus likely reflects the fact that they were less susceptible to attenuation bias.

Koch, Panayides and Thomas offer two responses to the problem that their industry definitions do not match market definitions, both of which are flawed. One response is to re-run their regressions using two alternative industry definitions—3-digit SIC codes or Hoberg and Phillips (H&P) industry codes—which they find does not meaningfully change their results.²⁰⁴ They argue that the fact that "[n]one of the three industry definitions seems to produce more positive and significant results than the others suggest[s] that our overall conclusion of no relation is not attributable to measurement error in identifying rivals."²⁰⁵ But as already discussed, 3-digit SIC codes also define industries that are vastly greater than markets, and there are only 300 H&P industry codes,²⁰⁶ so they on average are even more overbroad

²⁰⁰ Koch, Panayides & Thomas, *supra* note 196, at 51, 59.

²⁰¹ WOOLDRIDGE, *supra* note 74, at 320.

²⁰² Koch, Panayides & Thomas, *supra* note 196, at 51, 59.

²⁰³ Gutiérrez & Philippon, *supra* note 37, at 129.

²⁰⁴ Koch, Panayides & Thomas, *supra* note 196, at 13, 19, 22–23, 25–26, 67–68.

²⁰⁵ *Id.* at 31.

²⁰⁶ *Id.* at 13.

than the 311 4-digit NAICS codes. Thus, these alternative industry definitions will suffer from the same market mismeasurement problem and create similar attenuation bias.

Their other response is to re-run their regressions using subsamples of industries for which firms' 10-Ks overlap in the states they mention is relatively high or for which shipping costs are relatively low, which they argue indicates those industries are more likely to operate in a national market.²⁰⁷ They find similar results for those subsamples and conclude that this means: "conditional on our geographic overlap and shipping costs variables being good proxies for the degree of correspondence between industry codes and product markets, it does not appear that our overall conclusions are due to a lack of precision in defining product markets via industry definitions."²⁰⁸ But their condition is clearly not met because, even if their variables are a good proxy for whether firms in those industries operate in the same *geographic* market (which is certainly questionable), it has nothing to do with whether they operate in the same *product* market. For example, the 4-digit NAICS code for Pharmaceutical and Medicine Manufacturing (like the 3-digit SIC code for drugs) includes not only all pharmaceuticals, but also all vitamins, vaccines, and diagnostic substances.²⁰⁹ It is likely that firms making statins, or Vitamin C, or pregnancy tests all operate in national markets, but that does not at all mean that statins, Vitamin C, and pregnancy tests compete with each other in the same product market.

Still, while their industry definitions result in mismeasurement bias that systematically biases all their regressions against finding effects, it does remain the case that firms in the same industry are somewhat more likely to be horizontal competitors than are firms in different industries. Thus, if the effects of horizontal shareholding were powerful enough, one might be able to pick them up even with their overbroad industry definitions. And in fact, remarkably enough, they do find, 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.²¹⁰ They dismiss this result for two reasons, but neither is persuasive. (1) They reject this result because they do not find effects if they use measures of horizontal shareholding other than ΔMHHI , which they argue means the result is not robust.²¹¹ But the other measures that they use do not consider market concentration levels.²¹² Their regressions using those other measures are thus like a study asking whether horizontal mergers generally increase prices; they are unlikely to produce results because it takes the combination of high market concentra-

²⁰⁷ *Id.* at 4–5, 34.

²⁰⁸ *Id.* at 5, 34–35, 58.

²⁰⁹ *NAICS Industry Group 3254*, CLASS CODES, <https://classcodes.com/lookup/naics-4-digit-industry-group-3254/> (last visited Feb. 28, 2020).

²¹⁰ Koch, Panayides & Thomas, *supra* note 196, at 50.

²¹¹ *Id.* at 18, 50.

²¹² *Id.* at 13–14, 50.

tion and significant horizontal mergers/shareholding to increase prices.²¹³ Their 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.²¹⁴ But the problem with that approach is that an increase in ΔMHHI can be statistically significant, but small in magnitude, so such a test is likely to include small ΔMHHI increases below the 200 level likely to indicate anticompetitive effects.²¹⁵

Finally, in addition to mismeasuring markets, all of the Koch, Panayides and Thomas regressions have several other drawbacks that bias them against finding effects. For starters, with one exception, all of Koch, Panayides and Thomas' regressions use 13F data without aggregating shares voted by the same fund family and without correcting other well-known errors.²¹⁶ This failure to aggregate and correct means that all those regressions are systematically underestimating horizontal shareholding levels in a way that biases their results.

The one regression for which Koch, Panayides and Thomas 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.²¹⁷ However, it suffers from mismeasurement bias given its use of industry definitions. Further, 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."²¹⁸ 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.²¹⁹ Koch, Panayides and Thomas report that their variance inflation factor (VIF) for ΔMHHI is usually between 5 and 10,²²⁰ which is problematic because "as a rule of thumb, a VIF value that exceeds 5 or 10 indicates a

²¹³ See *supra* Parts I.D.1(a), I.D.2, I.D.5, I.E.1.

²¹⁴ Koch, Panayides & Thomas, *supra* note 196, at 18, 50. Their regression limited to concentrated industries uses only this test. *Id.* at 65. They do not explain why their concentrated industries regression does not report any results for ΔMHHI changes that exceed two-standard deviations.

²¹⁵ See *supra* Parts I.D.1(a), I.D.2 & I.D.5 & I.E.1

²¹⁶ Koch, Panayides & Thomas, *supra* note 196, at 12 & n.10, 20 n.20; see also *supra* Parts I.D.1 & I.D.2 (collecting sources on the need for such corrections and aggregations).

²¹⁷ Koch, Panayides & Thomas, *supra* note 196, at 20 & n.20, 52, 80.

²¹⁸ *Id.* at 45, 53, 78.

²¹⁹ WOOLDRIDGE, *supra* note 73, at 102.

²²⁰ Koch, Panayides & Thomas, *supra* note 196, at 69.

problematic amount of collinearity.”²²¹ More serious problems of reverse causality problems are likely created by their use of 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.”²²² 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.

Koch, Panayides and Thomas’s financial institution merger analysis has additional problems. It fails to correct and aggregate the 13F data, as well as suffering from market mismeasurement bias. Also, although it finds that institutional investor mergers that increased ΔMHHI did not significantly increase profits,²²³ most of these mergers were between institutional investors that were 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 102.²²⁴ Thus, almost all the merger-created ΔMHHI increases that they considered were below the 200 increase level that is likely to create anticompetitive effects. Their response is to re-test for the subsample of cases where the change in ΔMHHI was in the 90th or 95th percentile, finding no statistically significant effect for them either.²²⁵ But their own data indicates that the ΔMHHI increases for the 90th and 95th percentile were respectively only 7.4 and 24, far too low to have likely anticompetitive effects. So all their financial institution merger regression shows is that insignificant increases in ΔMHHI have no significant anticompetitive effect, which is just what horizontal shareholding theory would predict.

Their manufacturing price regression has other difficulties. It likewise does not correct and aggregate the 13F data and suffers from market mismeasurement bias. 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.²²⁶ Finally, this regression could also reflect reverse causality, because an increase

²²¹ JAMES, GARETH, *et al*, AN INTRODUCTION TO STATISTICAL LEARNING WITH APPLICATIONS IN R, Chapter 3.

²²² Koch, Panayides & Thomas, *supra* note 196, at 51, 59, 80.

²²³ *Id.* at 25, 54–56.

²²⁴ *Id.* at 24, 53. 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 24. However, it simply reflects the fact that mergers between small undiversified institutional investors can 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* Part I.D.1(c).

²²⁵ Koch, Panayides & Thomas, *supra* note 196, at 25, 55.

²²⁶ *Id.* at 27–28.

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.²²⁷

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."²²⁸ 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.

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 were too empirically uncertain for enforcement action, because the only empirical support was the airline and banking studies that had been disputed.²²⁹ However, as I show above, taking account of the valid critiques of the airline and banking studies actually increase the estimated adverse effects, and other critiques use biased methods or are otherwise misguided.²³⁰ Further, today the empirical support extends far beyond the original airline and banking studies. Similar results have now also been found not only in the three new empirical studies on seed and pharmaceutical markets, but also for hundreds of consumer goods in a new cross-market study, for horizontal ownership by venture capitalists, across all industries given the two new cross-industry studies, and across all markets given the new study showing that when entry into the S&P 500 increases horizontal shareholding, it increases rival stock prices.²³¹ And these studies avoid endogeneity issues and are not subject to the same critiques as the original airline and banking studies. Thus, even if it were once true that the empirical evidence was too uncertain for enforcement action, that is no longer the case today.

²²⁷ See *supra* Part I.D.1(a).

²²⁸ Koch, Panayides & Thomas, *supra* note 196, at 4.

²²⁹ 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, ¶¶ 12, 15 (Dec. 6, 2017) [hereinafter "US OECD Note"]; Phillips, *supra* note 19, at 3–5; Ginsburg & Klovers, *supra* note 3, ¶¶ 2, 6; Capital Markets Committee, *supra* note 29, 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, 108, at 12.

²³⁰ See *supra* Part I.D–E.

²³¹ *Supra* Part I.B–D.

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 affirmatively assume that horizontal shareholding has *zero* effect on competitive interactions. Likewise, when the agencies rely on merger simulation models, those models affirmatively 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.

Nor would any empirical uncertainty justify a failure to consider horizontal shareholding when assessing mergers and cross-shareholdings and to investigate any markets with a sufficiently high level of horizontal shareholding ($\Delta\text{MHHI} > 200$) and product market concentration ($\text{MHHI} > 2500$), in order to make case-by-case determinations about whether the horizontal shareholding has any anticompetitive effects in that market.²³² Such 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.

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

The argument that Clayton Act §7 bans any horizontal shareholding that has anticompetitive effects is straightforward.²³³ Clayton Act §7 prohibits stock acquisitions that may substantially lessen competition. Thus, the stock acquisitions that create horizontal shareholdings are illegal whenever

²³² Elhauge, *supra* note 2, at 1303 (proposing such a case-by-case approach). Some critics falsely assert my position is that antitrust enforcement should “challenge any stock acquisition that results in a common set of investors owning significant shares in corporations that are horizontal competitors.” Dennis, Gerardi & Schenone, *supra* note 48, at 1–2. In fact, my position is that the stock acquisitions with a ΔMHHI over 200 and MHHI over 2500 should be investigated to determine whether they raised prices. Elhauge, *supra*, at 1303. My proposal, unlike their straw man mischaracterization of it, would thus require large (not just significant) horizontal shareholding, a concentrated product market (a limit that they ignore), and would result in just an investigation to determine whether adverse price effects exist (rather than, as they falsely say, result in an automatic challenge). Menesh Patel has echoed my call for case-by-case enforcement, but he asserts it is inconsistent with investigating markets with high concentration and horizontal shareholding. Patel, *supra* note 15, at 282–83. There is no inconsistency: one needs to investigate such markets in order to determine when case-by-case analysis indicates enforcement is merited. Patel does not explain how, without any investigation, one is supposed to know when to do the case-by-case analysis that he agrees with me should occur.

²³³ Elhauge, *supra* note 2, at 1302–1304.

those horizontal shareholdings are shown to have created actual or likely anticompetitive effects. 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.²³⁴ 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.²³⁵ This change in standard of proof provides no obstacle if the evidence shows that the horizontal stock acquisitions actually raised prices or were likely to do so.

Despite this straightforward reading of the statute, others have critiqued the claim that when horizontal shareholding has anticompetitive effects, Clayton Act §7 actions should be brought against them. Some have focused on administrability concerns, which I address in Section A. Others have offered various legal critiques, which I rebut in Section B.

A. Clayton Act Enforcement Is Administrable

Although Posner, Scott Morton, and Weyl agree that the Clayton Act prohibits anticompetitive horizontal shareholding, they worry that case-by-case enforcement would raise administrability concerns because the legality of one horizontal stock acquisition can turn on the existence of other, often later, horizontal stock acquisitions.²³⁶ 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 imposed by multiple suppliers, such as exclusive dealing or vertical price-fixing.²³⁷ The underlying economic reality is

²³⁴ *Id.* at 1305–07.

²³⁵ *Id.* at 1305, 1307–09; *See also* AREEDA & HOVENKAMP, ANTITRUST LAW ¶¶ 1203c, 1204b (2017). A OECD background note seemed to suggest that jurisdiction under Clayton Act § 7 is limited to acquisitions of more than 10% of a corporation’s voting stock. DAF/COMP(2017)10 at 8 (Oct. 30, 2017). If such a suggestion was intended, it would be incorrect. U.S. law is rather than an acquirer of less than 10% need not *notify* the agencies in advance if the acquisition is solely for investment. Elhaug, *supra* note 2, at 1310. If the investment is not passive, then an acquirer of less than 10% must still notify the agencies. *Id.* at 1310–11. Further, under U.S. law, an exemption from advance notification does not eliminate substantive jurisdiction over a stock acquisition. Thus, even when stock acquisitions below 10% are sufficiently passive to be exempt from notification, they are still illegal if they are likely to substantially lessen competition or have actually created such anticompetitive effects. *Id.* at 1305–10. The notification exemption for passive sub-10% investments thus poses no obstacle to challenging horizontal shareholdings by passive institutional investors that each are individually below 10% if their horizontal shareholdings collectively have substantially lessened competition or are likely to do so.

²³⁶ Posner, Scott Morton & Weyl, *supra* note 2, at 677–78, 691–94.

²³⁷ AREEDA & HOVENKAMP, *supra* note 186, ¶¶ 1203e, 1204; EINER R. ELHAUGE, UNITED STATES ANTITRUST LAW AND ECONOMICS 343–46 (3rd ed. 2018) [hereinafter “ELHAUGE, US

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, although more rule-like in form, ultimately does make the legality of individual horizontal stock acquisitions turn on the existence of others.²³⁸ 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.²³⁹

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 transaction but a status which continues until the transaction is undone.²⁴⁰

ANTITRUST"]; see, e.g., *FTC v. Motion Picture Advertising Service*, 344 U.S. 392 (1953); *Leegin Creative Leather Products v. PSKS, Inc.*, 551 U.S. 877, 897 (2007)."]

²³⁸ Elhaage, *The Growing Problem of Horizontal Shareholding*, 3 ANTITRUST CHRONICLE 1, 15 (June 2017).

²³⁹ Scott Morton & Hovenkamp, *supra* note 2, at 2037, 2044–47.

²⁴⁰ *United States v. ITT Continental Baking Co.*, 420 U.S. 223, 240–42 (1975); see also AREEDA & HOVENKAMP, *supra* note 186, ¶¶ 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.")

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 *forty years* after the stock was acquired.²⁴¹

Administrability concerns have also been overblown based on an implicit premise that antitrust enforcement would automatically make horizontal shareholding illegal whenever MHHI exceeds 2500 and Δ MHHI exceeds 200. Instead, such levels of horizontal shareholding and market concentration could simply trigger investigation to determine whether, in fact, those horizontal stock acquisitions had raised prices or were likely to do so.²⁴² 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.”²⁴³ Likewise, market power had always been understood to require some showing that the power to raise prices is durable rather than temporary.²⁴⁴ 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.²⁴⁵

Thus, bringing antitrust enforcement actions against anticompetitive horizontal stock acquisitions need not imply rapid shifts from legality to illegality based on subsequent stock transactions and the mechanical application of an MHHI test. Illegality would instead require a showing that 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 the claim that Clayton Act § 7 prohibits horizontal shareholding that has anticompetitive effects on the grounds that (1) Clayton Act § 7 only prohibits stock acquisitions that confer control and (2) the solely-for-investment exception immunizes an investor

²⁴¹ *United States v. E.I. du Pont de Nemours & Co.*, 353 U.S. 586, 588–89, 592, 597–98 (1957).

²⁴² Elhauge, *supra* note 2, at 1303.

²⁴³ U.S. DOJ–FTC, Horizontal Merger Guidelines § 4.1.1 (2010).

²⁴⁴ *Reazin v. Blue Cross & Blue Shield of Kan.*, 899 F.2d 951, 968 (10th Cir. 1990) (“[M]arket power, to be meaningful for antitrust purposes, must be durable.”); AREEDA & HOVENKAMP, *supra* note 186, ¶ 501 (“Market power need not trouble the antitrust authorities unless it is both substantial in magnitude and durable.”).

²⁴⁵ 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 9, at 1546–47.

whenever it exercises influence through ordinary investor activities like voting their shares or communicating with management.²⁴⁶ But their first claim conflicted 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.”²⁴⁷ Their second claim conflicted 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.²⁴⁸

Since then, Rock and Rubinfeld have acknowledged that (given cases like *Dairy Farmers*) “a stock acquisition that lessens competition is a prima facie violation of Section 7, whether or not it provides control or influence.”²⁴⁹ They claim that this proposition “is subject to the ‘solely for investment’ exemption, which was not at issue in *Dairy Farmers*.”²⁵⁰ 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.”²⁵¹ The court cited this rejection of the claim that a lack of control immunized an acquisition under the solely for investment exception in order 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.”²⁵²

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 § 7.²⁵³ 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 admission means that they effectively concede the

²⁴⁶ Rock & Rubinfeld, *Defusing*, *supra* note 50, at 18–24.

²⁴⁷ *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 246, ¶ 1203.

²⁴⁸ 15 U.S.C. § 18 (2012).

²⁴⁹ Rock & Rubinfeld, *Antitrust*, *supra* note 3, at 262.

²⁵⁰ *Id.*

²⁵¹ *Dairy Farmers*, 426 F.3d at 860 n.3.

²⁵² *Id.* at 860.

²⁵³ Rock & Rubinfeld, *Antitrust*, *supra* note 3, at 262.

legal point 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 the claim that Clayton Act § 7 prohibits anticompetitive horizontal shareholding relies on the “plain meaning” or “literal meaning” of the statute.²⁵⁴ 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.’”²⁵⁵ Under that principle, their concession that statutory plain meaning supports interpreting the statute to cover anticompetitive horizontal shareholding should have made that interpretation conclusive, 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.²⁵⁶ 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.²⁵⁷ 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 increased.”²⁵⁸ 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.”²⁵⁹ 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 claim that the U.S. antitrust agencies, as well as Rock and Rubinfeld, have concluded that Clayton Act § 7 applies to cross-shareholding but not to horizontal shareholding.²⁶⁰ But their claim is simply inaccurate. To the contrary, 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.²⁶¹ Likewise, as

²⁵⁴ Ginsburg & Klovers, *supra* note 3, ¶¶ 29, 30, 32, 47.

²⁵⁵ Engine Mfrs. Ass’n, ex rel. Certain of its Members v. EPA, 88 F.3d 1075, 1088 (D.C.Cir.1996) (citations omitted).

²⁵⁶ Ginsburg & Klovers, *supra* note 3, ¶ 29.

²⁵⁷ *Id.*

²⁵⁸ ELHAUGE, US ANTITRUST, *supra* note 237, at 54.

²⁵⁹ United States v. E.I. du Pont de Nemours & Co., 353 U.S. 586, 597–98 (1957).

²⁶⁰ Ginsburg & Klovers, *supra* note 3, ¶¶ 31, 33, 35.

²⁶¹ US OECD Note, *supra* note 180, at 3, 9.

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's 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 or granting of proxies or otherwise, may be substantially to lessen competition" ²⁶²

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's 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

²⁶² Clayton Act § 7, 15 U.S.C. § 18 (emphasis added).

involving cross-shareholding, but had not yet litigated any case involving horizontal shareholding.²⁶³ 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*.”²⁶⁴ 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.”²⁶⁵ The agencies noted that the DOJ lost that case,²⁶⁶ 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 exception.²⁶⁷ The agencies also noted that the FTC had brought another case against horizontal shareholding by “*two* private equity firms.”²⁶⁸ The agencies noted that in that case the two horizontal shareholders had strong influence over the corporations at issue,²⁶⁹ 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.²⁷⁰ 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.

²⁶³ Ginsburg & Klovers, *supra* note 3, at 19–21.

²⁶⁴ US OECD Note, *supra* note 180, at 2 (emphasis added).

²⁶⁵ *Id.* at 2 n.4 (emphasis added).

²⁶⁶ *Id.*

²⁶⁷ United States v. Tracinda Inv. Corp., 477 F. Supp. 1093, 1098 (C.D. Cal. 1979).

²⁶⁸ US OECD Note, *supra* note 180, at 5 n.14 (emphasis added).

²⁶⁹ *Id.*

²⁷⁰ RED VENTURES HOLDCO AND BANKRATE, IN THE MATTER OF, <https://www.ftc.gov/enforcement/cases-proceedings/file-no-1710196/red-ventures-holdco-bankrate> (last visited Feb. 13, 2020). <https://www.ftc.gov/enforcement/cases-proceedings/file-no-1710196/red-ventures-holdco-bankrate>.

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.²⁷¹ 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’s 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 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.”²⁷² 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 this 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.”²⁷³ Thus, even if the initial acquisition was solely for investment, it becomes illegal if at any later time the use of the stock brings

²⁷¹ Ginsburg & Klovers, *supra* note 3, at 19, 22–25.

²⁷² Clayton Act § 7, 15 U.S.C. § 18 (emphasis added).

²⁷³ *United States v. E.I. du Pont de Nemours & Co.*, 353 U.S. 586, 597–598 (1957) (emphasis added).

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."²⁷⁴ 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."²⁷⁵ The Supreme Court has thus explicitly and repeatedly rejected not only Ginsburg and Klovers's 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's 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."²⁷⁶ 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 decision-making. This is consistent with Supreme Court cases that interpret an illegal "acquisition" to include continuing to hold stock when that stockholding has anticompetitive effects.²⁷⁷

Ginsburg and Klovers's 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.²⁷⁸ 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's statutory interpretation. The Sixth Circuit held in *Dairy Farmers* that: "We . . . do

²⁷⁴ *Denver & Rio Grande W. R.R.*, 387 U.S. at 501.

²⁷⁵ *United States v. ITT Continental Baking Co.*, 420 U.S. 223, 242 (1975).

²⁷⁶ Clayton Act § 7, 15 U.S.C. § 18 (emphasis added).

²⁷⁷ See *supra* Part II.A.

²⁷⁸ See H.R. REP. NO. 81-1191, at 2-3, 11-13 (1949).

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.”²⁷⁹ It thus flatly rejected Ginsburg and Klovers’s claim that control or influence is required. In *Anaconda* and *Tracinda*, two federal district courts directly rejected Ginsburg and Klovers’s claim that showing an acquisition is solely for investment suffices to exempt it from the Act, holding instead that all such a showing did 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.’”²⁸⁰

In response, Ginsburg and Klovers argue that we should ignore the plain meaning of what the cases say,²⁸¹ just as they urge ignoring the plain meaning of what the statute says.²⁸² 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.²⁸³ 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.²⁸⁴ 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’s 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.²⁸⁵ 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

²⁷⁹ United States v. Dairy Farmers of Am., Inc., 426 F.3d 850, 859–60 (6th Cir. 2005).

²⁸⁰ *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).

²⁸¹ See Ginsburg & Klovers, *supra* note 3, ¶¶ 40–46.

²⁸² See *id.* ¶¶ 29, 30, 32, 47.

²⁸³ See *id.* ¶¶ 43–44.

²⁸⁴ *Id.* ¶¶ 45–46.

²⁸⁵ *Denver & Rio Grande W. R.R.*, 387 U.S. at 487–88.

effects from partial stock acquisitions under the general public interest standard of ICA § 20.²⁸⁶ 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 that conferred no control if they produced anticompetitive effects.²⁸⁷ 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."²⁸⁸ 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.²⁸⁹ 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.²⁹⁰ 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.²⁹¹ 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.²⁹² 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.²⁹³ 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.²⁹⁴

²⁸⁶ See *id.* at 496.

²⁸⁷ See *id.* at 493–94, 496–97, 501–02.

²⁸⁸ Ginsburg & Klovers, *supra* note 3, ¶ 46.

²⁸⁹ See *ITT Continental Baking Co.*, 420 U.S. at 225–26.

²⁹⁰ See *id.* at 240–44.

²⁹¹ Ginsburg & Klovers, *supra* note 3, ¶ 42.

²⁹² See *Anaconda Co.*, 411 F. Supp. at 1218.

²⁹³ *Id.* at 1218–19.

²⁹⁴ *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

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.²⁹⁵ But *Tracinda* said nothing of the sort.²⁹⁶ 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.”²⁹⁷ 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.”²⁹⁸ 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.”²⁹⁹ 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 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 or influence.”³⁰⁰ But that is a mischaracterization of what the agencies stated.³⁰¹ Indeed, this characterization of the agencies’ position is flatly in

the proof has 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.”).

²⁹⁵ Ginsburg & Klovers, *supra* note 3, ¶ 41.

²⁹⁶ 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, Ginsburg & Klovers, *supra* note 3, ¶ 41, but the court never linked the two. See *Tracinda*, 477 F. Supp. at 1098, 1100.

²⁹⁷ *Tracinda*, 477 F. Supp. at 1099.

²⁹⁸ *Id.*

²⁹⁹ *Id.* at 1101–02. 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 3, ¶ 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.

³⁰⁰ Ginsburg & Klovers, *supra* note 3, ¶ 33.

³⁰¹ 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 3, ¶ 33 (quoting US OECD Note, *supra* note 180, ¶ 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 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 [it] cannot influence the conduct of the target firm."³⁰² 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".³⁰³ 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*."³⁰⁴ In any event, whether the focus was on cross-shareholding is beside 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 the mistaken claim that Ginsburg and Klovers made and that they applied to cases involving cross-shareholding as well as horizontal shareholding.³⁰⁵

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 Part 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. 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. Part III.B thus lays out some new legal theories for how to tackle horizontal shareholding under EU competi-

vestment-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.'" Ginsburg & Klovers, *supra* note 3, ¶ 33. 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 180, ¶¶ 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 180, ¶ 7, the agencies never said such an intent to seek control was *necessary* to lose the premerger notification exemption.

³⁰² U.S. DEP'T OF JUST. & FED. TRADE COMM'N, HORIZONTAL MERGER Guidelines § 13 (Aug. 19, 2010).

³⁰³ Ginsburg & Klovers, *supra* note 3, ¶ 29 n.67, ¶ 33.

³⁰⁴ US OECD Note, *supra* note 180, ¶ 9 (emphasis added).

³⁰⁵ Ginsburg & Klovers, *supra* note 3, ¶¶ 41–43.

tion 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.³⁰⁶ 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 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.³⁰⁷

Indeed, the reason that the Sherman Act was called an *antitrust* law was that it aimed to prohibit certain trusts, and those 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.³⁰⁸ 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

³⁰⁶ 15 U.S.C. § 1; ELHAUGE, US ANTITRUST, *supra* note 237, at 54–55.

³⁰⁷ See *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 237, at 343–46.

³⁰⁸ 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.

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. Indeed, many ETFs with horizontal shareholdings are literally trusts.

The statute also applies to any “combination in the form of trust or otherwise.”³⁰⁹ 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 § 1.³¹⁰ 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 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.³¹¹

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

³⁰⁹ 15 U.S.C. § 1; ELHAUGE, US ANTITRUST, *supra* note 237, at 54–55.

³¹⁰ *Northern Sec. Co. v. United States*, 193 U.S. 197, 325–27 (1904).

³¹¹ See generally ELHAUGE, US ANTITRUST, *supra* note 237, at 628, 661–703.

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.³¹² 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 the point that the agreements involved in horizontal shareholding decrease incentives to compete *without* requiring any coordination among firms somehow implicitly rests on a claim that mere coordination (i.e., conscious parallelism) is illegal.³¹³ In fact, the 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.³¹⁴

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 multi-

³¹² Elhauge, *supra* note 2, at 1269–70; *supra* Part I.

³¹³ Ginsburg & Klovers, *supra* note 3, ¶ 55.

³¹⁴ See generally ELHAUGE, US ANTITRUST, *supra* note 237, at 628, 661–703.

ple institutional investors.³¹⁵ 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.³¹⁶ But the shares would be voted by institutional investors who are not horizontally invested. Further, 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 Δ MHHI levels given that individual shares would be small relative to the size of institutional investor shareholdings.³¹⁷ This alternative would thus be much less restrictive of competition than horizontal shareholding by institutional investors that results in high Δ MHHI levels and likely anticompetitive effects. Ginsburg and Klovers's argument to the contrary fails to even consider the alternative's different effect on Δ MHHI 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.³¹⁸

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.³¹⁹ 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.³²⁰ Nor, under antitrust law, can

³¹⁵ Posner, Scott Morton & Weyl, *supra* note 2, at 711.

³¹⁶ Ginsburg & Klovers, *supra* note 30, ¶¶ 48–49.

³¹⁷ *Supra* Part I.D.1(c); Elhauge, *The Causal Mechanisms*, *supra* note 108, at Part IV.

³¹⁸ Ginsburg & Klovers, *supra* note 30, ¶¶ 49–50. Ginsburg and Klovers later make a claim that conflicts with this formalistic claim but that is equally unconnected to the Δ MHHI levels that are relevant to likely anticompetitive effects. Namely, they support Rock and Rubinfeld's proposal for a safe harbor whenever an investor holds less than 15% stock in a corporation "because even the proponents' econometric studies do not find anticompetitive effects when common shareholdings fall below that threshold." *Id.* ¶ 52. However, Ginsburg and Klovers are simply wrong in asserting that the proponents' econometric studies find no anticompetitive effects when each institutional investor holds less than 15%. To the contrary, the markets in which those studies found anticompetitive effects involved situations in which multiple horizontal shareholders, each with less than 15% stock, resulted in high Δ MHHI levels. See Part I. Rock and Rubinfeld neither cited any econometric evidence for their proposed 15% safe harbor nor made any claim that it was supported by econometric evidence.

³¹⁹ Elhauge, *The Causal Mechanisms*, *supra* note 108, at Part IV.

³²⁰ See *id.*

any net benefits from horizontal shareholding to investors in the investment market legally offset any anticompetitive harm to consumers in the relevant product market.³²¹

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 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,³²² which makes it narrower than Clayton Act § 7, which bans any stock acquisition likely to substantially lessen competition.³²³ 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

³²¹ Lambert and Sykuta argue that this proposition applies under Clayton Act §7, but not under Sherman Act §1. Lambert & Sykuta, *supra* note 29, 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.

³²² DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS COMPETITION COMMITTEE *supra* note 186 at 43 n.7; European Union Institutions and Bodies, *Commission Consolidated Jurisdictional Notice under Council Regulation 139/2004 on the Control of Concentrations Between Undertakings*, 95/1 OFFICIAL JOURNAL OF THE EUROPEAN UNION (2008) ¶¶ 7, 16.

³²³ *See supra* Part II.

control because of strong common financial interests.³²⁴ 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.³²⁵ If (under such an interpretation) horizontal stock 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.³²⁶ 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.³²⁷ 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.³²⁸

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.”³²⁹ 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

³²⁴ European Union Institutions and Bodies, *supra* note 273, ¶ 76 (“collective action can occur on a *de facto* basis where strong common interests exist between the minority shareholders”).

³²⁵ 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).

³²⁶ *Id.* at 49–50, 56–57 (collecting cases).

³²⁷ European Union Institutions and Bodies, *supra* note 273, ¶ 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.”)

³²⁸ GERMANY, COMMON OWNERSHIP BY INSTITUTIONAL INVESTORS AND ITS IMPACT ON COMPETITION (128th OECD Competition Committee Meeting 2017) ¶ 21.

³²⁹ European Union Institutions and Bodies, *supra* note 273, ¶ 79.

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.”³³⁰ 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 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,³³¹ 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.³³² However 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.³³³ 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

³³⁰ *Id.* ¶ 80.

³³¹ *Supra* Part I.

³³² ELHAUGE & GERADIN, *GLOBAL ANTITRUST LAW & ECONOMICS* 992–93, 1045 (3d ed. 2018).

³³³ *Id.* at 1045–47.

structural reasons that do not depend on such collective decisive influence.³³⁴ 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 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.”³³⁵ 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 behavior of the companies on the relevant market.”³³⁶ 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.³³⁷ 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 behavior of the companies.”³³⁸ 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.

³³⁴ *Supra* Part I.

³³⁵ ELHAUGE & GERADIN, *supra* note 336, 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).

³³⁶ Joined Cases 142 and 156/84, *British Am. Tobacco v Comm’n (Philip Morris)*, 1987 E.C.R. 4487, ¶ 45.

³³⁷ *Id.* ¶¶ 46–64.

³³⁸ *Id.* ¶ 45.

Moreover, TFEU Article 101 extends beyond agreements to also capture “concerted practices.”³³⁹ 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 practical cooperation between them for the risks of competition.”³⁴⁰ 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. . . .”³⁴¹

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.³⁴²

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.³⁴³ 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.³⁴⁴ For present purposes, this holding is mainly interesting because it confirms a broad view of what constitutes

³³⁹ ELHAUGE & GERADIN, *supra* note 336, at 892.

³⁴⁰ Case 48/69, *ICI v. Comm’n*, 1972 E.C.R. 619, ¶ 64.

³⁴¹ Case 40/73, *Suiker Unie v. Comm’n* 1975 E.C.R. 1663, ¶¶ 173–74.

³⁴² China Anti-Monopoly Law Art. 13; (promulgated by the Standing Comm. Nat’l People’s Cong., effective Aug 1 2008) NAT’L PEOPLE’S CONG. GAZ (China); Fair Trade Act of 2015 Art. 7, (Taiwan)

³⁴³ *Philip Morris*, 1987 E.C.R. 4487, ¶65; *Warner-Lambert/Gillette*, 1993 O.J.L. 116/21, ¶24.

³⁴⁴ *Warner-Lambert/Gillette*, 1993 O.J.L. 116/21, ¶ 25.

“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 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 dominance³⁴⁵ and bans abusing that dominance through excessive pricing.³⁴⁶ 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.³⁴⁷ 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.³⁴⁸

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.³⁴⁹ Unlike with oligopoly pricing, horizontal shareholding does not reflect an unavoidable act, like pricing. Holding leading shares in horizontal competi-

³⁴⁵ TFEU Article 102 (banning “Any abuse by one or more undertakings of a dominant position”); ELHAUGE & GERADIN, *supra* note 336, at 307–08.

³⁴⁶ TFEU Article 102(a) (banning the abuse of imposing “unfair . . . prices”); *United Brands v. Comm’n*, 1978 E.C.R. 207.

³⁴⁷ ELHAUGE & GERADIN, *supra* note 336, at 305, 441–42; Elhaug, *Disgorgement as an Antitrust Remedy*, 76 ANTITRUST L.J. 79, 89–90 (2009); Elhaug, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253, 331–32 (2003).

³⁴⁸ ELHAUGE & GERADIN, *supra* note 336, at 308, 893, 942.

³⁴⁹ *Supra* Part I.

tors 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.

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.³⁵⁰ 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.³⁵¹ 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.³⁵² 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 dominance³⁵³ and treat excessive pricing as an abuse of dominance.³⁵⁴

³⁵⁰ *Supra* Parts I & III.A.

³⁵¹ *Gencor Ltd. v. Comm'n*, 1999 E.C.R. II-753; *Airtours v. Comm'n*, 2002 E.C.R. II-2585, ¶ 61.

³⁵² *France v. Comm'n (Kali & Salz)*, 1998 E.C.R. I-1375, ¶¶ 171, 221.

³⁵³ 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.

³⁵⁴ 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) (Taiwan); *Belco Decision*, No. 01-17/150-39 (Turkey Competition Commission 2001) (banning excessive pricing by a dominant firm).

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 A, and mean that what now look like non-horizontal mergers should often be treated as horizontal, as explained in section 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.³⁵⁵

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 an-

³⁵⁵ 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).

ticompetitive 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. Consistent with this analysis, both U.S. and E.U. antitrust agencies have now begun to consider horizontal shareholdings when deciding whether to approve mergers.³⁵⁶

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,³⁵⁷ considering horizontal shareholding levels when doing traditional merger analysis would still have strong implications. 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 shareholding only in markets with an

³⁵⁶ David McLaughlin, *Index Fund Giants Draw Antitrust Scrutiny in U.S. Merger Reviews*, Bloomberg Law (Jan. 3, 2020), at <https://news.bloomberglaw.com/mergers-and-anti-trust/index-fund-giants-draw-antitrust-scrutiny-in-u-s-merger-reviews> (noting that the FTC in merger investigations now asks “buyers and sellers to identify their largest shareholders, the extent of their influence over the companies and any communications they’ve had” and the “European Union cited common ownership as one reason that two agricultural–chemical companies had to spin off assets to win approval to merge.”)

³⁵⁷ I show why that conclusion is mistake above in Part III.A, as well as in Elhauge, *The Causal Mechanisms*, *supra* note 108, at Part IV.

HHI level above 2500.³⁵⁸ 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 3000-4000,³⁵⁹ 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.

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

³⁵⁸ Elhaug, *supra* note 2, at 1276, 1301-02.

³⁵⁹ ELHAUGE, US ANTITRUST, *supra* note 237, at 740.

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.³⁶⁰ 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.³⁶¹ But suppose the leading shareholders of the other three 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 hori-

³⁶⁰ *Supra* Parts II–III; Elhaug, *The Causal Mechanisms*, *supra* note 108, at Part IV.

³⁶¹ 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 283, at 1187–88. However, we do not yet have any U.S. Supreme Court authority treating mergers between such potential competitors as horizontal, *id.* at 1190–97, nor any authority doing so in the EU or in other nations, *id.* at 1197–98, 1235–36.

zontal 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 these rising national concentration levels raise significant anticompetitive concerns that require increased antitrust enforcement.³⁶² 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.³⁶³ 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 2001-2014,³⁶⁴ and the banking *HHIs* going from 2000 to 2200 from 2002-2013.³⁶⁵ 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 institutional investors and that those firms will be in index funds like the S&P 500.³⁶⁶ In short, the combination of increasing national concentration with relatively stable local market concentration generally implies higher horizontal shareholding levels. Consistent with this, from 2011-2014, average *MHHI* levels on local

³⁶² See e.g., E-Commerce – America’s Concentration Crisis, <https://concentrationcrisis.openmarketsinstitute.org/industry/e-commerce/> (last visited Feb. 13, 2020).

³⁶³ Werden & Froeb, *supra* note 166, at 9–10.

³⁶⁴ Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1526–27.

³⁶⁵ Azar, Raina & Schmalz, *supra* note 11, at 69.

³⁶⁶ 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).

airline routes increased from around 6700 to 8000.³⁶⁷ Likewise, from 2002 to 2013, average GHHI in local banking markets increased from 3200 to 4800.³⁶⁸ Similarly, while the average HHI in consumer goods markets has risen relatively modestly, from 3500 to 4300, the average MHHI has increased sharply from 4000 to 6000.³⁶⁹ And for airlines, banking, and consumer goods markets we have empirical evidence that this increase in MHHI and GHHI levels has had anticompetitive effects on prices.³⁷⁰

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.

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 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

³⁶⁷ Azar, Schmalz & Tecu, *Airline Study*, *supra* note 9, at 1527.

³⁶⁸ Azar, Raina & Schmalz, *supra* note 11, at 69.

³⁶⁹ Aslan, *supra* note 145, at 12–13, 14.

³⁷⁰ *Supra* Part I.

and pharmaceutical markets, but also to hundreds of consumer goods in a new cross-market study, to common ownership by venture capitalists, and to all industries and markets in two new cross-industry studies and the new study of entry into the S&P 500.

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.