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ESSAY

HORIZONTAL SHAREHOLDING

*Einer Elhauge**

Horizontal shareholdings exist when a common set of investors own significant shares in corporations that are horizontal competitors in a product market. Economic models show that substantial horizontal shareholdings are likely to anticompetitively raise prices when the owned businesses compete in a concentrated market. Recent empirical work not only confirms this prediction, but also reveals that such horizontal shareholdings are omnipresent in our economy. I show that such horizontal shareholdings can help explain fundamental economic puzzles, including why corporate executives are rewarded for industry performance rather than individual corporate performance alone, why corporations have not used recent high profits to expand output and employment, and why economic inequality has risen in recent decades. I also show that stock acquisitions that create anticompetitive horizontal shareholdings are illegal under current antitrust law, and I recommend antitrust enforcement actions to undo them and their adverse economic effects.

An economic blockbuster has recently been exposed. A small group of institutions has acquired large shareholdings in horizontal competitors throughout our economy, causing them to compete less vigorously with each other. For example, from 2013 to 2015, seven shareholders who controlled 60.0% of United Airlines also controlled big chunks of United's major rivals, including 27.5% of Delta Airlines, 27.3% of JetBlue Airlines, and 23.3% of Southwest Airlines.¹ More generally, institutional investors held 77.0% of the stock of all airlines operating in the average flight route from 2001 to 2013.² A new econometric study shows that this sort of horizontal shareholding has made average airline ticket prices three to ten percent higher than they otherwise would have been.³

* Petrie Professor of Law, Harvard Law School. © 2016 Einer Elhauge. All rights reserved. I am grateful for summer research funding from Harvard Law School and for comments from Cindy Alexander, Joseph England, José Azar, Jonathan Baker, John Coates, Todd Collins, Allen Ferrell, Jesse Fried, Luke Froeb, Anthony Mariano, Doug Melamed, Mark Roe, Christopher Sagers, Steve Salop, David Schleicher, Martin Schmalz, Ganesh Sitaraman, Larry Summers, Isabel Tecu, Glen Weyl, David Zhang, and the participants in the Harvard Corporate Group Lunch.

¹ See José Azar, Martin C. Schmalz & Isabel Tecu, *Online Appendix to: Anti-Competitive Effects of Common Ownership* 2 tbl.A.1 (Univ. of Mich. Stephen M. Ross Sch. of Bus., Working Paper No. 1235, 2015), <https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWVpbmxtYXJoaW5jc2NobWFsenxneDo5YTM1MDU0NjU0ODY0ODQ> (listing the airline shareholdings of Capital Research, T. Rowe Price, BlackRock, Wellington, Janus Capital, Fidelity, and Vanguard).

² See José Azar, Martin C. Schmalz & Isabel Tecu, *Anti-Competitive Effects of Common Ownership* 14 (Univ. of Mich. Ross Sch. of Bus., Working Paper No. 1235, 2015), <http://papers.ssrn.com/abstract=2427345> [<https://perma.cc/3CKH-X75N>].

³ See *id.* at 3–4.

The airline industry is not the only industry plagued by such horizontal shareholdings. Consider the following figures from 2013 to 2014. In the banking industry, the top four shareholders of JPMorgan Chase (BlackRock, Vanguard, State Street, and Fidelity) were also the top four shareholders of Bank of America and four of the top six shareholders of Citigroup, collectively holding 19.2% of JPMorgan Chase, 16.9% of Bank of America, and 21.9% of Citigroup.⁴ Another new econometric study finds that such horizontal shareholdings have significantly increased the fees that banks charge and decreased the deposit rates that banks pay.⁵

These same shareholders were also the top four shareholders of Apple and four of the top six shareholders of Apple's main rival, Microsoft.⁶ These four horizontal shareholders collectively owned 18.4% of Apple and 17.3% of Microsoft.⁷ In the pharmacy market, the top five shareholders of CVS (the aforementioned four plus Wellington) were also the top five shareholders of its main rival Walgreens.⁸ These horizontal shareholders owned 24.6% of CVS and 19.6% of Walgreens.⁹

There is every reason to think that the problem of horizontal shareholding is pervasive across our economy because institutional investors like BlackRock, Vanguard, Fidelity, and State Street now own around 80% of all stock in S&P 500 corporations.¹⁰ These institutional investors also offer index funds that cover all industries and sector funds in each specific industry, so most industries likely have significant horizontal shareholdings. Even though individual money managers at each institutional investor may manage smaller portfolios, institutional investors usually exercise the shareholder voting rights of all their funds jointly at the fund-family level in order to maximize each institutional investor's influence on corporate governance.¹¹

Economic theory has long shown that horizontal shareholdings can reduce the incentives of horizontal competitors to compete with each other.¹² The reason is that firms maximize profits by competing only when the profits from taking market share away from other firms ex-

⁴ See *id.* at 48 tbl.1.

⁵ José Azar, Sahil Raina & Martin C. Schmalz, *Ultimate Ownership and Bank Competition* (Jan. 8, 2016), <http://ssrn.com/abstract=2710252> [<https://perma.cc/UD9E-8H7M>].

⁶ Azar, Schmalz & Tecu, *supra* note 2, at 48 tbl.1.

⁷ See *id.*

⁸ *Id.*

⁹ See *id.*

¹⁰ See Neil Stewart, *Retail Shareholders: Looking Out for the Little Guy*, IR MAG. (May 15, 2012), <http://www.irmagazine.com/articles/shareholder-targeting-id/18761/retail-shareholders-looking-out-little-guy>.

¹¹ Azar, Schmalz & Tecu, *supra* note 2, at 34.

¹² See *infra* Part I, pp. 1273–78.

ceed the interest in keeping marketwide prices high. In competitive markets where ownership is separate, economic models prove that firms have incentives to undercut each others' prices because the profits they gain from the additional sales exceed the price reduction caused by their own conduct. Because each firm sets prices based on the same calculus, they keep undercutting each other until they drive down prices toward marginal cost, which is the most efficient level.

But the standard economic model of market competition assumes that when a firm takes away sales by undercutting its rivals' prices, the firm's owners gain the profits from those sales but lose no profit on the sales taken away from their rivals. When the owners of a firm also own that firm's rivals, the calculus is entirely different. This is easiest to see when the owners of a firm are identical to the owners of that firm's rival. In that case, when a firm undercuts its rival's price to take away a sale, the movement of the sale to the firm from the rival simply moves their owners' money from one pocket to another; the net effect of the price cut for those owners is that the prices charged by both firms are lower, thus lowering those owners' profits across both firms. Suppose, for example, that there are only two restaurants in town that are separately incorporated but both owned by the same person. What incentive would one restaurant have to undercut the price of the other restaurant to take away its business? None — because it is taking away business from the same person who owns it.

This anticompetitive incentive is similar, though somewhat attenuated, when the shareholders of two firms are only partially overlapping. Suppose one firm's shareholders also own 50% of that firm's rival. Now, the firm's shareholders will gain some profits by moving a sale from the rival to the firm, but less profits than if their shareholders were entirely different. Instead, a firm acting on behalf of its shareholders will realize that each sale gained by the firm costs the firm's owners not only the usual marginal cost of making the product, but also 50% of the profits that the rival loses by having the sale taken away. The effect on firm pricing incentives is the same as if its marginal cost for expanding output were increased by an amount equal to half the profits the rival loses by losing a sale. Like any increase in a firm's marginal costs, this effect reduces the incentives of each firm to price products lower — even if their respective managers never communicate or coordinate with each other.

Although this anticompetitive effect also does not require communication between managers and shareholders, I show below that institutional investors usually do communicate with and actively seek to influence the corporations in which they own shares.¹³ In those

¹³ See *infra* section III.B, pp. 1305–09.

investor-manager communications, “high on the list of topics” is urging those corporations to “throw the switch from developing market share to instead exercise market power to get margins up” in particular markets, according to the former legal counsel of a very large asset management firm.¹⁴

However, such active communication is unnecessary for horizontal shareholdings to have anticompetitive effects. Without any active communication, corporate managers know the identity of their shareholders and the fact that their shareholders also own shares in their rivals.¹⁵ To the extent those shareholders are index funds, their holdings in rivals are obvious, and in any event SEC rules require all institutional investors to disclose all their holdings quarterly.¹⁶ Managers thus know that taking away sales from rivals imposes a cost on their shareholders. Managers also have incentives to take those shareholder interests into account for a variety of reasons, including: out of a sense of fiduciary duty or gratitude, to gain support in future elections, to enhance future job prospects, because executive compensation methods align with shareholder interests, or so their shareholders will help fend off takeover threats.¹⁷ None of those reasons requires any management-shareholder communication. Nor does this anticompetitive effect require that the managers of the two firms communicate or coordinate with each other. The anticompetitive incentive created by this horizontal shareholding is purely structural, changing the price-setting incentive of each firm acting separately.

For that matter, it suffices that institutional investors have incentives to *fail* to exercise their corporate-governance rights in a way that demands maximizing individual corporate performance over industry performance. Consider the case of DuPont, whose main competitor in the seeds market is Monsanto. The top four shareholders of DuPont (Vanguard, BlackRock, State Street, and Capital Research) are also four of the top five shareholders in Monsanto, and they own respectively 19.4% of DuPont and 19.8% of Monsanto.¹⁸ The fifth largest shareholder of DuPont, the Trian Fund, did not own significant shares

¹⁴ Azar, Schmalz & Tecu, *supra* note 2, at 35.

¹⁵ *Id.* at 11 (“The ownership structure is public information, and moreover frequently communicated in engagement meetings [with institutional investors]. Our interviews with pricing managers moreover indicate that they are well aware of their competitors’ owners.” (citation omitted)).

¹⁶ Securities Exchange Act § 13(f)(1), 15 U.S.C. § 78m(f)(1) (2012); *id.* § 13m(f)(5)(A), *id.* § 78m(f)(5)(A); Exchange Act Rule 13f-1, 17 C.F.R. § 240.13f-1 (2015); Shareholder Reports and Quarterly Portfolio Disclosure of Registered Management Investment Companies, Securities Act Release Nos. 33-8393, 34-49333, Investment Company Act Release No. 26372, 69 Fed. Reg. 11,244, 11,254-57 (Mar. 9, 2004).

¹⁷ See *infra* Part I, pp. 1273-78.

¹⁸ See Martin C. Schmalz, *How Passive Funds Prevent Competition*, ERIC POSNER (May 18, 2015), <http://ericposner.com/martin-schmalz-how-passive-funds-prevent-competition> [https://perma.cc/3YGM-76LB].

in Monsanto, and Trian launched a proxy contest criticizing DuPont management for failing to maximize DuPont profits.¹⁹ In particular, Trian complained that: (1) DuPont profits had risen only because industry profits had risen and that DuPont was not increasing profits relative to its competitors; (2) DuPont was not aggressively investing in research and development to gain market share; (3) DuPont's CEO sold her DuPont shares and thus lessened her competitive incentives; and (4) DuPont entered into a patent settlement with Monsanto whereby, instead of competing, DuPont paid Monsanto for a license to use Monsanto's patent.²⁰

These complaints make perfect sense for nonhorizontal DuPont shareholders who own no shares in its competitors and are thus only interested in maximizing DuPont's profits. But these complaints are much less likely to persuade horizontal shareholders because they instead benefit from maximizing their returns from the *joint* profits of DuPont and Monsanto. It was thus unsurprising that Trian's proxy contest was not supported by the four top shareholders of DuPont, given that their 19.8% share of Monsanto slightly exceeded their 19.4% share in DuPont and that Monsanto has nearly double the market capitalization of DuPont.²¹ Their failure to support the proxy contest proved decisive because the proxy contest was narrowly defeated, which illustrates that horizontal shareholdings of less than 20% can significantly affect corporate behavior.²² Consistent with the proposition that the proxy contest sought to further DuPont-specific competitive interests rather than the anticompetitive joint interests of both DuPont and Monsanto, the defeat of the proxy contest caused DuPont stock to sharply decline and Monsanto stock to sharply rise.²³

My analysis will proceed in three steps. Part I explains how new empirical evidence not only indicates pervasive horizontal shareholdings that economic models show are likely to have anticompetitive effects, but also confirms the predictions of those economic models by empirically proving that horizontal shareholdings have the predicted anticompetitive effects. This new empirical work also provides the only systemic empirical validation we have of the market concentration threshold, a Herfindahl-Hirschman Index (HHI) over 2500,²⁴ that the federal antitrust agencies now use to judge whether a market is con-

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² *See id.*

²³ *Id.*; see also Jeff Murdock, *Retail Shareholders Cited as Key to DuPont Proxy Win*, USA TODAY (May 13, 2015), <http://www.usatoday.com/story/money/business/2015/05/13/dupont-proxy-fight/27224495> [<https://perma.cc/TP6F-X9N3>].

²⁴ *See infra* note 27.

centrated enough to make it likely that a concentration increase would have anticompetitive effects. Roughly speaking, a product market hits this concentration threshold when it has four major firms or fewer. When the same set of institutional investors has large, leading stockholdings across such a concentrated product market, their horizontal shareholdings are likely to be problematic.

Part II shows that horizontal shareholdings can help explain some fundamental economic puzzles. Horizontal shareholdings help explain the puzzle of why large, sophisticated corporate shareholders support executive compensation methods that reward executives for the success of their industry rather than the relative success of their firm alone, notwithstanding the persuasive showing by Professors Lucian Bebchuk and Jesse Fried that this method does not maximize profits for the individual firm.²⁵ Horizontal shareholdings also help explain why, in the recovery from the recent Great Recession, firms that made record-high profits because of enormous fiscal and monetary stimuli have proven so reluctant to invest those high profits on increasing output and employment. Finally, the rise of horizontal shareholdings in recent decades helps explain why, as Professor Thomas Piketty has famously observed, income inequality has risen in those recent decades.²⁶ Antitrust enforcement against horizontal shareholdings in concentrated markets thus offers the promise of improving management compensation, increasing economic growth and employment, and reducing income inequality.

Part III shows that, contrary to the assertion by some that new legislation is required to deal with this new anticompetitive problem, current antitrust law provides ample authority for antitrust agencies and private litigants to attack stock acquisitions that create anticompetitive horizontal shareholdings in concentrated markets. The so-called passive-investor exception is not a bar. That exception requires complete passivity in influencing corporate management or governance, not a passive investment strategy like indexing to pick investments. Nor is it really an exception because all the doctrine really does, when established, is heighten the standard of proof. Because the empirical evidence suggests this heightened standard can be met, even truly passive horizontal shareholdings could be subject to antitrust challenge.

²⁵ LUCIAN BEBCHUK & JESSE FRIED, PAY WITHOUT PERFORMANCE 137–58 (2004); see also Azar, Schmalz & Tecu, *supra* note 2, at 33.

²⁶ See generally THOMAS PIKETTY, CAPITAL IN THE TWENTY-FIRST CENTURY (Arthur Goldhammer trans., 2014); Eric Posner & E. Glen Weyl, *Mutual Funds' Dark Side*, SLATE (Apr. 16, 2015, 9:46 AM), http://www.slate.com/articles/news_and_politics/view_from_chicago/2015/04/mutual_funds_make_air_travel_more_expensive_institutional_investors_reduce.html [<https://perma.cc/QJN5-9WB9>].

I. THE ANTICOMPETITIVE EFFECTS OF HORIZONTAL SHAREHOLDING

To determine the likelihood that a merger would be anticompetitive without considering any horizontal shareholding, U.S. antitrust agencies have long measured market concentration by calculating the HHI and measuring how it would be increased for each market affected by the merger. The HHI equals the sum of the square of each firm's market share, and the change in HHI (or ΔHHI) is how much the merger would increase HHI. Thus, if two merging firms had a 30% share each and a third firm had a 40% share, the HHI before the merger would be $30^2 + 30^2 + 40^2 = 3400$. The HHI after the merger would be $60^2 + 40^2 = 5200$, and thus the ΔHHI would be 1800. Under the U.S. merger guidelines, a merger is presumed likely to have anticompetitive effects if it produces a ΔHHI above 200 that results in an HHI above 2500.²⁷

A seminal article by Daniel O'Brien and Professor Steven Salop systematized analysis of the anticompetitive incentives of horizontal shareholders by showing they could be captured by modified HHIs (or MHHIs).²⁸ O'Brien and Salop established that if HHIs accurately measure the likelihood of anticompetitive effects from completely separate ownership, economic modeling indicates how to calculate MHHIs that measure the likelihood of anticompetitive effects in a way that takes into account partial-ownership overlaps among horizontal rivals.²⁹ Importantly, the economic model that establishes these anti-

²⁷ See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 5.3 (2010).

²⁸ Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67 ANTITRUST L.J. 559 (2000). I focus on O'Brien and Salop because they provide the best developed statement of the theory and method for MHHIs. However, the point that horizontal shareholdings reduce competitive incentives was first made in Julio J. Rotemberg, *Financial Transaction Costs and Industrial Performance* (Mass. Inst. of Tech., Alfred P. Sloan Sch. of Mgmt., Working Paper No. 1554-84, 1984), and MHHIs were first proposed in Timothy F. Bresnahan & Steven C. Salop, *Quantifying the Competitive Effects of Production Joint Ventures*, 4 INT'L J. INDUS. ORG. 155 (1986). For other excellent literature developing this idea, see Roger H. Gordon, *Do Publicly Traded Corporations Act in the Public Interest?* (Nat'l Bureau of Econ. Research, Working Paper No. 3303, 1990); David Gilo, *The Anticompetitive Effect of Passive Investment*, 99 MICH. L. REV. 1 (2000) [hereinafter Gilo, *The Anticompetitive Effect*]; David Gilo, Yossi Moshe & Yossi Spiegel, *Partial Cross Ownership and Tacit Collusion*, 37 RAND J. ECON. 81 (2006); and Robert G. Hansen & John R. Lott, Jr., *Externalities and Corporate Objectives in a World with Diversified Shareholder/Consumers*, 31 J. FIN. & QUANTITATIVE ANALYSIS 43 (1996).

²⁹ O'Brien & Salop, *supra* note 28, at 597, 610–11. HHIs are most relevant when firms engage in Cournot competition, which means the firms set output, and then sell at whatever price is needed to sell that output given market demand. *See id.* at 595. When firms engage in differentiated price competition, the firms instead set prices, and then make whatever output buyers will purchase at that price. For markets of the latter sort, O'Brien and Salop develop a parallel Price Pressure Index that shows the adverse price effects of horizontal shareholdings. *Id.* at 594, 598–

competitive effects does not require *any* coordination or communications among the firms. The basic anticompetitive effects arise from the fact that interlocking shareholdings diminish each *individual* firm's incentives to cut prices or expand output by increasing the costs of taking away sales from rivals.³⁰ To be sure, horizontal shareholdings might also produce communications that aid coordination among firms, which would make the anticompetitive effects even worse. But no such communication or coordination is necessary for the basic anticompetitive effect, which turns purely on structural incentives created by the interlocking shareholdings.

Nor does this anticompetitive effect require any communication between management and shareholders. It suffices that managers act, at least to some extent, on behalf of their shareholders' interests. Although some agency slack is inevitable, there are a host of mechanisms that make managers act mainly on behalf of shareholder interests. Managers mainly serve shareholder interests: (a) out of a sense of fiduciary obligation or gratitude toward those who voted them in; (b) because managers want those shareholders to support them in future board elections or other votes; (c) because managers' future prospects in the labor market are worse if managers harm shareholder interests; (d) because managers' compensation methods align their interests with shareholder interests;³¹ or (e) because managers want shareholders to support them in fending off takeover threats. None of these mechanisms requires any management-shareholder communication. Nor is any such communication necessary to reveal that a firm's shareholders also own shares in that firm's rivals, because this information is public knowledge.³²

An impressive recent empirical study by José Azar, Professor Martin Schmalz, and Isabel Tecu takes advantage of the fact that, for the airline industry, we have public data on airline ticket prices and the quantity of passengers for each route. For each route they calculate an

602, 611. I focus on their MHHI analysis because that is what has been validated in the recent empirical studies discussed in this section.

³⁰ Of course, firms always have a collective financial interest in having inflated market prices. But without any horizontal shareholdings, firms have strong individual incentives to undercut those inflated prices to gain a greater share of supracompetitive profits and often cannot collude or coordinate on such inflated prices. Horizontal shareholdings can reduce individual firm incentives to undercut rivals' prices even when coordination is not possible.

³¹ As discussed in section II.A, with pervasive horizontal shareholdings, methods for executive compensation and dismissal are largely influenced by industry performance, rather than just by individual corporate performance. Rewarding and punishing executives based on industry performance gives them strong incentives to refrain from competition that lowers industry profits, even if they are unaware of the horizontal shareholders and never communicate with them.

³² See *supra* p. 1270. Further, even if managers were unaware of horizontal shareholdings, it suffices that managers who compete less aggressively are more likely to get reelected, obtain future management jobs, receive higher compensation, and fend off takeovers.

HHI that ignores horizontal shareholdings, an MHHI that takes horizontal shareholdings into account, and a Δ MHHI that equals the difference between MHHI and HHI.³³ Δ MHHI thus provides a good measure of the degree to which market concentration is increased by the stock acquisitions that create horizontal shareholdings. Using this data, they make four major findings.

First, Azar, Schmalz, and Tecu calculate that for the average airline route, the HHI has ranged over time from approximately 5000 to 5400 and Δ MHHI has ranged from approximately 1000 to 2600, resulting in MHHIs ranging from approximately 6000 to 8000.³⁴ Thus, their study proves that horizontal shareholdings are so pervasive that the stock acquisitions that created them produce MHHIs that are more than two to three times the federal guidelines' HHI threshold of 2500 and Δ MHHIs that are five to thirteen times greater than the guidelines' Δ HHI threshold of 200. Given that the guidelines presume likely anti-competitive effects from a merger that produces an HHI over 2500 and a Δ HHI over 200, the airline stock acquisitions that produced an average MHHI of 5000–5400 and average Δ MHHI of 1000–2600 should be presumed highly likely to have anticompetitive effects.

Second, Azar, Schmalz, and Tecu empirically confirm the validity of MHHI models by running a regression that controls for differences among routes, carriers, and time periods. They show that higher levels of Δ MHHI (that is, greater horizontal shareholdings) increased prices with a 99% level of statistical confidence.³⁵ Given the actual levels of HHIs and MHHIs, they show that this effect means that, in the average airline route, prices are 3–5% higher than they would be without any horizontal shareholdings.³⁶ This is bigger than it sounds for two reasons. First, a price increase of 3–5% creates a large increase in profit margin because the average airline profit margin is 1–2.4%.³⁷ Second, this 3–5% increase in prices is the average across all airline routes, some of which were too unconcentrated for the horizontal shareholdings to matter. The effect is much greater (6.7%) on routes for which horizontal shareholding produces very high market concentration.³⁸

This price correlation cannot be explained by the alternative hypothesis that institutional investors are good at choosing to invest in firms that fly routes with increasing demand. That alternative hypothesis conflicts with the evidence that higher levels of Δ MHHI also

³³ Azar, Schmalz & Tecu, *supra* note 2, at 11–17.

³⁴ *Id.* at 55 fig.1; *see also id.* at 12, 16.

³⁵ *Id.* at 3, 18–20, 50 tbl.3.

³⁶ *Id.* at 3, 19–20.

³⁷ *Id.* at 3.

³⁸ *Id.* at 19.

decrease quantity with a 99% level of statistical confidence, with the average quantity decrease across all routes being 6%.³⁹ This 6% quantity decrease matches what one would expect from the estimated price increase, given existing estimates of airline demand elasticity.⁴⁰ That alternative hypothesis also conflicts with the facts that these institutional investors often pursue passive investment strategies like indexing and make investments in airlines that have hundreds of different routes, only some of which have the significant HHIs and Δ MHHI that produce the observed price effects.

Third, to address possible reverse causality or endogeneity problems, Azar, Schmalz, and Tecu also do an econometric analysis of BlackRock's acquisition of Barclays Global Investors. Because this acquisition was driven by Barclays' decision to sell its iShares family of exchange-traded funds, and because airline stocks are a small share of the portfolio of these institutional investors, any effect this acquisition had on airline ticket pricing seems clearly exogenous.⁴¹ Azar, Schmalz, and Tecu show that the BlackRock-Barclays combination of institutional investors increased airline prices on routes affected by the combination, compared to unaffected routes, using a regression that controlled not only for local economic conditions but also for differences across each route and carrier.⁴² They further show that the coefficient produced by this regression indicates that horizontal shareholdings increase average airline prices by 10%.⁴³ Thus, this strict control for endogeneity results in an estimated price effect that is even greater than the 3–5% estimated in the regression mentioned above.

Fourth, Azar, Schmalz, and Tecu show that the effect of horizontal shareholdings (that is, Δ MHHI) on prices becomes significant only when the base market HHI concentration exceeds 2500.⁴⁴ This finding is important because although there have been many empirical studies of mergers, no prior study had rigorously tested the HHI threshold levels used by the agencies. This study indicates that the 2500 threshold that the federal antitrust agencies use accurately determines likely anticompetitive effects. The study thus validates the agencies' decision in 2010 to raise the HHI threshold from 1800 to 2500 to determine when a market is highly concentrated enough that

³⁹ *Id.* at 3, 27; Azar, Schmalz & Tecu, *supra* note 1, at 18 tbl.F.1.

⁴⁰ Azar, Schmalz & Tecu, *supra* note 2, at 27–28.

⁴¹ *Id.* at 3, 21.

⁴² *Id.* at 3–4, 22–25.

⁴³ *Id.* at 4, 25.

⁴⁴ *Id.* at 29.

increased concentration levels are likely to cause anticompetitive effects.⁴⁵

In short, horizontal shareholdings across airlines are so pervasive that guidelines and economic models indicate they are highly likely to increase airline prices in concentrated markets. Further, empirical analysis shows that having substantial horizontal shareholdings actually does raise airline prices significantly when the owned firms compete in concentrated markets, meaning markets with an HHI above 2500. An HHI over 2500 means, roughly speaking, there are four or fewer major firms in the market.⁴⁶

Similar results are found for the banking industry in a recent empirical study by Azar, Sahil Raina, and Schmalz.⁴⁷ They find that, although the average HHI in banking markets is around 2000, taking into account horizontal shareholdings reveals that the average GHHI (a generalization of MHHI) is almost double this level and has risen above 4000 in recent years.⁴⁸ They further find that although changes in HHI fail to correlate with changes in bank fees or rates, changes in GHHI have a large and statistically significant effect, with higher GHHIs increasing the fees that banks charge and decreasing the deposit rates that banks pay. Finally, to address possible endogeneity problems, they isolate the increase in GHHI created by index fund growth. They show that this index-driven GHHI increase alone has had the statistically significant effect of raising bank fees and decreasing deposit rates.

As noted in the Introduction, similar patterns of horizontal shareholding exist in numerous other major sectors, including computing, pharmacies, and seeds. Indeed, there is good reason to think the phenomenon extends generally across many industries because institutional investors own 80% of all stock in S&P 500 corporations, which is

⁴⁵ Compare U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 27, § 5.3 (highly concentrated market threshold of 2500), with U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 1.51 (1992) (rev. ed. 1997) (highly concentrated market threshold of 1800).

⁴⁶ If a market consists of four firms, the minimum HHI results if they are all equally sized, in which case $HHI = 4 \text{ times } 25 \text{ squared} = 2500$.

⁴⁷ See Azar, Raina & Schmalz, *supra* note 5.

⁴⁸ *Id.* at 62 fig.VII.A. The MHHI formula works when horizontal shareholding reflects either a common set of investors with stock in competing firms or the fact that some firms hold shares in competing firms. However, the MHHI formula requires further refinement if there is either (a) a mixture of common shareholding and firm cross-ownership or (b) mutual cross-shareholdings (that is, when competing firms each own shares in each other). In those cases, the indirect control and shares require solving for the ultimate control and ultimate financial interest shares before applying the formula. The difference between MHHI and GHHI can be significant but usually is not large. In the banking study, where bank cross-shareholdings are significant, the difference was less than 100 for 78% of local markets, though it did exceed 200 for 8% of them. See *id.* at 3. In the airlines study, all the ownership was direct, so the MHHI was the same as the GHHI.

actually a bit greater than the 77% of airline stock that is owned by institutional investors.⁴⁹ Large horizontal shareholdings similar to those for airlines and banking likely exist in many other industries and thus likely create anticompetitive effects if the relevant product markets are sufficiently concentrated, as are many markets today.⁵⁰ The major exceptions are probably firms with dominant nonhorizontal shareholders who are likely to drive firm behavior or markets with foreign firms which are more likely to have significantly different investors.

The next section shows that horizontal shareholdings can also shed light on some other economic puzzles relevant to corporate governance and national economic policy.

II. HOW HORIZONTAL SHAREHOLDINGS ILLUMINATE SOME FUNDAMENTAL ECONOMIC PUZZLES

The economic effects of horizontal shareholdings are interesting not just as a matter of antitrust policy, but also as a matter of corporate and economic policy more generally. In particular, horizontal shareholdings can help explain fundamental puzzles about executive compensation, macroeconomic policy, and economic inequality.

A. Executive Compensation Based on Industry Performance Rather than Corporate Performance

As Bebchuk and Fried have observed, corporations generally compensate executives using measures (like stock options) that are 70% driven by general market profitability and only 30% driven by individual corporate performance.⁵¹ They argue that this method of compensation provides executives with a windfall that is unrelated to executive performance and thus harmful to corporate shareholders. To correct this, they advocate that shareholders design stock options to screen out marketwide effects, such as allowing stock options to be exercised only if the executive's firm exceeds marketwide performance or indexing the option's exercise price to move with marketwide changes

⁴⁹ See *supra* pp. 1267, 1268.

⁵⁰ According to data from Professors Gerard Hoberg and Gordon Phillips, 64% of industries had an HHI over 2500 in 2013. Gerard Hoberg & Gordon Phillips, *Hoberg-Phillips Industry-Level Data*, U.S. CAL.: HOBERG-PHILLIPS DATA LIBR., <http://cwis.usc.edu/projects/industrydata/industryconcen.htm> (last updated Jan. 1, 2015) [<https://perma.cc/P2H7-FAR9>]. This should not be taken as a true indication of concentration levels because, having to cover huge numbers of firms and industries, they necessarily rely on industry definitions that may not correspond to antitrust markets and on methods for ascertaining firms' industry shares that are imprecise. Still, the data does suggest fairly pervasive concentration, and because they find only 183 industries, it seems likely that actual markets are smaller, which could indicate even greater concentration.

⁵¹ BEBCHUK & FRIED, *supra* note 25, at 138–39.

so that the profits from the option reflect the extent to which executives have outperformed the market.⁵² As they note, scholars have deemed it puzzling that corporations have in fact failed to adopt such methods that focus on individual firm performance.⁵³ Their explanation is that managerial power is blocking the adoption of executive compensation methods that would benefit shareholders.⁵⁴

However, their managerial power explanation raises a further puzzle. If current methods of executive compensation reflect managers using their power against shareholder interests, why do large institutional shareholders usually fail to vote both for shareholder proposals to change these methods and against reelecting boards who refuse to change them?⁵⁵ After all, institutional investors should know better, and they have large enough stakes to act on their knowledge.

Moreover, if increasing executive pay to benefit managers were the only explanation, why is it that, from 1993 to 2009, decisions to oust managers were driven almost as much by the performance of their industry as by the performance of their firms?⁵⁶ When a corporation ousts a manager, that manager's power has clearly been overcome. So in these cases, given that shareholders have by definition overcome the incumbency power of management, it does not make much sense that the shareholders would choose to exercise their removal power based on a performance measure that does not reflect the shareholders' own interests. The managerial power explanation also seems directly contradicted by the fact that the use of industry performance evaluation for ouster decisions does not vary with the length of executive tenure or degree of executive power.⁵⁷

The study by Azar, Schmalz, and Tecu offers a different explanation: the use of industry performance measures is not a bug but a feature for institutional investors who are invested across the industry.⁵⁸ For such institutional investors, managers who increase individual corporate performance by competing with rivals and taking away market share decrease institutional investor profits across the industry by decreasing industry profits. Institutional investors are more likely to prefer managers who maximize industry profits by avoiding competition. Consistent with horizontal shareholding theory, empirical work finds that firms give less weight to individual corporate performance

⁵² *Id.* at 140–43.

⁵³ *Id.* at 143.

⁵⁴ *Id.* at 144–46.

⁵⁵ *See id.* at 138–39.

⁵⁶ *See* Dirk Jenter & Fadi Kanaan, *CEO Turnover and Relative Performance Evaluation*, 70 J. FIN. 2155, 2166 (2015).

⁵⁷ *See id.* at 2157–58, 2180–81.

⁵⁸ Azar, Schmalz & Tecu, *supra* note 2, at 33–34.

in manager compensation when the firms operate in less competitive product markets.⁵⁹

To be sure, one might posit alternative explanations for why corporations might assess executives based on industry performance. One possible explanation is that shareholders make an attribution error: mistakenly blaming managers for low profits regardless of whether the situation is their fault.⁶⁰ But it seems implausible that institutional investors are that unsophisticated. Another posited explanation is that economic downturns expose managerial skill deficits that were otherwise unobservable. But this explanation conflicts with the fact that judging management based on industry performance is just as likely for longer-tenured managers, who are more likely to have already proved their skills in good and bad economic times.⁶¹ Moreover, both alternative explanations seem inconsistent with the fact that ouster decisions are driven far more by industry performance than by general stock market performance, and that compensating based on industry performance is more likely in less competitive markets.⁶² These facts are more consistent with horizontal shareholding theory.

Further, unlike these alternative theories, changes in horizontal shareholding over time fit with changes over time in the bases for ousting and compensating managers. Until sometime in the 1980s, the empirical data indicated that managers were ousted based on individual corporate performance, with industry performance filtered out of dismissal decisions.⁶³ The change to making dismissal decisions based on industry performance since then coincides with the increasing share of stock held by institutional investors, which has grown from 34% of the market value for all U.S. common stock in 1980 to 67% of all such

⁵⁹ See Vicente Cuñat & Maria Guadalupe, *Executive Compensation and Product Market Competition* 4–5 (Feb. 2004), <http://ssrn.com/abstract=562446> [<https://perma.cc/53PM-7SER>]. The authors of this paper explain that it reverses the conflicting results in prior studies because their paper includes a larger sample and uses explicit control variables. *Id.*

⁶⁰ See Jenter & Kanaan, *supra* note 56, at 2157, 2179–80.

⁶¹ See *id.* at 2157.

⁶² See *id.* at 2155–56, 2172; Cuñat & Guadalupe, *supra* note 59, at 4–5. Professor Dirk Jenter and Fadi Kanaan themselves dismiss the anticompetitive explanation, which they call the oligopolistic explanation, because the effect of industry performance on management dismissals persists for small firms and with broader industry definitions. Jenter & Kanaan, *supra* note 56, at 2157, 2174–75. But neither of those measures is telling. Small firms can be mavericks that undercut industry pricing, and institutional investors have even more incentives to rein in the competitive pricing of small firms because the institutional investors will earn more profits from the larger firms in the same business market. Further, ΔMHHI could be high even for small firms or broad industry definitions. Even to the extent ΔMHHI was not high in such cases, this finding would only show that horizontal shareholdings are not the sole explanation for why managers are evaluated based on industry performance; this finding would not disprove the anticompetitive explanation in other cases.

⁶³ See Jenter & Kanaan, *supra* note 56, at 2158–59.

stock in 2010.⁶⁴ Likewise, stock options became an important method of management compensation in the 1990s,⁶⁵ which again coincided with the increasing influence of institutional investors who have affirmative incentives to favor methods of executive compensation that reward industry performance. The alternative explanations do not explain these changes over time because increasing institutional shareholder power should lower both managerial power and the likelihood that shareholders believe in unsophisticated performance metrics, and because the possibility that different managers are appropriate during economic downturns seems no more true since the 1980s than it was before.

This is not to deny that managerial power might also often explain the use of compensation methods that give managers windfalls for industry performance. As Bebchuk and Fried point out, stock options sometimes reward managers for industry performance even for corporations in unconcentrated product markets, where the anticompetitive explanation is likely weak.⁶⁶ But the empirical evidence described above indicates that horizontal shareholdings are not only an important explanation for executive compensation methods, but also seem more important than other possibilities for explaining the overall pattern and trend. The full public policy argument against allowing managers to be compensated based on industry performance must rest on a combination of these two explanations. Either a corporation is dominated by management, in which case such compensation methods likely reflect managerial power at the expense of shareholders, or a corporation has strong shareholders, in which case such compensation methods likely reflect the anticompetitive incentives of horizontal shareholders to favor industry profits over individual firm profits. Neither explanation would indicate the compensation method is in the public interest.

B. Explaining the Failure of High Corporate Profits to Lead to High Growth

Another big economic puzzle in recent years has been why, at a time when corporate profits have been at record highs, corporations have been so reluctant to invest those profits on expanding output. Ordinarily, high profits induce corporations to invest in expansion to try to get a greater share of those high profits, and that expansion in turns leads to high levels of economic growth and employment. Re-

⁶⁴ Marshall E. Blume & Donald B. Keim, *Institutional Investors and Stock Market Liquidity: Trends and Relationships* 5 (Aug. 21, 2012) (working paper), <http://papers.ssrn.com/abstract=2147757> [<https://perma.cc/5AZK-C479>].

⁶⁵ BEBCHUK & FRIED, *supra* note 25, at 137.

⁶⁶ *Id.*

cently, after-tax corporate profits have risen to record levels of nearly \$2 trillion per year, four times the corporate profits in the late 1990s and higher as a percentage of GDP than at any time in the last sixty years.⁶⁷ Despite those record profits, U.S. corporate investments in expansion and capital projects have fallen; indeed, as a percentage of GDP, corporate investments were over 10% higher in 2000 than they were in each quarter from 2012 to July 2015.⁶⁸ Nor have firms been making up for the relatively low level of investments by heavily using their existing capacity to increase output. As of October 2015, U.S. capacity utilization was 77.7%, which remains below the long-term average of 80.1%.⁶⁹ Instead of spending to expand output, S&P 500 companies have retained between \$3.5 trillion and \$5 trillion in cash and spent other profits on stock buybacks, dividend payments, and high executive compensation.⁷⁰

To be sure, the United States has managed to return to sluggish growth since the Great Recession. But only at the cost of massive deficit spending that has increased our national debt by \$9 trillion since 2008 and enormous monetary stimulus that has not only set short-term interest rates at virtually zero percent for years, but has also involved a “quantitative easing” program that effectively involved printing money to purchase \$3.5 trillion in long-term securities.⁷¹ In a nation of 321 million people,⁷² this \$12.5 trillion stimulus amounts to \$39,000 per

⁶⁷ See Harlan Green, *Why Lower Growth, Higher Corporate Profits?*, HUFFINGTON POST (June 24, 2015, 3:47 PM), http://www.huffingtonpost.com/harlan-green/why-lower-growth-higher-c_b_7656672.html [https://perma.cc/WP35-A9CS]; Jordan Weissmann, *The Economy Stinks, but at Least Corporate Profits Are at 60-Year Highs!*, THE ATLANTIC (July 27, 2012), <http://www.theatlantic.com/business/archive/2012/07/the-economy-stinks-but-at-least-corporate-profits-are-at-60-year-highs/260411> [https://perma.cc/C5KV-Z3SY].

⁶⁸ Green, *supra* note 67; *Shares of Gross Domestic Product: Gross Private Domestic Investment: Fixed Investment: Nonresidential*, FED. RES. BANK ST. LOUIS: ECON. RES., <https://research.stlouisfed.org/fred2/series/A008RE1Q156NBEA> (last updated Oct. 29, 2015, 5:43 PM) [https://perma.cc/QH5H-TW82]; Paul Krugman, Opinion, *The Profits-Investment Disconnect*, N.Y. TIMES (Oct. 24, 2014, 11:41 AM), <http://krugman.blogs.nytimes.com/2014/10/24/the-profits-investment-disconnect>.

⁶⁹ See FED. RESERVE, G.17 (419), STATISTICAL RELEASE: INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION 1 (2016), <http://www.federalreserve.gov/releases/g17/Current/g17.pdf> [https://perma.cc/UDG3-A2RK].

⁷⁰ Green, *supra* note 67.

⁷¹ See *The Daily History of the Debt Results*, TREASURYDIRECT, <http://www.treasurydirect.gov/NP/debt/search?startMonth=12&startDay=01&startYear=2007&endMonth=07&endDay=06&endYear=2015> [https://perma.cc/U8JB-CJX2]; Jeff Kearns, *The Fed Eases Off: Tapering to the End of a Gigantic Stimulus*, BLOOMBERG: QUICKTAKE (Sept. 16, 2015, 4:44 PM), <http://www.bloombergvew.com/quicktake/federal-reserve-quantitative-easing-tape> [https://perma.cc/GLW3-LZH4]; Justin Wolfers, *The Fed Has Not Stopped Trying to Stimulate the Economy*, N.Y. TIMES: THE UPSHOT (Oct. 29, 2014), <http://www.nytimes.com/2014/10/30/upshot/the-fed-has-not-stopped-trying-to-stimulate-the-economy.html>.

⁷² *United States Quickfacts*, U.S. CENSUS BUREAU, <http://www.census.gov/quickfacts/table/PST045215/00> [https://perma.cc/G845-EMEU].

person even if one puts aside the fact that short-term interest rates have been set at virtually zero percent. Despite this massive fiscal and monetary stimulus, the labor force participation rate has dropped from 65.8% in February 2009 to 62.4% in October 2015, which is the lowest it has been since 1977.⁷³ The unemployment rate has fallen, but that partly reflects the fact that fewer people in the labor force are looking for work,⁷⁴ which is quite rational given that there are fewer good jobs available than there should be. Further, the labor share of income is now at historically low levels.⁷⁵ For some reason, while all this stimulus has produced high corporate profits, it has not produced the expected level of business expansion that would seriously increase employment levels and wages.

As Paul Krugman has observed, “this kind of divergence — in which high profits don’t signal high returns to investment — is what you’d expect if a lot of those profits reflect monopoly power rather than returns on capital.”⁷⁶ But what would that unexplained exercise of monopoly power be? After all, the United States has antitrust laws to curb anticompetitive creations of market power, and those antitrust laws are actively enforced by government agencies and private actors.

Perhaps the explanation is that horizontal shareholdings are now pervasive because more and more stock is in the hands of institutional investors, but so far there has been no antitrust enforcement against horizontal shareholdings because the anticompetitive problem had not been appreciated until now.⁷⁷ With such horizontal shareholdings, firms acting in the interests of their shareholders have incentives to constrain output rather than expand. The high profits they reap are not a signal to competitively expand individual firm output. Rather, the high profits are a symptom of the fact that they have successfully constrained overall market output. This could help explain why high corporate profits have not led to expansion and higher economic growth and employment levels.

⁷³ See *Labor Force Statistics from the Current Population Survey*, BUREAU LAB. STAT., <http://www.bls.gov/web/empsit/cpseeao8b.htm> [<https://perma.cc/WCT3-V2A3>].

⁷⁴ See Brad Plumer, *Three Reasons the U.S. Labor Force Keeps Shrinking*, WASH. POST: WONKBLOG (Sept. 6, 2013), <http://www.washingtonpost.com/news/wonkblog/wp/2013/09/06/the-credible-shrinking-labor-force-again> [<https://perma.cc/5YXV-QQGK>].

⁷⁵ See *Nonfarm Business Sector: Labor Share*, FED. RES. BANK ST. LOUIS: ECON. RES., <https://research.stlouisfed.org/fred2/series/PRS85006173> (last updated Dec. 2, 2015, 9:26 AM) [<https://perma.cc/9ZZX-GFV2>].

⁷⁶ Krugman, *supra* note 68.

⁷⁷ There have been some challenges to mergers of investors that left a single investor group with substantial enough horizontal shareholdings in competitors to lessen competition between them. See *TC Grp., L.L.C.*, 143 F.T.C. 343 (2007). However, so far there seem to have been no challenges to stock acquisitions that left multiple investors with substantial horizontal shareholdings that in aggregate lessen competition.

To be sure, one might doubt that anticompetitive conduct could have such large macroeconomic effects. But the Azar, Schmalz, and Tecu study suggests that horizontal shareholdings have lowered output by 6% in at least one industry.⁷⁸ If generalizable to other industries, which seems plausible given that institutional investors have an even greater share of large corporate stock in other industries, this finding suggests that eliminating horizontal shareholdings could increase economic output by 6%, which would have a huge effect on economic growth and employment levels.

Moreover, there is precedent for anticompetitive conduct having these sorts of large macroeconomic effects and for antitrust enforcement to thus have strong macroeconomic benefits. Antitrust enforcement was a key part of what brought the United States out of the Great Depression. To be sure, conventional wisdom is that World War II was responsible for that recovery. But while wartime spending certainly led to expansion in the 1940s, the recovery actually began in 1938 and had cut unemployment in half by 1941, which clearly preceded the United States's December 1941 entry into World War II.⁷⁹ Nor can prewar military buildup explain the recovery because average defense spending in 1938 actually dropped 18.5% and continued to be 12% below 1937 levels in 1939 and 9.5% below 1937 levels in 1940.⁸⁰ Military stimulus thus cannot explain the recovery that began in 1938 because that recovery actually had to overcome military spending cuts.

Others assume that what caused the recovery that began in 1938 was the fact that the United States adopted looser monetary and fiscal policies in 1938. But this theory has two problems. First, statistical analysis shows that, while monetary and fiscal stimulus helped, they cannot explain the full strength of the ensuing recovery.⁸¹ Thus, economists have concluded that some factor other than monetary and fiscal policy is needed to explain why the economy “rebounded so strongly” from 1938 to 1941.⁸² Second, prices actually declined from 1938 to 1941, with only one short deviation in September 1939, when Hitler's invasion of Poland led to speculative buying.⁸³ But even then prices

⁷⁸ See Azar, Schmalz & Tecu, *supra* note 2, at 3, 27–28; Azar, Schmalz & Tecu, *supra* note 1, at 18 tbl.F.1.

⁷⁹ See *infra* pp. 1288–89; François R. Velde, *The Recession of 1937 — A Cautionary Tale*, ECON. PERSP., Fall 2009, at 16, 17, 33.

⁸⁰ These figures are based on defense spending as a percentage of GDP. Christopher Chantrill, *20th Century Defense Spending*, U.S. GOV'T SPENDING, http://usgovernmentspending.com/spending_chart_1937_1942USp_16s11io1rtn_3of_20th_Century_Defense_Spending [https://perma.cc/F5HU-6F6R].

⁸¹ Velde, *supra* note 79, at 33.

⁸² *Id.* at 34; James B. Stewart, *Aftershock to Economy Has a Precedent That Holds Lessons*, N.Y. TIMES (Aug. 12, 2011), <http://www.nytimes.com/2011/08/13/business/financial-aftershocks-with-precedent-in-history.html>.

⁸³ See Velde, *supra* note 79, at 26, 29 fig.13.

remained below 1938 levels and continued their decline after that 1939 spike.⁸⁴ This downward price trend is precisely the *opposite* of the price inflation one would expect if monetary and fiscal stimuli were what drove the recovery.⁸⁵

Increased antitrust enforcement provides a missing factor that can help explain why the 1938–41 recovery was not only so strong, but also lowered prices. Although the Sherman Act was enacted in 1890, until 1938 antitrust enforcement was rare and anticompetitive conduct was common.⁸⁶ President Theodore Roosevelt made many political speeches about being a trustbuster, but he brought few antitrust cases. Indeed, his entire Antitrust Division had only five lawyers.⁸⁷ By the time his cousin President Franklin Delano Roosevelt took office in 1933, the Antitrust Division had expanded slowly to 15 lawyers, but that was hardly enough for vigorous enforcement in a nation of over 130 million people.⁸⁸

Worse, from 1933 to 1938, the Roosevelt Administration fell prey to the natural, but mistaken, tendency to confuse the symptoms of the Depression (low prices and profits) with the disease (low production and employment). To beef up prices and profits, the Administration not only relaxed antitrust enforcement, but in 1933 affirmatively allowed cartels via the National Industrial Recovery Act (NIRA).⁸⁹ The effect was to significantly raise prices. For example, from April 1933 to June 1934, prices for bituminous coal (which was cartelized under the Act) rose 20%, while prices for anthracite coal (which was not) dropped 7%.⁹⁰ The NIRA exacerbated the Depression because higher prices meant consumers bought less, which reduced production and thus reduced employment, which in turn reduced the ability of consumers to buy, further reducing production and employment. Economic analysis shows that NIRA cartels lowered investment by 60%, employment by 11%, and output by 13%, causing about 60% of the

⁸⁴ *Id.*

⁸⁵ *Id.* at 26 (describing the price decline during this recovery as puzzling).

⁸⁶ Thurman Arnold, *Antitrust Law Enforcement, Past and Future*, 7 LAW & CONTEMP. PROBS. 5, 12 (1940) (“After a period of fifty years of only occasional enforcement, violations of the antitrust laws have become so common as to cause no comment. Lawyers in many communities have been scarcely aware of their existence. They have not been a problem considered in making business deals.” *Id.* at 12.); *id.* at 15 (noting that “thousands of price fixing agreements and instances of coercion of small businesses” went unprosecuted).

⁸⁷ *Id.* at 9.

⁸⁸ *See id.*

⁸⁹ *See* Act of June 16, 1933, ch. 90, 48 Stat. 195, 196 (terminated by Exec. Order No. 7252 (Dec. 21, 1935)); ELLIS W. HAWLEY, *THE NEW DEAL AND THE PROBLEM OF MONOPOLY* 59–61 (Fordham Univ. Press 1995) (1966) (noting that under the NIRA, 444 industries fixed prices, 61 limited output, and 30 restricted capacity).

⁹⁰ *See* Harold L. Cole & Lee E. Ohanian, *New Deal Policies and the Persistence of the Great Depression: A General Equilibrium Analysis*, 112 J. POL. ECON. 779, 790–92 (2004).

post-1933 depression in national output.⁹¹ Even after the NIRA was held unconstitutional in 1935,⁹² the mistaken economic intuition that underlay it continued to produce limited antitrust enforcement.⁹³

That abruptly changed in March 1938, when President Roosevelt appointed Yale Law Professor Thurman Arnold to head the Antitrust Division. Arnold explicitly rejected the notion that antitrust enforcement should be relaxed during an economic downturn.⁹⁴ He vastly increased antitrust enforcement, expanding the antitrust division to 583 lawyers by 1942.⁹⁵ In his five years in office, he brought 44% of all the antitrust cases that had been brought in the first 53 years of the antitrust laws.⁹⁶

Arnold also made antitrust enforcement far more systematic and focused. Prior enforcement (even before the New Deal) had been not only isolated but also mercurial in a way that often seemed to challenge big businesses just for being big.⁹⁷ The combination meant little deterrence of anticompetitive conduct both because enforcement was unlikely and also because it was unclear just what firms were supposed to do to avoid enforcement. Arnold made clear that (unlike his predecessors) he had no problem with businesses being big as long as their conduct was efficient and lowered consumer prices.⁹⁸ This gave firms a far clearer and more desirable signal about how to modify their

⁹¹ *Id.* at 781, 810; see also Jason E. Taylor, *The Output Effects of Government Sponsored Cartels During the New Deal*, 50 J. INDUS. ECON. 1, 8 (2002) (finding that NIRA cartels lowered manufacturing output by 10% even if one separates out the fact that the NIRA also fixed wages).

⁹² See *A.L.A. Schechter Poultry Corp. v. United States*, 295 U.S. 495 (1935).

⁹³ Cole & Ohanian, *supra* note 90, at 783, 786; HAWLEY, *supra* note 89, at 166, 364. Thurman Arnold's predecessor as head of the Antitrust Division, Robert Jackson, was an illustrious lawyer and went on to become an even more illustrious Supreme Court Justice, but he was not a supporter of antitrust enforcement because he believed in the theory of the NIRA. See Wilson D. Miscamble, *Thurman Arnold Goes to Washington: A Look at Antitrust Policy in the Later New Deal*, 56 BUS. HIST. REV. 1, 13-14 (1982).

⁹⁴ Thurman Arnold, *Fair and Effective Use of Present Antitrust Procedure*, 47 YALE L.J. 1294, 1296-97 (1938).

⁹⁵ See Corwin D. Edwards, *Thurman Arnold and the Antitrust Laws*, 58 POL. SCI. Q. 338, 339 n.1 (1943).

⁹⁶ *Id.* at 339.

⁹⁷ Gene M. Gressley, *Thurman Arnold, Antitrust, and the New Deal*, 38 BUS. HIST. REV. 214, 223 (1964).

⁹⁸ See Thurman Arnold, *Report of Assistant Attorney General Thurman Arnold in Charge of the Antitrust Division*, in ANNUAL REPORT OF THE ATTORNEY GENERAL OF THE UNITED STATES 36, 38-39 (1939) [hereinafter Arnold, *Antitrust Division Report*]; THURMAN W. ARNOLD, *THE BOTTLENECKS OF BUSINESS* 3-4 (1940) [hereinafter ARNOLD, *BOTTLENECKS*] ("Most of the books in the past on the antitrust laws have been written with the idea that they are designed to eliminate *the evil of bigness*. What ought to be emphasized is not the evils of size but the evils of industries which are not efficient or do not pass efficiency on to consumers."); Thurman Arnold, *The Policy of Government Toward Big Business*, 18 PROC. ACAD. POL. SCI. 58, 58-59 (1939) [hereinafter Arnold, *The Policy of Government*]; Arnold, *supra* note 86, at 11, 14; Alan Brinkley, *The Antimonopoly Ideal and the Liberal State: The Case of Thurman Arnold*, 80 J. AM. HIST. 557, 567-71 (1993); Gressley, *supra* note 97, at 229-30.

behavior. Further, Arnold deliberately used antitrust enforcement as a form of economic policy. He targeted industries that he thought were inefficient in a way that hampered economic growth. He also used multiple simultaneous lawsuits in each selected industry to thoroughly restore free competition at each stage of the industrial process.⁹⁹ His strategy was to “hit hard, hit everyone and hit them all at once.”¹⁰⁰ He multiplied the effect of his expansion of prosecutorial resources by using prosecutions to obtain extensive consent decrees designed to go beyond the alleged antitrust violations to make markets as competitive as possible, as quickly as possible, in as many industries as possible.¹⁰¹

Arnold further pursued an aggressive campaign to change the law on cartels, which resulted in the landmark May 1940 decision *United States v. Socony-Vacuum Oil Co.*,¹⁰² argued before the Supreme Court by Thurman Arnold himself, which adopted a sweeping definition of pricefixing and made it per se illegal.¹⁰³ *Socony* made antitrust compliance far less dependent on agency enforcement levels, both because the deterrent effect was so clear and because the change in antitrust law spawned a sharp rise in private antitrust litigation. Encouraged by this and other changes in antitrust law, the number of initiated private antitrust cases rose from 8 in 1937 to 110 and 111 in the fiscal years ending June 30, 1940, and 1941.¹⁰⁴ Judgments for private antitrust plaintiffs rose in 1947–1951 to an annual rate that was 16-fold the level in 1914–1940.¹⁰⁵

Arnold’s antitrust enforcement successfully lowered prices in the targeted industries.¹⁰⁶ Arnold himself stated that his goal was to have

⁹⁹ See Arnold, *Antitrust Division Report*, *supra* note 98, at 40; Arnold, *supra* note 86, at 17; Arnold, *The Policy of Government*, *supra* note 98, at 62–65; Brinkley, *supra* note 98, at 565–66; Miscamble, *supra* note 93, at 11; Gressley, *supra* note 97, at 224.

¹⁰⁰ Joseph Alsop & Robert Kintner, *Trust Buster: The Folklore of Thurman Arnold*, SATURDAY EVENING POST, Aug. 12, 1939, at 5, 7; see also ARNOLD, BOTTLENECKS, *supra* note 98, at 191–93.

¹⁰¹ See Arnold, *Antitrust Division Report*, *supra* note 98, at 41–42; ARNOLD, BOTTLENECKS, *supra* note 98, at 139–44, 152–63; Brinkley, *supra* note 98, at 565; Gressley, *supra* note 97, at 222–23.

¹⁰² 310 U.S. 150 (1940).

¹⁰³ *Id.* at 210, 218; Spencer Weber Waller, *The Antitrust Legacy of Thurman Arnold*, 78 ST. JOHN’S L. REV. 569, 596–97 (2004).

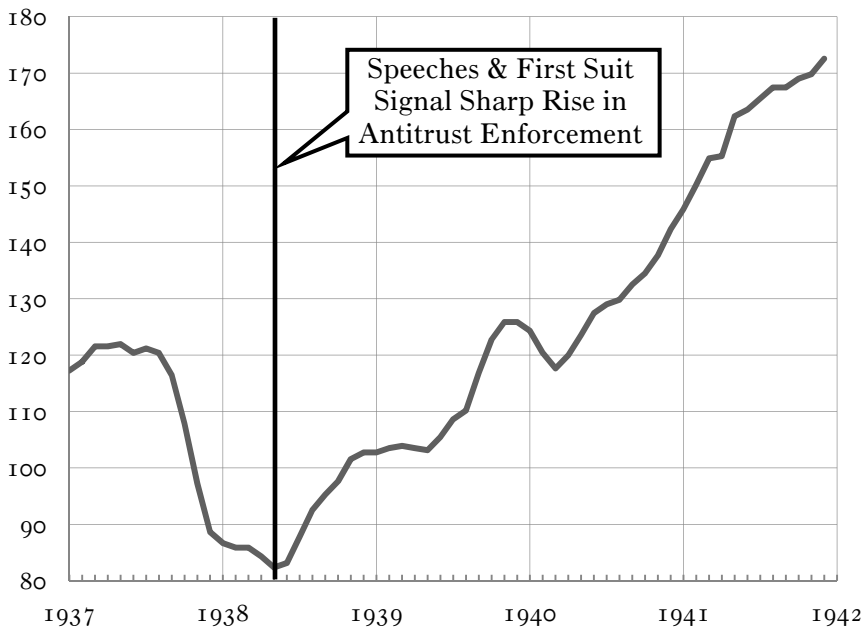
¹⁰⁴ Compare ANNUAL REPORT OF THE DIRECTOR OF THE ADMINISTRATIVE OFFICE OF THE UNITED STATES COURTS 71 (1940), with ANNUAL REPORT OF THE DIRECTOR OF THE ADMINISTRATIVE OFFICE OF THE UNITED STATES COURTS 96 (1941).

¹⁰⁵ Comment, *Antitrust Enforcement by Private Parties: Analysis of Developments in the Treble Damage Suit*, 61 YALE L.J. 1010, 1010–11, 1063 (1952). Private antitrust lawsuits had produced only 13 judgments for antitrust plaintiffs in the 36 years between 1914, when private antitrust standing was created, and 1940, for a rate of 0.36 plaintiff judgments a year. See *id.* at 1010 & n.1. In the five years from 1947 to 1951, the number of judgments for antitrust plaintiffs was 28, or 5.6 a year, which is approximately 16 times the pre-1940 rate. See *id.* at 1063.

¹⁰⁶ Arnold, *Antitrust Division Report*, *supra* note 98, at 40; ARNOLD, BOTTLENECKS, *supra* note 98, at 77, 193–94, 197–200; HAWLEY, *supra* note 89, at 435–36, 439.

macroeconomic effects: lowering prices that were elevated by anticompetitive conduct so that consumers could buy more, which would cause firms to increase production and thus employment, which in turn would increase consumer purchasing power, further increasing production and employment.¹⁰⁷ Industrial output dropped 32% from July 1937 to May 1938, but after that began to rise by an average of 22% a year.¹⁰⁸ In order to produce more, firms needed to hire more workers. Unemployment, which had risen from 14% in 1937 to 19% in 1938, steadily declined in the years after Arnold's March 1938 appointment, reaching 10% by 1941.¹⁰⁹

*U.S. Industrial Output, 1937–1941*¹¹⁰



The production turnaround from the low point in May 1938 did start shortly after the April 14–16, 1938, announcements of increased federal spending and looser monetary policy.¹¹¹ But the production

¹⁰⁷ See Arnold, *supra* note 86, at 5–6, 8–9; Brinkley, *supra* note 98, at 571; HAWLEY, *supra* note 89, at 411.

¹⁰⁸ Velde, *supra* note 79, at 17, 34 fig.19.

¹⁰⁹ Stanley Lebergott, *Annual Estimates of Unemployment in the United States, 1900–1954*, in 2 NAT'L BUREAU OF ECON. RESEARCH, *THE MEASUREMENT AND BEHAVIOR OF UNEMPLOYMENT* 211, 215–16 tbl.1 (1957), <https://core.ac.uk/download/files/153/6871122.pdf> [<https://perma.cc/9S2F-DUTQ>].

¹¹⁰ This output data comes from Velde, *supra* note 79, at 34 fig.19.

¹¹¹ *Id.* at 20, 34.

turnaround also followed shortly after Arnold and President Roosevelt gave speeches on April 28–29, 1938, that signaled a sharp coming increase in antitrust enforcement and that would predictably have started to deter anticompetitive behavior.¹¹² Arnold also met with leading industrialists in May 1938 to explain what the new antitrust enforcement regime would look like.¹¹³ These signals were quickly confirmed by action because Arnold initiated industrywide antitrust suits with remarkable speed. He was sworn in on March 21, 1938, and by May 18, 1938, Arnold had issued criminal indictments against 86 firms and individuals in the auto industry, prompting all but one of them to begin negotiating settlements within weeks.¹¹⁴ Other industrywide cases followed quickly, including July 1938 cases against the motion picture and dairy industries, an August 1938 case against the medical industry, and in the following months numerous other cases that overhauled the housing, construction, tire, newsprint, steel, potash, sulphur, retail, fertilizer, tobacco, shoe, and various agricultural industries.¹¹⁵ By June 1939, Arnold had “1375 complaints pending in 213 cases involving forty industries with 185 continuing investigations.”¹¹⁶ Arnold’s cases produced quick results not only because he used massive criminal indictments to secure quick industrywide consent decrees, but also because merely launching an antitrust investigation sufficed to drop prices by 18–33% in various industries.¹¹⁷

To be sure, the Roosevelt Administration also pursued various regulatory policies. But what made the new antitrust policy unique was not only its timing, but also the extent to which it was an unexpected about-face. Roosevelt had pursued an anti-antitrust policy through the NIRA until the Supreme Court stopped him in 1935, and in the years thereafter he and his appointees remained, consistent with the policy views that prompted the NIRA, unenthusiastic about antitrust enforcement.¹¹⁸ The main objection raised during Thurman Arnold’s confirmation hearing was that his academic writings indicated he did *not* believe in antitrust enforcement.¹¹⁹ It was thus a true surprise,

¹¹² See Gressley, *supra* note 97, at 217; Arnold, *supra* note 94, at 1294 n.*. Arnold helped draft Roosevelt’s speech, thus indicating that the two speeches were coordinated. William Kolasky, *Thurman Arnold: An American Original*, ANTITRUST, Summer 2013, at 89, 90.

¹¹³ John H. Crider, *Business Confers with New Dealers*, N.Y. TIMES, June 22, 1938, at 1.

¹¹⁴ Waller, *supra* note 103, at 577, 589 & n.99; see also Arnold, *Antitrust Division Report*, *supra* note 98, at 41 (outlining requirements for consent decrees).

¹¹⁵ Waller, *supra* note 103, at 589–94; HAWLEY, *supra* note 89, at 435–37.

¹¹⁶ Waller, *supra* note 103, at 594.

¹¹⁷ See ARNOLD, BOTTLENECKS, *supra* note 98, at 193–94, 197–98; Arnold, *Antitrust Division Report*, *supra* note 98, at 40.

¹¹⁸ See *supra* p. 1286 & n.93.

¹¹⁹ Kolasky, *supra* note 112, at 89; see also Edwards, *supra* note 95, at 338 (“When Thurman Arnold was appointed Assistant Attorney General in charge of the Antitrust Division of the De-

contrary to all market expectations, when Roosevelt and Arnold came out so strongly for vigorous antitrust enforcement at the end of April 1938. There was no comparable surprising shift in Roosevelt's regulatory policies during this period. The closest thing to it was the so-called "Switch in Time That Saved Nine," when the Supreme Court became more willing to sustain New Deal regulations.¹²⁰ But that switch occurred in March 1937,¹²¹ and was followed by a sharp drop in industrial output over the next 14 months, which was reversed only after the new antitrust policy was announced. Moreover, Roosevelt's regulatory policies were more likely to raise prices than lower them, and thus (unlike the shift in antitrust policy) cannot explain the price-reducing nature of the economic recovery that started in May 1938.

In short, while increased antitrust enforcement was hardly the sole force bringing the United States out of the Great Depression, the combined evidence indicates that it did play a key role. First, prior economic analysis shows (as mentioned above) that fiscal and monetary stimuli cannot statistically explain the full strength of the 1938–1941 recovery. Second, such stimuli cannot explain at all why that recovery produced lower prices. Third, increased antitrust enforcement directly lowered prices in many industries and would predictably have a deterrence effect that decreased prices in other industries. Fourth, under standard economic principles, such price reductions would increase output. Fifth, Arnold's antitrust enforcement was affirmatively designed to have macroeconomic effects. Sixth, prior economic analysis shows that the pre-1938 policy of allowing cartels had large macroeconomic effects on output, investment, and employment, which indicates that Arnold's 1938 reversal of that policy would likely have a similarly strong macroeconomic effect in reverse. Seventh, a conclusion that increased antitrust enforcement was an important driver of macroeconomic growth from 1938–1941 can explain, unlike fiscal and monetary stimuli, why that growth coincided with an economy-wide reduction in prices. Eighth, the economic literature does not indicate any other change in 1938 that could have caused such a strong, price-reducing stimulatory effect.

It is unclear whether the effects of antitrust enforcement against horizontal shareholdings would be similarly large today in improving our recovery from the Great Recession. On the one hand, the anti-competitive effects of horizontal shareholdings are generally weaker

partment of Justice, his selection was widely regarded as a cynical recognition of the futility of antitrust enforcement.”)

¹²⁰ At the time, the switch was widely viewed to be a response to Roosevelt's court-packing plan, but that view has since been disputed. See Michael Ariens, *A Thrice-Told Tale, or Felix the Cat*, 107 HARV. L. REV. 620, 622–23, 629–52 (1994).

¹²¹ *Id.* at 628.

than the anticompetitive effects of the sorts of cartels that Arnold attacked. On the other hand, given that institutional investors now own 80% of all large corporations' stock, horizontal shareholdings are more pervasive across our economy now than cartels were in 1938,¹²² and while there was some antitrust enforcement against cartels before 1938, current enforcement against horizontal shareholdings by multiple institutional investors is nonexistent.¹²³ Initiating antitrust enforcement against anticompetitive horizontal shareholdings could therefore have stronger or weaker effects than Arnold's 1938 expansion of antitrust enforcement. Either way, the economic effects of attacking anticompetitive horizontal shareholdings certainly seem salutary and likely to be significant for the national economy.

C. *Explaining the Recent Rise in Economic Inequality*

In his recent bestselling book, *Capital in the Twenty-First Century*, Piketty documented a recent rise in economic inequality that he attributes to the fact that the returns to capital have risen relative to the returns to labor.¹²⁴ Piketty does not show that rising economic inequality is an inherent feature of capitalism. Rather, he shows that income inequality in the United States rose from 1900 to 1940, dropped sharply after 1940 and stayed low until 1980, and has since been rising to return to pre-1940 levels.¹²⁵ The puzzle is: what drives these changes in economic inequality over time?

Professors Eric Posner and Glen Weyl argue that Azar, Schmalz, and Tecu's study could explain what has driven the recent rise in economic inequality.¹²⁶ As Posner and Weyl point out, the rise in economic inequality since 1980 corresponds to a period when institutional investors' share of corporate stock grew to record levels. They also argue that the earlier period of high economic inequality corresponds to the dominance of anticompetitive trusts in the late 1800s before the Sherman Act was enacted in 1890.¹²⁷ The timing does not quite work for this latter point because Piketty actually shows income inequality rose from 1900 to 1940. But we can still relate the trend in income inequality to anticompetitive conduct because, as I have detailed in section II.B, antitrust enforcement was weak and mercurial until the appointment of Thurman Arnold in 1938, who vastly expanded antitrust

¹²² See Arnold, *supra* note 94, at 1295 (noting that the "great mass" of markets were competitive even though anticompetitive conduct was common); Arnold, *supra* note 86, at 5–6, 12–13 (same).

¹²³ See *supra* note 77.

¹²⁴ PIKETTY, *supra* note 26, at 25–27.

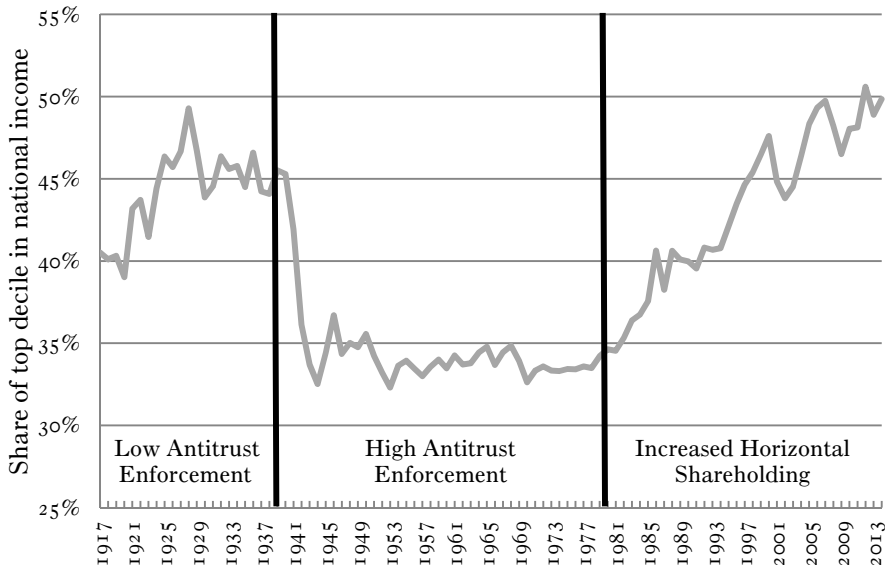
¹²⁵ *Id.* at 24 fig.1.1, 324 fig.9.8.

¹²⁶ See Posner & Weyl, *supra* note 26.

¹²⁷ *Id.*

enforcement and systematized it to focus on eliminating market inefficiencies. Before 1938, anticompetitive conduct was thus common.¹²⁸ With this adjustment to their timing, Posner and Weyl's point remains valid that the periods of high U.S. economic inequality correspond to periods when either anticompetitive conduct or anticompetitive horizontal shareholdings were prevalent, whereas the period of low economic inequality corresponds to a period when both were less prevalent. The following figure illustrates the point using Piketty and Professor Emmanuel Saez's measure of economic inequality over time.

*Income Inequality in the United States, 1917–2014*¹²⁹



In addition to matching the timing of past changes in economic inequality, the anticompetitive explanation also provides a persuasive causal mechanism for those changes. When markets are anticompetitive, the returns to capital necessarily rise because that capital is invested in firms whose product prices are inflated, and the returns to labor decline because that same rise in product prices lowers the pur-

¹²⁸ See *supra* section II.B, pp. 1281–91.

¹²⁹ For the data underlying this chart, see Thomas Piketty & Emmanuel Saez, *Income Inequality in the United States, 1913–1998*, 118 Q.J. ECON. 1 (2003); Thomas Piketty & Emmanuel Saez, *Income and Wage Inequality in the United States, 1913–2002*, in *TOP INCOMES OVER THE TWENTIETH CENTURY* 141 (A.B. Atkinson & T. Piketty eds., 2007); Thomas Piketty & Emmanuel Saez, *Tables and Figures Updated to 2014 in Excel Format, June 2015*, tbl.A3: Top Fractiles Income Shares (Including Capital Gains) in the United States (June 2015) (unpublished tables) (on file with the Harvard Law School Library), <http://eml.berkeley.edu/~saez/TabFig2014prel.xls>.

chasing power of wages. Because richer people have more invested in the stock market and spend proportionally less of their income on consumption, the fact that anticompetitive conduct increases returns to capital relative to returns to labor will increase economic inequality.¹³⁰ Moreover, horizontal shareholdings create anticompetitive effects in some markets and not others, thus bestowing economic rents on only some firms. This increases economic inequality within capital income because shareholders invested in those firms get higher returns than others.¹³¹ It also increases economic inequality within labor income to the extent that executives and workers at those firms get higher compensation than others.¹³²

The anticompetitive explanation for changes in economic inequality is also consistent with data on per capita output growth. U.S. output grew annually by 1.4% from 1913 through 1950, by 2.0% between 1950 and 1980, and dropped back to 1.3% since 1980.¹³³ This pattern of data fits the anticompetitive theory because anticompetitive cartels and horizontal shareholdings can be expected to suppress market output. In contrast, the pattern fits poorly with the alternative theory that income inequality rises when firms or wealthy persons become more productive because if that were so then we should see market output rise with increasing income inequality. The output reduction created by widespread anticompetitive conduct further exacerbates economic inequality because it decreases the economy-wide demand for labor and thus reduces wages and employment.

In a recent article, Professor Daniel Crane acknowledges that a host of economists, including Nobel laureates Joseph Stiglitz and Paul Krugman, have concluded that anticompetitive practices increase economic inequality, but Crane argues that all these economists are wrong.¹³⁴ However, Crane's arguments are mistaken.

¹³⁰ See, e.g., Irene Powell, *The Effect of Reductions in Concentration on Income Distribution*, 69 REV. ECON. & STAT. 75 (1987); William S. Comanor & Robert H. Smiley, *Monopoly and the Distribution of Wealth*, 89 Q.J. ECON. 177, 189–93 (1975).

¹³¹ See Jason Furman & Peter Orszag, Presentation at “A Just Society” Centennial Event in Honor of Joseph Stiglitz at Columbia University: A Firm-Level Perspective on the Role of Rents in the Rise in Inequality 3–6, 9–12 (Oct. 16, 2015), https://www.whitehouse.gov/sites/default/files/page/files/20151016_firm_level_perspective_on_role_of_rents_in_inequality.pdf [<https://perma.cc/57QZ-BVYW>] (noting that much of the rise in income inequality is within capital income because some firms earn much higher returns than others and that this could reflect increased market concentration).

¹³² *Id.* at 3–4, 12–14 (noting that much of the rise in income inequality is within labor income and could reflect higher wages at firms that earn product market rents).

¹³³ PIKETTY, *supra* note 26, at 94 tbl.2.5.

¹³⁴ See Daniel A. Crane, *Antitrust and Wealth Inequality*, 101 CORNELL L. REV. (forthcoming 2016) (Aug. 2015 manuscript at 2–3, 9–14), <http://ssrn.com/abstract=2648541> [<https://perma.cc/WF9C-QY3P>].

Crane argues that anticompetitive profits may not be disproportionately captured by the wealthy for four erroneous reasons. First, Crane points out that many shareholders are not wealthy.¹³⁵ But that hardly negates the point that the wealthy own proportionately far more stock than the nonwealthy. Indeed, Crane acknowledges that the wealthiest 1% own 49.8% of stock and the wealthiest 10% own 81.4%.¹³⁶ Moreover, 52% of Americans have literally nothing invested in the stock market, either directly or through retirement accounts.¹³⁷ In any event, because anticompetitive profits accrue to only some firms, anticompetitive profits increase income inequality by making some shareholders richer than others.

Second, Crane argues that empirical work indicates average firm profits are not higher in concentrated markets.¹³⁸ But this claim really goes to the issue of whether there are anticompetitive profits, not who captures them, and thus does not apply when horizontal shareholdings do generate anticompetitive profits. In any event, empirical work cited by Crane actually finds that increased concentration *does* increase profit margins if concentration is correctly measured.¹³⁹ Moreover, empirical work on the relation between concentration and profits is of limited utility because high concentration can be achieved not only through anticompetitive practices but also by the expansion of more efficient firms. The empirical analysis Crane cites is limited to the years before 1982, when aggressive antitrust enforcement did not permit mergers that significantly increased concentration.¹⁴⁰ Such empirical work does not mean that concentration-increasing mergers do not increase profits and indeed the empirical work that Crane cites concludes that they do.¹⁴¹ Nor can concentration studies tell us whether anticompetitive practices that do not increase concentration, like cartels, increase profits. Further, all the empirical work that Crane cites uses a measure of concentration that ignores the effect of horizontal shareholding.¹⁴²

¹³⁵ *Id.* at 16–17.

¹³⁶ *Id.* at 17 n.61.

¹³⁷ Tom Anderson, *Half of Americans Avoid the Stock Market*, CNBC (Apr. 9, 2015, 2:56 PM), <http://www.cnbc.com/2015/04/09/half-of-americans-avoid-the-stock-market.html> [<https://perma.cc/X4CC-FFGK>].

¹³⁸ Crane, *supra* note 134, at 18–20.

¹³⁹ See Michael Salinger, *The Concentration-Margins Relationship Reconsidered*, 1990 BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 287, 301–07; Crane, *supra* note 134, at 18 n.64 (citing Salinger, *supra*).

¹⁴⁰ Salinger, *supra* note 139, at 318.

¹⁴¹ *Id.* at 319.

¹⁴² For example, although empirical studies find that bank-market HHI and prices are not correlated if one controls for market differences or changes, a new study shows they are correlated if one adjusts HHIs to reflect horizontal shareholdings. See Azar, Raina & Schmalz, *supra* note 5.

Third, Crane argues that a firm's anticompetitive profits are shared with its workers because he claims that empirical evidence shows that wages are higher in more concentrated markets with larger firms.¹⁴³ This argument again relies on market share and concentration measures that are poor proxies for anticompetitive practices. Nor is he right that the empirical literature shows that monopoly rents produce a labor premium. The only recent article he cites for this claim actually finds "little support" for the hypothesis that the large-firm labor premium results from the sharing of monopoly rents, concluding that it instead reflects other factors like large firms having a more skilled work force.¹⁴⁴ Likewise, the author of the article that Crane cites for the proposition that market concentration increases wages concluded in a later article that this effect did not reflect a sharing of monopoly rents but rather reflected the fact that some industries feature large technological investments that both spur demand for higher-quality workers and result in higher market concentrations.¹⁴⁵ Even if Crane were right that firms share some of their monopoly rents with their workers, that hardly means that such workers capture as much monopoly rent as shareholders. In addition, these workers are still disproportionately hurt by product price increases because they spend a greater share of their income on consumption. Further, the large-firm labor premium (a) declined from 1988–2007, which means it could hardly have offset the simultaneous rise in horizontal shareholding, and (b) is nearly twice as high for managers as for other workers, which actually exacerbates economic inequality.¹⁴⁶ Moreover, to the extent monopoly rents are shared with labor, that increases labor income inequality because it benefits only the subset of executives and workers that is lucky enough to work at firms that reap those monop-

¹⁴³ Crane, *supra* note 134, at 22–25.

¹⁴⁴ William E. Even & David A. Macpherson, *Is Bigger Still Better? The Decline of the Wage Premium at Large Firms* 3–4, 8 (IZA Discussion Paper No. 4082, 2009); see also Erling Barth & Harald Dale-Olsen, *Employer Size or Skill Group Size Effect on Wages?*, 64 *INDUS. & LAB. REL. REV.* 341, 343 (2011) (finding that the product market power explanation can now be ruled out because it turns out the effect is due to group size rather than firm size); Charles Brown & James Medoff, *The Employer Size-Wage Effect*, 97 *J. POL. ECON.* 1027, 1046–47 (1989) (finding that the large-firm labor premium persists after adjusting for market power and industry profits, that being in an anticompetitive industry has no effect on the large-firm labor premium, and that larger firms within those industries did not have greater market power).

¹⁴⁵ Dale Belman & John S. Heywood, *Market Structure and Worker Quality*, 39 *J. INDUS. ECON.* 155, 155, 157, 161, 166 (1990); see also *id.* at 155 (noting that the literature found that the relationship between market concentration and wages disappeared when one controlled for worker quality, as well as other typical control variables); Donald L. Alexander & Huizhong Zhou, *Product-Market Competition and Executive Compensation*, 47 *J. ECON. & BUS.* 441, 450–52 (1995) (determining that empirical results "indicate that product-market competition has no discernible impact on variations in total executive compensation since CR_4 [four-firm concentration ratio] and HHI are both insignificant," *id.* at 450).

¹⁴⁶ Even & Macpherson, *supra* note 144, at 8.

ly rents.¹⁴⁷ Crane ignores the fact that those who work for competitive firms can get no monopoly wage premium to offset the higher product prices they pay because of anticompetitive practices at other firms. He also ignores the fact that widespread anticompetitive conduct reduces economy-wide output in a way that reduces average wages and employment.

Fourth, Crane argues that antitrust law is often enforced against noncorporate businesses, which are sometimes not wealthy.¹⁴⁸ But such anecdotes cannot negate statistics showing that the wealthiest 10% own 93.8% of unincorporated business equity.¹⁴⁹ Nor are noncorporate businesses relevant to the problem of horizontal shareholding.

Crane also mistakenly argues that anticompetitive prices may not be disproportionately paid by the less wealthy for three reasons. First, Crane argues that a substantial share of anticompetitive prices is paid by governments, which account for 16% of product purchases.¹⁵⁰ He argues that this is progressive because the government is disproportionately funded by rich taxpayers. But by his own account, 84% of anticompetitive prices are not paid by taxpayers. Even as to the fraction that is paid by taxpayers, the share of stock owned by the wealthy (which determines the share of anticompetitive profits they capture) far exceeds the share of taxes paid by the wealthy. The top 1% in income pay 26% of taxes,¹⁵¹ but as noted above they own 49.8% of stock. Further, Crane's argument assumes that governments will fund the increased product costs by raising taxes, rather than by increasing debt or cutting other government spending and benefits. The latter seems more prevalent under current political conditions.

Second, Crane argues that the direct purchasers affected by anticompetitive product pricing are often other businesses.¹⁵² But that does not alter the reality that the anticompetitive profits accrue disproportionately to shareholders and that the higher prices are largely

¹⁴⁷ See Furman & Orszag, *supra* note 131, at 3–4, 12–14.

¹⁴⁸ Crane, *supra* note 134, at 25–28.

¹⁴⁹ Edward N. Wolff, *Household Wealth Trends in the United States, 1962–2013: What Happened over the Great Recession?* 56 tbl.7 (Nat'l Bureau of Econ. Research, Working Paper No. 20,733, 2014), <http://www.nber.org/papers/w20733> [<https://perma.cc/3Z9M-G8LN>].

¹⁵⁰ Crane, *supra* note 134, at 29–30. Crane tries to increase this percentage to 25% by adding all healthcare expenditures, *id.* at 31–32, but to the extent healthcare spending is paid by taxpayers, it is already in the 16%, and to the extent it is paid on the private market, health insurance premiums are generally similar across different income brackets. In any event, 75% of product purchases reflect neither government nor healthcare expenditures, so the point remains that the lion's share of monopoly rents is not paid by governments or health insurers.

¹⁵¹ CONG. BUDGET OFFICE, *THE DISTRIBUTION OF HOUSEHOLD INCOME AND FEDERAL TAXES, 2011 (2014)*, <https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/reports/49440-Distribution-of-Income-and-Taxes.pdf> [<https://perma.cc/B7H2-AGVW>].

¹⁵² Crane, *supra* note 134, at 32–34.

passed on downstream to consumers. Further, the fact that anticompetitive pricing benefits some businesses and harms other businesses actually exacerbates income inequality within capital and labor income.¹⁵³

Third, Crane argues that anticompetitive conduct sometimes raises the prices charged to wealthy consumers and that the wealthy spend more than the less wealthy.¹⁵⁴ But the less wealthy still capture far less of the anticompetitive profits and spend proportionately more of their income on consumption,¹⁵⁵ which drives the result that any general increase in anticompetitive practices increases economic inequality.

The above evidence does not necessarily prove that increasing horizontal shareholdings are the sole or main explanation for the recent rise in economic inequality. Piketty himself argues that, historically, capitalism has always produced a return to capital that exceeds the national growth rate and that this divergence always increases economic inequality unless offset by wars, taxes, or fiscal policy, leading him to conclude that wars and changes in taxes or fiscal policy provide the main explanation for changes in economic inequality over time.¹⁵⁶ However, it is also true that anticompetitive conduct was permissible for most of human history, which could help explain the old historical combination of high returns to capital coupled with lower growth rates.¹⁵⁷

Moreover, Piketty's analysis has come under critique in an important recent article by Matthew Rognlie, which questions whether the net capital share has consistently grown in the way that Piketty suggests.¹⁵⁸ Rognlie makes three major points. First, he stresses that after 1948 the net capital share dropped through the 1970s and only

¹⁵³ See Furman & Orszag, *supra* note 131, at 3–4, 9–14.

¹⁵⁴ Crane, *supra* note 134, at 34–38.

¹⁵⁵ See Dirk Krueger & Fabrizio Perri, *Does Income Inequality Lead to Consumption Inequality? Evidence and Theory*, 73 REV. ECON. STUD. 163 (2006) (confirming that lower-income groups spend proportionally more of their income on consumption).

¹⁵⁶ PIKETTY, *supra* note 26, at 354–58 figs.10.9, 10.10 & 10.11, 571–75.

¹⁵⁷ Piketty also points out that income inequality in Europe has followed a similar trend to the United States. *Id.* at 324 fig.9.8. But the European trend is hard to disentangle from U.S. antitrust enforcement because when World War II started, U.S. antitrust enforcers attacked international cartels, Jason Scott Smith, *What Did Happen to the Antitrust Movement?*, 30 REV. IN AM. HIST. 639, 640–42 (2002) (book review), and after World War II, antitrust experts who had served under Thurman Arnold in the U.S. Antitrust Division “became important players in the postwar reconstruction of the German and Japanese economies, working to contain and eliminate collusion among firms. Through their efforts, Arnold’s protégés shaped the economic and political terrain of competition for American and foreign companies in such industries as chemicals, oil, and steel.” *Id.* at 640; see also *id.* at 642–43.

¹⁵⁸ Matthew Rognlie, *Deciphering the Fall and Rise in the Net Capital Share*, BROOKINGS PAPERS ON ECON. ACTIVITY (Mar. 19, 2015), http://www.brookings.edu/~media/projects/bpea/spring-2015/2015a_roggnlie.pdf [<https://perma.cc/R3RN-EPH4>].

then started to rise.¹⁵⁹ This observation parallels my above point about the pattern, though Rognlie's point is limited to the period after 1948 because his data do not extend before then. Second, Rognlie argues that Piketty's claim for an overall rise in inequality over time comes from an increase in capital returns in the housing sector, which in turn relies on the debatable premise that the imputed rent from owner-occupied housing is purely capital income that requires no labor.¹⁶⁰ Third, Rognlie points out that for nonhousing capital income, the U-shaped pattern turns not on ordinary returns to capital, but rather on a variation over time in markups that reflects "variation in market power."¹⁶¹ Jason Furman and Peter Orszag find that the recent rise in income inequality reflects less an increasing capital share of income than increasing inequality within capital and labor income, associated with an increase in the ability of some firms to earn higher economic rents than others.¹⁶² These findings are quite supportive of the proposition that variations in anticompetitive practices help explain the pattern of economic inequality.

To be sure, factors other than increased anticompetitive practices might contribute to economic inequality. As the graph above shows, economic inequality started to rise around 1980. This coincides with the post-1980 increase in horizontal shareholdings caused by the growth of institutional-investor stockholdings. This in turn is related to ERISA and tax rule changes that spawned 401(k)s in 1980 and greatly expanded IRAs in 1981.¹⁶³ But a host of other regulatory changes also started in 1980 with the election of President Reagan and a general conservative turn in politics. Increases in economic inequality might, for example, reflect the decline of unions or changes in taxes and government spending. Further research will be necessary to disentangle these multiple contributors to changes in economic inequality.

Nonetheless, the evidence so far suggests that increasing anticompetitive practices probably have played a significant role in increasing economic inequality. Rognlie's findings specifically show that the recent rise in nonhousing capital returns reflects increased market power. And the evidence from the 1930s indicates that liberal New Deal policies on unions, taxes, and spending did not reduce economic inequality

¹⁵⁹ *Id.* at 1, 3, 9.

¹⁶⁰ *See id.* at 1, 3, 10–11; *see also* Furman & Orszag, *supra* note 131, at 5–6 (finding that the increase in capital share of income reflects increased housing capital).

¹⁶¹ Rognlie, *supra* note 158, at 1; *see also id.* at 3–4, 15–16.

¹⁶² *See* Furman & Orszag, *supra* note 131, at 3–6, 9–14.

¹⁶³ *See* Tom Anderson, *Your 401(k): When It Was Invented — and Why*, LEARNVEST (July 3, 2013), <http://www.learnvest.com/knowledge-center/your-401k-when-it-was-invented-and-why> [<https://perma.cc/Z9DT-A8J2>]; Paul Burnham & Larry Ozanne, *Individual Retirement Accounts*, TAX POL'Y CTR., <http://www.taxpolicycenter.org/taxtopics/encyclopedia/IRAs.cfm> [<https://perma.cc/RC9W-3QM2>].

without antitrust enforcement, but that after aggressive antitrust enforcement began, economic inequality sharply dropped. The evidence also shows that during this high level of antitrust enforcement from 1938 to 1980, which became largely independent from the government agencies because private lawsuits became the dominant means of antitrust enforcement,¹⁶⁴ economic inequality remained low despite the fact that different presidents pursued varying policies on unions, taxes, and spending.

To the extent the post-1980 rise in economic inequality does reflect a rise in anticompetitive practices, the recent increase in horizontal shareholdings may not be the sole or main cause of that rise. The rise of economic inequality also coincides with President Reagan's 1980 appointment of Professor William F. Baxter to head the Antitrust Division, which ushered in the modern era of more conservative antitrust enforcement influenced by Chicago School critiques of prior antitrust enforcement. Although those critiques have never been fully accepted, they have been persuasive enough to continue to narrow antitrust enforcement in subsequent administrations, including Democratic ones, as well as in the courts where narrower interpretations of antitrust law have produced a sharp drop in private antitrust cases.¹⁶⁵ To the extent one thinks that at least some of that narrowing has incorrectly allowed more anticompetitive mergers and conduct, the recent increase in economic inequality may reflect a general decrease in antitrust enforcement.¹⁶⁶ Empirical analysis of mergers indicates, for example, that merger policy in the past thirty years has mistakenly allowed many mergers that turned out to increase prices.¹⁶⁷

But at least for mergers and other anticompetitive conduct, antitrust agencies and courts have offered reasoned analysis for why their enforcement decisions enhance market competition, even though their decisions may have been mistaken. What stands out about the in-

¹⁶⁴ See *supra* p. 1287 (noting the sharp rise in private antitrust enforcement from 1937 to the late 1940s); Paul E. Godek, *Does the Tail Wag the Dog? Sixty Years of Government and Private Antitrust in the Federal Courts*, ANTITRUST SOURCE, Dec. 2009, at 1–2, http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/Dec09_FullSource.authcheckdam.pdf [<https://perma.cc/TAY9-E8JS>] (noting that private antitrust enforcement has continued to dominate public antitrust enforcement since 1949).

¹⁶⁵ See Godek, *supra* note 164, at 2 (showing a sharp decline in private antitrust cases after 1980).

¹⁶⁶ See Crane, *supra* note 134, at 9–14 (collecting sources arguing that decreases in antitrust enforcement since the Reagan administration have increased economic inequality). See generally Jonathan B. Baker & Steven C. Salop, *Antitrust, Competition Policy, and Inequality*, 104 GEO. L.J. ONLINE 1, 10–28 (2015) (arguing that increased antitrust enforcement would help reduce economic inequality).

¹⁶⁷ See, e.g., 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).

crease in horizontal shareholding resulting from institutional investors is that its potential anticompetitive effects have, until now, gone unnoticed and unaddressed. Such an entirely unchecked and widespread anticompetitive practice seems more likely to cause large-scale economic inequality than possibly mistaken changes in the enforcement levels used to check other anticompetitive practices. Indeed, the underlying reason why the antitrust agencies have (in recent decades) approved mergers that turned out to raise prices may be that their merger models failed to include the exacerbating effects of horizontal shareholdings.

In any event, to the extent one is concerned about this recent rise in economic inequality,¹⁶⁸ preventing anticompetitive horizontal shareholdings is a useful method for reducing economic inequality because making markets more competitive necessarily reduces the returns to capital relative to the returns to labor. Antitrust enforcement against horizontal shareholdings is also far more feasible than Piketty's solution of imposing a global wealth tax.¹⁶⁹ Getting Congress to enact a wealth tax seems politically unrealistic, and it seems even more fanciful that enough nations would simultaneously adopt similar taxes to prevent capital flight to other nations with lower wealth taxes. Others suggest that a progressive consumption tax is a better solution.¹⁷⁰ But a new consumption tax also seems politically infeasible in the United States and might, if seriously pursued, lead to consumption flight to other nations absent international agreements to impose the same consumption tax everywhere. In contrast, as shown next in Part III, current U.S. antitrust laws already authorize enforcement against horizontal shareholdings, so all that would be required are antitrust agencies willing to enforce the law, or private plaintiffs willing to bring antitrust actions that could be highly lucrative.

Moreover, wealth or consumption taxes have the cost that to some extent they retard economic growth. The precise extent to which they retard growth is much debated, and slower growth may be a cost worth bearing to achieve more equal distributions. But antitrust enforcement against anticompetitive horizontal shareholdings has the advantage that it would increase market output and thus affirmatively increase economic growth.¹⁷¹ Unlike a tax increase, antitrust enforce-

¹⁶⁸ While the rise in economic inequality has become a major policy concern for many, others disagree it is a problem in itself. See, e.g., N. Gregory Mankiw, *Yes, $r > g$. So What?*, 105 AM. ECON. REV. (PAPERS & PROC.) 43, 46 (2015).

¹⁶⁹ PIKETTY, *supra* note 26, at 527–30, 571–75.

¹⁷⁰ See Mankiw, *supra* note 168, at 45–46; Alan J. Auerbach & Kevin Hassett, *Capital Taxation in the Twenty-First Century*, 105 AM. ECON. REV. (PAPERS & PROC.) 38, 41 (2015).

¹⁷¹ See *supra* Part I, pp. 1273–78.

ment not only divides the pie more equitably, but also increases the size of the pie itself.

In short, although perhaps not a full solution to the problem of economic inequality, antitrust enforcement against horizontal shareholdings certainly seems to be the remedy that has the lowest political and economic costs associated with it. Indeed, it would likely produce affirmative benefits to economic growth and employment.

But does existing antitrust law allow enforcement against anticompetitive horizontal shareholdings? That is the topic I address next.

III. TAKING LEGAL ACTION AGAINST ANTICOMPETITIVE HORIZONTAL SHAREHOLDING

Some have suggested that, absent evidence that institutional investors are directing corporate managers not to compete on price, the antitrust laws provide no remedy, even when horizontal shareholdings create structural incentives for anticompetitive pricing.¹⁷² They suggest the solution is instead to have Congress enact a new law that takes away tax advantages for retirement funds that invest in any mutual funds that have a significant number of shares in more than one firm in a specific industry.¹⁷³

Such a solution faces an uphill battle politically. It is hard to get Congress to enact new laws when there is serious political conflict over them, as there surely would be for a new statute that takes away tax advantages from retirement funds and harms institutional investors, the people who invest in them, and the corporate managers who benefit from lower competition and higher compensation. Such a solution also seems seriously overbroad, because Part I shows that both economic theory and empirical evidence indicate that such horizontal shareholdings are likely to create significant anticompetitive problems only when the market concentration is high and the horizontal shareholdings are substantial, with the empirical evidence and antitrust guidelines indicating the relevant thresholds are an MHHI above 2500 and a Δ MHHI above 200.

Such a solution is also unnecessary because, as I explain below, current antitrust law already provides a remedy against horizontal shareholdings. That antitrust remedy is far more politically feasible. All it requires is the will to bring cases by one of the two federal antitrust agencies, or any one of the fifty states, or any set of injured plaintiffs who could bring lucrative private actions for treble damages to recover the higher prices caused by anticompetitive horizontal shareholdings. The antitrust remedy is also far less overinclusive because it

¹⁷² See Posner & Weyl, *supra* note 26.

¹⁷³ *Id.*

is limited to cases where horizontal shareholdings can have anticompetitive price effects: that is, when the horizontal shareholdings are significant enough to make Δ MHHI substantial and affect corporations in markets that are sufficiently concentrated to result in an MHHI over 2500. Absent those conditions for anticompetitive effects, we currently lack a sound basis to interfere with shareholder diversification across horizontal rivals.

*A. The Clayton Act Already Bans Any Anticompetitive
Stock Acquisition*

The view that direct discussions of price or output would be necessary to bring an antitrust action seems to rest on the premise that the relevant cause of action would allege a horizontal conspiracy on prices or output. But a cause of action could be brought against stock *acquisitions* that create horizontal shareholdings if their structural effect is anticompetitive. Such a cause of action can readily be brought under Clayton Act § 7,¹⁷⁴ which was created precisely to address stock acquisitions that create anticompetitive market structures. Usually Clayton Act § 7 is applied to mergers, prohibiting any merger that creates an anticompetitive market structure, without requiring any evidence of postmerger conspiracy or anticompetitive conduct.¹⁷⁵ For example, Clayton Act § 7 bans mergers that make oligopolistic coordination with other firms easier or that give the merged firm greater unilateral incentives to raise prices.¹⁷⁶

But Clayton Act § 7 extends far beyond mergers. Its sweeping language provides:

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 competition¹⁷⁷

The statute thus bans any stock acquisition that may lead to anticompetitive effects.

The application to horizontal shareholdings is quite straightforward. As Part I showed, economic models and econometric studies indicate that institutional investors' acquisition of stock in horizontal competitors is likely to substantially lessen competition whenever those

¹⁷⁴ 15 U.S.C. § 18 (2012).

¹⁷⁵ See EINER R. ELHAUGE, UNITED STATES ANTITRUST LAW AND ECONOMICS 585–90 (2d ed. 2011).

¹⁷⁶ See *id.* at 590–646.

¹⁷⁷ 15 U.S.C. § 18.

stock acquisitions produce a substantial increase in MHHI in a concentrated market. Such stock acquisitions can thus be challenged under Clayton Act § 7. Indeed, legal actions against horizontal shareholdings are quite parallel to the accepted point that one firm's acquisition of a noncontrolling interest in a rival can be illegal (even when passive) if it lessens the incentives of the firms to compete with each other in a sufficiently concentrated market.¹⁷⁸ Horizontal shareholdings also raise problems that are very similar to those created by interlocking directorates and officers, which are illegal under antitrust law whenever the firms are large horizontal competitors.¹⁷⁹

Accordingly, the federal agencies can and should challenge any stock acquisitions that have produced, or are likely to produce, anti-competitive horizontal shareholdings. Given their own guidelines and the empirical results summarized in Part I, they should investigate any horizontal stock acquisitions that have created, or would create, a Δ MHHI of over 200 in a market with an MHHI over 2500, in order to determine whether those horizontal stock acquisitions raised prices or are likely to do so.

When the agencies are reviewing horizontal mergers, they should also take into account that horizontal shareholdings worsen the anti-competitive effects that the agencies might otherwise predict. And when the agencies review horizontal mergers between institutional investors themselves, the agencies should take into account that such mergers can anticompetitively exacerbate horizontal shareholdings across the product markets in which the institutional investors invest.

The grounds for challenging horizontal shareholdings are in one important sense stronger than the grounds for challenging mergers. A true merger creates integrative efficiencies that might offset any anti-competitive effect from increasing concentration. In contrast, stock acquisitions that create horizontal shareholdings generate no such offsetting integrative efficiencies.¹⁸⁰ There is thus little reason to allow horizontal shareholdings if they have any significant anticompetitive potential. True, acquiring stock in horizontal competitors might create some portfolio diversification benefits for shareholders. But those benefits are small because virtually all diversification benefits could be achieved by investing in one corporation in each market. Such mar-

¹⁷⁸ See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 27 § 13; United States v. Dairy Farmers of Am., Inc., 426 F.3d 850, 859–60 (6th Cir. 2005).

¹⁷⁹ Clayton Act § 8, 15 U.S.C. § 19. See generally Louis D. Brandeis, *The Endless Chain: Interlocking Directorates*, HARPER'S WKLY., Dec. 6, 1913, at 13, 13 ("The practice of interlocking directorates is the root of many evils. It offends laws human and divine. Applied to rival corporations, it tends to the suppression of competition and to violation of the Sherman law.")

¹⁸⁰ Agency guidelines make a similar point about partial stock acquisitions between rivals. See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 27 § 13 ("[P]artial acquisitions usually do not enable many of the types of efficiencies associated with mergers . . .").

ginal diversification benefits thus cannot offset significant anticompetitive effects. Moreover, even if a marginal diversification improvement benefits shareholders in the stock market, it is unlikely to lower product prices in a way that benefits consumers in the relevant product market. Under the Clayton Act, stock acquisitions are illegal if they may lessen competition "in any line of commerce,"¹⁸¹ and thus efficiency benefits in one market cannot offset anticompetitive effects in another market.¹⁸² Accordingly, even if an agency has approved mergers that led to concentrated product markets because those mergers had integrative efficiencies that were likely to benefit consumers in those product markets, such prior merger approvals provide no reason to tolerate horizontal shareholdings that can have no such efficiencies.

Institutional investors should also consider the fact that their current holdings make them vulnerable to private antitrust lawsuits. Although most Clayton Act § 7 challenges have been brought by the federal antitrust agencies, any person financially injured by a stock acquisition that creates anticompetitive horizontal shareholdings has standing to bring a claim under Clayton Act § 7 to recover treble damages and to get injunctive relief ending the horizontal shareholdings.¹⁸³ A class of passengers injured by paying higher airline fares because of horizontal shareholdings on a concentrated route could, for example, bring suit on the theory that the stock acquisitions by institutional investors that created those horizontal shareholdings harmed the passengers by lessening airline competition.¹⁸⁴ Moreover, injured persons could also sue under Sherman Act § 1 on the theory that holding shares in horizontal competitors is a combination or agreement that restrains competition.¹⁸⁵ Likewise, any state could bring an antitrust suit on behalf of residents injured by the horizontal shareholdings created by such stock acquisitions.¹⁸⁶

¹⁸¹ Clayton Act § 7, 15 U.S.C. § 18.

¹⁸² See *United States v. Phila. Nat'l Bank*, 374 U.S. 321, 370-71 (1963); U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 27 § 10 & n.14 ("To make the requisite determination, the Agencies consider whether cognizable efficiencies likely would be sufficient to reverse the merger's potential to harm customers in the relevant market, e.g., by *preventing* price increases in *that* market. . . . The Agencies normally assess competition in each relevant market affected by a merger independently and normally will challenge the merger if it is likely to be anticompetitive in *any* relevant market." (emphasis added)). When a transaction produces large benefits in one market that are inextricably intertwined with small harms to another market, the agencies might exercise prosecutorial discretion not to challenge the transaction. *Id.* § 10 n.14. But the agencies do not claim that such a transaction would be legal, and this ground for exercising prosecutorial discretion would not apply here because any marginal diversification benefits are small.

¹⁸³ 15 U.S.C. §§ 4, 12, 15, 25-26; see *Reiter v. Sonotone Corp.*, 442 U.S. 330, 339-40 (1979).

¹⁸⁴ See FED. R. CIV. P. 23.

¹⁸⁵ See *infra* note 205.

¹⁸⁶ 15 U.S.C. § 15c.

B. The Passive Investor “Exception” Provides No Immunity for Anticompetitive Horizontal Shareholdings

The so-called passive investor “exception” does not immunize anti-competitive horizontal shareholdings of institutional investors. To understand the issue, it is important to begin by clearly distinguishing the *substantive* passive investor provision, which alters the liability rule for passive investors, and the *filing* passive investor provision, which exempts some passive investors only from having to file information about their stock acquisitions with the antitrust agencies in advance of their acquisitions. The filing exemption does not alter the substantive standard. A firm could be a passive investor exempt from filing but still be liable both because the substantive standard defines passivity differently and because the substantive standard can make even passive investors liable. I discuss the filing passive investor exemption in the next section. Here, I will focus on the substantive passive investor provision.

The substantive passive investor provision provides 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.”¹⁸⁷ Getting the benefit of this exception thus requires proving *both* of the following elements: (1) the stock acquisition must be *solely* for investment; and (2) the acquired stock must not *actually* be used to lessen competition substantially or to attempt to do so.¹⁸⁸

Some might argue that this provision exempts institutional investors who pursue passive investment strategies like indexing. But it does not for two reasons. First, as detailed below, the solely-for-investment element requires a complete lack of influence over management that has nothing to do with having a passive investment strategy. The second reason is that the second element condemns stock acquisitions that actually create anticompetitive effects even if the solely-for-investment element has been established. Thus, as the Supreme Court has stressed: “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.”¹⁸⁹

1. The Narrow Meaning of the Solely-for-Investment Element. — The solely-for-investment element excludes not only investments that give working control, but also investments that give the stock acquirer

¹⁸⁷ *Id.* § 18 (emphasis added).

¹⁸⁸ See *United States v. Tracinda Inv. Corp.*, 477 F. Supp. 1093, 1098–99 (C.D. Cal. 1979); *Anacosta Co. v. Crane Co.*, 411 F. Supp. 1210, 1218–19 (S.D.N.Y. 1975).

¹⁸⁹ *United States v. E.I. du Pont de Nemours & Co.*, 353 U.S. 586, 597–98 (1957).

any influence over the corporation's business decisions (including by voting) or any access to the corporation's sensitive business information. For example, the Supreme Court has held that even if a 23% stake did not confer working control, the passive investment exception did not apply because the investor tried to influence business decisions.¹⁹⁰ The solely-for-investment element has been found to be met only when the investor committed either to not vote its stock or (in what amounts to the same thing) to vote the shares in the same proportion as other shareholders vote, often with the additional requirements that the investor not nominate directors, have any representative on the board, or exert any other form of influence over management.¹⁹¹ Likewise, agency guidelines make clear that the antitrust agencies consider a partial stock acquisition anticompetitive if it gives the acquirer an ability to influence the target that might produce anticompetitive effects or (even without any influence) gives the acquirer access to the target's confidential business information that might lead to anticompetitive effects.¹⁹²

This antitrust notion of passivity is totally different from what institutional investors usually mean when they call themselves "passive investors." They mean that they have a *passive investment strategy*, as with an index fund that makes no active decisions about which corporate stock to buy but rather purchases stock based on some index. A passive investment strategy differs from *passive ownership* because institutional investors with a passive investment strategy usually do actively seek to influence corporate management, including by direct communication, having investor executives serve on corporate boards, and voting their shares to favor positions and management that best advance their investor interests.¹⁹³ Vanguard stresses that their funds

¹⁹⁰ *Id.* at 597–606.

¹⁹¹ *See, e.g., Tracinda*, 477 F. Supp. at 1098 (solely-for-investment element was met when the investor committed to vote shares proportionately to other shareholders); *Anaconda*, 411 F. Supp. at 1218–19 (solely-for-investment element was met when the investor committed not to seek representation on board of directors and not to vote shares in any way that might lessen competition); United States Response to Comments of the Warner-Lambert Company and BIC Corporation Regarding the Proposed Final Judgment in *United States v. Gillette Co.*, 55 Fed. Reg. 28,312, 28,322 (July 10, 1990) (stating that solely-for-investment element was met when the investor committed not to vote its stock, nominate directors, have any representative on the board, deny credit, or exert any influence over management).

¹⁹² U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 27, § 13.

¹⁹³ Azar, Schmalz & Tecu, *supra* note 1, at 4–5, 33–36; Mike Scott, *Passive Investment, Active Ownership*, FIN. TIMES (Apr. 6, 2014, 9:48 AM), <http://www.ft.com/cms/s/0/7c5f8d60-ba91-11e3-b391-00144feabdco.html> (quoting former TIAA-CREF head of corporate governance as saying, "Having a passive investment strategy has nothing to do with your behaviour as an owner," and the head of corporate governance at State Street Global Advisors (SSgA) as saying, "As an asset manager with one of the world's largest passive offerings and a near-perpetual holder of index constituents, active ownership represents the tangible way in which SSgA can positively impact the value of our underlying holdings. . . . The option of exercising our substantial voting rights in

are “passive investors, not passive owners.”¹⁹⁴ Other institutional investors likewise stress that their passive investment strategy does not prevent them from being active owners.¹⁹⁵ A recent survey of institutional investors found that 63% admitted they engaged in direct discussions with corporate management, 53% admitted they tried to influence corporate management by voting against them, and only 19% said they made no efforts to influence corporate management.¹⁹⁶ Active ownership like this is inherently nonpassive under antitrust law, whether or not the influence is used to urge managers to price higher or to remind managers that horizontal shareholders have an interest in the profits of rival firms.

Indeed, some institutional investors stress that because passive investment strategies (like index funds) mean they are necessarily long-term investors in many firms, they have even stronger incentives to influence corporate governance.¹⁹⁷ In short, precisely because passive investment strategies prevent threats of “exit,” they give institutional investors with such strategies even more incentives to focus on exercising “voice.”¹⁹⁸ But that voice is precisely what makes their investments active for antitrust purposes.

The influence that negates the passive investor exception need not involve any direct communication from horizontal shareholders to managers. Managers know who their shareholders are and what best serves the shareholders’ interests.¹⁹⁹ They also know that institutional investors vote on board of director elections and on shareholder proposals.²⁰⁰ Although large institutional investors may have many separate funds, they jointly exercise the voting of all their funds for maximum effect.²⁰¹ Whenever such voting influences corporate management, as it surely does for institutional investors with large stockholdings, it voids the substantive passive investor exception.

2. *Even Purely Passive Investors Are Liable for Actual Anticompetitive Effects.* — The second element of the statutory provision means that even when an investor *can* show it is purely passive in the antitrust sense, the passive investor “exception” does not apply if the ac-

opposition to management provides us with sufficient leverage and ensures our views and client interests are given due consideration”).

¹⁹⁴ Azar, Schmalz & Tecu, *supra* note 1, at 33.

¹⁹⁵ *Id.*

¹⁹⁶ Joseph A. McCahery, Zacharias Sautner & Laura T. Starks, *Behind the Scenes: The Corporate Governance Preferences of Institutional Investors*, 71 J. FIN. (forthcoming 2016) (manuscript at 1, 8, 31), <http://papers.ssrn.com/abstract=1571046> [<https://perma.cc/GX8S-SSRX>].

¹⁹⁷ Azar, Schmalz & Tecu, *supra* note 1, at 35.

¹⁹⁸ See ALBERT O. HIRSCHMAN, EXIT, VOICE, AND LOYALTY (1970).

¹⁹⁹ Azar, Schmalz & Tecu, *supra* note 1, at 5, 11.

²⁰⁰ *Id.* at 34.

²⁰¹ *Id.*

quired stock is *actually* used, by voting or otherwise, to lessen competition substantially or to attempt to do so. The effect, as courts have noted, is that the passive investor “exception” is not really an exception at all, but rather means that a different standard of proof applies to purely passive investments.²⁰² Whereas an active investment can be condemned if it *may* substantially lessen competition, a passive investment can be condemned only if it *actually* does so or was intended to do so. A purely passive investment could, for example, actually lessen competition if it simply lessens the incentives of the firms to compete with each other, even though the investors never use their stock to affirmatively influence business conduct or to obtain confidential business information.²⁰³ Thus, even if investors who held horizontal stock were purely passive, proof that their horizontal shareholdings actually lessened competition, such as the Azar, Schmalz, and Tecu study showing that horizontal shareholdings actually raised airline prices,²⁰⁴ would negate the passive investor exception and leave the horizontal shareholders subject to challenge under § 7 of the Clayton Act.

In short, no matter how passive investors may be, they are still liable if their stock acquisitions or usage actually lessen competition. Passivity merely raises the standard of proof on that issue. Moreover, even for this substantive standard-shifting purpose, passivity requires the lack of any influence and thus cannot be satisfied by investors who vote their shares or plan to do so.²⁰⁵

3. *Timing of Challenge.* — Although even complete passivity only heightens the substantive standard of proof, it sometimes might arguably change the timing of a legal challenge. For investors who are not completely passive, a suit always can be brought prophylactically to prevent the stock acquisition from ever occurring, because the substan-

²⁰² See *United States v. Tracinda Inv. Corp.*, 477 F. Supp. 1093, 1098, 1099 n.5 (C.D. Cal. 1979); *Anaconda Co. v. Crane Co.*, 411 F. Supp. 1210, 1218–19 (S.D.N.Y. 1975).

²⁰³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 27, § 13; O’Brien & Salop, *supra* note 28, at 568–84; Gilo, *The Anticompetitive Effect*, *supra* note 28, at 88; see also *United States v. Dairy Farmers of Am., Inc.*, 426 F.3d 850, 859–60 (6th Cir. 2005) (finding that stock acquisition can lessen competition even if it does not confer control or influence over the acquired firm).

²⁰⁴ See Azar, Schmalz & Tecu, *supra* note 2; *supra* Part I, pp. 1273–78.

²⁰⁵ Further, even if § 7 of the Clayton Act did not apply, a purely passive investment that created horizontal shareholdings that produced likely anticompetitive effects would be reviewable because holding shares in horizontal competitors is a combination or agreement whose anticompetitive effects would constitute an unreasonable restraint of trade. See Sherman Act § 1, 15 U.S.C. § 1 (2012). Criminal penalties are unlikely for this sort of non-per se violation, but civil remedies, including damages and injunctive relief, would still apply. See ELHAUGE, *supra* note 175, at 13–27. Such acquisitions would also constitute an unfair method of competition, though that cause of action is enforceable only by the Federal Trade Commission (FTC). See Federal Trade Commission Act § 5, 15 U.S.C. § 45. But there is no need to pursue such theories since § 7 of the Clayton Act would plainly apply.

tive standard requires only that the stock acquisition “may” substantially lessen competition.²⁰⁶ However, for investors who are completely passive, proving the substantive standard requires showing that the investors are “using the [purchase of stock] by voting or otherwise to bring about, or in attempting to bring about, the substantial lessening of competition.”²⁰⁷ I think the better reading of this language is that this standard can be met prophylactically if, at the time of the stock acquisitions, it can be shown that the purchases of stock were intended to substantially lessen competition or foreseeably would have that effect because they lessen competitive incentives. In those cases, the investors are using the purchase of stock to bring about, or attempt to bring about, a substantial lessening of competition. But one can imagine a narrow reading of the statute that, for completely passive investors, requires waiting until their stock acquisitions actually have those anticompetitive effects before a challenge can be brought.

For any type of investor, whether completely passive or not, it may sometimes be the case that the substantive standard cannot be met when the investor acquires the stock, but can be met later. Suppose, for example, a large investor makes a stock acquisition that results in a Δ MHHI of only 150. A challenge probably cannot be brought at that time, even under the “may” standard, because anticompetitive effects are unlikely for a Δ MHHI below 200 given current empirical evidence.²⁰⁸ Later, that same investor, or some other large investor, makes another stock acquisition that brings the Δ MHHI to 300. Now both stock acquisitions can be challenged, because they both contribute to the horizontal shareholdings that create anticompetitive effects. The situation is analogous to exclusive dealing, which can create anti-trust liability when a series of exclusive dealing agreements by one seller, or a group of large sellers, creates a substantial foreclosure share. Under that doctrine, exclusive dealing with some buyers may initially be legal because it does not produce a substantial foreclosure share, but can become illegal later if a seller enters into subsequent exclusive-dealing agreements that make the aggregate foreclosure share substantial.²⁰⁹

C. *The Passive Investor Exemption from Filing*

The filing requirement’s passive investor exemption is broader than the substantive provision but does not alter the limited nature of the substantive immunity. Though broader, the filing exemption remains

²⁰⁶ Clayton Act § 7, 15 U.S.C. § 18.

²⁰⁷ *Id.*

²⁰⁸ Subsequent empirical studies may alter this conclusion.

²⁰⁹ See ELHAUGE, *supra* note 175, at 346; 9 PHILLIP E. AREEDA, ANTITRUST LAW 388 (1991).

too narrow to exempt typical institutional investors from filing. However, the antitrust agency's interpretation of the exemption still renders it broader than it should be given the new literature showing the potential anticompetitive effects of horizontal shareholdings by institutional investors. The agencies should narrow this interpretation to provide themselves with more information on horizontal shareholdings so the agencies can assess them properly.

Under the Hart-Scott-Rodino Act, those who plan to acquire "voting securities or assets" of another firm must (absent an applicable exemption) file information with the federal antitrust agencies if the stock acquisition exceeds \$50 million in 2004 dollars and the acquirer and target are sufficiently large.²¹⁰ By statute, this filing requirement does not apply if the acquired voting securities both (1) are solely for investment purposes and (2) do not give the acquirer more than 10% of the target's voting securities.²¹¹ But even if this filing exception for passive investors under 10% applies, that only means that failing to file information about the stock acquisition is not a violation of the filing rules. Even when no filing is required, the stock acquisition itself remains challengeable under the substantive standards noted in the prior section.

Although the Federal Trade Commission (FTC) and Department of Justice (DOJ) have no authority to provide exemptions from the substantive provision, they do have authority to adopt regulatory exemptions from the filing requirement.²¹² They have adopted a regulation that defines strict criteria for meeting the passive investor filing exemption. Their regulation treats a stock holding as solely for investment only "if the person holding or acquiring such voting securities has *no intention of participating in* the formulation, determination, or direction of the *basic business decisions* of the issuer."²¹³ Another FTC/DOJ regulation provides that if an institutional investor meets this passivity standard, then the filing exemption applies as long as the investor acquires 15% or less of the stock of a corporation.²¹⁴

Accordingly, this filing exemption does not apply to institutional investors who *do participate* in business decisions, even if they own less than 10–15% of a corporation's stock. The filing exemption there-

²¹⁰ Hart-Scott-Rodino Antitrust Improvements Act of 1976, 15 U.S.C. § 18a(a). The firm-size standard is satisfied if the assets or annual sales of the acquirer and target exceed \$10 million for one of them and \$100 million for the other in 2004 dollars. *Id.* § 18a(a)(2)(B). Filing is also required if the acquisition exceeds \$200 million in 2004 dollars regardless of the size of the acquirer or target firm, but it seems likely that an acquisition of that size would usually satisfy the firm-size standard. *Id.* § 18a(a)(2)(A).

²¹¹ *Id.* § 18a(c)(9).

²¹² *Id.* § 18a(d)(2)(B).

²¹³ 16 C.F.R. § 801.1(i)(1) (2015) (emphasis added).

²¹⁴ *Id.* § 802.64(b).

fore does not apply to the typical institutional investor, given the evidence in the prior section²¹⁵ that institutional investors are usually active owners who participate in corporate business decisions by discussing them with managers. The agencies have not in the past challenged many failures to file by typical institutional investors, but the lack of such challenges may reflect the fact that typical institutional investors have only recently become active owners in ways that void the filing exemption. In 2015, the FTC entered into a consent decree against a hedge fund for failing to file, stressing that: “[t]he investment-only exemption is a narrow exemption limited to those situations in which the investor has no intention to influence the management of the target firm,” and finding that standard violated when the hedge fund asked certain persons whether they might want to become a CEO or board candidate of the target firm.²¹⁶ Moreover, the FTC did so even though the \$66 million in stock acquired by the hedge fund was only 0.2% of the capitalized value of Yahoo, the target firm.²¹⁷

On its face, the regulation denying any filing exemption to investors who intend to participate in the formulation, determination, or direction of business decisions would seem to apply to voting, since the point of voting is precisely to influence which business decisions are made. However, the agencies’ report regarding the purpose of their regulation states that:

[M]erely voting the stock will not be considered evidence of an intent inconsistent with investment purpose. However, certain types of conduct could be so viewed. These include but are not limited to: (1) Nominating a candidate for the board of directors of the issuer; (2) proposing corporate action requiring shareholder approval; (3) soliciting proxies; (4) having a controlling shareholder, director, officer or employee simultaneously serving as an officer or director of the issuer; (5) being a competitor of the issuer; or (6) doing any of the foregoing with respect to any entity directly or indirectly controlling the issuer.²¹⁸

This statement usefully clarifies that the filing exemption does not apply to institutional investors who (as is often the case) have execu-

²¹⁵ See *supra* notes 193–196 and accompanying text.

²¹⁶ Press Release, Fed. Trade Comm’n Bureau of Competition, Third Point Funds Agree to Settle FTC Charges that They Violated U.S. Premerger Notification Requirements (Aug. 24, 2015), <https://www.ftc.gov/news-events/press-releases/2015/08/third-point-funds-agree-settle-ftc-charges-they-violated-us> [<https://perma.cc/F9HZ-S8YP>]; see also Debbie Feinstein et al., “*Investment-Only*” Means Just That, FED. TRADE COMM’N: COMPETITION MATTERS (Aug. 24, 2015, 5:25 PM), <https://www.ftc.gov/news-events/blogs/competition-matters/2015/08/investment-only-means-just> [<https://perma.cc/AA2X-GGYS>].

²¹⁷ Yahoo’s capitalized value was \$29.88 billion on August 25, 2015. See *Yahoo! Market Cap*, YCHARTS, https://ycharts.com/companies/YHOO/market_cap (last visited Jan. 31, 2016).

²¹⁸ Premerger Notification; Reporting and Waiting Period Requirements, 43 Fed. Reg. 33,450, 33,465 (July 31, 1978) (emphasis added).

tives that serve on corporate boards or who nominate directors for corporate boards. Unfortunately, the first line indicates that the agencies interpret the filing exemption to apply to any investor who “merely vot[es]” shares and has less than 10–15% of corporate stock. Given the economic literature and the analysis in this article, this interpretation is unwisely overbroad because horizontal investors who individually have less than 10–15% of corporate stock can nonetheless significantly alter the competitive incentives of corporate management by simply voting their shares, especially because collectively their share of corporate stock may be far higher than 10–15%. This overbroad interpretation of the filing exemption does nothing to alter the substantive standard, but it does deprive the antitrust agencies of useful information about potentially anticompetitive acquisitions. It reflects a prior time when the anticompetitive effects of horizontal shareholdings were not understood. The FTC and DOJ should change this interpretation to instead deny a filing exemption whenever a set of large shareholders plans to vote shares that, in aggregate, are more than 10% of the stock in multiple competing corporations.²¹⁹

Indeed, by statute the regulatory authority of the FTC and DOJ to adopt filing exemptions applies only to “classes of persons, acquisitions, transfers, or transactions which are not likely to violate the anti-trust laws.”²²⁰ The recent empirical work discussed in Part I of this article has proven that the agencies were mistaken to assume that an institutional investor’s acquisition of stock is unlikely to harm competition if an investor “merely votes” shares and individually acquires less than 10–15% of a corporation’s stock. Thus, this recent empirical work may well mean that the agencies are obligated to interpret the filing exemption more narrowly or to narrow the regulation itself. With the filing exemption properly narrowed, the agencies would benefit from far more systematic information about the extent of horizontal shareholding in the U.S. economy.

D. The Statute of Limitations Is Unlikely to Protect Anticompetitive Horizontal Shareholdings

If the stock that contributes to anticompetitive horizontal shareholdings was acquired more than four years ago, the statute of limitations might be an obstacle to a damages claim.²²¹ Antitrust claims seeking injunctive relief, however, have no statute of limitations, re-

²¹⁹ The dollar amount thresholds ensure that only large investors would be affected by this filing requirement. See 15 U.S.C. § 18a(a) (2012).

²²⁰ *Id.* § 18a(d)(2)(B).

²²¹ See *id.* § 15b.

ardless of whether they are brought by a private or public actor.²²² Thus, injunctive relief claims would suffice to force the divestiture of any horizontal shareholdings that had anticompetitive effects.

Even for a damages claim, it is usually the case that institutional investors will have acquired at least some of the stock in the last four years.²²³ Further, the statute of limitations begins to run only when a cause of action “accrues,” meaning that the defendant committed a violation *and* that this violation injured the plaintiff.²²⁴ For example, if an initially passive investment did not become a violation until its owner later exercised it actively, the statute of limitations could not begin to run until that active use started. Likewise, if a stock acquisition did not raise prices until later — perhaps because market concentration later increased or other horizontal shareholders later acquired stock that made Δ MHHI substantial — then the statute of limitations would not start until the price injury started. Indeed, some courts have held that the statute of limitations cannot begin to run until the plaintiff *discovers* his injury.²²⁵ Because any injury from horizontal shareholdings was generally unknown before the Azar, Schmalz, and Tecu empirical study came out, it seems unlikely that any plaintiffs could have discovered their injuries from horizontal shareholdings before then.

Moreover, rules about tolling may help to overcome the statute of limitations obstacle. The statute of limitations is tolled pending any government suit, unless seeking damages for injury to the government’s own business or property.²²⁶ The limitations period is also tolled if any one of three other tolling doctrines is met: First, the statute of limitations is tolled during any period when the defendant fraudulently concealed the violation, as long as the plaintiff was unaware of the concealed violation despite due diligence.²²⁷ Thus, the statute of limitations could be tolled if the investors concealed their horizontal shareholdings or concealed the use of their stock to lessen competition among the corporations in which they are invested. Second, when a defendant engages in a continuing course of anticom-

²²² 2 PHILLIP E. AREEDA, ROGER D. BLAIR & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 320g, at 237 (2d ed. 2000). Injunctive relief might be barred by the doctrine of laches when suit is unjustifiably delayed, *id.*, but that doctrine hardly seems applicable here, given that the ongoing injuries from horizontal shareholdings have only just now been revealed.

²²³ For example, all funds have to make stock acquisitions when there is investor inflow to their funds, index funds routinely make stock acquisitions to adjust for the changing capitalized value of the corporations in the index, and other funds routinely make stock acquisitions as they make strategic judgments.

²²⁴ See *Zenith Radio Corp. v. Hazeltine Research, Inc. (Zenith II)*, 401 U.S. 321, 338 (1971).

²²⁵ See, e.g., *In re Copper Antitrust Litig.*, 436 F.3d 782, 789 (7th Cir. 2006).

²²⁶ 15 U.S.C. § 16(i).

²²⁷ 2 AREEDA, BLAIR & HOVENKAMP, *supra* note 222, ¶ 320e, at 231–32.

petitive conduct, then each act that is part of the violation and injures the plaintiff restarts the period of limitations, even though the illegal conduct began much earlier.²²⁸ Thus, if the horizontal shareholdings have produced fresh injuries within the last four years, such as recent transactions at inflated prices, then the plaintiffs should be able to recover for the overcharge on such transactions.²²⁹ This conclusion may be even clearer if the claim is brought under Sherman Act § 1 because then the illegal act is not the past stock acquisition that has recent anticompetitive effects, but is rather the holding of shares that creates an ongoing combination or agreement that distorts incentives and raises product prices. Third, even if the misconduct and injury have occurred, the statute of limitations does not begin to run until the injury becomes sufficiently nonspeculative to form the basis for reasonably ascertainable damages.²³⁰ The logic is fairly straightforward: a plaintiff cannot be penalized for delaying suit if an earlier suit would have been barred on the grounds that its damages had not yet become reasonably ascertainable. This tolling doctrine would seem applicable to any new case against horizontal shareholdings because, until the Azar, Schmalz, and Tecu empirical study came out, plaintiffs likely had no nonspeculative basis for proving injury from horizontal shareholdings.

These statute of limitations issues would likely be resolved differently in different cases and by different courts. But the bottom line is that institutional investors with significant horizontal shareholdings in firms that compete in concentrated markets face a serious risk of antitrust liability and damages.

E. How Institutional Investors Can Avoid Antitrust Liability

How can large investors minimize the risk of antitrust liability from investments in concentrated markets? Essentially, they have two choices: refraining from horizontal investments or committing not to vote their stock. When investing in horizontal competitors would create significant horizontal shareholdings in a concentrated market, investors can avoid antitrust liability by investing in only one of the competing firms. Such selective investment in concentrated markets would produce only a minimal loss of diversification benefits because institutional investors can remain invested in one firm in each concentrated market and thus remain diversified across all industries in the economy. Further, because selective investment will result in each institutional investor concentrating its industry investments in one firm for each market, selective investment will give institutional investors a

²²⁸ *Klehr v. A.O. Smith Corp.*, 521 U.S. 179, 189 (1997).

²²⁹ *See id.*

²³⁰ *Zenith II*, 401 U.S. 321, 339 (1971).

greater share of corporate voting power in the firms in which they do invest. Having a greater share lessens the separation of ownership and control and should strengthen the investors' ability to affect corporate governance in ways that improve management efficiency and benefit shareholders without harming competition and consumers.

Alternatively, large investors could continue to buy stock across horizontal competitors, but avoid having any voting influence. They could buy only nonvoting stock to minimize any influence over corporate policy. They might similarly commit either to not vote their stock or to vote their stock in proportion to how nonhorizontal shareholders vote. This alternative of avoiding any voting influence lowers the risk of antitrust liability, but it may not eliminate that risk because such nonvoting stock might still influence management in anticompetitive ways. Managers might, for example, take into account the interests of stockholders who have committed not to vote their stock because the managers fear that otherwise the stockholders will sell to others attempting a corporate takeover or not support the managers' hire at subsequent corporations. This alternative also seems likely to be less desirable than refraining from horizontal investments because having institutional investors refrain from voting increases the separation of ownership and control in a way that harms corporate governance and efficiency on a host of issues that do not raise anticompetitive concerns. Nonetheless, one can imagine cases where some investor concludes that the harms from giving up voting influence are offset by the diversification benefits of investing across horizontal competitors in concentrated markets. Investors are free to make that choice because antitrust law properly leaves it to firms to pick the most efficient method of complying with antitrust law.

Contrary to the claims of some, this conclusion does not necessarily mean that index funds are already illegal under antitrust law.²³¹ First, as I have stressed, institutional-investor holdings are likely to be anti-competitive only when the holdings are in a concentrated product market (an MHHI > 2500) and substantial horizontal shareholdings exist (the same institutional investors have large enough holdings in the same competitors to make $\Delta\text{MHHI} > 200$). Investments in unconcentrated markets remain unconstrained by antitrust law. Second, because only a fraction of institutional investors are indexed, index funds might not alone suffice to generate large enough horizontal shareholdings to produce a ΔMHHI that exceeds 200. While institu-

²³¹ See Matt Levine, *Capital Charges and Illicit Indexing*, BLOOMBERG VIEW (July 21, 2015, 8:10 AM), <http://www.bloombergview.com/articles/2015-07-21/capital-charges-and-illicit-indexing> [<https://perma.cc/7CMU-SUQD>] (asserting, incorrectly, that this was my claim in a prior draft of this article).

tional investors as a whole hold 80% of S&P 500 corporate stock,²³² index funds (including exchange-traded funds) held only 10% of U.S. stock in 2013.²³³ Thus, if nonindexed funds invested in only one competitor in concentrated markets, the horizontal shareholdings of index funds might not suffice to exceed the Δ MHHI threshold. Third, index funds could avoid any risk of liability funds by changing how they index. They could index investments across industries without doing so across each firm in each industry. Fourth, if index funds alone would create a problem of anticompetitive horizontal shareholding in a concentrated market, and those index funds feel the benefits of diversification across all firms in that market exceed the benefits of influencing corporate governance, they could commit not to vote their shares.

Nonetheless, while index funds today may lack enough stock to alone create anticompetitive horizontal shareholdings in many concentrated markets, index funds have been growing rapidly in a way that increases the problem because they currently do index fully across horizontal competitors in each industry. Further, index funds have become increasingly active in using their shares to influence corporate management. The anticompetitive problem of horizontal shareholding means there is some antitrust cap on the share of the stock market that in the future can be allowed to go into fully indexed funds that actively vote shares. To avoid these anticompetitive problems, index funds must at some point either stop growing, give up any voting influence, or become indexed across industries rather than indexed across all competitors in each industry.

IV. CONCLUSION

Horizontal shareholdings are omnipresent in our economy given that institutional investors now own 80% of all stock in S&P 500 corporations. Economic models and recent empirical work show that such horizontal shareholdings are likely to anticompetitively raise prices when they are significant and the owned businesses compete in a concentrated market. Such horizontal shareholdings can help explain fundamental economic puzzles like the use of seemingly perverse methods of executive compensation, the recent failure of corporations to use high profits to expand output and employment, and the recent

²³² Stewart, *supra* note 10.

²³³ John C. Coates IV, *Thirty Years of Evolution in the Roles of Institutional Investors in Corporate Governance*, in RESEARCH HANDBOOK ON SHAREHOLDER POWER 79, 92 & tbl.4.4 (Jennifer G. Hill & Randall S. Thomas eds., 2015). It is unknown how frequently pension funds pursue indexing strategies, but if one assumes they do so as often as mutual funds, that would bring the percentage of U.S. stock that is indexed to about 20%. *Id.* at 92. However, pension funds generally have not contractually committed to index across all rivals in concentrated markets and thus could change such strategies more easily.

rise in economic inequality. These harmful economic effects could and should be reduced by using current antitrust law to challenge stock acquisitions that create anticompetitive horizontal shareholdings.