



Digital Commons@

Loyola Marymount University
LMU Loyola Law School

Loyola of Los Angeles Law Review

Volume 54 | Number 3

Article 3

Spring 5-1-2021

Empirical Findings in Need of a Theory—in Defense of Institutional Investors

Ittai Paldor

Hebrew University Faculty of Law

Follow this and additional works at: <https://digitalcommons.lmu.edu/llr>



Part of the [Antitrust and Trade Regulation Commons](#), and the [Banking and Finance Law Commons](#)

Recommended Citation

Ittai Paldor, *Empirical Findings in Need of a Theory—in Defense of Institutional Investors*, 54 Loy. L.A. L. Rev. 785 (2021).

This Article is brought to you for free and open access by the Law Reviews at Digital Commons @ Loyola Marymount University and Loyola Law School. It has been accepted for inclusion in Loyola of Los Angeles Law Review by an authorized administrator of Digital Commons@Loyola Marymount University and Loyola Law School. For more information, please contact digitalcommons@lmu.edu.

EMPIRICAL FINDINGS IN NEED OF A THEORY—IN DEFENSE OF INSTITUTIONAL INVESTORS

*Ittai Paldor**

In recent years theorists have argued that institutional investors' diversification harms competition. The theory is that when portfolio firms are cross-owned by institutional investors, managements compete less vigorously than they would have but for the cross ownership. The theory was bolstered by several empirical studies. The supporting empirical studies have been contested on methodological grounds, and some recent empirical studies make contradicting findings. But the theory of competitive harm itself is still considered persuasive. The federal antitrust agencies and competition agencies across the globe have begun to take action against instances of cross ownership based on this theory, in what has been described as an attack on the entire system of mutual fund holdings. This Article resolves the mismatch between theory and the most recent empirical findings. The Article develops an understanding of cross ownership and its effects on portfolio firms' conduct. It challenges the theory of competitive harm, and shows that institutional investors' common ownership cannot adversely affect portfolio firms' competitive conduct. Moreover, the Article shows that cross ownership actually safeguards against competitive harm of the kind envisioned in the literature. The theory developed in this Article suggests that enforcement measures taken against instances of cross ownership are socially harmful. They unduly deny investors the long-acknowledged benefits of diversification and disrupt the functioning of capital markets. These enforcement efforts should be abandoned as swiftly as they were initiated.

* Assistant Professor, Hebrew University Faculty of Law (SJD, University of Toronto, Faculty of Law). I am greatly indebted to Edward Rock, Jesse Fried, Assaf Hamdani, participants of the American Bar Association/New York University 2018 Annual Conference, and participants of the Academic Society for Competition Law 2018 Annual Conference, as well as participants of the Hebrew University Faculty of Law Seminar for extremely helpful comments, discussions, and suggestions on earlier drafts of this manuscript. The generous financial support provided by the Israel Science Foundation (grant number 877/18) is also greatly appreciated. Chaim Danino, Omri Leabovich, Dorin Erteschik, and Tahl Grunwald provided invaluable research assistance. All errors remain my own.

TABLE OF CONTENTS

INTRODUCTION	787
I. THE THEORY OF COMPETITIVE HARM	801
A. The Case of a Single Active Investor	803
B. The Case of a Single Passive Investor	805
C. The Case of Several Passive Investors.....	811
II. CHALLENGING (NOW) CONVENTIONAL WISDOM—CAN COMPETITION INDEED BE SPONTANEOUSLY CURTAILED?.....	812
A. Managerial Compensation Linked to Industry Performance.....	813
B. Future External Remuneration.....	817
1. The Basic Remuneration Scheme	817
2. The Scenario Is Implausible.....	819
3. The Scenario Has Nothing to Do with Cross Ownership.....	820
4. The Scenario Is Frustrated by Capital Market Players' Expected Response	822
5. The Opposing Interests of Institutional Investors Safeguard Against Competitive Harm	823
C. Future Internal Remuneration.....	829
III. THE EMPIRICAL EVIDENCE.....	832
IV. POLICY IMPLICATIONS	836

INTRODUCTION

This Article suggests a new understanding of the competitive impact of institutional investors' diversification strategy. The view currently prevalent in the literature, which has been adopted by the federal antitrust enforcement agencies and competition agencies across the globe, is that institutional investors' cross ownership chills portfolio firms' competitive incentives.¹ The Article explains why this intuitive theory of competitive harm is flawed. In fact, the Article shows that institutional investors' cross ownership actually safeguards against the competitive harm argued for in the recent literature.

Institutional investors are "the dominant capital market players of our time, displacing dispersed individual investors, who now obtain exposure to equity markets through the intermediation of the institutional investors."² They have become the dominant owners of public equity in most Organization for Economic Co-operation and Development (OECD) countries.³ According to an OECD report for 2018, in approximately half of OECD countries institutional investors' financial assets amounted to over 25 percent of the respective country's GDP, and in some countries far exceeded the country's GDP.⁴ Institutional investors account for the vast majority of equity-holding across the globe. According to some estimates, nearly 80 percent of the total value of the U.S. stock market is held by institutional investors.⁵ U.S.-registered investment companies

1. Steven Davidoff Solomon, *Rise of Institutional Investors Raises Questions of Collusion*, N.Y. TIMES (Apr. 12, 2016), <https://www.nytimes.com/2016/04/13/business/dealbook/rise-of-institutional-investors-raisesquestions-of-collusion.html>; Pauline Kennedy et al., *The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence* 2 (Jul. 26, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3008331 (unpublished paper); Menesh S. Patel, *Common Ownership, Institutional Investors, and Antitrust*, 82 ANTITRUST L.J. 279, 281 (2018) (although at least one of the investigations mentioned by Patel has apparently been abandoned); Edward B. Rock & Daniel L. Rubinfeld, *Antitrust for Institutional Investors*, 82 ANTITRUST L.J. 221, 222 (2018); Case C-M.7932, Dow/DuPont, at 1 (Mar. 23, 2017), http://ec.europa.eu/competition/mergers/cases/decisions/m7932_13668_3.pdf.

2. Eric A. Posner et al., *A Proposal to Limit the Anticompetitive Power of Institutional Investors*, 81 ANTITRUST L.J. 669, 669 (2017).

3. ORG. FOR ECON. COOP. & DEV., OECD INSTITUTIONAL INVESTOR STATISTICS 2010–2017, at 15–108 (2018).

4. *Id.* at 12–14.

5. Posner et al., *supra* note 2, at 674; Elliott J. Weiss & John S. Beckerman, *Let the Money Do the Monitoring: How Institutional Investors Can Reduce Agency Costs in Securities Class Actions*, 104 YALE L.J. 2053, 2056 (1995); Patel, *supra* note 1, at 279; José Azar et al., *Anticompetitive Effects of Common Ownership*, 73 J. FIN. 1513, 1514 (2018); Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267, 1277–78 (2016).

“managed more than \$19 trillion in assets at year-end 2016, largely on behalf of more than 95 million US retail investors.”⁶ The total value of the assets held by these institutional investors is constantly rising.⁷ In the United Kingdom, institutional investors managed approximately £4.75 trillion in assets in 2016,⁸ and direct ownership of stock by retail investors has declined from 54 percent in the mid-1960s to 11 percent in 2014.⁹ In Canada, too, institutional portfolio has been constantly rising for 65 years.¹⁰ By 2014 institutional investors held nearly C\$2 trillion in assets.¹¹ Across OECD countries, assets held by institutional investors totaled more than \$73.4 trillion in 2011.¹² Any rule regulating the investment strategies of these investors is thus of major significance to the U.S. economy, as well as to the global economy.

Institutional investors regularly diversify their investment across a large number of firms and industries.¹³ This diversification is socially important. First, diversification safeguards the investment against idiosyncratic (both firm-specific and industry-specific) risk.¹⁴ Second, and closely related, diversified investments obviate the need to pick specific stock.¹⁵ This lowers the cost of obtaining information and analyzing it,¹⁶ and even the cost of monitoring management. At

6. INV. CO. INST., 2017 INVESTMENT COMPANY FACT BOOK: A REVIEW OF TRENDS AND ACTIVITIES IN THE INVESTMENT COMPANY INDUSTRY 6 (57th ed. 2017).

7. See *id.* at 6–9. The constant trend has shown two dips, in 2008 and in 2011. *Id.* at 9. Both resulted in an almost immediate bounce back. *Id.* For a survey of a similar trend across the OECD area (a 6.6 percent average annual increase in the 1995–2005 decade), see Eric Gonnard et al., *Recent Trend in Institutional Investors Statistics*, 2008 OECD J.: FIN. MKT. TRENDS 1, 1, 3, <http://www.oecd.org/finance/financial-markets/42143444.pdf>.

8. ORG. FOR ECON. COOP. & DEV., OECD INSTITUTIONAL INVESTOR STATISTICS 2009–2016, at 168–69 (2017).

9. Serdar Çelik & Mats Isaksson, *Institutional Investors and Ownership Engagement*, 2013 OECD J.: FIN. MKT. TRENDS 93, 93, 96 (2014), <https://www.oecd.org/finance/Institutional-investors-ownership-engagement.pdf>.

10. Jeffrey G. MacIntosh, *The Role of Institutional and Retail Investors in Canadian Capital Markets*, 31 OSGOODE HALL L.J. 371, 373–74 n.1 (1993).

11. Alix d’Anglejan-Chatillon & Jeffrey Elliott, *Canada*, in THE ASSET MANAGEMENT REVIEW 111, 118 (Paul Dickson ed., 6th ed. 2017); Research, 2015 Canadian Institutional Investors: Institutional Asset Allocation, Greenwich Assocs. (Jan. 2016), <https://www.greenwich.com/sites/default/files/reports/2015%20Canadian%20Institutional%20Investors%20-%20Institutional%20Asset%20Allocation%20-%20Graphics.pdf>.

12. Çelik & Isaksson, *supra* note 9, at 97.

13. Patel, *supra* note 1, at 283–84.

14. Harry Markowitz, *Portfolio Selection*, 7 J. FIN. 77, 89 (1952).

15. Dov Solomon, *Rational Apathy of Shareholders: How to Awake Investors from Their Sleep*, 39 TEL AVIV UNIV. L. REV. 317, 340–41 (2016).

16. Posner et al., *supra* note 2, at 672–73.

times, the diversification is achieved almost mechanically through index funds,¹⁷ which require practically no analysis prior to purchasing stock, and no post-purchase monitoring of day-to-day activities.¹⁸ In other cases, the diversification is less mechanical. But whether the investment is entirely mechanical or requires some limited human involvement, the costs of investment are reduced dramatically. Of course, the reduced risk and lower costs of investment benefit not only the institutional investors themselves, but also retail investors. These advantages translate into lower fees and reduced risk for retail investors.¹⁹

One immediate result of institutional investors' diversification and the large amount of funds they manage is that they own stock of a large number of firms and across a large number of industries.²⁰ Institutional investors are estimated to be the (joint) largest shareholders of nearly 90 percent of public companies in the S&P 500.²¹ When combined, the largest institutional investors (BlackRock, Vanguard and State Street) are "the single largest shareholder of at least 40 percent of all public companies in the United States."²² Naturally, institutional investors' portfolio is often comprised of stock of several firms that are active in the same industry. "The probability that two randomly selected [S&P 1500] firms in the same industry . . . have a common shareholder with at least 5% stakes in both firms [is in the vicinity of] 90 percent" ²³

17. Which Posner et al. estimate account for less than 20 percent of the U.S. stock market. *Id.* at 673. See *id.* at 673 n.12 for an explanation of this estimate.

18. For a comprehensive account of index funds' disengagement in what they term "micro-mechanisms" and for an analysis of why involvement in portfolio firms' day-to-day activity is unlikely, see C. Scott Hemphill & Marcel Kahan, *The Strategies of Anticompetitive Common Ownership*, 129 YALE L.J. 1392, 1450–52 (2020).

19. See Posner et al., *supra* note 2, at 673.

20. See, e.g., Elhauge, *supra* note 5, at 1268.

21. Posner et al., *supra* note 2, at 674.

22. *Id.*

23. José Azar, Portfolio Diversification, Market Power, and the Theory of the Firm 2 (2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2811221 (unpublished paper).

At the same time, many industries are oligopolistic industries,²⁴ in which there are relatively few competitors.²⁵ Given the prevalence of oligopolistic industries on the one hand and the dominance of institutional investors on the other, it seems safe to conclude, as scholars and others do, that diversification by institutional investors has resulted in a widespread phenomenon of several institutional investors holding stock of several firms that compete amongst themselves in oligopolistic product markets.²⁶

Until relatively recently, the passive common ownership phenomenon was considered competitively benign. As such, it was exempt from antitrust scrutiny and from premerger notification filings under what has come to be known as the “investment-only exemption” afforded by the Hart-Scott-Rodino Antitrust Improvement Act (HSR).²⁷ The HSR imposes premerger notification obligations on parties to certain stock acquisitions and mergers, most notably acquisitions of stock meeting minimum “size-of-transaction” and “size-of-person” thresholds.²⁸ Such transactions require premerger notifications to be filed with the federal antitrust agencies—the Department of Justice and the Federal Trade Commission.²⁹ When premerger notification is mandated, the parties may not consummate the merger until a thirty-day waiting period from the day of filing has

24. Martin Pelletier, *Our Nation of Oligopolies Not Good for Consumers, but Great for Investors*, FIN. POST (July 31, 2018), <https://business.financialpost.com/investing/how-canadas-oligopolies-have-been-big-winners-for-investors>; Elhauge, *supra* note 5, at 1278 n.50 (pointing out that industry definitions may be different from antitrust market definitions); *Business in America: Too Much of a Good Thing*, ECONOMIST (Mar. 26, 2016), <https://www.economist.com/news/briefing/21695385-profits-are-too-high-america-needs-giant-dose-competition-too-much-good-thing>.

25. The generally accepted concentration measure is the Herfindahl-Hirschman Index (HHI), which sums the squares of each firm’s market share. Under the Horizontal Merger Guidelines, an industry with an HHI above 2500 is generally considered highly concentrated. *See* U.S. DEP’T JUST. & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES 18–19 (2010) [hereinafter HORIZONTAL MERGER GUIDELINES]. As explained subsequently, this regularly implies an industry with four competitors or fewer.

26. *Corporate Concentration: The Creep of Consolidation Across America’s Corporate Landscape*, ECONOMIST (Mar. 24, 2016), <https://www.economist.com/blogs/graphicdetail/2016/03/daily-chart-13>. On oligopolistic markets, see George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44 (1964).

27. Hart-Scott-Rodino Antitrust Improvements Act of 1976, Pub. L. No. 94-435, 90 Stat. 1383 (codified as amended in scattered sections of 15 U.S.C.); 15 U.S.C. § 18a(c)(9) (2018).

28. 15 U.S.C. § 18a(a). The size-of-transaction threshold has recently been raised to \$376 million, or \$94 million if either the acquiring or acquired party has annual net sales or total assets of at least \$18.8 million and the other party has annual net sales or total assets of at least \$188.8 million (the “person-size-threshold”). *See* Revised Jurisdictional Thresholds for Section 7A of the Clayton Act, 86 Fed. Reg. 7880, 7880 (Mar. 4, 2021).

29. 15 U.S.C. § 18a(d).

elapsed.³⁰ During this waiting period, the agencies assess whether or not the effect of the proposed transaction may be to substantially lessen competition or tend to create a monopoly in any line of commerce, as per section 7 of the Clayton Act.³¹ If they find the proposed merger competitively problematic, they may attempt to block it.³²

The HSR exempts acquisitions meeting the thresholds from premerger notification obligations when the acquirer will not hold over 10 percent of the issuer's voting securities, and when the acquisition is made "solely for the purpose of investment."³³ Until recently, this exemption was interpreted to apply to institutional investors' acquisition of stock for purpose of investment.³⁴ Consequently, when institutional investors purchased stock as part of their ordinary course of business, the purchase was effectively immune from antitrust scrutiny. Legal doctrine echoed the economic understanding according to which such transactions posed no competitive harm.³⁵

But the tide has changed. Recent academic work has argued that the phenomenon of several institutional investors holding equity of

30. *Id.* § 18a(a), (b)(1)(B).

31. *Id.* § 18.

32. FED. TRADE COMM'N, PREMERGER NOTIFICATION OFF., INTRODUCTORY GUIDE I: WHAT IS THE PREMERGER NOTIFICATION PROGRAM? AN OVERVIEW 13–14 (2009), <https://www.ftc.gov/sites/default/files/attachments/premerger-introductory-guides/guide1.pdf> [hereinafter INTRODUCTORY GUIDE TO PREMERGER NOTIFICATION]. In order to facilitate an effective review, the HSR sets a statutory waiting period (thirty days for most transactions, and fifteen days in the case of a cash tender offer or a bankruptcy sale), during which the transaction may not be consummated. *See id.* at 9.

33. 15 U.S.C. § 18a(c)(9). The HSR Rule 801.1i(1) states: "Voting securities are held or acquired 'solely for the purpose of investment' 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." 16 C.F.R. § 801.1(i)(1) (2020).

34. *But see* Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67 ANTITRUST L.J. 559, 562, 602–03 (2000) (contesting the point made in 5 PHILLIP E. AREEDA & DONALD F. TURNER, ANTITRUST LAW ¶ 1203(d), at 322(1980)); David Gilo, *The Anticompetitive Effect of Passive Investment*, 99 MICH. L. REV. 1 (2000). Note, however, that Gilo focuses on the anti-competitive effects of passive investments by a single shareholder that controls one of the firms. *Id.* at 22–28. *See also* O'Brien & Salop, *supra* note 34, at 585 for an analysis of horizontal joint ventures acting independently of their parents' incentives.

35. A comprehensive account of both the case law and the enforcement policy of the Department of Justice and the Federal Trade Commission is offered by Rock & Rubinfeld, *supra* note 1, at 252–58. On the 'investment-only' exemption, see Debbie Feinstein et al., "Investment-Only" Means Just That, FED. TRADE COMM'N (Aug. 24, 2015, 5:25 PM), <https://www.ftc.gov/news-events/blogs/competition-matters/2015/08/investment-only-means-just>.

firms that compete in oligopolistic product markets is competitively harmful. Importantly, the argument is that institutional investors' cross ownership of stock in oligopolistic markets results in coordinated-like anti-competitive pricing even if these institutional investors do not control any of the firms in which they invest, and regardless of these institutional investors' conduct; that is even if they do not coordinate amongst themselves or communicate with management in any way.³⁶ The argument is that "no such communication or coordination is necessary for the basic anti-competitive effect, which turns purely on the structural incentives created by horizontal shareholdings."³⁷

The theory itself seems fairly straightforward: Competition between firms in the same industry erodes total industry profits. When institutional investors cross-own firms that compete in the same industry, they prefer that competition between these firms be as lax as possible. If feasible, they prefer that competition be entirely eliminated. Economically, cross-owning institutional investors are invested in the industry as a whole and not in a specific firm. Much like any cross-owning shareholder, institutional cross owners gain nothing from one portfolio firm increasing its market share at its competitors' expense. They thus have nothing to gain and everything to lose from price reductions, and prefer that competition between portfolio firms be eradicated. That much is true for any cross owner of stock. However, institutional investors are unique in an important aspect. In addition to their interest in lax competition, their holdings are publicly known³⁸ and they are prominent market players. Portfolio firms' managements are aware that they are owned by shareholders who have stake in the firm's competitor (or competitors) as well. Even if nothing is communicated from the institutional investors, and even if these investors do not control the firms or instruct management, managers realize that their shareholders want them to compete less vigorously, and relax competition. In other settings of cross

36. See O'Brien & Salop, *supra* note 34, at 568; Azar et al., *supra* note 5, at 1558; Posner et al., *supra* note 2, at 676; Elhauge, *supra* note 5, at 1270.

37. Elhauge, *supra* note 5, at 1274.

38. When the investors are index funds, their holdings are obvious to all. Even if they are not, Securities and Exchange Commission (SEC) rules require all institutional investors to disclose all their holdings quarterly. 15 U.S.C. § 78m(f)(1) (2012); *Form 13F—Reports Filed by Institutional Investment Managers*, INVESTOR.GOV; U.S. SEC. & EXCH. COMM'N, <https://www.investor.gov/inroduction-investing/investing-basics/glossary/form-13f-reports-filed-institutional-investment> (last visited Feb. 21, 2021); see Rock & Rubinfeld, *supra* note 1, at 221.

ownership, managements do not necessarily know who their non-controlling shareholders are, because these are anonymous investors. Even if managements know who their own shareholders are, they do not know who their competitors' shareholders are. Thus, under regular circumstances, cross ownership will have no adverse impact on competition, unless the shareholders' preferences are expressly communicated, and management is instructed to not compete accordingly. By contrast, when institutional investors cross-own, competition between portfolio firms is spontaneously chilled. The theory itself is intuitive, and its underpinnings have attracted very little attention.

The hypothesis that cross ownership by institutional investors dampens competition was supported by an influential empirical article. Azar et al., focusing on the airline industry, attempted to assess the effect of a change in shareholder-level concentration on ticket prices.³⁹ They utilized a "natural shock"—a merger between institutional investors that hold stock in the airline industry—to gauge the effect of a change in shareholder-level concentration on ticket prices.⁴⁰ They found that following BlackRock's acquisition of Barclays Global Investors, airline ticket prices increased by 3 percent to 7 percent.⁴¹ Given the approximately 4 percent profitability in the industry, this is a significant change.⁴² It implies that profitability increased by anything between 75 percent to 175 percent as a result of a change in shareholder-level concentration, with no apparent change in concentration in the industry itself.⁴³

The empirical findings were soon challenged by two sets of empirical articles. The first set of articles strikes at the original study itself, and challenges the study's methodology and conclusions. The second set offers independent findings that are in opposition to those of the original study. Daniel O'Brien and Keith Waehrer,⁴⁴ Edward

39. Azar et al., *supra* note 5, at 1514.

40. *Id.* at 1535.

41. *Id.* at 1517–18.

42. *Id.* at 1517.

43. The authors used a modified measurement of concentration that accounts for ownership-concentration (a modified HHI, "MHHI"), originally developed in O'Brien & Salop, *supra* note 34.

44. Daniel P. O'Brien & Keith Waehrer, The Competitive Effects of Common Ownership: We Know Less Than We Think (Feb. 22, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2922677 (unpublished paper).

Rock and Daniel Rubinfeld,⁴⁵ and Scott Hemphill and Marcel Kahan⁴⁶ all challenged the methodology of the original empirical study.⁴⁷ Kennedy et al. conducted an independent study of the same industry while addressing the methodological issues identified in the key empirical research.⁴⁸ Their study found no effect of common ownership on prices.⁴⁹ Similarly, Gramlich and Grundl conducted an independent study focusing on the banking industry,⁵⁰ another industry in which an empirical study initially found supra-competitive profits associated with shareholder-level concentration.⁵¹ Gramlich and Grundl found mixed, although preliminary, results.⁵² The empirical pendulum has thus begun to swing back. But notwithstanding the state of the empirical research, the underlying theory of competitive harm remains unchallenged. Despite the empirical findings, the theory is considered compelling, and is heavily relied on.⁵³

Naturally, the recent economic analyses suggesting that passive cross ownership has an anti-competitive structural effect have been supplemented by legal arguments suggesting that institutional investors' common ownership of oligopolistic firms' stock should require premerger filing and antitrust scrutiny even when these are passive investments.⁵⁴ It has been argued that the 'investment-only' exemption afforded by the HSR can and should be interpreted to be inapplicable to such acquisitions.⁵⁵

The academic writings challenging institutional investors' business model have already begun to impact enforcement agencies. These writings have found a willing ear at the federal antitrust

45. Rock & Rubinfeld, *supra* note 1, at 1.

46. Hemphill & Kahan, *supra* note 18.

47. The original empirical study by Azar et al. was first available in 2014, when the authors posted it on Social Science Research Network.

48. Kennedy et al., *supra* note 1.

49. *Id.* at 22.

50. Jacob Gramlich & Serafin Grundl, *Estimating the Competitive Effects of Common Ownership* (Divs. Rsch. & Stat. & Monetary Affs., Fed. Reserve Bd., Finance and Economics Discussion Series, Working Paper No. 2017-029, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2940137.

51. José Azar et al., *Ultimate Ownership and Bank Competition 1* (May 4, 2019), <http://ssrn.com/abstract=2710252> (unpublished paper).

52. Gramlich & Grundl, *supra* note 50, at 1.

53. *E.g.*, Elhauge, *supra* note 5; Posner et al., *supra* note 2.

54. Elhauge, *supra* note 5, at 1309–12.

55. *Id.* at 1301–14; Posner et al., *supra* note 2, at 678.

agencies—the Antitrust Division at the Department of Justice and the Federal Trade Commission. These agencies have begun to investigate instances of cross ownership in several industries.⁵⁶ The investigations themselves are a potential attack on the entire system of mutual fund holdings,⁵⁷ given institutional investors’ sensitivity to controversy and scandals.⁵⁸ If action is taken following these investigations, this will clearly force institutional investors to alter their competitive strategy. The European Commission has done even more than investigate instances of cross ownership. It has recently blocked a merger between Dow and Du Pont based, *inter alia*, on the recent theory of competitive harm.⁵⁹ In fact, the European Commission seems to have even extended the theory of competitive harm, explaining that “[w]hile the economic literature has, to the best of the Commission’s knowledge, focused on the effects of cross shareholding and common shareholding on price competition, the economic rationale of such effects applies to innovation competition.”⁶⁰

The now-prevalent view that passive investments by institutional investors is competitively harmful has even brought about suggestions to limit institutional investors’ diversification, limiting them to either owning stock in no more than one firm per (oligopolistic) industry, or holding stock not exceeding 1 percent of the total value of any (oligopolistic) industry.⁶¹ Such proposals, if adopted, will adversely affect diversification, and significantly increase institutional investors’ portfolios’ exposure to idiosyncratic risk.⁶²

This Article develops a new understanding of the market forces at play. It argues that the competitive concerns are misplaced, and that

56. Kennedy et al., *supra* note 1, at 2 n.4; Solomon, *supra* note 1. Although at least one of these investigations has apparently been abandoned. See Rock & Rubinfeld, *supra* note 1, at 275–77.

57. Solomon, *supra* note 1.

58. Hemphill & Kahan, *supra* note 18, at 1435, 1442.

59. Case C-M.7932, Dow/DuPont, at 1, 28 n.85, Annex 5 (Mar. 23, 2017), http://ec.europa.eu/competition/mergers/cases/decisions/m7932_13668_3.pdf.

60. *Id.* at 383.

61. Posner et al., *supra* note 2, at 708; see also Rock & Rubinfeld, *supra* note 1, at 263–67 (discussing alternatives to Posner et al.’s suggestions to limit institutional investors’ diversification).

62. Although Posner et al. argue that much of this exposure may be mitigated. See Posner et al., *supra* note 2, at 710–11.

antitrust law should not deal with institutional investors' purely passive investments at all.

Specifically, the Article explains that common ownership of stock does not harm competition in any way. The key reason for this is that common ownership by non-controlling institutional investors cannot incentivize managers to compete any less vigorously than they would have absent common ownership. Cross ownership can adversely impact competition only if institutional investors coordinate between themselves and communicate with portfolio firms in a very elaborate manner. Such coordination is neither alleged in the recent academic writings nor likely given the potential criminal liability and reputational cost associated with it. If managers are not spontaneously incentivized to compete less vigorously and are not explicitly instructed to do so, their competitive conduct will remain intact. Thus, passive (non-controlling) common ownership of stock does not worsen the competitive situation in any way. Spontaneous harm to competition is impossible. In fact, cross ownership safeguards against competitive harm of the kind argued for in the recent literature.

The key observation developed in this Article is that in addition to increasing total industry profits, anti-competitive conduct of the kind argued for in the recent literature entails an additional inseparable element—the tunneling element. When firms engage in anti-competitive coordination of the kind envisaged by the recent literature, they not only increase total industry profits. They also tunnel all of these profits to one of the firms. This is a unique feature of the anti-competitive conduct argued for in the recent literature. In all other anti-competitive settings, all coordinating firms gain from the anti-competitive conduct. The unique tunneling feature has important implications for the analysis of the anti-competitive potential. It makes spontaneous competitive harm unlikely, because some of the firms in the industry will lose from the coordinated conduct.

As an illustrative example, we may consider two competitors, firm *A* and firm *B*, both of which sell an identical product for the competitive price of one dollar per unit. If they form a cartel, they can each profitably sell the product for three dollars per unit. The price increase will not result in loss of sales to the competitor (whose price will not be more attractive to consumers). A cartel will benefit both

coordinating firms to the tune of two dollars per unit.⁶³ By contrast, in the anti-competitive setting envisaged by the recent theory of competitive harm, one of the competitors, firm *A* for example, increases its price to a level that is unprofitable for it (say, four dollars per unit), so that firm *B* may then profitably charge the monopoly price of three dollars per unit. From an overall industry perspective, the outcome is indeed similar to a cartel or a monopoly: The product will be sold to consumers for three dollars per unit, and industry profits will be maximized. From the joint shareholder's (or shareholders') perspective, such a result is even superior to that of an outright cartel. The joint shareholders will want managements to conduct themselves so that profits to flow to the firm in which the shareholders' holdings are greater—firm *B* in the preceding example. Through their larger holdings in the firm to which profits are tunneled (firm *B*), the shareholders will accrue a larger portion of the industry's rents. But importantly, the strategy is unprofitable from firm *A*'s perspective. It will make no sales at the price of four dollars. Firm *A* must lose, so that firm *B* profits.

The anti-competitive conduct identified by the recent literature is thus markedly different from all other anti-competitive pricing settings. In all other long-recognized settings of anti-competitive pricing, all coordinating firms profit from coordination. Whether the coordination takes the form of an outright cartel, a merger, or tacit collusion,⁶⁴ all coordinating (or merging) firms' profits are increased as a direct consequence of the elimination of competition.⁶⁵ By contrast, in the setting of passive cross ownership, all firms in the industry but one lose from the anti-competitive conduct. They are even worse off than they would have been under perfect competition. Not only the additional profits, but all industry profits are tunneled to one of the firms in the industry.

63. Firms in a cartel will also lose some sales, because elevated prices will price some consumers out of the market. Thus, the cartelistic firms will need to balance the additional two dollars per unit against the forgone profits. But this does not alter the core analysis. It complicates the computation of overall gains, but the overall effect on the firms' profits will be positive. For an elaborate account of the difficulties in assessing the precise effects of cartels on prices, quantities, and profits, see DAVID ASHTON & DAVID HENRY, *COMPETITION DAMAGES ACTIONS IN THE EU: LAW AND PRACTICE* 213–19 (2013).

64. On tacit collusion, see generally Stigler, *supra* note 26 (discussing factors that govern the practicability of tacit collusion).

65. On the similarity between oligopolies and cartels, see Richard A. Posner, *Oligopoly and the Antitrust Laws: A Suggested Approach*, 21 STAN. L. REV. 1562, 1566–75 (1969).

To be sure, as the tunneling effect accompanies an increase in total industry profits, there is scope for a mutually beneficial arrangement. The firm that directly benefits from the scheme, or the joint shareholder, may make payments to the other firms (or to their managements), thus incentivizing them to participate in the scheme. But the point is precisely that such an elaborate compensation mechanism is necessary. It must be negotiated and communicated to the managements and shareholders of the losing firms. Cross ownership cannot spontaneously harm competition. The implication of this observation on the likelihood of the scenario is dramatic and goes far beyond the mere technical issue of reaching an agreement. Both communicating with management on these issues and management's acquiescence would violate antitrust laws as well as corporate fiduciary duties.⁶⁶ And institutional investors' sensitivity to scandals and criminal offenses makes them much less likely than others to participate in such a scheme. In any event, unless both managements and institutional investors are willing to take the risk of severe criminal sanctions, competition cannot be harmed in any way. Spontaneous harm to competition is certainly not a concern.

A helpful analogy may be the difference between standard price-fixing cartels and bid-rigging cartels.⁶⁷ In a price fixing cartel, all cartel members directly profit from the cartel. They all share in the cartelistic rents. In a bid-rigging cartel, by contrast, only the bidder that is allocated the specific bid directly gains from the cartel. It wins the bid at prices that are more favorable to it than had it competed. But the immediate effect of a bid-rigging cartel on all other cartel members is negative. They lose the bid. This does not suggest, of course, that bid-rigging cartels are impossible. They can, and do, exist. But they require some agreed mechanism through which the losing cartel members are compensated by the cartel member that wins the bid, thereby conquering the entire market at a monopoly price.⁶⁸ In some bid-rigging cartels the winning cartel member will make direct payments to other cartel members. In other bid-rigging cartels compensation takes the form of shielding the losing cartel members from competition in future bids by allocating future bids to these cartel

66. See *infra* text accompanying notes 132–39.

67. See ROBERT C. MARSHALL & LESLIE M. MARX, *THE ECONOMICS OF COLLUSION: CARTELS AND BIDDING RINGS* 29–54, 55–70 (2012).

68. *Id.* at 25.

members. Regardless of the precise compensation technique, spontaneous bid rigging is impossible. Similarly, in the scenario envisaged by the recent literature all firms but one lose from the coordinated conduct. A scheme for compensating them must therefore be put in place. Spontaneous harm to competition is unlikely.

The idea of spontaneous competitive harm is, in fact, even less persuasive than the analogy to bid rigging suggests. This is due to the fact that it is not a single shareholder who cross-owns portfolio firms, but several institutional investors. The difference in these institutional investors' holdings guarantees that if one institutional investor benefits from the scheme, another institutional investor will lose. As subsequently explained in detail, in all of the industries surveyed in the empirical studies, some institutional investors' holdings were larger in one portfolio firm, while other institutional investors had larger stakes in other portfolio firms.⁶⁹ Thus, any conduct that tunneled profits to the benefit of one institutional investor would have simultaneously harmed other institutional investors. The scheme would harm the majority of the prominent shareholders—precisely those shareholders that managements presumably want to benefit. Another layer of complication is introduced. Not only are managers ill-incentivized to participate in the scheme, they also cannot spontaneously realize which institutional investor they are to serve, and which they are to alienate. The fact that there are many institutional investors who cross-own further frustrates any possibility of spontaneous harm.

Once again, an agreement could theoretically be struck between institutional investors according to which the benefitting institutional investor compensates the losing institutional investors. But such an agreement would, as explained, be an outright criminal offense, which institutional investors are unlikely to engage in. In any event, spontaneous coordination is impossible. Perhaps counter-intuitively, cross ownership by several institutional investors actually safeguards against any spontaneous anti-competitive outcome.

Finally, spontaneous competitive harm is less likely not only due to lack of (managerial) incentive and due to other shareholders' expected retaliation, but also due to the difficulty of reaching an equilibrium without explicit coordination, which, again, is neither

69. See *infra* text accompanying notes 150–65.

alleged nor likely.⁷⁰ Under standard coordination, all firms must price at the monopoly price that optimizes industry profits (three dollars in the numeric example previously used).⁷¹ This price is known to all firms in the industry. Coordination is thus relatively simple.⁷² By contrast, the anti-competitive setting envisioned by the recent theory of competitive harm requires differential pricing, with some firms pricing at supra-monopolistic levels, and others pricing at the monopoly level. This requires a far more complex and elaborate agreement. Firms must agree on which firms will price at one price and which will price at another. Another layer of complexity is introduced, again complicating any hope of spontaneous coordination.

The theory developed in this Article helps understand the findings of the recent empirical studies. As mentioned, the most recent empirical studies find no correlation between shareholder-level concentration and prices. These findings are puzzling, given what seems to be an infallible theory of competitive harm. The recent empirical studies and the theory developed in this Article reinforce one another.

The remainder of this Article is structured as follows: Part I introduces the now-prevailing view according to which the cross-ownership phenomenon is harmful to competition; Part II develops the key hypothesis of this Article. It challenges the arguments presented in Part I and attempts to demonstrate that there are no anti-competitive outcomes that are attributable to truly passive common ownership of stock. Part III discusses the empirical evidence. It reviews the criticism launched by O'Brien and Waehrer, Rock and Rubinfeld, and Hemphill and Kahan against the original empirical studies finding a correlation between shareholder-level concentration and industry profits. It also reviews the newer (opposite) findings. While additional empirical work is undoubtedly called for, the theory advanced in the current Article seems well supported by the most recent empirical studies and helps explain these findings. Part IV offers a brief conclusion.

70. See Hemphill & Kahan, *supra* note 18, at 1409, 1435.

71. See HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* §§ 1.2, 4.1 (5th ed. 2016).

72. Adherence and compliance are undoubtedly an issue because each firm has an inherent incentive to cheat on the cartel. *Id.* § 4.1. But at least the first element of coordination—setting prices, whether through an explicit agreement or through tacit collusion—is simple.

I. THE THEORY OF COMPETITIVE HARM

In order to understand the theory of competitive harm it is helpful to begin with the setting of a single retail investor holding stakes in competing firms, and then proceed to the more complicated setting of a single passive, non-controlling investor with cross holding in competing firms. Building on the analyses of these two settings, the more complex setting of several passive investors with non-controlling stakes in competing firms can then be introduced and analyzed. This step-by-step analysis will help reveal the shortcomings of the hypothesis regarding cross ownership and its anti-competitive potential.

Before proceeding, a preliminary note with respect to the structure of the product market is in order. The hypothesis developed in the literature is that cross ownership brings about spontaneous competitive harm in oligopolistic product market industries.⁷³ The term ‘oligopolistic industry’ is an imprecise economic term. Industrial organization theory predicts that, all else equal, the intensity of competition will decrease as the number of competitors decreases.⁷⁴ But the precise price and output levels depend on a host of additional factors, making it impossible to accurately predict real life outcomes.⁷⁵ As a workable tool, the federal antitrust agencies use a widely accepted concentration index, the HHI,⁷⁶ which is based on the number of competitors and on their respective market shares, to determine whether an industry is unconcentrated, moderately concentrated, or highly concentrated.⁷⁷ For all practical purposes, we

73. See HORIZONTAL MERGER GUIDELINES, *supra* note 25, at 19. But see Posner et al.’s point regarding markets with HHI’s that are lower than 2,500, but with relatively high MHHI’s (at 24). Posner et al., *supra* note 2, at 697–98. On the MHHI, see *infra* text accompanying note 178.

74. Stigler, *supra* note 26, at 57.

75. *Id.* at 48.

76. But see Louis Kaplow, *Why (Ever) Define Markets?*, 124 HARV. L. REV. 437, 487 n.99 (2010) (arguing the HHI is not always an accurate indicator of when mergers will result in enhanced market power and increased prices). For a competing view, see Malcom B. Coate & Joseph J. Simons, *In Defense of Market Definition*, 57 ANTITRUST BULL. 667 (2012) and Duncan Cameron et al., *Good Riddance to Market Definition?*, 57 ANTITRUST BULL. 719 (2012). For Professor Kaplow’s response to several commentators, see Louis Kaplow, *Market Definition Alchemy*, 57 ANTITRUST BULL. 915, (2012) and Herbert Hovenkamp, *Markets in Merger Analysis*, 57 ANTITRUST BULL. 887, 904–11 (2012) (discussing Professor Kaplow’s work and the “disconnect between merger analysis and articulated merger goals”). Despite the nearly decade-old challenges to market definition, it continues to be employed by the federal antitrust agencies.

77. HORIZONTAL MERGER GUIDELINES, *supra* note 25, at 18–19. The guidelines explicitly state that market shares and the tentative thresholds cannot be the end of the analysis:

may regard an oligopolistic industry as one with four major competitors or fewer.⁷⁸ Following the analyses developed in recent writings, this Article too focuses on product markets in which competition is of an oligopolistic nature. For ease of exposition, I normally use the case of a product-market duopoly—a two-firm industry. The analysis is equally applicable to other highly concentrated markets.⁷⁹

The purpose of these thresholds is not to provide a rigid screen to separate competitively benign mergers from anticompetitive ones, although high levels of concentration do raise concerns. Rather, they provide one way to identify some mergers unlikely to raise competitive concerns and some others for which it is particularly important to examine whether other competitive factors confirm, reinforce, or counteract the potentially harmful effects of increased concentration.

Id. at 19.

78. According to the HORIZONTAL MERGER GUIDELINES, industries with HHIs of 2,500 and higher are considered highly concentrated. *Id.* Mathematically, an HHI of over 2,500 normally means that there are four or fewer major firms in the market, Elhauge, *supra* note 5, at 1277, although theoretically an industry with over four competitors may have an HHI of over 2,500, and this becomes more likely as the disparity in market shares increases.

79. Of course, the “but-for” quantity-price equilibria might be different; that is, the equilibrium in a three-firm oligopoly may be different than the equilibrium in a duopoly or a four-firm industry. The different equilibria would depend not only on the number of competitors, but also on the nature of competition in the industry. *See generally* JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 239–76 (1988) (analyzing how repeated interactions impact competition). But in terms of the effect common ownership has on competition, the analysis is no different.

Closely related, the analysis developed in this Article is not to be taken to suggest that markets in which institutional investors are found to commonly own stock are necessarily competitive. Regardless of common ownership, tacit collusion, which is generally legal, *see* Bell Atl. Corp. v. Twombly, 550 U.S. 544, 553–54 (2007); Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 227 (1993); *In re* Text Messaging Antitrust Litig., 782 F.3d 867, 872 (7th Cir. 2015), occurs in concentrated product markets. Neither the existence of tacit collusion nor the concomitant supra-competitive pricing is in any way challenged. Moreover, there might even be reason to expect firms in oligopolistic markets to be over-represented in institutional investors’ portfolios. Firms in relatively stable oligopolies can be expected to generate supra-competitive profits. If capital markets function perfectly, this should not make the stock of such firms a better investment opportunity. The supra-competitive rents should be reflected in the price at which the oligopolistic firms’ stock is traded, making the stock as lucrative as other firms’ stock in terms of the expected return on investment. Excessive product-market profits do not necessarily imply excessive returns on investment in the firms’ stock. But if there is any element requiring expertise in appraising the value of the stock—e.g., the likelihood of regulatory action or inaction, the probability of emerging competition, etc.—institutional investors may be better situated than less sophisticated (certainly lay) investors to identify these opportunities, which may result in over-representation of such firms in institutional investors’ portfolio. On the efficient-market hypothesis, *see generally* Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1970) (discussing various tests and evidence that support the efficient-markets model). This Article does not suggest in any way that firms in which institutional investors invest are typically in fierce product-market competition. But the argument advanced in the recent literature is that when the product market is oligopolistic, common ownership *exacerbates* the anti-

A. The Case of a Single Active Investor

We may begin by focusing on a single retail investor, who monitors his or her investment and controls the respective managements of the firms in which he or she is invested. When such an investor diversifies his or her investment across competing firms, the competitive concern is straightforward: Any investor that has a stake in two or more competitors will naturally prefer lax competition between these competitors. The investor's overall profits are maximized if the firms do not compete. An investor that has full control of two competing firms can obviously be expected to prevent all competition between the two firms. It will order the two firms to conduct themselves as if they were one, restricting output and raising prices to the monopolistic level.⁸⁰ This is equally true for an investor that controls several firms in the same industry. Firms under joint control will conduct themselves as if they were a single fully merged firm.

It is important to note that the joint controlling shareholder need not hold all outstanding stock of the firms, or even most of their stock, for this anti-competitive outcome. The threshold for control is lower the more dispersed ownership is.⁸¹ At times, control may be achieved with relatively small holdings in one or more of the firms.⁸² Regardless of the threshold for control, firms under common control are, from a competitive perspective, very similar to a single merged firm.

Closely related, cross holdings may also facilitate cartel-like conduct even absent control. This may be facilitated through exchange of information and collusion, neither of which require control. A shareholder that has a representative on the board of directors of each of the firms may be able to transfer competitively sensitive information from one firm to the other,⁸³ and even explicitly coordinate pricing and output. Such conduct does not require control. In fact, such collusion may be possible even if each of the respective

competitive outcome by inducing what I will refer to as "unilateral coordination." And this Article argues that they do not.

80. See Ariel Ezrachi & David Gilo, *EC Competition Law and the Regulation of Passive Investments Among Competitors*, 26 OXFORD J. LEGAL STUD. 327, 331–34 (2006).

81. See O'Brien & Salop, *supra* note 34, at 570.

82. Rock & Rubinfeld, *supra* note 1, at 270.

83. Sharing of information would generally be considered a "plus factor," tending to make tacit collusion, otherwise legitimate, actionable. See William E. Kovacic et al., *Plus Factors and Agreement in Antitrust Law*, 110 MICH. L. REV. 393, 435 (2011).

firms has a controlling shareholder that is not the joint shareholder. Other shareholders also benefit from the elimination of competition and from supra-competitive pricing. The joint shareholder is, in this setting, benefitting not only herself, but also all shareholders of both firms. Other shareholders have little reason to object to coordination or prevent it.⁸⁴

A single, active, **controlling** shareholder that holds stock of two or more competitors may thus bring about a merger-like anti-competitive outcome. And a single, active, **non-controlling** shareholder that holds shares in two or more competitors may facilitate collusion, whether tacit collusion or outright cartels.

These kinds of anti-competitive outcomes are neither novel nor controversial. Antitrust law is, and has long been, well-equipped to deal with them. The first kind, cross holding that results in merger-like outcomes, is the main focal point of the rules regulating merger control as set out in the Clayton Act⁸⁵ and the HSR. Merger control is aimed at preventing harm to competition in its incipency.⁸⁶ As mentioned, acquisition of shares in a firm meeting some threshold by a shareholder of a competing firm will normally require scrutiny by antitrust authorities, as per the HSR.⁸⁷ This scrutiny is in place precisely to facilitate identification of anti-competitive potential of the kind described here. If the effect of the acquisition may be to substantially lessen competition in any line of commerce or in any

84. Even if the shareholder does not facilitate direct coordination, the mere fact that such a joint shareholder exists may provide both firms with comfort that inexplicit anti-competitive messages are received. Consider the following example: firm *A* is considering a price increase that will only be profitable if firm *B* also raises prices (otherwise firm *B* will capture all sales). Firm *A* wants to raise prices, hoping that firm *B* will follow suit. Under regular circumstances, firm *A* cannot be sure that firm *B* will understand that if it does not follow suit, *A*'s prices will be lowered. A joint board member—or a joint shareholder who communicates with his representatives on the respective boards—may be helpful in ensuring that the strategy is made known to the competitor, which can then be expected to cooperate even absent an explicit agreement to do so. Uncertainty, which challenges most tacit collusion situations, is resolved or mitigated through the joint shareholder.

85. Clayton Antitrust Act of 1914, Pub. L. No. 63-212, 38 Stat. 730 (codified as amended at 15 U.S.C. §§ 12–27; 29 U.S.C. §§ 52–53).

86. *Brown Shoe Co. v. United States*, 370 U.S. 294, 317 (1962); HORIZONTAL MERGER GUIDELINES, *supra* note 25, at 1, 25. For an account of actual enforcement actions and trends, see Am. Antitrust Inst., *Mergers, Market Power, and the Need for More Vigorous Enforcement* (Mar. 25, 2016), <https://www.antitrustinstitute.org/wp-content/uploads/2018/08/mergerfinal.pdf> (preview of a chapter from unpublished 2016 Presidential Transition Report).

87. See 15 U.S.C. § 18a (2018); INTRODUCTORY GUIDE TO PREMERGER NOTIFICATION, *supra* note 32.

activity affecting commerce in any section of the country, the agencies will challenge the merger.⁸⁸

The second kind of potential competitive harm, the facilitation of explicit or tacit collusion by a non-controlling shareholder, is also well-addressed by antitrust law. An increased likelihood of post-merger collusion may bring about both an objection to a specific deal under the Clayton Act (when the deal requires premerger approval) and post-merger scrutiny under the Sherman Act (if the deal does not require approval).⁸⁹ The Clayton Act addresses such concerns in the same way it addresses the concerns associated with a joint controlling shareholder. It preempts the competitive harm *ex ante*, by enjoining the transaction.⁹⁰ The Sherman Act⁹¹ combats such collusion *ex post*, i.e., when such collusion has already been made possible, whether through a merger or through market characteristics. Section 1 of the Sherman Act prohibits horizontal collusion and makes it a criminal offense.⁹² This is well established antitrust doctrine.⁹³

B. The Case of a Single Passive Investor

The analysis is slightly complicated when the joint shareholder controls one of the firms but is a non-controlling passive shareholder in the other. This is taken to mean that the investor neither dictates the non-controlled firm's conduct, nor delivers information (or explicitly

88. See 15 U.S.C. § 19.

89. On the forward-looking nature of merger control, see sources cited *supra* note 86; Deborah L. Feinstein, Director, Fed. Trade Comm'n, Bureau of Competition, Speech at Advanced U.S. Antitrust Conference, San Francisco: The Forward-Looking Nature of Merger Analysis 1–3 (2014), https://www.ftc.gov/system/files/documents/public_statements/forward-looking-nature-merger-analysis/140206mergeranalysis-dlf.pdf.

90. 16 C.F.R. §§ 801, 802, 803 (2020); INTRODUCTORY GUIDE TO PREMERGER NOTIFICATION, *supra* note 32, at 13–14.

91. Sherman Antitrust Act, Pub. L. No. 51-647, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. §§ 1–7).

92. See, e.g., *Timken Roller Bearing Co. v. United States*, 341 U.S. 593 (1951), *overruled by* *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752 (1984). The case may have been decided differently today under the single-economic-entity doctrine. See BJÖRN LUNDQVIST, JOINT RESEARCH AND DEVELOPMENT UNDER US ANTITRUST AND EU COMPETITION LAW 33–34 (2015); see also Competition Act 1998, c. 41 (Eng.).

93. On the analysis of this scenario, referred to as the “cartel ringmaster” scenario, and on the relevant case law establishing that such conduct constitutes an antitrust offense under Section 1 of the Sherman Act, see Rock & Rubinfeld, *supra* note 1, at 222–24, 226–28. Although focusing on the hypothetical of a portfolio manager of a fund, the analysis is equally applicable to any cross-holding “ringmaster.”

coordinates) between the firms.⁹⁴ It controls and guides only the controlled firm.

Ostensibly, the firms' competitive conduct should remain intact despite the cross holding. Their conduct is not guided by the same shareholder, and there is no coordination between them. Nonetheless, and although less straightforward, scholars have identified anti-competitive potential associated with such cross-shareholding as well. Professor Gilo refers to the case in which a firm's controller invests in the firm's competitor as "passive investment by controllers."⁹⁵ He shows that under such circumstances, the controller has both the incentive and the ability to stifle competition.⁹⁶ If the controller's financial interest in the non-controlled firm is larger than her financial interest in the controlled firm, the controller will have a preference for profits to flow from the controlled firm to the non-controlled firm.⁹⁷ As she controls the firm from which she wants profits to flow, the controller will cause that firm to raise prices or otherwise conduct itself so that profits flow to the firm in which her holdings are greater.⁹⁸

Consider the following example: Firm *A* and firm *B* are competitors. A shareholder owns 10 percent of firm *A*'s outstanding stock. She controls this firm, because ownership of the firm is dispersed, and no other shareholder owns any more than a trivial amount of firm *A*'s stock. The same shareholder also owns 15 percent of firm *B*'s outstanding stock. But she does not control firm *B*, because other shareholders own large portions of firm *B*'s stock. The shareholder clearly prefers profits and sales to be diverted from firm *A* to firm *B*. For every dollar diverted from firm *A* to firm *B*, this shareholder's profits are increased by five cents (15 percent to 10 percent). Although she cannot affect firm *B*'s conduct, the shareholder controls firm *A*. Firm *A*'s management can be instructed to raise the price firm *A* charges for the product, so that consumers shift demand to firm *B*.

The general observation is that as long as there is any difference between the financial stakes the shareholder has in each of the firms,

94. See sources cited *supra* note 36.

95. Gilo, *supra* note 34, at 22.

96. *Id.*

97. *Id.*

98. *Id.* at 22–23.

the shareholder will have a preference for profits to flow to the firm in which his or her financial stake is greater. If the financial holdings in the controlled firm are smaller than the financial stakes in the non-controlled competitor, the anti-competitive conduct becomes likely. As Gilo summarizes:

[W]hen a firm's controller (be it a parent corporation or an individual) invests in the firm's competitor, in addition to the controller's stake in the competitor, the controller's stake in the firm it controls becomes important. The smaller the controller's stake in the firm it controls, the less aggressively will the controller cause the firm it controls to compete. This is because, the smaller the controller's stake in the firm it controls, the more weight the controller places on its stake in the competing firm. This further implies that even relatively small stakes the controller holds in the competing firm could substantially lessen competition if the controller has a diluted stake in the firm it controls.⁹⁹

Importantly, this analysis requires no collusion or even communication between the firms or their respective managements. Even absent collusion and communication, cross-investment has anti-competitive potential. The controller can be expected to cause the controlled firm to forego competition (and profit) so as to allow the competing firm (in which the controller has a greater financial stake) to reap the benefits.¹⁰⁰

An extremely important observation for the argument presented in this Article is that there is a stark difference between the two settings discussed thus far—the “classic” setting (in which the same shareholder controls both firms and exerts this control to relax competition) and the setting in which the shareholder controls only one of the firms (in which the shareholder's holdings are smaller).

In the first setting of a joint, active, shareholder, both coordinating firms' profits are increased as compared to the no-coordination (competitive) counterfactual. Whether the shareholder controls the firms, thereby forming a *de facto* merger, or controls neither firm but acts as a coordinator, thereby forming a cartel (from an economic

99. Gilo, *supra* note 34, at 25 (footnote omitted).

100. *Id.* at 5; *see also* Elhauge, *supra* note 5, at 1270 (explaining that this anticompetitive effect will occur even absent communication or coordination between managers of firms).

perspective),¹⁰¹ both firms' profits are increased through the elimination of competition between them.

In the second setting, in which the controller controls one firm but has a (passive, but greater) financial stake in the other firm, the controlled firm loses from the anti-competitive "coordination." It loses sales to its competitor, so that its competitor (in which the controller has a larger financial stake) may reap the benefits of this loss by charging monopoly prices. The controlled firm must raise its prices to levels exceeding the optimal monopoly price, an increase which is unprofitable by definition, so that its competitor may then profitably charge monopoly prices, thereby maximizing its own profits.¹⁰² The analysis of this second setting must be sensitive to the idea that one of the "coordinating" firms loses as a result of the "coordinated" conduct. This is acknowledged by both Gilo and O'Brien and Salop.¹⁰³

This observation will prove key for the analysis developed in this Article. For want of a better term, we may refer to the conduct of the firms in the latter setting of a joint shareholder who controls only one of the firms using the oxymoron "unilateral coordination." Price levels in the industry are similar to those that would have prevailed under explicit coordination (monopoly prices). But only one of the firms, the one controlled by the joint shareholder, "coordinates" in the sense that it considers the effects of its own pricing on its competitor's profitability. The other firm, the one not controlled by the joint

101. From a legal standpoint, this economic cartel may be permissible. If both firms are fully controlled by the same controller, they may be "incapable of conspiring . . . for purposes of § 1 of the Sherman Act." *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 777 (1984). *Copperweld* established what is known as the single-entity defense doctrine. *Id.* at 752. Note, however, that the *Copperweld* rule applies to a conspiracy alleged between a parent company and its *wholly owned* subsidiary. *Id.* The precise contours of the single-entity defense are unclear outside the paradigmatic setting of a parent company and a wholly owned subsidiary. For an account of subsequent case law, see Dean V. Williamson, *Organization, Control, and the Single Entity Defense in Antitrust* (U.S. Dep't Just., Antitrust Div., Econ. Analysis Grp., Discussion Paper No. EAG 06-4, 2006), <https://www.justice.gov/sites/default/files/atr/legacy/2007/09/28/221876.pdf>.

102. This kind of anti-competitive effect corresponds to what is referred to in merger control as "unilateral effects," or the "recapture effect." See HORIZONTAL MERGER GUIDELINES, *supra* note 25, at 20–24. The specific kind of unilateral effect that is relevant to the present context is the one discussed in section 6.1 of the HORIZONTAL MERGER GUIDELINES. See also Posner et al., *supra* note 2, at 682.

103. Gilo, *supra* note 34, at 5; O'Brien & Salop, *supra* note 34, at 568. O'Brien and Salop acknowledge this point, and explicitly make the distinction between financial interest and corporate control. See *id.* at 569. They tie their analysis to the seminal work of Berle and Means on the separation of ownership and control and its implications on the performance of an individual corporation. *Id.* at 563–64 (citing ADOLF A. BERLE, JR. & GARDINER C. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* (1932)).

shareholder, does not coordinate in any meaningful sense. It does not consider the effects of the coordination on its competitor's profits. It simply responds to its competitor's elevated prices, which allow it to profitably elevate its own prices to the monopolistic levels.¹⁰⁴

Unilateral coordination is very different not only from the previous scenarios of a de facto merger (a single controller directing both firms' conduct) or a cartel, but also from standard tacit collusion. Much like a de facto merger and a cartel, tacit collusion benefits both coordinating firms.¹⁰⁵ Under the regular oligopolistic setting, one firm raises its price (or otherwise conducts itself) attempting to signal the other firm to do the same. If the other firm does not reciprocate, the first firm returns to the competitive (or pre-collusion) prices, leaving neither firm better off.¹⁰⁶ If the other firm reciprocates, both firms are better off than they would have been had they competed.¹⁰⁷ By contrast, in the setting of unilateral coordination, the unilaterally coordinating firm is worse off than it would have been under competition, regardless of its competitor's response. Tacit collusion and unilateral coordination are similar in the sense that one firm may raise prices to the benefit of the other firm without having coordinated explicitly with the other firm. But the two phenomena are nonetheless very different. The former is engaged in for the benefit of the firm engaging in it.¹⁰⁸ The latter is engaged in for the opposite reason.

By way of summary, it is helpful to consider the outcome under four different settings in a hypothetical two-firm industry, in which the competitive return is two dollars, duopoly rents are four dollars, and monopoly rents are six dollars.

Under competition, both firms will split the competitive return. Each will enjoy a return of one dollar. Under duopoly, both firms will tacitly collude and split (duopoly) rents of four dollars, for a return of

104. Or to its competitors' elevated prices, if the industry is not a duopoly.

105. And, indeed, the second kind of competitive concern associated with mergers is coordinated effects of the merger (i.e., its facilitation of coordinated conduct). See HORIZONTAL MERGER GUIDELINES, *supra* note 25, at 24–27; Jonathan B. Baker, *Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws*, 77 N.Y.U. L. REV. 135, 137 (2002).

106. See Edward J. Green et. al, *Tacit Collusion in Oligopoly*, in 2 THE OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS (Robert D. Blair & D. Daniel Sokol eds., 2014) (analyzing the benefits and possibilities of tacit collusion among firms).

107. See Michael K. Vaska, Comment, *Conscious Parallelism and Price Fixing: Defining the Boundary*, 52 U. CHI. L. REV. 508, 510 (1985); Baker, *supra* note 105, at 137–38.

108. See Rock & Rubinfeld, *supra* note 1, at 222.

two dollars per firm. Under a de facto merger (joint control), both firms will sell for the monopoly price and split the monopoly rents of six dollars, for a return of three dollars per firm. Under unilateral coordination, the unilaterally coordinating firm (the controlled firm) will sell for a price that exceeds the monopoly price (say, four dollars), allowing the firm in which the controller has a larger financial interest to profitably charge the monopoly price. All monopoly rents (six dollars) will accrue to the second firm, and the first firm will have made no sales. These results are summarized in Table 1.

Table 1

Competitive Setting	Total Industry Profits	Firm A's Profits	Firm B's Profits
Competition	\$2	\$1	\$1
Duopoly	\$4	\$2	\$2
Merger/Cartel	\$6	\$3	\$3
Unilateral Coordination	\$6	\$0	\$6

In conformity with standard economic analysis, both firms find monopoly rents, which are the outcome of explicit coordination or a de facto merger, superior to duopoly rents, which are in turn superior to the competitive outcome. However, unilateral coordination is an improvement compared to all other possibilities from firm B's perspective. Under unilateral coordination, all (not only a share of) monopoly rents accrue to it. By contrast, from firm A's perspective, unilateral coordination is inferior not only to a de facto merger and to duopoly pricing, but even to perfect competition. Firm A's only rationale for engaging in unilateral coordination is its controller's instructions.

C. *The Case of Several Passive Investors*

The final development in the theory of competitive harm is fairly recent, and it is this development that is at the heart of this Article. Recent scholarly work has extended the analysis to situations in which the competing firms are jointly held by several investors, most commonly institutional investors, even if these investors control neither of the firms and do not coordinate amongst themselves.¹⁰⁹

The analysis seems like a straightforward extension of the unilateral coordination scenario. Instead of a single shareholder, several institutional investors jointly function as a single joint shareholder (in the sense that management seeks to serve their interests). The analysis is duplicated. Rather than a single shareholder owning stock of both firm *A* and firm *B*, we may think of two institutional investors, *X* and *Y*, who each own stock of both firm *A* and firm *B*. Their joint interest is to curtail competition between the competing portfolio firms (*A* and *B*), much like the single shareholder in the previous examples. Eliminating competition is seemingly even simpler than in the previous examples, because when the joint shareholder is a private shareholder, management does not necessarily know that the shareholder also owns stock in a competitor. In order for management to conduct itself anti-competitively, the shareholder's interest in the competitor needs to be communicated to at least one of the firms' managements. By contrast, institutional investors' holdings are publicly known.¹¹⁰ Naturally, they are also known to the managers of the companies that are in these institutional investors' portfolios. Consequently, "no such communication or coordination is necessary for the basic anticompetitive effect, which turns purely on structural incentives created by the interlocking shareholdings."¹¹¹

Managements have no difficulty realizing the interest of their (joint) shareholders, and thus compete less vigorously. The competitive result is similar to the anti-competitive result discussed earlier.

109. Professor Elhauge argues that if the product market is relatively concentrated, then "[w]hen the same set of institutional investors has large, leading stock holdings across such a concentrated product market, their horizontal shareholdings are likely to be problematic." Elhauge, *supra* note 5, at 1272.

110. See sources cited *supra* note 38.

111. Elhauge, *supra* note 5, at 1274; see also O'Brien & Salop, *supra* note 34, at 568 (explaining the impact of financial interest and corporate control on the competitive incentives of the acquiring firms).

The theory is, as mentioned, rapidly gaining proponents. The federal antitrust enforcement agencies, the Department of Justice and the Federal Trade Commission, have reportedly launched investigations into instances of interlocking shareholding,¹¹² and the European Commission has recently blocked a merger based, *inter alia*, on this theory of competitive harm.¹¹³

II. CHALLENGING (NOW) CONVENTIONAL WISDOM—CAN COMPETITION INDEED BE SPONTANEOUSLY CURTAILED?

The argument developed in this Article is that institutional investors' cross ownership does nothing to dampen competition. To be sure, such cross ownership may aid existing cartels by facilitating explicit coordination. It may also allow information to be shared, thereby aiding and stabilizing cartels. But there is wide consensus that institutional investors do not engage in coordination or in information sharing (between boards).¹¹⁴ And for a host of reasons enumerated by Hemphill and Kahan and reviewed subsequently, it is also unlikely that institutional investors will engage in such conduct.¹¹⁵ Therefore, if cross ownership does not harm competition through its structural impact on incentives, there is little reason to deal with it and unduly deny retail investors the benefits of diversification.

First and foremost, the mechanism through which shareholders' incentives supposedly trickle down to management is unclear. Unless such a mechanism is identified, there is little reason to fear that managers will unilaterally adopt any anti-competitive measures that they would not have adopted but for the cross ownership. It is here that the observation regarding the self-harming nature of unilateral coordination comes into play. Recall that in the context of unilateral coordination, the theory of competitive harm requires managers to relax competition in a manner that is detrimental to the firm that they manage. As demonstrated in the example presented earlier, the unilaterally coordinating firm essentially diverts profits to the

112. See sources cited *supra* note 56.

113. Case C-M.7932, Dow/DuPont, at 1 (Mar. 23, 2017), http://ec.europa.eu/competition/mergers/cases/decisions/m7932_13668_3.pdf.

114. See sources cited *supra* note 37.

115. See *infra* text accompanying notes 214–21. Very briefly Hemphill & Kahan, *supra* note 18, point to institutional investors' incentives and sensitivity to illegal conduct; their regular conduct when engaging with portfolio firms' managements; and their internal structure and modus operandi (with different teams having different incentives), as rendering these scenarios unlikely.

competitor by raising its own prices to an unprofitable level.¹¹⁶ Why would management conduct itself in a manner that harms the company under management?

The intuitive answer to this puzzle is reciprocity. In the oligopolistic setting, the firm may expect its competitor to follow suit and raise prices as well. This may indeed be the case, and few would argue that tacit collusion (which is generally legal)¹¹⁷ does not occur in oligopolistic markets. But this has nothing to do with cross ownership. This is an outcome of concentration within the product market in which the firms held by the cross-owning institutional investors compete. The product market may be conducive to tacit collusion, and it may not. If it is, for example, because there are only three competitors, market prices will indeed be higher than the competitive prices. A firm—any firm, whether or not its shareholders cross-own competitors—may indeed attempt to raise prices hoping that its competitor will reciprocate. If the product market is not conducive to tacit collusion, prices can be expected to be competitive. But regardless of what the product market equilibrium is, there is no reason to think that managers will forego profit absent a mechanism that incentivizes them to do so. The question therefore resonates even in the oligopolistic setting—why would managers act in a manner that is detrimental to the firm they manage? Several possible explanations for this are considered and shown to be unpersuasive.

A. Managerial Compensation Linked to Industry Performance

One answer offered in the literature to this puzzle¹¹⁸ is that managers' performance-based compensation may be linked to performance of the industry rather than to performance of the specific firm (or the extent to which the specific firm's performance exceeds

116. Or by engaging in equivalent conduct, for example, by deteriorating the quality of the product, or the like.

117. See *supra* note 79; Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal*, 75 HARV. L. REV. 655, 666 (1962); Jonathan B. Baker, *Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory*, 38 ANTITRUST BULL. 143, 145 (1993); Green et al., *supra* note 106 (examining the economics literature on tacit collusion in oligopoly markets). But see Posner, *supra* note 65, at 1575.

118. E.g., Miguel Antón et al., *Common Ownership, Competition, and Top Management Incentives* (Eur. Corp. Governance Inst. Working Paper Series in Fin., Working Paper No. 511, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2802332.

industry performance).¹¹⁹ Specifically, managers may be granted stock and options of the firms they manage.¹²⁰ In an influential article on managerial compensation, Bebchuck, Fried, and Walker argue that managerial compensation plans are not an outcome of optimal contracting, but rather of managerial power.¹²¹ Within this framework, Bebchuck et al. analyze the phenomenon of granting management options to purchase firm stock.¹²² Bebchuck et al. observe that as a result of such a mechanism, managers' compensation is conditioned on absolute share price, rather than on the performance of the stock in comparison to other firms' stock.¹²³ The thrust of Bebchuck et al.'s argument is that managers may, through such a mechanism, be rewarded for stock-price increases that they did not contribute to.¹²⁴ But the observation has important implications in the current setting too.

In the specific context of competition between portfolio firms, granting managers stock or options in the firms they manage effectively rewards them for the elimination of competition.¹²⁵ Eliminating competition will increase all competing firms' profits, including those of the firm under management.¹²⁶ The value of management's stock will also increase.¹²⁷ Stock and options thus incentivize managers to chill competition.¹²⁸ This may seemingly bring about the anti-competitive conduct envisaged by the recent literature.

But a closer look at such compensation plans reveals that they are unlikely to bring about what has been termed here as unilateral coordination. Stock and options cannot incentivize unilateral coordination of the kind envisaged in the recent literature. In fact, in the context of unilateral coordination the competitive effect of stock

119. Lucian Arye Bebchuk et al., *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 751, 803–04 (2002).

120. *Id.* at 791–92.

121. *Id.* at 753.

122. *Id.* at 791–93.

123. *Id.* at 802.

124. *Id.* The point is stressed in LUCIAN A. BEBCHUK & JESSE FRIED, *PAY WITHOUT PERFORMANCE: THE UNFULFILLED PROMISE OF EXECUTIVE COMPENSATION* 122 (2004).

125. See D. Daniel Sokol & Rosa Abrantes-Metz, *Antitrust Corporate Governance and Compliance*, in 2 THE OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS 2–5 (Robert D. Blair & D. Daniel Sokol eds., 2014).

126. *Id.*

127. *Id.* at 3.

128. See *id.* at 3–5.

and options is reversed. Granting managers stock or options in the firm they manage creates a disincentive to unilaterally coordinate. If the firm unilaterally coordinates, the effect on the price of its own stock will be negative. Profits will flow to competitors, whose stock price will be positively affected. But the stock price of the unilaterally coordinating firm can be expected to plummet. This is a result of the simple observation offered earlier and summarized in Table 1. As explained, unilateral coordination entails two inseparable elements: An increase in total industry profits and the tunneling of these profits to a single firm to the detriment of all other industry firms. If managers' compensation is linked to the profitability of their own firm, they will try to prevent profits from flowing to competitors. Managerial compensation plans granting management stock or options in the firm under their management cannot result in unilateral coordination. In order to incentivize unilateral coordination, compensation must be designed to benefit management when two conditions are met: (1) competitors do well, and (2) the firm under management performs relatively poorly at the same time. Stock and options (of the managed firm) do not accomplish this.

Moreover, even if stock and options could somehow incentivize unilateral coordination, this would have little to do with cross ownership. Neither the fact that portfolio firms are cross-owned nor the fact that they are cross-owned by several investors (be they lay investors or institutional investors) exacerbates any competitive concern. A shareholder—any shareholder—benefits from relaxing competition between the firm it has holdings in and the firm's competitors. This is the case even if the shareholder holds none of the competitors' stock. A shareholder—again, any shareholder—may thus devise a compensation plan that incentivizes management to compete less vigorously by explicitly or tacitly coordinating with competitors. The shareholder's holdings in competitors or the lack of such holdings do not change the profitability of anti-competitive conduct in any way. Consider a shareholder who holds 2 percent of a firm's stock. Suppose that the firm is the only firm in the shareholder's portfolio. The shareholder's profits will clearly increase if the firm forms a cartel. The shareholder will gain 2 percent of every additional dollar of profit facilitated by the cartel. If the shareholder splits its holdings between portfolio firms, and owns 1 percent of the stock of the original firm and 1 percent of the competitor's stock, the

profitability of a cartel between the portfolio firms remains the same. Cross ownership does nothing to increase the shareholder's incentive to relax competition. Similarly, the question of whether the stock—be it 2 percent of one firm's stock or 1 percent of each firms' stock—is held by a single investor or by several investors does not in any way change the analysis. And indeed, previous scholarly work has suggested that compensation plans of this sort may bring about explicit coordination as a general matter, regardless of cross ownership.¹²⁹ Cross ownership and unilateral coordination are not required for anti-competitive conduct to be profitable, and they do not increase the shareholder's (or shareholders') gains from such anti-competitive conduct. They cannot exacerbate the problem.

It is beyond the scope of this Article to recommend a specific rule to be applied to possible compensation plans that link managers' compensation to the performance of competing firms.¹³⁰ For current purposes, it suffices to acknowledge that such compensation plans are undoubtedly a mechanism through which shareholder' (not necessarily cross owners') incentives to inhibit competition trickle down to management. Antitrust law should indeed deal with the phenomenon, much like it deals with acquisition of competitors' stock. But importantly for current purposes, this has nothing to do with cross ownership or with incentivizing unilateral coordination, and therefore does not explain how cross ownership may inhibit competition. The recent literature's reliance on such compensation plans as a possible mechanism for incentivizing unilateral coordination¹³¹ is misplaced.

129. See Bebchuk et al., *supra* note 119, at 804. Bebchuck et al. reject the “softening industry competition” explanation for granting managers stock and options. But their objection does not challenge the economic analysis. *Id.* Bebchuck et al. reject this explanation mainly because as an empirical matter such compensation plans normally link compensation not to specific-industry performance but rather to broader price increases. *Id.* This objection does not imply that such compensation plans cannot incentivize managers to soften competition.

130. Devising such a rule requires a comprehensive analysis of the potential welfare-enhancing effects of such compensation plans and a balancing of these effects against the clear anti-competitive effects of the plans. See, e.g., Anup Agrawal & Gershon N. Mandelker, *Managerial Incentives and Corporate Investment and Financing Decisions*, 42 J. FIN. 823 (1987). A per se illegality rule may be appropriate, and a rule of reason may be appropriate—if enough welfare-enhancing effects are identified—specifically when the industry-performance-dependent component of compensation is trivial. See Bebchuck et al., *supra* note 119 (offering possible ways to address the situation in which stock prices are unrelated to managers' performance).

131. See Antón et al., *supra* note 118; Azar et al., *supra* note 5, at 1556–57.

B. Future External Remuneration

A second mechanism that may incentivize management to manage the firm in a self-harming manner for the benefit of non-controlling, passive, cross owners is future external remuneration. The term “future external remuneration,” as used here, refers to consideration that it occurs outside the realm of the unilaterally coordinating firm. The possibility of remuneration within the unilaterally coordinating firm, such as support of managers in future votes or salary increases, is discussed separately in Section II.C.

Future external remuneration may take the form of employment within the institutional investor’s organization, future employment in other firms in which the institutional investor may have holdings, lucrative consulting agreements, or any other form of remuneration that is detached from the unilaterally coordinating firm.

1. The Basic Remuneration Scheme

At first blush, the basic mechanism seems simple enough: Managers act in a manner that benefits the institutional investor. In return, the institutional investor rewards the manager with some beneficial consideration. For example, after the manager has left the company, the institutional investor may hire her as a consultant for a hefty fee.

However, a closer look reveals the shortcomings of this analysis. At the outset, recall once again that absent coordination with competing firms, serving the institutional investor’s (or institutional investors’) interests requires foregoing profit. This, in turn, implies that managers are breaching their fiduciary obligations to all other shareholders (and other stakeholders, if such a fiduciary duty is owed).¹³² They are simply tunneling¹³³ profits from the firm to the institutional shareholder,¹³⁴ and consequently bearing the risk of civil

132. See Edward M. Iacobucci, *Corporate Fiduciary Duties and Prudential Regulation of Financial Institutions*, 16 THEORETICAL INQUIRIES L. 183, 186–87 (2015).

133. The term “tunneling” is problematic in this context, as tunneling normally describes “the transfer of assets and profits out of firms for the benefit of those who control them.” Simon Johnson et al., *Tunneling*, 90 AM. ECON. REV. 22, 22–27 (2000). In the current context, the benefited entities are *not* controllers. Nonetheless, from the perspective of the effect on the firm, the phenomenon discussed here is no different—although, as I argue, unlikely precisely because the benefitted entity is not a controller.

134. In a recent case before the Israeli District Court in Tel Aviv, a publicly traded firm’s controller committed to pay management a specific discretionary bonus if the bonus was not granted by the board. The court ruled that officers are not allowed to receive direct remuneration

lawsuits and, at times, criminal proceedings, with no immediate gain.¹³⁵ Moreover, if managers' compensation is in any way linked to their own firm's performance, be it through stock, options, bonuses, or other compensation methods, they are in fact paying (in the form of lost compensation) for this tunneling scheme.¹³⁶ Their immediate return on this payment is civil and criminal liability. If there is no explicit quid pro quo agreement between management and the institutional investors for compensation (which would be illegal),¹³⁷ the manager's remuneration is the shareholders' gratitude and the prospect of future consideration.¹³⁸

This observation itself does not, of course, make the scenario impossible. If the shareholder is a prominent and influential capital market player, such gratitude may be valuable.¹³⁹ But if this is the case, unilateral coordination is both implausible, and—far more importantly—has nothing to do with cross ownership or with large financial interests. Both of these points will be elaborated next. Subsequently, two additional complications that cast doubt on the probability, and in fact on the very possibility, of such competitive harm will be discussed. These final two complications have to do with the possibility of market self-correction and the fact that institutional investors have divergent holdings in portfolio firms.

from controllers. The rationale for this ruling is precisely the possibility that this will distort management's incentives and cause it to act to the benefit of the controller at the expense of other shareholders. DerivC (DC TA) 18994-05-17 De Lange v. Israel Corp., Nevo Legal Database (Apr. 30, 2017) (Isr.).

135. See MODEL BUS. CORP. ACT § 8.30 (AM. BAR ASS'N 2019) (outlining the standards of conduct required of directors); see also DerivC (DC TA) 18994-05-17 De Langa v. Israel Corp., Nevo Legal Database (Apr. 30, 2017) (Isr.) (serving as an example of the risk of lawsuits managers run). See generally G. P. STAPLEDON, INSTITUTIONAL SHAREHOLDERS AND CORPORATE GOVERNANCE 8–12 (1996) (discussing fiduciary duties directors owe to shareholders and the varying interests of the two).

136. Once again, managerial compensation dependent on the specific firm's performance may incentivize explicit coordination or tacit collusion. See Abrantes-Metz & Sokol, *supra* note 125, at 2. But it will not incentivize unilateral coordination.

137. If the quid pro quo is explicit, the manager is discharging its obligations under a clear conflict of interest and in breach of its fiduciary duties. See MODEL BUS. CORP. ACT §§ 8.31(a)(2)(i), (iii), (v), 8.42.

138. Elhauge, *supra* note 5, at 1274.

139. On the importance of leading capital market players in general, see John E. Core et al., *Corporate Governance, Chief Executive Officer Compensation, and Firm Performance*, 51 J. FIN. ECON. 371, 372–73 (1999); Richard M. Cyert et al., *Corporate Governance, Takeovers, and Top-Management Compensation: Theory and Evidence*, 48 MGMT. SCI. 453, 453–69 (2002).

2. The Scenario Is Implausible

Let us begin with the likelihood of the scenario. The likelihood of future remuneration is a function of two determinants. First, the benefitted shareholder must be expected to deliver on an unspecified, unspoken,¹⁴⁰ non-binding commitment to make some undetermined future payment. This itself does not negate the possibility of future remuneration, most importantly because if the institutional investor is a repeat player (as most institutional investors are), reputation may substitute for enforceability.¹⁴¹ But this is not enough. Obviously, the shareholder must also be aware that the manager has acted in a manner that was designed to benefit the shareholder at the expense of all other stakeholders. At the same time, all other shareholders (as well as all other stakeholders) must not realize what is transpiring. The more obscure or subtle the conduct, the less likely the benefitted shareholder is to realize that the manager has acted in a manner that warrants remuneration.¹⁴² The more egregious the conduct, the more likely other stakeholders (and authorities) are to realize what the manager is doing.¹⁴³ Thus, although this observation does not render the scenario impossible, it does cast serious doubt on its likelihood.

140. The commitment must be unspoken. Otherwise, both the shareholder and management will be exposed to criminal sanctions. *See supra* note 137.

141. This may be done for a host of reasons. Importantly, the shareholder may find it valuable to obtain a reputation of a shareholder that rewards managers who have furthered its interests. In this context, Professor Heymann's observation, although focusing on reputation in its social context, is useful: "At its core, then, reputation is the result of the collective act of judging another and the potential use of that result to direct future engagements." Laura A. Heymann, *The Law of Reputation and the Interest of the Audience*, 52 B.C. L. REV. 1341, 1342 (2011). For a discussion of reputation in the business context (although focusing on corporate reputation and employee reputation), see Karen S. Cravens & Elizabeth Goad Oliver, *Employees: The Key Link of Corporate Reputation Management*, 49 BUS. HORIZONS 293 (2006). For a formal comprehensive discussion of reputation in settings in which players have repeated interactions (as in the current setting), see GEORGE J. MAILATH & LARRY SAMUELSON, REPEATED GAMES AND REPUTATIONS: LONG-RUN RELATIONSHIPS (2006).

142. Management may be able to bring its conduct to the attention of the shareholder. But it is in the manager's interest to claim that it has acted to the benefit of the shareholder (and the detriment of other stakeholders) regardless of whether or not this is true. This makes the manager's report to the shareholder less credible.

143. Other shareholders' financial interest in detecting such breaches may be small. But the possibility of filing a class action—and receiving the monetary consideration as class plaintiff—should provide enough incentives to detect the breach and pursue an action. In this context, it is important to recall that the setting becomes more conducive to unilateral coordination as the controller's financial interest in the unilaterally coordinating company decreases, implying that other shareholders will find it even more appealing to act. Not surprisingly, the case cited by Rock & Rubinfeld, *supra* note 1 as the only case alleging such conduct—*In re Domestic Airline Travel Antitrust Litigation*, 221 F. Supp. 3d 46 (D.D.C. 2016)—is a class action. In any event, authorities

3. The Scenario Has Nothing to Do with Cross Ownership

Far more important than the likelihood of the scenario, is the fact that this scenario has very little to do with cross ownership or with large financial interests. The shareholder in question need not be the controlling shareholder, or even a large shareholder, of the unilaterally coordinating firm. The prerequisite for this scenario is only that the benefitted shareholder be a prominent figure. In fact, on closer examination, the smaller the financial stakes the shareholder has in the unilaterally coordinating firm, the more profitable and likely unilateral coordination becomes. The institutional investor's holdings in the unilaterally coordinating firm make unilateral coordination less profitable, easier to detect, and easier to punish. Cross ownership is an obstacle to unilateral coordination.

To see why, let the following setting be considered: BlackRock, a leading institutional investor, holds 0.5 percent of firm *A*'s outstanding stock and 3 percent of firm *B*'s outstanding stock. Firm *A*'s CEO decides to raise firm *A*'s prices to an unprofitable level so that profits flow to firm *B*, to BlackRock's benefit. This scenario is one of the scenarios envisioned by advocates of the anti-competitive theory of harm brought about by cross ownership.

First, the play is more profitable for BlackRock the smaller its holdings in firm *A*. The profitability of the scheme is a function of the difference in BlackRock's holdings in the unilaterally coordinating firm and in the firm to which profits flow. For any level of holding in the competing firm (firm *B*), if BlackRock's holdings drop to zero in the unilaterally coordinating firm (firm *A*), its profits are maximized.¹⁴⁴

Second, if BlackRock is not a shareholder of the unilaterally coordinating firm, the scheme becomes much more difficult to detect, if not practically undetectable. If BlackRock is a shareholder of firm *A*, other stakeholders of the firm or authorities are likely to be alarmed by a business decision that turns out to be harmful to the firm, when another firm held by BlackRock reports increased earnings at the same

and criminal sanctions, which are probably an even greater deterrent than civil action, definitely become more likely as the conduct becomes more questionable.

144. In the numeric example used here, BlackRock's profits are increased by 0.5 cents for every dollar that flows to firm *B* as a result of the scheme. Rather than 2.5 cents for every dollar of profit flowing to firm *B* ($3\% - 0.5\% = 2.5\%$), it will earn 3 cents for every such dollar ($3\% - 0\%$). The profitability of the scheme for BlackRock will have increased by 20%.

time. Even if the precise scheme is unclear, red flags will be raised. The scheme is far less conspicuous if BlackRock is not a shareholder of the unilaterally coordinating firm at all.¹⁴⁵ This is not to suggest that detection is always immediate if BlackRock is a shareholder of firm *A*. But the unilaterally coordinating manager is better off if BlackRock is not a shareholder at all.

Finally, in jurisdictions in which shareholders owe fiduciary duties to each other,¹⁴⁶ BlackRock itself, not only management, may be breaching its fiduciary duties as a shareholder to other shareholders of the unilaterally coordinating firm if the firm unilaterally coordinates.

For the preceding reasons, cross ownership is detrimental to the scheme. If BlackRock holds no shares of the unilaterally coordinating firm, the scheme is far more profitable, detection is much less likely, and both management's risk and BlackRock's risk (when a fiduciary duty is owed by shareholders) are significantly mitigated. At the same time, BlackRock may still realize that the strategy was designed for its benefit and reward the manager in the future.

Ultimately, the theory boils down to an argument that a firm's management may devise a strategy that, while in breach of the managers' fiduciary duties, tunnels funds to an influential figure, for no immediate benefit, but with hope of future reward. An influential entity's gratitude may definitely be valuable. And although prohibited,¹⁴⁷ managers may indeed breach their obligations to other stakeholders if they have the opportunity to self-serve. But even if this is somehow likely absent an agreement, or at least an explicit

145. If BlackRock is not a shareholder, management's conduct is far more likely to be effectively protected under the business judgment rule than if shareholders' conflicting interests are observed. On the business judgment rule, see *In re Walt Disney Co. Derivative Litig.*, 907 A.2d 693, 697–98, 746–48 (Del. Ch. 2005); *Aronson v. Lewis*, 473 A.2d 805, 812–13 (Del. 1984), *overruled by Brehm v. Eisner*, 746 A.2d 244 (Del. 2000).

146. The fiduciary duties that may be owed in closely held corporations, *see, e.g.*, *Hagshenas v. Gaylord*, 557 N.E.2d 316 (Ill. App. Ct. 1990), are, of course, irrelevant to the current setting. But in some jurisdictions, fiduciary duties may be owed by controlling shareholders of publicly traded corporations as well. *See Frank Martin Laprade, Eur. Parliament, Directorate-Gen. for Internal Pol'y, Rights and Obligations of Shareholders: National Regimes and Proposed Instruments at EU Level for Improving Legal Efficiency*, at 30 (May 2012), https://www.europarl.europa.eu/meetdocs/2009_2014/documents/juri/dv/pe462463/_pe462463_en.pdf; § 192(a), *Companies Law*, 5759–1999 (Isr.), <https://www.jewishvirtuallibrary.org/jsource/Politics/CompaniesLaw57591999.pdf>; Joseph Gross, *Trends in the Duties of Holders of Control in a Company*, 1 *A Mishpat Va'Asakim* 271 (2004).

147. MODEL BUS. CORP. ACT §§ 8.31(a)(2)(i), (iii), (v), 8.42 (AM. BAR ASS'N 2019).

understanding, it has very little to do with cross ownership in the industry. In fact, cross ownership is detrimental to this kind of conduct.

4. The Scenario Is Frustrated by Capital Market Players' Expected Response

A third important point in this respect is one made by Rock and Rubinfeld. Even if unilateral coordination were likely, the market would presumably self-correct.¹⁴⁸ Recall, once again, that the scenario envisaged is one in which the institutional investors who the unilaterally coordinating firm or firms set out to please do not control these firms. This in turn suggests that the unilaterally coordinating firms present a lucrative investment opportunity. As Rock and Rubinfeld state: "Without control, any sacrifice of firm profits out of deference to a shareholder's other holdings will provide a profitable investment opportunity for a shareholder that thinks it can shift the strategy back towards maximizing single firm value."¹⁴⁹

Importantly, a potential shareholder that identified this investment opportunity need not even engage in a takeover battle or attempt to control the firm. As unilateral coordination is wasteful (from the unilaterally coordinating firm's perspective), all other shareholders would benefit from discontinuing such unilateral coordination. And as the benefitted shareholder is not a controlling shareholder, it would be enough for the investor identifying unilateral coordination (or otherwise suboptimal bad management) to buy any amount of stock, explain the situation to other shareholders who have no cross holdings in the industry or whose holdings are larger in the unilaterally coordinating firm, and make a profit by discontinuing the practice. If unilateral coordination occurred, this would clearly attract activist investors, whose task would be easier than usual.¹⁵⁰ They could simply purchase stock and draw other shareholders' attention to the fact that profits had been tunneled. The market could be expected to swiftly self-correct.

148. See Rock & Rubinfeld, *supra* note 1, at 251.

149. *Id.*

150. For an account of activist investors' involvement in firms' conduct, see Michal Barzuza & Eric L. Talley, *Long-Term Bias* (Eur. Corp. Governance Inst., Working Paper No. 449, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3338631.

5. The Opposing Interests of Institutional Investors Safeguard Against Competitive Harm

A final shortcoming of the anti-competitive theory has to do with the divergent holdings of institutional investors. Portfolio firms are cross-owned by several institutional investors with different holdings in each firm. This is a fatal blow to the possibility of competitive harm. The reason is that if each institutional investor's stake in the competing firms is different, each investor will prefer that a different firm be the unilaterally coordinating firm. Investors want profits to flow to the firm in which their own holdings are greatest. Each institutional investor's preference will thus depend on its individual difference in holdings and may therefore be very different from other institutional investors' preferences. If investor *X*, a cross owner of firms *A* and *B*, has larger holdings in firm *A* than in firm *B*, and investor *Y*, a second cross owner, has larger holdings in firm *B* than in firm *A*, portfolio firms' managements will be deadlocked even if they have made the decision to engage in this form of tunneling. To understand how limiting this is to the theory of competitive harm, it is helpful to note that in all of the industries surveyed in the recent literature, a conflict of interests among institutional shareholders would severely challenge any hope of unilateral coordination.

The pharmaceutical industry, which is presented by Azar et al. as an illustrative industry conducive to unilateral coordination, demonstrates this neatly.¹⁵¹ According to Azar et al., in the pharmacy industry, the five largest institutional investors who hold stock in CVS are BlackRock, Fidelity, Vanguard, State Street, and Wellington.¹⁵² They hold a total of slightly less than 25 percent of CVS's stock.¹⁵³ The same institutional investors also hold approximately 19.55 percent of Walgreens' stock.¹⁵⁴ Assuming the product market is relatively concentrated, the hypothesis is that industry firms' managements will act to further the interests of these shareholders at the expense of other shareholders. However, once the joint holdings of the three largest institutional investors are broken down by investor, it becomes clear that if management were to attempt to serve these

151. Azar et al., *supra* note 5, at 1515 tbl.1.

152. *Id.*

153. *Id.*

154. *Id.*

investors it would, absent explicit coordination, find itself baffled. The respective holdings are elaborated in the following table:

Table 2¹⁵⁵

Investor	Holdings in CVS	Holdings in Walgreen
BlackRock	5.9%	4.44%
Fidelity	5.1%	3.07%
Vanguard	4.78%	5.26%

BlackRock and Fidelity hold approximately 6 percent and 5 percent of CVS's stock, respectively, and approximately 4.5 percent and 3 percent of Walgreens' stock, respectively. They both have a strong preference for profits to flow from Walgreens to CVS. But Vanguard holds 4.78 percent of CVS's shares and 5.26 percent of Walgreens' shares. Vanguard thus prefers that profits flow to Walgreens. If CVS were to unilaterally coordinate (i.e., unprofitably raise its own prices to the benefit of Walgreens), BlackRock and Fidelity would have lost. If Walgreens were to do the same, Vanguard would have lost.

Under these circumstances, unilateral coordination is even less likely. It is difficult to decide which influential institutional investor to serve and which to harm. Furthermore, even if management somehow makes this decision, a problem of detection emerges. Unlike serving an influential shareholder when all other shareholders are dispersed, lay retail investors, who have neither the incentives nor the ability to monitor performance,¹⁵⁶ in the current setting there will always be a professional (institutional) shareholder with significant holdings that has been harmed. This shareholder is as likely to realize that it has been harmed as the benefitted shareholder is to realize that it has been benefitted. And since the harmed shareholder has significant holdings in the unilaterally coordinating firm, it is much more likely to take action.

155. *Id.* (numbers were taken from an earlier version of the article).

156. Although, as suggested earlier, there are mechanisms—most notably the class action mechanism, that can be expected to offset shareholder indifference—specifically in the current setting. *See supra* note 143.

Again, institutional investors may coordinate between themselves and agree that profits should flow to CVS, where their joint holdings (25 percent) are greater than their joint holdings in Walgreens (19.55 percent).¹⁵⁷ BlackRock and Fidelity, who will have gained from this, will have gained more than Vanguard will have lost. As the net effect of this unilateral coordination is positive (from the cross owners' joint perspective), the losing party can be compensated. But this requires both explicit coordination at the investors' level, which would be a criminal offense, and some method through which the joint decision is conveyed to management (which would, in turn, be violating its own duties). As Hemphill and Kahan explain, intervening with firm conduct at such a level would be extremely conspicuous.¹⁵⁸ In any event, the structural incentives created by horizontal shareholdings cannot spontaneously result in unilateral coordination.

A similar problem emerges when considering the second industry with concentrated ownership that is provided by the recent literature as an example of the effects of cross ownership—the banking industry. Here too, according to Azar et al., the six largest investors hold approximately 24 percent of JP Morgan Chase, 20 percent of Bank of America, and over 33 percent of Citigroup. But when these holdings are broken down, the picture becomes much more complicated:

Table 3¹⁵⁹

Investor	Holdings in JP Morgan Chase	Holdings in Bank of America	Holdings in Citigroup
BlackRock	6.7%	5.38%	9.29%
Fidelity	3.16%	2.56%	3.83%
Vanguard	4.78%	4.51%	4.4%

157. Azar et al., *supra* note 5, at 1515 tbl.1 (numbers were taken from an earlier version of the article).

158. Hemphill & Kahan, *supra* note 18, at 1444–45.

159. Azar et al., *supra* note 5, at 1515 tbl.1 (numbers were taken from an earlier version of the article).

Any unilateral coordination that benefits BlackRock and Fidelity will be harmful to Vanguard, and vice versa. This industry is even more problematic than the pharmaceutical industry because the industry is comprised of three banks. Therefore, two banks would need to unilaterally coordinate for each investor to benefit from such conduct. Both JP Morgan Chase and Bank of America would need to unprofitably raise their prices so that Citigroup could enjoy supra-competitive returns. This requires even more elaborate coordination and is therefore even less likely to occur absent explicit coordination amongst investors and explicit instructions to management.

The argument is slightly less immediate in the third industry presented by Azar et al., the technology industry. The largest shareholders jointly hold approximately 20 percent of Apple, and 27 percent of Microsoft.¹⁶⁰ All three joint institutional investors—BlackRock, Fidelity and Vanguard—have greater stakes in Microsoft, as summarized in the following table:

Table 4¹⁶¹

Investor	Holdings in Apple	Holdings in Microsoft
BlackRock	5.58%	5.33%
Fidelity	3.28%	3.08%
Vanguard	4.95%	4.49%

Although their holdings in Apple are only slightly greater than their holdings in Microsoft, BlackRock, Vanguard, and Fidelity undoubtedly all prefer profits to flow to Apple. But Microsoft's third-largest shareholder is, according to Azar et al., Bill Gates, who holds 4.52 percent of Microsoft's stock. Bill Gates holds none of Apple's stock, and therefore clearly has an extremely strong preference for profits to flow to Microsoft.¹⁶² It is unlikely, and then some, that Microsoft will unilaterally coordinate. Any dollar unilaterally lost to Apple implies an almost five cent loss to Microsoft's third largest shareholder (Bill Gates). The benefit to Microsoft's three other large

160. *Id.* (numbers were taken from an earlier version of the article).

161. *Id.* (numbers were taken from an earlier version of the article).

162. *Id.*

shareholders is approximately one cent in total.¹⁶³ It is similarly unlikely that Apple will act to the detriment of its largest shareholders to the benefit of Bill Gates, who has no holdings in Apple.¹⁶⁴ Once again, shareholders may coordinate price, quantities, or other competitive dimensions, and then notify managements of their decisions. Alternatively, they may agree that it is worthwhile to have one firm unilaterally raise its prices to the benefit of the other firm. But they would then need to agree on payments to be made by the shareholder or shareholders benefitting from this unilateral coordination to the shareholders or shareholder losing from it (and, once again, at minimum, inform management of the unilaterally coordinating firm of their decision). These compensation schemes are, given the differences in holdings, extremely complex, and can be expected to require elaborate formulae and lengthy negotiations. Absent explicit (illegal) coordination, this is extremely unlikely.

A similar coordination problem emerges in all of the industries surveyed by Posner et al. as oligopolistic industries in which there are significant cross ownership patterns. In the mobile phone industry there are four major competitors—AT&T, Verizon, T-Mobile, and Sprint.¹⁶⁵ When looking at institutional investors' holdings in each of these competitors, it is clear that they have completely opposing (and very strong) preferences. Vanguard, BlackRock, and Capital Group's stakes in Verizon are larger than their stakes in any other company in the industry.¹⁶⁶ They would clearly insist that profits flow to Verizon. Evercore is invested only in AT&T and would thus lose if profits were to flow to any other competitor.¹⁶⁷ Deutsche Telekom holds slightly more than 65 percent of T-Mobile (with no holdings in any other competitor), and SoftBank holds nearly 83 percent of Sprint's stock,

163. I limit the analysis to the three largest shareholders for consistency, as these are the same investors previously considered. If one looks at these shareholders alone, total gains from unilateral coordination are less than one cent ($0.25+0.46+0.2=0.91$). However, such conduct by Microsoft will yield a total benefit of slightly more than one cent to its large shareholders, because the fourth largest shareholder, State Street, holds 4.59 percent of Apple and 4.39 percent of Microsoft, so an additional 0.2 cents will accrue to a large shareholder. This, however, does not change the analysis. Bill Gates will have lost approximately five cents, for a benefit of 1.11 cents divided among four other shareholders.

164. Azar et al., *supra* note 5, at 1515 tbl.1.

165. Posner et al., *supra* note 2, at 726.

166. *Id.*

167. *Id.*

with no holding in any other competitor.¹⁶⁸ Absent explicit coordination between Deutsche Telekom, Vanguard, BlackRock, SoftBank, and Evercore, it is extremely difficult to unilaterally coordinate. The breakfast cereal, aluminum, and cooking-stoves industries all demonstrate similar holding patterns.¹⁶⁹ In each of these industries different influential shareholders can be expected to have contradicting (and strong) preferences with respect to where profits should flow to.

Finally, the airline industry, the second industry analyzed by Azar et al., also exhibits a holding pattern that makes unilateral coordination unlikely.¹⁷⁰ Rock and Rubinfeld reformat the data on institutional investors' holdings in the airline industry as a spreadsheet.¹⁷¹ A quick glance at this spreadsheet shows that the largest shareholder in each of the six major airlines is almost always different from the largest shareholder in the other airlines: Delta Air Lines' largest shareholder is Berkshire Hathaway; Southwest Airlines Co.'s largest shareholder is PRIMECAP; American Airlines' largest shareholder is T. Rowe Price; United Continental Holdings' largest shareholders are BlackRock and Berkshire Hathaway (each with 9.2 percent of Continental's stock); Alaska Air's largest shareholder is T. Rowe Price; and JetBlue Airways' largest shareholder is Vanguard.¹⁷² Absent explicit coordination, it is impossible to see how unilateral coordination may have occurred.

In the airline industry, the idea of unilateral coordination is even more perplexing. In addition to the very different holdings, Rock and Rubinfeld also show that holdings in the airline industry changed dramatically over time.¹⁷³ A quick glance at this spreadsheet shows that the largest shareholder in each of the six major airlines is almost always different from the largest shareholder in the other airlines: Delta Air Lines' largest shareholder is Berkshire Hathaway; Southwest Airlines Co.'s largest shareholder is PRIMECAP; American Airlines' largest shareholder is T. Rowe Price; United Continental Holdings' largest shareholders are BlackRock and

168. *Id.*

169. *Id.* at 727–28.

170. Azar et al., *supra* note 5, at 1516 tbl.1.

171. Rock & Rubinfeld, *supra* note 1, at 234 tbl.1A.

172. *Id.* (numbers were taken from an earlier version of the article).

173. *Id.* at 235 tbl.2.

Berkshire Hathaway (each with 9.2 percent of Continental's stock); Alaska Air's largest shareholder is T. Rowe Price; and JetBlue Airways' largest shareholder is Vanguard. Absent explicit coordination, it is impossible to see how unilateral coordination may have occurred.

In the airline industry, the idea of unilateral coordination is even more perplexing. In addition to the very different holdings, Rock and Rubinfeld also show that holdings in the airline industry changed dramatically over time.¹⁷⁴ Changes in holdings would further complicate unilateral coordination, as the unilaterally coordinating firm would need to constantly change, depending on the firm in which institutional shareholders' (joint) holdings were largest at any given point in time.¹⁷⁵ Although data for other industries are not presented, the general point is extremely relevant to all industries. Institutional investors constantly change the balance of their portfolios, thereby altering the relative impact of each portfolio firm on overall profitability. Any change in the portfolio impacts the profitability of the scheme and will require renegotiation of payments made by one institutional investor to the others. When any institutional investor's holdings in a specific portfolio firm become larger than its holdings in another portfolio firm, the whole scheme may need to be renegotiated, and the unilaterally coordinating firm may need to be changed.

Perhaps counter intuitively, cross ownership of portfolio firms by several institutional investors actually safeguards against spontaneous competitive harm.

C. Future Internal Remuneration

"Future internal remuneration" refers to any remuneration the unilaterally coordinating manager expects to receive within the unilaterally coordinating firm. For example, the manager may expect to receive the institutional investors' support for future salary increases, generous bonuses, or approval of other suggestions made by the manager. Without loss of generality, we may think of this kind of remuneration as taking the form of support in future votes. The analysis developed in the previous section must be slightly altered to fit this kind of remuneration. But the basic result remains the same.

174. *Id.* at 235 tbl.2.

175. *Id.* at 236.

In the previous setting of external remuneration it was shown that holdings in the unilaterally coordinating firm (by the benefitted institutional investor) is redundant, and in fact harmful to the scheme. The holding was superfluous, because management could tunnel profits to the firm in which the institutional investor has a financial interest even if the institutional investor has no holdings in the unilaterally coordinating firm. And the grateful institutional investor could then reward management in the future with a generous consulting agreement or the like. There was no need for the institutional investor to hold stock of the unilaterally coordinating firm at all. As explained, holding in the unilaterally coordinating company was in fact harmful because it made the scheme less profitable, more likely to be detected, and potentially exposed the institutional investor to sanctions for breach of its own duties (when such are owed).

By contrast, if the reward to managers is to take the form of support in future votes, holdings in the unilaterally coordinating firm are essential, at least at the stage when management receives its "payment." If the institutional investor has no holdings in the unilaterally coordinating firm, it cannot support management in votes.

However, the previous observations still hold: The scheme is still less profitable due to the institutional investor's holding in the unilaterally coordinating firm; the risk of detection is greater; and the institutional investor itself may be liable for breach of its own duties (in jurisdictions where shareholders owe fiduciary duties to other shareholders). It would therefore generally be preferable for the institutional investor to purchase equity of the unilaterally coordinating firm after unilateral coordination had occurred rather than before management unilaterally coordinates. The institutional shareholder would then purchase equity after the stock had depreciated in value due to the tunneling of profits to the competing firm, rather than hold the unilaterally coordinating firm's stock as it depreciated in value. This would also make detection far less likely. Cross ownership at the time of unilateral coordination is still unnecessary and harmful (due to the increased risk of detection). The stock can be purchased at a later stage.

But even if, for whatever reason, the benefitted institutional investor had to hold equity of the unilaterally coordinating firm before management unilaterally coordinated, the other objections to the hypothesis would remain relevant: Other institutional investors whose

holdings in the unilaterally coordinating firm were greater than their holdings in the firm to which profits flowed would likely retaliate against managers that harmed them. Even if these investors did not file a lawsuit or file complaints with the authorities, they could be expected to vote against management in future votes. And since the setting envisaged is one in which the benefitted shareholder is a shareholder with relatively small holdings in the unilaterally coordinating firm, the net effect on future voting will regularly be negative from management's perspective. The benefitted shareholder is, by definition, the shareholder whose holdings are small (relative to its other holdings), whereas all shareholders whose holdings are greater in the unilaterally coordinating firm will have been alienated. As the data in tables 2, 3, and 4 suggest, such a strategy would not have been a profitable strategy (from management's perspective) in any of the industries for which data are offered in the recent literature. The would-be alienated shareholders' holdings far exceed those of the would-be grateful shareholders.

Additionally, Rock and Rubinfeld's observation regarding the possibility of self-correction by the market makes any such plan even less likely to succeed.¹⁷⁶ Even if the harmed institutional investors do not retaliate against management at their own initiative, any investor that noticed that the unilaterally coordinating firm was underperforming would find it to be a lucrative investment, and could easily purchase stock with a view to replacing management or altering its conduct (recall, again, that the benefitted shareholder is not a controlling shareholder). Once again, as mentioned, this investor could then quite easily persuade those investors that management had wronged to join it in outvoting management. Importantly, the investor need not even purchase a significant share of the unilaterally coordinating firm's equity (although this might be a profitable strategy, as the stock would be underpriced). In all of the industries surveyed, unilateral coordination harms investors that hold a larger share of the firm's equity than the potentially benefitted shareholder. Thus, there would be no need for a hostile takeover, major purchases by activist investors, or the like. Simply acquiring some equity and drawing shareholders' attention to what had transpired would be enough. And, of course, this will have been profitable for the activist

176. *See id.* at 251.

investor, who will have bought the equity at the lower price and could sell it once the unilateral coordination was discontinued.

Therefore, although support in future votes, or future internal remuneration, is slightly different from other forms of consideration, on closer examination this does not alter the analysis significantly. Such forms of remuneration indeed require the investor to which profits are tunneled to hold equity of the unilaterally coordinating firm at some point. But this form of consideration too does not require holdings at the time of the unilateral coordination. And in this setting too, it seems more profitable and less risky for the benefitted shareholder to purchase stock post-coordination. In this setting too, there is no reason to think that cross ownership causes, facilitates, or even streamlines unilateral coordination.

III. THE EMPIRICAL EVIDENCE

As mentioned, the influential research by Azar et al., which is the cornerstone of the recent theories of competitive harm, found empirical evidence supporting the hypothesis that institutional investors' cross ownership dampens competition. Analyzing the airline industry, Azar et al. identify a positive effect of common ownership on ticket prices.¹⁷⁷ They use a measurement of concentration that incorporates ownership-concentration into the concentration-measurement of an industry—the MHHI.¹⁷⁸ Azar et al. use a measurement of the effect of common ownership (“MHHIΔ”), developed by O'Brien and Salop.¹⁷⁹ They exploit BlackRock's acquisition of Barclays Global Investors to confirm the results and find that “ticket prices are approximately 3% to 7% higher in the average U.S. airline route than would be the case under separate ownership.”¹⁸⁰

This would seem to support the recent theory of competitive harm. However, Azar et al.'s methodology has been challenged by several subsequent writers.¹⁸¹

177. Azar et al., *supra* note 5, at 1517, 1523–49.

178. *Id.* at 1532 tbl.4. The MHHI is a modified HHI. On the basic HHI, see *supra* note 25.

179. Azar et al., *supra* note 5, at 1519.

180. *Id.* at 1517.

181. See O'Brien & Waehrer, *supra* note 44, at 25–26; Gramlich & Grundl, *supra* note 50, at 5; Rock & Rubinfeld, *supra* note 1, at 223, 229–51; Hemphill & Kahan, *supra* note 18, at 1397–98.

First, the use of MHHIA, as well as any HHI-type measurement (which Gramlich and Grundl denote as GHHI—General HHI),¹⁸² suffers from potential endogeneity problems. This is the case because quantities cleared by the market, which the HHI uses to measure concentration, are a function, *inter alia*, of market concentration¹⁸³ and because ownership shares are not strictly an independent variable. Ownership shares (MHHI—the independent variable used by Azar et al.) are dependent, *inter alia*, on factors other than common ownership, which affect both price and MHHI.¹⁸⁴ Therefore, the relationship between price and MHHI may be a function of these factors. Gramlich and Grundl themselves, when controlling for the endogeneity problem, find mixed results.¹⁸⁵

Second, Rock and Rubinfeld argue that the change in concentration in holdings that resulted from BlackRock's merger with BGI (from around 3 percent each to 6 percent) is, from a theoretical perspective, an implausible explanation for the price increase.¹⁸⁶ They also discuss additional possible events that may have triggered the price increase, arguing that these are not controlled for in the Azar et al. research.¹⁸⁷

Third, Rock and Rubinfeld argue that the timing of the “natural shock”—BlackRock's merger with BGI—coincides with at least two or three other potentially powerful explanations for the price increase.¹⁸⁸ The merger occurred in 2009, a year after Delta's acquisition of Northwest airlines, and when the adverse effects of the 2008 recession were diminishing.¹⁸⁹ Also, in 2010, one year following the merger, United acquired Continental.¹⁹⁰ Rock and Rubinfeld suggest that these mergers may have increased product quality, which in turn might imply that quality-adjusted prices stayed constant or even decreased.¹⁹¹ Alternatively, even if quality-adjusted prices

182. Gramlich & Grundl, *supra* note 50, at 2.

183. *Id.* at 2–3.

184. *Id.*

185. Gramlich & Grundl, *supra* note 50, at 3, 19–29. Rock & Rubinfeld note that Azar et al. comment on the endogeneity, but do not offer instrumental variables to control for this. See Rock & Rubinfeld, *supra* note 1, at 242.

186. Rock & Rubinfeld, *supra* note 1, at 242–43.

187. *Id.* at 243.

188. *Id.* at 243–44.

189. *Id.*

190. *Id.* at 244.

191. *Id.*

indeed increased, this could have been a result of increased product-market concentration (attributable to mergers within the product market), rather than of increased concentration at the shareholder level.¹⁹² Ultimately, Rock and Rubinfeld “find unconvincing Azar et al.’s evidence suggesting that increased ticket prices were due to the BlackRock/BGI merger rather than these alternative, highly plausible, explanations.”¹⁹³

Finally, Hemphill and Kahan point to a mismatch between the empirical evidence and the underlying theories of competitive harm. They offer a typology that distinguishes between potential mechanisms along three different dimensions and show that at least some of the potential mechanisms are not supported by the empirical findings.¹⁹⁴ They too find “the case for broad reform unproven”¹⁹⁵ and that there is “a persistent gap in our empirical understanding of common ownership, namely direct evidence about the ‘who, where, when, and how’ that [concentrated common owners] employ.”¹⁹⁶

In addition to the empirical gap that has already been identified, the insights offered in this Article suggest that the empirical findings supporting the theory of competitive harm are problematic from another important perspective. As explained, compensation mechanisms linking managerial compensation to industry performance by granting managers stock and options cannot incentivize unilateral coordination. They can, however, incentivize outright cartelistic conduct.¹⁹⁷ Consequently, if the validity of the recent theory of competitive harm is to be tested empirically, industries in which managerial compensation typically includes a significant portion of stock and options must be distinguished from industries in which such compensation is insignificant. Only supra-competitive pricing observed in the latter case may lend support to the theory. Supra-competitive pricing in industries in which managerial compensation is linked to the firm’s performance may only lend support to traditional theories of competitive harm. However, Azar et al. did not collect data on performance-based compensation of

192. *Id.*

193. *Id.*

194. Hemphill & Kahan, *supra* note 18, at 1399.

195. *Id.* at 1450.

196. *Id.* at 1440.

197. *See* sources cited in *supra* notes 128–31.

management in the industry.¹⁹⁸ In line with current theory, the authors considered industry-linked performance-based compensation to be one of several mechanisms through which shareholders may incentivize management to compete less vigorously by unilaterally coordinating.¹⁹⁹ Even if such mechanisms are identified, their prevalence in the industry is a key determinant of their potential to induce unilateral coordination.²⁰⁰ This significantly widens the gap between the empirical evidence collected by Azar et al. and the underlying theory, a gap that Hemphill and Kahn have already pointed to.²⁰¹

As mentioned, Kennedy et al. attempt to address the issues identified with Azar et al.'s research. They apply a different approach to the same industry, substituting indices of common ownership incentives for concentration measures.²⁰² Attempting to construct the same dataset, they find no evidence that common ownership raises prices.²⁰³

The tentative conclusion to be drawn from the current state of the empirical research is that the most recent empirical findings support the theory developed in this Article (and are supported by it), casting serious doubt on the recent theory of competitive harm. This conclusion is, as suggested, tentative, and should be taken with a grain

198. See Azar et al., *supra* note 5, at 1556–60.

199. *Id.* at 1556, 1558–60.

200. The predictions suggested by this Article are in fact very nuanced regarding how common such mechanisms must be in an industry to induce unilateral coordination. Even if a mechanism that links managerial compensation to industry-wide performance—and detaches compensation from firm-specific performance—is introduced, the prevalence of this mode of compensation in the industry must also be considered. Perhaps counter-intuitively, industry-wide linkage of performance-based compensation to industry performance will *not* incentivize unilateral coordination. The reason is that all of the firms in which such a compensation mechanism is in place are incentivized to unilaterally coordinate. Therefore, if all firms in the industry have such compensation plans in place, each will try to raise its price above that of the competing firms, and industry prices will be too high, resulting in lost profit. Industry-wide prevalence of industry-performance-dependent compensation will result in a race to the top (from a price perspective), or to the bottom (from an overall profit perspective). Industry-wide prevalence of such compensation plans will, however, incentivize cartelistic behavior. Managers will have an interest in reaching an anti-competitive agreement with their competitors (to the benefit of shareholders), as their profits are maximized if total industry profits are maximized. It is only when *some* firms in the industry have such compensation plans in place that unilateral coordination is plausible. Any empirical research attempting to ascertain the validity of the theory must be sensitive to this observation. See Abrantes-Metz & Sokol, *supra* note 125.

201. Hemphill & Kahan, *supra* note 18, at 1410.

202. Kennedy et al., *supra* note 1, at 4.

203. *Id.*

of salt. The empirical findings are controversial, and this controversy has attracted quite some attention,²⁰⁴ resulting in “diametrically opposed results.”²⁰⁵ Ultimately, while the most recent empirical studies indeed support the argument pressed in this Article, it seems that the most compelling conclusion regarding the empirical results is Rock and Rubinfeld’s conclusion that “[t]here is more work to be done,”²⁰⁶ echoed by Hemphill and Kahan’s call for more calibrated empirical research.²⁰⁷

IV. POLICY IMPLICATIONS

Following the now widely accepted analysis according to which cross ownership of firms in oligopolistic product markets spontaneously results in supra-competitive pricing, antitrust doctrine has been called on to combat such cross ownership. The argument is that such cross ownership should be considered to run afoul of section 7 of the Clayton Act.²⁰⁸ To that end, interpretations and analyses of the “investment-only” exemption afforded by the HSR have been advanced, arguing that when the relevant transaction-size and firm-size thresholds are met, acquisitions of oligopolistic firms’ stock by cross owning institutional investors should be subject to ex ante antitrust scrutiny.²⁰⁹

The analysis developed in this Article shows that this recent theory misses the mark. Cross ownership by institutional investors does not, in and of itself, harm competition in any way. However, the policy implications of the analysis offered in this Article require an additional step. The conclusion that antitrust law should not deal with the phenomenon at all does not automatically follow. The reason is that even if such cross ownership cannot incentivize unilateral coordination, it may nonetheless incentivize different anti-competitive conduct. If that is the case, there may be reason to condemn it.

204. See Rock & Rubinfeld, *supra* note 1, at 242 (addressing a potential solution that Azar et al. offer to the endogeneity problem and explaining why they do not find the solution compelling); Gramlich & Grundl, *supra* note 50, at 2 n.1 (discussing additional empirical studies with contradicting results); Heung Jin Kwon, Executive Compensation Under Common Ownership 1 (Nov. 29, 2016), <http://fmaconferences.org/Boston/ExecutiveCompensationunderCommonOwnership.pdf> (unpublished paper); Antón et al., *supra* note 118, at 50.

205. Rock & Rubinfeld, *supra* note 1, at 247.

206. *Id.* at 245.

207. See Hemphill & Kahan, *supra* note 18, at 1441.

208. Rock & Rubinfeld, *supra* note 1, at 222.

209. *Id.* at 274–77.

Specifically, although shareholders' preference for lax product-market competition cannot trickle down to management through the holding structure, cross ownership may still theoretically incentivize explicit coordination. Merger control is, as mentioned, designed to preempt potential harm to competition.²¹⁰ Therefore, stock acquisitions that incentivize managements to inhibit competition may justifiably be blocked.

The problem, however, is that application of antitrust law to passive cross ownership has a significant social cost on the one hand and is redundant in addressing the actual competitive concerns on the other. Additionally, coordination is neither alleged, nor likely, as demonstrated by Hemphill and Kahan.²¹¹ Disallowing mergers based on the new theories of competitive harm is thus an attempt to address a very rare (and possibly merely theoretical) phenomenon with a blunt tool, the costs of which far exceed its benefits.

First, it is extremely unlikely that institutional investors act as cartel ringmasters. Hemphill and Kahan review the modus operandi of institutional investors, and explain that the generation of, transmission of, and inducement to follow a cartelistic strategy is complex.²¹² There are several reasons for this. To begin with, the institutional investors that are identified in the literature on anti-competitive effects of common ownership are, with few exceptions, comprised of different business entities.²¹³ Each of these institutional investors is treated in the literature as a single entity, because their holdings are reported to the SEC on a consolidated basis²¹⁴ and through the same legal entity.²¹⁵ However, from a business perspective, these are multi-layered structures with divergent interests.²¹⁶ Their investment, recommendation, and voting operations are conducted by fund portfolio managers, analysts, and centralized voting units.²¹⁷ Fund portfolio managers make investment decisions for the funds they manage, and each fund portfolio manager is incentivized to increase

210. *See supra* note 86.

211. *See* Hemphill & Kahan, *supra* note 18, at 1409.

212. *Id.* at 1421.

213. *Id.*

214. Institutional investment managers managing at least \$100 million must use Form 13F for reports to the SEC. 15 U.S.C. § 78m(f)(1) (2012).

215. Hemphill & Kahan, *supra* note 18, at 1421.

216. *Id.* at 1421–23.

217. *Id.* at 1422.

the value of the fund under her management.²¹⁸ Fund portfolio managers care very little about the performance of other funds under different (business) management within the same institutional investor.²¹⁹ As each fund's portfolio is likely to be different from other funds' portfolios, fund portfolio managers have conflicting interests with respect to competition between portfolio firms.²²⁰ A second reason for why it would be difficult for an institutional investor to orchestrate a cartel is that transmission of the strategy, even assuming one was devised, and inducing performance are also complicated and dangerous.²²¹ Regardless of who within the institutional investor's organization interacted with portfolio firms' managers, a formidable problem in its own right,²²² Hemphill and Kahan argue that discussions of specific prices and quantity are likely to draw attention.²²³ Institutional investors regularly focus on corporate governance and compensation structure.²²⁴ A discussion of specific quotas or prices (with more than one product-market firm) would "almost certainly raise eyebrows."²²⁵ And institutional investors are extremely sensitive to the reputational costs associated with scandals.²²⁶ The huge impact of even very slight changes in assets under management is destructive, even if it is not accompanied by criminal charges.²²⁷ Institutional investors (specifically mutual fund companies):

[H]ave largely succeeded in staying on everybody's good side. The largest players, in particular, enjoy a squeaky-clean image. Any suggestion that an investment advisor as a whole . . . had a policy of encouraging firms to pursue an anticompetitive strategy would be damaging. . . . And a criminal investigation, let alone an indictment, could be devastating.²²⁸

218. *See id.*

219. *See id.*

220. *Id.* at 1422–23.

221. *See id.* at 1424.

222. *Id.* at 1423–26.

223. *Id.* at 1425.

224. *Id.*

225. *Id.*

226. *Id.* at 1435.

227. *Id.*

228. *Id.*

Thus, although theoretically possible, the cartel-ringmaster scenario is an extremely unlikely one. Moreover, even regardless of the implausibility of the scenario, blocking mergers based on the new theories of competitive harm seems unjustified from a regulatory cost-benefit analysis.

On the cost side, the logic behind applying merger control for fear of explicit coordination or information-sharing applies not only to cases of significant cross ownership. It applies to any case of a shareholder owning stock in two competing firms. The implications of a rule designed to prevent such competitive harm would be that all instances of cross holding should be regulated, regardless of the share of the outstanding stock that is held in each of the firms. Any transaction meeting the transaction-size and firm-size thresholds would need to be blocked. As explained, in contrast to unilateral coordination, regular coordination—tacit or explicit—benefits both coordinating firms. If a shareholder is in a position to stabilize a cartel (and bear the associated risks), other shareholders' interests will also have been served through this coordination. The incentives to eliminate competition are ever-present, and cross ownership does not alter them in any way. Thus, coordination through a joint shareholder is simply a matter of opportunity and willingness, not of a difference in incentives. The question of whether cross ownership is significant should not matter. If explicit coordination is truly a concern (and there is little reason to think that it is), the “investment-only” exception to premerger scrutiny would be effectively abolished. In the specific context of institutional investors, a prohibition on cross ownership has unimaginable costs. A rule regulating institutional investors' ability to diversify their portfolio will impact the degree of diversification, which is an important social tool. Such a rule will increase institutional investors' (and through them, retail investors') exposure to firm-specific idiosyncratic risk. Posner et al.'s proposal to limit institutional investors' holdings in oligopolistic industries is a notable example of this risk. Posner et al. have suggested limiting institutional investors by either allowing them to own stock of only one firm in an oligopolistic industry, or by limiting the holdings in each of the firms to a total of 1 percent of the value of the industry.²²⁹ The first of these clearly results in reduced diversification. The second limits the total

229. Posner et al., *supra* note 2, at 724.

amount any institutional investor may invest in a specific (oligopolistic) industry, which imposes a social cost borne by both sides of the investment transaction: Institutional investors are forced to invest significantly larger portions of their portfolio in less appealing opportunities, and oligopolistic-product-market firms are denied access to capital which would otherwise have been forthcoming. Posner et al. acknowledge that their proposal has a negative impact on diversification.²³⁰ They argue that the size of the effect on diversification would be limited.²³¹ But even if the effect on diversification is limited, it nonetheless exists. The diversification and discretion of the investors through whom the vast majority of investors are exposed to capital markets is curtailed. And this will affect trillions of dollars of investments.

On the benefit side of applying merger control to this setting, very little can be gained from such application. As cross ownership itself does not affect the incentives of management, no spontaneous anti-competitive conduct can be expected to ensue. Competition may be inhibited only through explicit coordination at the managerial level. Such coordination already violates both antitrust laws and corporate laws. As explained, each institutional investor has opposing preferences with respect to the unilaterally coordinating firm. Therefore, institutional investors would need to coordinate amongst themselves in order to agree on which firm would unilaterally coordinate. This kind of agreement would itself be an antitrust offense. Even assuming such an agreement were reached, institutional investors would then need to communicate their instructions to management, which could not know how to act until instructed. Instruction to management to prefer a course of action that benefits the cross owning shareholder (or shareholders) at the expense of the firm (and all other shareholders) is disallowed by corporate law. Managers who complied with the instructions would be intentionally inflicting

230. *Id.* at 720.

231. *Id.* at 710 (citing John Y. Campbell et al., *Have Individual Stocks Become More Volatile? An Empirical Exploration of Idiosyncratic Risk*, 56 J. FIN. 1 (2001)). They also suggest additional reasons for why the impact on diversification would be limited. These include the narrower definition of industry as compared to that proposed by Campbell et al. (who broke major stocks into forty-nine industries), the importance of industry diversification, a lack of effect on holdings in industries that are not concentrated, and a "safeguard" policy that would allow holdings even within the same oligopolistic industry.

harm on the corporation,²³² thereby breaching their own fiduciary duties.²³³

It is important to note that, in this context, corporate law would prohibit compliance with such instructions independently of antitrust laws. In other circumstances, anti-competitive conduct benefits all coordinating firms, and as a derivative, all of their shareholders. Therefore, absent an antitrust prohibition, corporate law should not only allow, but in fact encourage anti-competitive conduct and coordination. If not for antitrust law's prohibition, corporate law would applaud even the formation of cartels. It is only antitrust law's condemnation of cartels and other anti-competitive business practices that makes them problematic from a corporate-law perspective.

By contrast, in the current setting the vast majority of the unilaterally coordinating firms' stakeholders lose from the anti-competitive conduct. As mentioned, unilateral shareholding is simply a form of tunneling. With the exception of the cross owning shareholder (or shareholders), whose holdings in the unilaterally coordinating firm must be relatively small (otherwise unilateral coordination will have been unprofitable), all shareholders of the unilaterally coordinating firm lose from this unilateral coordination. Corporate law prohibits such conduct, which is an egregious breach of management's fiduciary duties, regardless of any antitrust-law prohibition.

Therefore, two independent legislative systems, antitrust law and corporate law, already prohibit the only type of conduct that cross ownership may incentivize. And each of these pieces of legislation prohibits the conduct independently of the other's prohibition. There is little value in additional pieces of legislation that may be applied to the situation.

If there were no downside to applying merger control to the situation, its application would be neither beneficial nor harmful. But given the social cost of forcing institutional investors to less lucrative investments or to undiversified (or much less diversified) portfolios, and given the unlikelihood of the cartel ringmaster scenario, the social cost is significant. And the benefit of an additional piece of legislation that may be cited to address conduct that is already prohibited seems

232. MODEL BUS. CORP. ACT § 8.09 (AM. BAR ASS'N 2019).

233. *Id.* § 8.30.

extremely small. It is far better to steer clear from unnecessarily regulating institutional investors' strategy, diversification, and discretion.

The conclusion to be drawn from the analysis presented in this Article is, therefore, that antitrust law should not be harnessed to prohibit passive cross ownership by non-controlling institutional investors.