TRANSACTION COSTS IN COMMON OWNERSHIP*

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A phenomenon known as "Common Ownership" arises when shareholders hold substantial stakes in competing firms. Although recent empirical evidence has illustrated how common concentrated owners are associated with higher product market prices and lower output, scholars remain divided as to the precise mechanism through which common ownership can induce anti-competitive outcomes. In this Article, I propose a novel framework to evaluate the likelihood of candidate mechanisms of anti-competitive harm in common ownership. I argue that all disagreements over the anti-competitive mechanisms of common ownership hinge on a central determinant: the transaction costs of internalizing pecuniary externalities between portfolio firms. I define two broad categories of transaction costs: information costs and coordination costs. Information costs relate to costs involved in implementing mechanisms of anti-competitive harm that rely on unilateral effects, while coordination costs relate to costs involved in implementing mechanisms that rely on coordinated effects. Where the transaction costs of internalizing such externalities are positive, common owners will tradeoff the gains from internalizing these externalities with the costs involved in doing. I characterize this tradeoff by introducing a new parameter: "tailoring." The degree of tailoring reflects the extent to which a common owner would rationally exert *actual* control. Highly tailored mechanisms internalize more pecuniary externalities, but incur more transaction costs. On the other hand, untailored mechanisms internalize fewer pecuniary externalities, but incur less transaction costs.

In the context of institutional investing, my analytical framework suggests that institutional investors who are also common owners face large transaction costs in implementing highly tailored mechanisms. These investors are far more likely to pursue relatively untailored mechanisms' effects instead. Similarly, institutional investors face relatively large transaction costs in implementing mechanisms that induce unilateral effects and are thus likely to prefer mechanisms that induce coordinated effects. I contend that optimal policy responses to the anti-competitive effects of

common ownership should focus on mechanisms that institutional investors are likely to harness in reducing competition between their portfolio firms. Here, legal reforms can play a critical role in changing the incentives of common owners by increasing the transaction costs of implementing particular mechanisms of anti-competitive harm and in changing the incentives of non-common owners by decreasing the transaction costs of implementing pro-competitive mechanisms. These mechanism-specific remedies have significant advantages when compared to competing proposals in the literature.

I. INTRODUCTION

Common Ownership, or "Horizontal Shareholding," arises where shareholders hold substantial stakes in competing firms. Like horizontal mergers, common ownership is said to lead to anti-competitive effects through one of two means.[1] First, a common owner has an incentive to modify a portfolio firm's conduct so that the firm maximizes its portfolio profits as opposed to the firm's individual profits.[2] Essentially, a common owner has the unilateral incentive to internalize the pecuniary externality of a portfolio firm's actions on rival firm profits within its portfolio, even in the absence of any collusion or communication between firms *inter se*. The resulting adverse consequences are commonly known as "unilateral effects."[3] Second, common ownership may, through various means, ameliorate the sustainability of collusion amongst competing portfolio firms. These adverse consequences are known as "coordinated effects."[4] Either of

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1. The two means reflect the distinction between the two separate channels through which competition in product markets may be impaired in merger control. Where the post-merger firm finds it profitable to raise its prices independent of its rivals' conduct, the adverse consequences are known as "unilateral effects." Where the merger induces changes in market structure that may promote tacit or explicit coordination among firms, the adverse consequences are known as "coordinated effects." *See* U.S. DEP'T OF JUST. & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 2 (2010) (distinguishing between unilateral and coordinated effects).

2. Such a firm acting under the common owner's influence is commonly said to be a "portfolio-value maximizer," as opposed to a "firm-value maximizer," which maximizes the firm's individual profits. *See* Martin C. Schmalz, *Common-Ownership Concentration and Corporate Conduct*, 10 ANN. REV. FIN. ECON. 413, 417 (2018) (explaining that unless a firm has a controlling shareholder that has no economic interests outside that firm, there is no reason for a firm to maximize its own value, or for shareholders to induce management to do so); *see also* Oliver D. Hart, *On Shareholder Unanimity in Large Stock Market Economies*, 47 ECONOMETRICA 1057, 1057 (1979) ("In an economy with complete markets, the owners of a firm will unanimously desire the firm to maximize profits if it is a perfect competitor.").

3. U.S. DEP'T OF JUST., *supra* note 1, at 20.

4. *Id.* at 24.

the two channels is likely to result in a decrease in competition by the commonly owned firms across product markets, resulting in increased prices and/or a lower quality of goods and services for consumers.

Although scholars have known about these potential anti-competitive effects for a long time, common ownership has not received much attention from legal academics until recent years. Ostensibly, this rise in interest has been driven by real-world changes in the structure of capital markets over the past century. In 1950, institutional investors owned about 7% of public companies in the United States. Today, they hold almost 70% of the U.S. market.[5] When combined, three firms alone—Vanguard, Blackrock, and State Street—constitute the largest shareholder in 88% of the S&P 500.[6] More importantly, Backus et al. illustrate how the "profit weight" of an average firm in the S&P 500—a measure indicating the degree of importance that a given firm places on the profits of other firms—has risen from about 0.2 in 1980 to almost 0.7 in 2017.[7] In European markets, institutional investing is also on the rise: Blackrock, for example, is already the largest shareholder of a third of the largest companies in the UK and the German public-exchange markets.[8] In 2015, institutional investors held more than 60% of the entire German chemical industry; in 2016, pension funds in Iceland had acquired shareholdings in most of the local companies, including 50% of telecommunication firm shares.[9]

This increasing concentration in capital markets has sparked a heated debate on whether the anti-competitive effects of common ownership are sufficiently great to warrant regulatory intervention.[10] At the risk of over-

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5. José Azar, Portfolio Diversification, Market Power, and the Theory of the Firm 2 (Aug. 23. 2017) (unpublished manuscript), https://dx.doi.org/10.2139/ssrn.2811221.

6. Jan Fichtner et al., *Hidden Power of the Big Three? Passive Index Funds, Re-Concentration of Corporate Ownership, and New Financial Risk*, 19 BUS. & POL. 298, 313 (2017).

7. Matthew Backus, Christopher Conlon & Michael Sinkinson, *Common Ownership in America: 1980–2017*, 13 AM. ECON. J.: MICROECON., Aug. 2021, at 273, 275; *see also* discussion *infra* Section II.B.

8. *See* Antonio Capobianco, *Common Ownership by Institutional Investors and Its Impact on Competition*, OECD (Dec. 6, 2017), http://www.oecd.org/competition/common-ownership-and-its-impact-on-competition.htm [https://perma.cc/YZK5-5CW9] (describing theoretical and empirical foundations for the competition concerns associated with common ownership and proposing policy responses); *see generally* John P. Weche & Achim Wambach, *The Fall and Rise of Market Power in Europe*, 241 JAHRBÜCHER FÜR NATIONALÖKONOMIE UND STATISTIK 555 (Nov. 2021) (Ger.) (analyzing recent developments of average market power in Europe).

9. Capobianco, *supra* note 8, at 15.

10. *See, e.g.*, Einer Elhauge, *How Horizontal Shareholding Harms Our Economy-And Why Antitrust Law Can Fix It*, 10 HARV. BUS. L. REV. 207 (2020) (arguing that when

generalization, this debate has generally proceeded on two distinct fronts. On one front, scholars have disagreed over the empirical basis for the relationship between common ownership and higher product market prices.[11] In a seminal article, Azar *et al*. found that common ownership among owners of American airline companies was positively correlated with higher ticket prices along routes in which those airlines compete.[12] Critics, however, assert that an extension of these findings to the macroeconomy may not be warranted without more empirical support.[13] Koch *et al*., for instance, find

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horizontal shareholding has anti-competitive effects, it is illegal under Clayton Act § 7 and Sherman Act § 1); Eric A. Posner et al., *A Proposal to Limit the Anti-competitive Power of Institutional Investors*, 81 ANTITRUST L.J. 669 (2017) (advocating aggressive regulation); BARBARA NOVICK ET AL., INDEX INVESTING AND COMMON OWNERSHIP THEORIES, BLACKROCK (2017), https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-index-investing-and-common-ownership-theories-eng-march.pdf [https://perma.cc/87HM-X UEV] (advocating that no regulation is needed at this point); *see also* Edward B. Rock & Daniel L. Rubinfeld, *Antitrust for Institutional Investors*, 82 ANTITRUST L.J. 221 (2018) (addressing antitrust issues presented by common ownership by large, diversified investors); Lucian A. Bebchuk et al., *The Agency Problems of Institutional Investors*, 31 J. ECON. PERSPECTIVES 89 (2017) (discussing the effects of the rise of institutional investors on corporate governance); C. Scott Hemphill & Marcel Kahan, *The Strategies of Anti-competitive Common Ownership*, 129 YALE L.J. 1392 (2020) (examining the causal mechanisms that link common ownership to anti-competitive effects).

11. *See* José Azar et al., *Anticompetitive Effects of Common Ownership*, 73 J. FIN. 1513 (2018) (supporting this proposition); Pauline Kennedy et al., The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence (Jul. 2017) (unpublished manuscript), https://dx.doi.org/10.2139/ssrn.3008331 (showing no empirical support for the proposition by finding no evidence that common ownership raises airline prices); Patrick J. Dennis et al., *Common Ownership Does Not Have Anticompetitive Effects in the Airline Industry*, 77 J. FIN. 2765 (2022) (arguing against the proposition). *But see* José Azar, Martin C. Schmalz & Isabel Tecu, The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence: Reply (Sept. 27, 2018) (unpublished manuscript), https://dx.doi.org/10.2139/ssrn.3044908 (casting doubt on the findings of Kennedy et al., *supra* note 11); José Azar, Martin C. Schmalz & Isabel Tecu, Reply to: "Common Ownership Does Not Have Anti-Competitive Effects in the Airline Industry," (Apr. 24, 2018) (unpublished manuscript), https://dx.doi.org/10.2139/ssrn.3168095 (rebutting the counterarguments raised by Kennedy et al., *supra* note 11); *see also* Lysle Boller & Fiona Scott Morton, *Testing the Theory of Common Stock Ownership* (Nat'l Bureau Econ. Rsch., Working Paper No. 27515, 2020) (finding that increases in common ownership cause increases in stock returns); Jie (Jack) He & Jiekun Huang, *Product Market Competition in a World of Cross-Ownership: Evidence from Institutional Blockholdings*, 30 REV. FIN. STUD. 2674 (2017) (indicating that cross-ownership by institutional investors offers strategic benefits by fostering product market coordination).

12. Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1513.

13. One key concern is the endogeneity of ownership which arises due to the fact that common ownership is influenced by portfolio firm profits, creating bilateral causality between common ownership and firm profitability. *See* Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1517–18 (conducting a variety of placebo tests to alleviate concerns about model misspecification and the endogeneity of market shares).

that common ownership is neither positively related with output prices nor negatively related with measures of non-price competition, as would be expected if common ownership reduced competition.[14] On a separate front, a debate has raged over exactly *how* common owners can induce changes in competitive outcomes.[15] Commonly referred to as the literature on the "causal mechanisms" of common ownership, scholars disagree on the likelihood of candidate channels through which common owners may influence product market competition. Elhauge, for example, has contended that common owners have multiple avenues (e.g., executive compensation, exit rights, board elections, etc.) whereby they can raise equilibrium product market prices relative to a counterfactual without common ownership.[16] In contrast, scholars like Morley have disagreed, pointing out that the economic agents acting on behalf of common owners are systemically disincentivized from interfering with product market decision-making in portfolio firms.[17] Importantly, the precise mechanism through which common ownership induces anti-competitive outcomes has yet to be identified.[18]

In this Article, I introduce a novel criterion to evaluate the likelihood of candidate mechanisms of anti-competitive harm in common ownership. I argue that *all* disagreements over the anti-competitive mechanisms of common ownership hinge on a central determinant: the *transaction costs* of internalizing pecuniary externalities between portfolio firms.[19] I define two

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14. Andrew Koch, Marios Panayides & Shawn Thomas, *Common Ownership and Competition in Product Markets*, 139 J. FIN. ECON. 109, 111 (2021).

15. *See* Koch et al., *supra* note 14 (noting that common institutional owners can influence managerial choices to reward less competitive outcomes through their access to top executives, voting power, and influence over CEO compensation).

16. Einer Elhauge, *The Causal Mechanisms of Horizontal Shareholding*, 82 OHIO STATE L.J. 1, 6 (2021).

17. John D. Morley, *Too Big to Be Activist*, 92 S. CAL. L. REV. 1407, 1412 (2019).

18. Jens Frankenreiter et al., *Cleaning Corporate Governance*, 170 U. PA. L. REV. 1, 7 (2021). However, recent empirical work has provided evidence detailing how common owners have employed certain mechanisms to achieve their anti-competitive objectives. *See* discussion *infra* Section V.A.

19. The use of the term "transaction costs" here includes a large umbrella of costs. I incorporate Dahlman's framework, which provides a taxonomy of transaction costs that incorporate search costs, bargaining and decision costs, as well as enforcement costs. The category of bargaining and decision costs would include costs associated with a large class of moral hazard and adverse selection problems (including agency costs), as strategic bargaining is likely to take place in the presence of private information. They would also include the costs associated with collective decision making (say, through a voting mechanism). Carl J. Dahlman, *The Problem of Externality*, 22 J.L. & ECON. 141 (1979). Second, I also include costs associated with inefficiencies associated with incomplete contracting. Many of these costs arise because of ex-ante (firm-specific/relationship-specific) underinvestment induced

broad categories of transaction costs: information costs and coordination costs.[20] Information costs refer to the costs involved in implementing mechanisms of anti-competitive harm that rely on unilateral effects, while coordination costs refer to the costs involved in implementing mechanisms that rely on coordinated effects.[21]

Where the transaction costs of internalizing such externalities are positive, common owners will tradeoff the gains from internalizing these externalities with the costs involved in doing so.[22] Essentially, the anti-competitive effects of common ownership arise from the potential for common owners to internalize the pecuniary externalities that each portfolio firm imposes on other rival firms within the common owners' portfolios.[23] However, the mere fact that such "gains from trade" arise from common ownership does not necessarily entail that common owners must rationally internalize all of them.[24] Indeed, a dominant theme in organizational

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by the threat of ex-post opportunism. *See* Oliver Hart & John Moore, *Incomplete Contracts and Renegotiation*, 56 ECONOMETRICA 755 (1988) (developing a theory of incomplete contracts); *see also* OLIVER E. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS: A STUDY IN THE ECONOMICS OF INTERNAL ORGANIZATION (1975) (explaining that the same transaction costs which impede autonomous contracting between individuals also impede market exchange between technologically separable work groups); Benjamin Klein et al., *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978) (exploring the cost that is the possibility of post-contractual opportunistic behavior). Note that this notion of transaction costs also includes coordination costs, conceiving of both tacit and explicit collusive agreements as "transactions."

20. The term "information costs" relates to costs that are mostly informational in nature, but also includes other costs (e.g., costs arising from conflicts of interest) that reflect difficulties in implementing a common owner's unilateral preferences. *See* discussion *infra* Part III.

21. HORIZONTAL MERGER GUIDELINES, *supra* note 1, at 20, 24.

22. The intuition here is very similar to that expressed in Roger B. Myerson & Mark A. Satterthwaite, *Efficient Mechanisms for Bilateral Trading*, 29 J. ECON. THEORY 265 (1983), where trade, while efficient, may nevertheless fail to occur with a positive probability due to information asymmetries.

23. This applies regardless of whether the common owner pursues a mechanism that leads to unilateral or coordinated effects (the only difference between the two being whether rival firms of the common owner's firms are taken to pursue cooperative or non-cooperative strategies). More generally, Gordon has noted that common owners have the incentives to internalize *any* type of externality across their portfolio firms. Roger Gordon, *Do Publicly Traded Corporations Act in the Public Interest?*, 3 B.E. J. ECON. ANALYSIS & POL'Y 1 (2003).

24. Hence, common ownership will *always* result in a reduction of competition relative to a counterfactual without common ownership. *See* Martin C. Schmalz, *Recent Studies on Common Ownership, Firm Behavior, and Market Outcomes*, 66 ANTITRUST BULL. 12, 16 (2021) (illustrating key issues for the future development of economics and finance research regarding effects of common ownership); Azar et al., *Anticompetitive Effects of Common*

economics is that individuals within a firm face all sorts of transaction costs (e.g., agency costs, costs of collective decision making, etc.) that prevent them from reaching the "pareto frontier"—otherwise known as "the best possible solution" common to the parties.[25] This, in turn, raises the question of why these parties continue to bear such transaction costs. There is a simple answer to this question—if the countervailing benefits from organizational structures that give rise to such transaction costs exceed the costs from pursuing alternative courses of action, then transaction costs are likely to persist, even in the long run.[26] As I will explain, one application of this phenomenon arises in the context of *power allocation* within firms.[27] Although allocating decision-making power to managers might give rise to large managerial agency costs, shareholders may be willing to *rationally* bear these costs if the benefits of delegating decision-making to managers outweigh the costs of doing so.

The introduction of transaction costs to the analysis of common ownership exposes a fundamental distinction between "vanilla" instances of common ownership often depicted in the literature and a contemporary setting where large institutional investors (like Blackrock, State Street, and Vanguard) are viewed as common owners in financial markets.[28] To appreciate the stark disparity between the two, consider two hypothetical scenarios. In the first scenario, an individual investor has common ownership of two bakeries, bakery *A* and bakery *B*, in a small town. For simplicity, assume that this investor has co-ownership of the two bakeries with another co-investor. As Patel has demonstrated, the anti-competitive effects stemming from common ownership here are obvious. Given that bakeries *A* and *B* compete in the same market, a portfolio-maximizing common owner has significant incentives to induce the bakeries to compete less (relative to non-commonly owned bakeries), since any bread sales that the owner loses

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Ownership, *supra* note 11, at 1538 (estimating that common ownership implies higher airline ticket prices compared to a counterfactual in which firms are separately owned or in which firms ignore the anti-competitive incentives of their shareholders).

25. *See generally* HENRY HANSMANN, THE OWNERSHIP OF ENTERPRISE (1996) (exploring how the balance between costs of contracting in the market and the costs of ownership effect the success of particular ownership forms).

26. This Article follows Hansmann in using a "survivorship test" as evidence of the relative weight of different transaction costs. *See generally id.* For example, if an alternative organizational form in financial markets were more efficient than widespread institutional investing, we should expect to see a market-wide shift to that organizational form over time. *Id.* at 22.

27. *See* discussion *infra* Sections II.C–D.

28. Backus et al. note that the latter scenario (i.e., institutional investing) is a recent incarnation of a much longer historical trend of an increase in diversified investment strategies. Backus et al., *supra* note 7, at 302.

from diminished competition in bakery *A* would generate additional bread sales for bakery *B* (and vice versa).[29] Indeed, the investor could do even better by inducing collusion between the two bakeries at the monopoly price, internalizing the entire effect of each bakery's competitive actions on the other. Implicit within this stylized framework, however, is the underlying assumption that the information and/or coordination costs of implementing the common owner's preferences are negligible. For example, the individual investor is assumed to be both able and willing to control the actions of the bakeries it co-owns.[30] The individual investor is also assumed to have complete knowledge of the effects of bakery *A*'s actions on bakery *B* (and vice versa). Finally, in the case where collusion occurs, the individual investor is assumed to be able to coordinate on an anti-competitive agreement vis-à-vis its co-investor and their bakeries.

In the second scenario, an investor manager like Blackrock is taken to be a common owner. Unlike an individual investor in the aforementioned scenario, investor managers are *financial intermediaries*—that is, they have a dual-layered agency relationship where they both act on behalf of fund investors and are equity holders in the firms in which they hold blocks.[31] Importantly, although an investment manager has certain control rights (e.g., voting rights) and exit rights over its clients' investments, each of the investment manager's clients (fund investors) often have their own individualized owners, individualized preferences, and distinct corporate existence.[32] As Morley has pointed out, "Blackrock does not own much of anything—its funds do."[33] Thus, when Blackrock (and its fund managers) votes on behalf of its clients, it may take into account the potential for conflicts of interest between its clients, given how each client is a separate

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29. *See* Menesh S. Patel, *Common Ownership, Institutional Investors, and Antitrust*, 82 ANTITRUST L.J. 279, 308 (2018) (introducing a bakery hypothetical).

30. Hemphill and Kahan term this the "power and ability" to employ a given mechanism. Hemphill & Kahan, *supra* note 10, at 1415.

31. *See* Amil Dasgupta, Vyacheslav Fos & Zacharias Sautner, *Institutional Investors and Corporate Governance* 33–37 (Eur. Corp. Governance Inst., Finance Working Paper No. 700/2020, 2020) (explaining the concept of dual-layered agency relationships). Note that this concept of a "dual-layered agency relationship" may be strained even further by the recognition of the unique organizational structure of investor managers vis-à-vis their clients, who have little to no control over their appointment and dismissal. John Morley, *The Separation of Funds and Managers: A Theory of Investment Fund Structure and Regulation*, 123 YALE L.J. 1228, 1232 (2014).

32. Morley, *supra* note 17, at 1416; *see also* JEAN TIROLE, THE THEORY OF CORPORATE FINANCE 20–27 (2006) (distinguishing between "explicit" and "implicit" incentives, roughly comporting to control and exit rights).

33. Morley, *supra* note 17, at 1413.

locus of fiduciary duties.[34] Furthermore, unlike the individual investor in the first scenario who is a co-owner of only two firms, Blackrock manages thousands of distinct clients, with thousands of unique portfolio firms.[35] In addition, because there are so many portfolio firms, many of these portfolio firms are likely to have large transactions with each other, creating vertical spillovers that ought to be accounted for.[36] Within each portfolio firm, ultimate control over pricing decisions may span multiple hierarchies, with multiple employees (not just top management) having significant input with regard to the firm's competitive conduct.[37] Finally, Blackrock is but an artificial legal entity—it has to act through its human agents, whose incentives may not be completely aligned with Blackrock, even if the latter were to have a profit-maximizing objective.[38] The totality of these complications entails the presence of large information costs.[39] In contrast to the individual investor in the first scenario, Blackrock would have to overcome these costs in implementing a given anti-competitive outcome. In particular, *inter alia*, Blackrock faces collective-decision making problems in reconciling divergent incentives among its clients and other portfolio shareholders; it faces agency problems in determining the extent to which it should delegate control rights both within itself and its portfolio firms; it faces search problems in determining the exact magnitude and nature of the pecuniary externalities between its portfolio firms; and it faces legal constraints in implementing product market outcomes.[40]

The transaction costs in common ownership represent the real-world frictions that exist both *within* and *between* firms. Indeed, one can view the costs of running a cartel as the transaction costs that arise between firms in sustaining a mutually beneficial agreement to *not* compete. These coordination costs include the costs of *detecting* and *punishing* deviations from collusive equilibria.[41] In general, an amelioration of these costs will also improve the payoffs of engaging in collusive conduct. Thus, antitrust law has often focused on prohibiting *facilitating practices* that promote

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34. *Id.* at 1417.

35. *Id.* at 1416. This incurs search costs, which are discussed *infra* Section III.E.

36. *See* discussion *infra* Section III.E.

37. *See* discussion *infra* Section III.B.

38. *See* discussion *infra* Section III.C.

39. These transaction costs have to be justified by countervailing benefits provided by the prevailing organizational structures that give rise to such costs (i.e., that the benefits outweigh the costs). HANSMANN, *supra* note 25, at 61.

40. As I explain *infra* Section V.A., legal constraints may stem from antitrust law, corporate law, and securities law, among other legal regimes.

41. Ian Ayres, *How Cartels Punish: A Structural Theory of Self-Enforcing Collusion*, 87 COLUM. L. REV. 295, 296 (1987); *see also* discussion *infra* Sections IV.B, IV.C.

either the detection or punishment of deviations from collusion.[42] For instance, information exchanges concerning individual prices and outputs increase the observability of prices amongst horizontal competitors and would preclude secret price cuts that threaten the profitability of collusion.[43] As such, the exchange of competitively sensitive information between horizontal competitors is taken, without more, to be a violation of the Sherman Act.[44]

To characterize the tradeoffs that common owners face in internalizing pecuniary externalities at a cost, I introduce a new parameter in my analysis: "tailoring." The degree of tailoring reflects the extent to which a common owner would rationally incur transaction costs in attempting to exert *actual* control.[45] In other words, by tailoring, I argue that firms consider the extent to which they would tolerate transaction costs in relation to the material benefits they are likely to obtain. Highly tailored mechanisms tend to target particular areas of conduct in specific firms. These mechanisms invoke more transaction costs, but also internalize more of the pecuniary externalities that exist between competing portfolio firms. In contrast, untailored mechanisms would be far more general in their application, applying to all portfolio firms, or at least broad categories of portfolio firms.[46] Untailored strategies incur less information costs or coordination costs, but also internalize less pecuniary externalities between competing portfolio firms.[47] A common owner is likely to choose mechanisms that maximize its *net* profits. However, as the relative benefits and costs of mechanisms are likely to differ across common owners, different common owners will also pursue disparate mechanisms of anti-competitive harm.[48] I consider the transaction costs involved in implementing four candidate mechanisms suggested by the literature: (1) voting, (2) executive compensation, (3) voice and engagement,

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42.   PHILLIP AREEDA & DONALD F. TURNER, ANTITRUST LAW (1980).

43.   George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 54–55 (1964).

44.   Sherman Antitrust Act of 1890 § 1, 15 U.S.C. § 1 (2018).

45.   I use "tailoring" as a way to describe a common owner's conduct that would influence a portfolio firm's conduct in line with the common owner's preferences. Hemphill and Kahan introduce a similar notion which they term a "targeted-mechanism," a strategy directed at specific actions of the firm. As opposed to Hemphill and Kahan, my definition of "tailoring" reflects a broader notion of a common owner's influence across its portfolio firms, as opposed to its influence within a single portfolio firm. Hemphill & Kahan, *supra* note 10, at 1419.

46.   Given the significant levels of common ownership across the larger economy, welfare losses arising from untailored mechanisms can nevertheless be very large. Backus et al., *supra* note 7, at 275.

47.   *See* discussion *infra* Section V.B. Note that the remaining pecuniary externalities that are not internalized may be considered as "gains from trade" left uncaptured by the common owner.

48.   *See* discussion *infra* Parts III, IV.

and (4) exit and passivity.[49] I suggest a ranking of these mechanisms in terms of the relative intensity of the transaction costs associated with them. At one extreme end, "voting" is a tailored mechanism that is likely to invoke very high transaction costs. On the other end, "exit and passivity" is an untailored mechanism that would involve little to no transaction costs.[50]

My analysis provides three important implications novel to the literature on common ownership. First, in the context of institutional investing, I argue that it is unlikely for common owners to pursue highly tailored mechanisms in softening competition between their portfolio firms. For example, the prospects of a fund manager enforcing an executive compensation package for a portfolio firm CEO that corresponds exactly to its portfolio holdings in the fund are slim to none.[51] The intuition is simple— large institutional investors are not structured to optimally respond to changes in local information, and are thus unsuited to make day-to-day decisions concerning the firm's competitive conduct. Instead, most of these decision-making powers are credibly delegated to the portfolio firm's management.[52] In contrast, institutional investors are far more likely to advance their anti-competitive interests as common owners through subtler means. I argue that institutional investors do so by pursuing untailored mechanisms. Many of these untailored mechanisms apply across the board to the common owner's portfolio firms, or involve issues that attract widespread consensus vis-à-vis other shareholders and firm managers.[53] Untailored strategies are particularly attractive for institutional investors because the transaction costs involved in fully internalizing pecuniary externalities are very large for them. I also suggest that institutional investors are likely to prefer untailored mechanisms that induce coordinated effects,

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49.   Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1557– 58.

50*.   See* discussion *infra* Section V.B.

51.   Note that this is a stronger notion than the usual advisory "say on pay" votes that are permitted under existing securities regulations. *See* discussion *infra* Section V.A.2.

52.   This has significant (negative) implications for the use of common ownership metrics that implicitly assume that firm managers maximize a weighted sum of its shareholders' returns. For example, the Modified Herfindahl Index ("MHHI") proposed by O'Brien and Salop assumes proportionate control by common owners. Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67 ANTITRUST L.J. 559, 594–96 (2000).

53.   *See* discussion *infra* Section V.B. Hemphill and Kahan also suggest "across-the-board" mechanisms. Hemphill & Kahan, *supra* note 10, at 1409. However, in their framework, they suggest mechanisms which would affect a firm's operations broadly, rather than a firm's specific operations. *Id.* In contrast, under my framework, untailored strategies apply not only within portfolio firms but also across portfolio firms.

relative to similar mechanisms that induce unilateral effects.[54]

Second, my analysis eschews "one-size-fits-all" policies in addressing the anti-competitive effects associated with common ownership.[55] While the law plays a crucial role in determining the magnitude of transaction costs that common owners face, the optimal policy response is likely to differ across different *types* of common owners. For instance, structural remedies in antitrust are likely to work well where common owners are willing and able to exercise strong control over their portfolio firms. Changing the payoffs from ownership here is likely to lead to an elastic response in the firm's competitive conduct.[56] However, as suggested above, institutional managers in contemporary capital markets (as common owners) are likely to have weak incentives to engage in direct control of their portfolio firms given the substantial transaction costs involved. Thus, structural remedies are unlikely to be effective here.[57] Rather, optimal policies should focus on the understated roles that institutional investors may play in softening competition amongst their portfolio firms. To address these modes of harm, I propose targeted policy responses that are *mechanism-specific*. The mechanism-specific remedies I propose would change the incentives of common owners by increasing the transaction costs they face in implementing particular mechanisms of anti-competitive harm.[58] For instance, to attenuate the potential harms to product competition via mechanisms like "voice," I contend that antitrust policy should demand greater scrutiny of information exchanges amongst institutional investors and their portfolio firms, implicitly increasing the transaction costs of using the mechanism.[59] These remedies would also change the incentives of non-common owners by decreasing the transaction costs they face in implementing pro-competitive behavior. I argue that the mechanism-specific remedies I offer provide significant advantages over competing policy proposals.[60]

Third, by taking transactions costs into account, my analytical framework provides a robust explanation for the observed variation in the impact of common ownership across industries. Given a large variation in transaction costs both across portfolio firms and across common owners, one

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54. *See* discussion *infra* Section V.B.

55. For a similar argument, see Gerard Hertig, *On-Going Board Reforms: One Size Fits All and Regulatory Capture*, 21 OXFORD REV. ECON. POL'Y 269, 273–74 (2005).

56. *See* discussion *infra* Section VI.F.

57. *See* discussion *infra* Section VI.F.

58. *See* discussion *infra* Sections VI.B through VI.E.

59. *See* discussion *infra* Section VI.D.

60. *See* discussion *infra* Section VI.F.

should expect to observe very different competitive outcomes in different industries. Some recent empirical studies have shown evidence of this—unlike studies on the airline, banking, and pharmaceutical industries, Backus et. al find little impact of common ownership weights on scanner data price measures in the ready-to-eat cereal industry.[61] In contrast, most of the existing literature on common ownership overlooks the role that transaction costs play in the internalization of pecuniary externalities between portfolio firms. Elhauge, for instance, simply asserts, without more, that a combination of mechanisms "more than suffices to make managers influenced by the interests of horizontal shareholders in lessened market competition."[62]

This Article is organized as follows. In Part II, I discuss several assumptions that underly existing theories of harm in common ownership. Challenging these assumptions, I suggest that a fundamental question arises as to whether common owners have incentives to invest in *actual* control—an issue which provides the primary motivation for this Article. In Part III, I provide a taxonomy of information costs and explain why common owners would rationally choose to bear them. In Part IV, I provide a similar taxonomy for coordination costs. In Part V, I provide a framework of candidate mechanisms that common owners may utilize to achieve their anti-competitive objectives. Drawing on my earlier taxonomies of the transaction costs that common owners face, I provide several hypotheses as to which mechanisms institutional investors (as common owners) are likely to adopt. In Part VI, I put forth policy proposals to address the anti-competitive harms that follow from my arguments in Part V. In Part VII, I provide some concluding remarks. Finally, in Parts VIII and IX (Appendices A and B, respectively), I construct a simple economic model to formalize my arguments in Parts V and VI.

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61. With regard to the airline, banking, and pharmaceutical industries, see Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1558–59; José Azar et al., *Ultimate Ownership and Bank Competition*, 51 FIN. MGMT. 227, 2 (2022); Melissa Newham, Jo Seldeslachts & Albert Banal-Estano, *Common Ownership and Market Entry: Evidence from the Pharmaceutical Industry* 5 (German Inst. Econ. Rsch., Discussion Paper No. 1738, 2018), http://dx.doi.org/10.2139/ssrn.3194394. As for the ready-to-eat cereal industry, see Matthew Backus, Christopher Conlon & Michael Sinkinson, *Common Ownership and Competition in the Ready-to-Eat Cereal Industry* 38–39 (Nat'l Bureau Econ. Rsch., Working Paper No. 28350, 2021), https://doi.org/10.3386/w28350.

62. Elhauge, *supra* note 16, at 23.

II. MOTIVATION

A. Comparison with Horizontal Mergers

   The idea that an owner of a firm would have the incentive to modify the objective function of that firm in favor of the owner's own interests is not new. Indeed, there is a long tradition in economics of weighting shareholder interests in the firm's objective function.[63] Consider the scenario where a shareholder wholly owns two rival airlines, say, United and Delta. If United and Delta compete on one or more routes, and if both United and Delta were directly controlled by the same shareholder, each airline should be incentivized to take into account the effect of its individual output on its rival's profits. Because United imposes a pecuniary externality on Delta when maximizing its own profits (and likewise for Delta), the shareholder can improve its payoff by internalizing the pecuniary externalities between the two airlines. The process of internalizing these pecuniary externalities manifests itself through the form of *softer competition*—relative to a counterfactual without common ownership of both airlines, United and Delta may raise their ticket prices, reduce the number of flights, reduce their investments, or innovate less.[64]

   In the example provided above, the shareholder was assumed to have complete ownership of both airlines, raising the question as to whether the two airlines can even be termed as separate entities. In the economics literature, the contemporary answer to that question is in the negative. As control rights are unified under a single owner, the two airlines are said to be "horizontally integrated."[65] Horizontal integration provides the primary justification for merger control—because the owner of the merged entity is implicitly assumed to have *unified control* of the merged entity's actions, it is also assumed to have strong incentives to raise product market prices.[66] Accordingly, antitrust authorities tend to view horizontal mergers with

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   63.   Julio Rotemberg, *Financial Transaction Costs and Industrial Performance* 1 (Mass. Inst. Tech., Working Paper No. 155484, 1984), http://hdl.handle.net/1721.1/47993 [https://perma.cc/35R3-S634]; Sanford J. Grossman & Oliver D. Hart, *A Theory of Competitive Equilibrium in Stock Market Economies*, 47 ECONOMETRICA 293, 294 (1979).

   64.   For empirical evidence supporting a similar factual matrix, see Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1514, 1517; Miguel Anton, Florian Ederer, Mireia Giné & Martin C. Schmalz, *Common Ownership, Competition, and Top Management Incentives* 1 (Eur. Corp. Governance Inst., Finance Working Paper No. 511/2017, 2022), http://dx.doi.org/10.2139/ssrn.2802332.

   65.   Robert Gibbons, *Four Formal(izable) Theories of the Firm?*, 58 J. ECON. BEHAV. & ORG. 200, 203 (2005).

   66.   *Id.*

suspicion unless there are substantial countervailing benefits to the merger.[67] Furthermore, for the merger to be countenanced, antitrust law may require that a substantial proportion of benefits arising from the merger be transferred to consumers.[68]

In the context of common ownership, large investors own shares in competing firms. Unlike the setting of horizontal mergers, however, the stake that these investors have in these firms is often significant, but nevertheless small—a minority stake of 1% to 2%, for example, is not uncommon.[69] Additionally, many of these large investors are not individuals, but complex institutions with their own beneficiaries and agents.[70] This departure from the setting of horizontal mergers is critical. Because unified control of the portfolio firms can no longer be safely assumed, a vigorous debate has ensued as to *how* and *whether* these investors are able to influence product market decision-making in their portfolio firms.[71] The debate is not merely academic. In recent years, the Federal Trade Commission, Department of Justice, European Commission, Securities and Exchange Commission, and OECD have all expressed concerns regarding the anti-competitive effects of common ownership, especially in the context of capital markets.[72]

B. Profit Weights

As explained in Section II.A, common ownership can be conceived as a *partial* horizontal merger of firms competing within a given industry. To conceptualize this idea, economists have formally defined the objective function of a given portfolio firm to consider the entire spectrum of possible conduct under common ownership—ranging from the situation where a given firm engages in own-firm profit maximization, to one where the firm maximizes the profits of the industry it operates in.

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67.   Clayton Act § 7, 15 U.S.C. § 18.

68.   Under the Horizontal Merger Guidelines, if a merger creates cognizable efficiencies, the agency then asks whether they "would be sufficient to reverse the merger's potential to harm customers in the relevant market, e.g., by preventing price increases in that market." HORIZONTAL MERGER GUIDELINES, *supra* note 1, at 30–31.

69.   Dasgupta et al., *supra* note 31, at 98.

70.   Morley, *supra* note 31.

71.   See sources cited *supra* note 10 for a discussion on the extent of the anti-competitive effects of common ownership.

72.   *Opening Remarks and Discussion With FTC Cmr. Noah Joshua Phillips and SEC Cmr. Robert J. Jackson Jr.*, FTC (Dec. 6, 2018), https://www.ftc.gov/news-events/audio-video/audio/opening-remarks-discussion-ftc-cmr-noah-joshua-phillips-sec-cmr-robert [https://perma.cc/4MMB-NCJQ].

As the term "ownership" is conventionally used, share ownership entails two formal rights in law: (1) the right to the firm's residual earnings (or net profits), and (2) the right to control the firm.[73] The former may be said to be the shareholder's "cash-flow" rights, while the latter could be termed the shareholder's "control rights." Consider a scenario where a shareholder i exercises both of these rights (to the fullest extent possible) in firm f.[74] If shareholder i owns a percentage β_{if} of firm f, it can be said to have an entitlement to a β_{if} proportion of the profits π_f generated by the firm. Similarly, if shareholder i is both able and willing to influence the firm's decision-making by a percentage γ_i, it can be said to have a control weight γ_{if} with regard to firm f (and likewise, for firm g).[75] Backus et al. show that the objective function of the firm f under common ownership can be re-written as:[76]

$$\pi_f + \sum_{g \neq f} \left(\frac{\sum_i \gamma_{if} \beta_{ig}}{\sum_i \gamma_{if} \beta_{if}} \right) \pi_g$$

where $\left(\frac{\sum_i \gamma_{if} \beta_{ig}}{\sum_i \gamma_{if} \beta_{if}} \right)$ can be defined as κ_{fg}, a "profit weight." Essentially, the profit weight κ_{fg} represents the degree of emphasis that firm f places on firm g's profits when both firms compete in the same product market under common ownership. This framework allows for the nesting of various behavioral models of the firm. When $\kappa_{fg} = 0$, the firm f engages in own-firm profit maximization. When $\kappa_{fg} = 1$, the firm f internalizes all pecuniary externalities between f and g, resembling a scenario where firm f treats firm g as if both firms were colluding at the price that maximized their joint profits (or, alternatively, a merged entity consisting of firms f and g).[77]

Such a general formulation of the firm's objective function under common ownership poses problems for economists. Although the cashflow rights of shareholders β_{if} and $\beta_{ig} \forall g \neq f$ are observable (insofar as they can be proxied by ownership shares), measures of *actual control*, as determined

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73. *See* HANSMANN, *supra* note 25, at 11 ("A firm's 'owners' . . . are those persons who share two formal rights: the right to control the firm and the right to appropriate the firm's profits, or residual earnings . . . .").

74. In the following Section II.C, I explain why a shareholder may rationally decline to exercise its rights, particularly in relation to control.

75. Note that firm g is used here to represent firm f's rivals, and therefore may represent multiple firms other than firm f. For instance, a common owner may have profit weights κ_{fg1} for firm $g1$, κ_{fg1} for firm $g2$, and so on for all the firms g that f competes with.

76. Backus et al., *supra* note 7, at 278.

77. *Id.* at 279.

by γ_{if} and $\gamma_{ig} \forall g \neq f$, are not. Thus, it is unsurprising that most of the literature on common ownership simply assumes that $\beta_{if} = \gamma_{if}$, a notion of *proportional control*.[78]

    With proportional control, Backus et al. go on to show that the profit weight κ_{fg} may be further decomposed into:[79]

$$\kappa_{fg} = \cos(\beta_f, \beta_g) \sqrt{\frac{\| \beta_g \|^2}{\| \beta_f \|^2}}$$

where $\cos(\beta_f, \beta_g)$ represents a similarity measure that determines the degree of overlapping ownership between firms f and g, and $\sqrt{\frac{\|\beta_g\|^2}{\|\beta_f\|^2}}$ is a measure that determines the degree of relative investor concentration within the respective firms. As Backus et al. explain, the degree of relative investor concentration has intuitive content—it depicts the *relative prices* of control rights. Holding all other things equal, a rise of investor concentration within firm g entails a rise in $\| \beta_g \|^2$, increasing the price of control rights in firm g, making them relatively more expensive relative to firm f. Since the rise in $\| \beta_g \|^2$ makes it more difficult to implement anti-competitive preferences in firm g, the profit weight that firm f would place on firm g's profits decreases. Similar intuition applies to a fall in $\| \beta_f \|^2$.[80]

    The decomposition of κ_{fg} into components of overlapping ownership and relative investor concentration reveals a more serious problem with the assumption of proportional control. With an exogenous increase of investor concentration within firm g (i.e., a rise in $\| \beta_g \|^2$), $\cos(\beta_f, \beta_g)$ increases by the same amount as $\cos(\beta_g, \beta_f)$, so the degrees of overlapping ownership in both κ_{fg} and κ_{gf} will increase by the same amount. However, $\sqrt{\frac{\|\beta_g\|^2}{\|\beta_f\|^2}}$ also increases, increasing κ_{fg}, while κ_{gf} falls at the same time, since $\sqrt{\frac{\|\beta_f\|^2}{\|\beta_g\|^2}}$ decreases. Since firm f can assign a relatively high profit weight to firm g, and firm g a low profit weight to firm f, firm f may have an asymmetric incentive to "tunnel" if $\kappa_{fg} > 1$, that is, to transfer profits from itself to firm

    78. For example, the Modified Herfindahl Index ("MHHI") proposed by O'Brien and Salop is a metric of common ownership that relies on the assumption of proportionate control. *See* O'Brien & Salop, *supra* note 52 at 594–96.
    79. Backus et al., *supra* note 7, at 280.
    80*. Id.*

g.[81] As Backus et al. concede, adhering to proportional control entails the empirical finding that more than 10% of the S&P 500 would be engaging in some form of tunneling behavior, a hypothesis that seems to be "implausibly strong."[82] As I will explain in Section II.C, these stylized facts motivate a theory of common ownership that disentangles *formal control* from *actual control*.

C. Formal Control (Power) vs. Actual Control

In Section B, the profit weight κ_{fg} represents the weight that firm f places on firm g's profits when both firms compete in the same product market under common ownership. Notably, κ_{fg} depends on the parameter γ_{if}, which represents the degree of *actual control* exercised by shareholder i in firm f. In models of proportional control, β_{if} is assumed to be equal to γ_{if}. But there is generally no *a priori* reason why this should be true. Indeed, a corporate governance scholar would be hard pressed to agree with such an assumption. Rather, she would point out that the managers (or the board of directors) of firm f would be ordinarily in charge of firm f's day-to-day affairs.[83] These issues would include, *inter alia*, firm f's competitive conduct and strategy vis-à-vis its product market rivals. Any attempt at such a direct intervention by an activist shareholder would run into a board-friendly legal presumption of the "Business Judgement Rule."[84] On a related note, courts have struck down even modest attempts at including issues "significantly related to the company's business" onto the management's proxy statement for annual shareholder meetings.[85]

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81. *Id.* at 281; *see also* Simon Johnson et al., *Tunneling*, 90 AM. ECON. REV. 22, 22–23 (2000) (defining "tunneling" as the practice of transferring profits, whether via acquisition, mispriced purchase orders, or direct transfers, from one company to another to benefit the interests of a controlling stakeholder in both, which expropriates both creditors and minority shareholders in the former firm (in this case, firm f)).

82. Backus et al., *supra* note 7, at 293.

83. The Delaware General Corporation Law, for instance, provides that "[t]he business and affairs of every corporation organized under this chapter shall be managed by or under the direction of a board of directors, except as may be otherwise provided in this chapter or in its certificate of incorporation." DEL. CODE. ANN. tit. 8, § 141(a) (2022). For the purposes of this Article, my discussion of state corporate law is limited to that of Delaware corporate law, given that 60% of all publicly traded corporations are Delaware corporations. *See* discussion *infra* Section V.V. On a related note, Schmalz also notes that it is a challenge to "convince a finance audience of a measure that assumes firms behave in their shareholders' interest, without acknowledging agency problems as a first-order determinant of firm behavior." Schmalz, *supra* note 24, at 25.

84. Kamin v. Am. Express, 383 N.Y.S. 2 (Sup. Ct. 1976).

85. Apache Corp. v. N.Y.C. Emp. Ret. Sys., 621 F. Supp. 2d 444 (S.D. Tex. 2008).

Despite these objections, scholars have argued that common owners continue to influence managerial decisions through various indirect means. For instance, shareholders still vote to appoint and dismiss directors.[86] Shareholders also participate in amendments of charter provisions and, depending on the firm in question, in determining levels of managerial compensation.[87] Furthermore, large shareholders actively engage the directors and managers of firms to discuss issues of corporate governance.[88] Finally, shareholders wield the ultimate right to offload their stock positions in a given firm, potentially threatening the value of performance-sensitive compensation packages vested in the firm's directors and managers.[89] Such mechanisms, these scholars argue, provide sufficient incentives for managers to implement the anti-competitive preferences of common owners.[90]

The disparate approaches to issues of control reveal an important feature of firm decision-making that is understated in debates on common ownership—the allocation of decision-making *power* within the firm.[91] Often termed as "formal control," this notion of power relates to the authority of one or more individuals to *legally* represent (and bind) the firm vis-à-vis third parties. Although the allocation of power within firms will differ from firm to firm, the decision-rights of firms are often vested in a small subset of individuals (usually the board of directors or firm managers), who may or may not be shareholders of the firm in question. In close corporations, the issue is less salient, as shareholders of the firm are often also the managers of the same firm.[92] In bigger firms, however, it is far more common for there to be a separation between ownership and control, an observation noted as far back as 1932 by Berle and Means.[93] Here, managers who are given legal authority to make decisions on behalf of the firm may not be shareholders of

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86.   The Delaware General Corporation Law provides that, in the absence of specification in the charter or bylaws of the corporation, the corporation's directors "shall be elected by a plurality of the votes of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors." DEL. CODE. ANN. tit. 8, § 216.

87.   These forms of intervention, however, require board assent. *See* DEL. CODE. ANN. tit. 8, § 242; 17 C.F.R. § 240.14a-21 (2017); *see also* discussion *infra* Section V.A.

88*.   See* discussion *infra* Section V.A.

89*.   Id*.

90.   Elhauge, *supra* note 16.

91.   The notion of "power" I use relates to Blair and Stout's use of the term, where they use it to describe the board's overarching authority over the use of corporate assets. Margaret M. Blair & Lynn A. Stout, *A Team Production Theory of Corporate Law*, 85 VA. L. REV. 247, 251 (1999).

92.   *Id.* at 302.

93.   ADOLF A. BERLE JR. & GARDINER C. MEANS, THE MODERN CORPORATION AND PRIVATE PROPERTY 5 (1932).

the firm. Depending on the corporate governance regime of the firm in question, they may also have some discretion to deviate from shareholder interests.[94] Indeed, in the vast majority of modern-day firms, the power to make decisions in product markets is ordinarily vested in the board of directors, who in turn delegate this decision-making authority to ordinary employees of the firm.[95] As I will detail in Section II.D, any ex-post intervention by common owners interfering with these decisions will thus entail transaction costs.

Finally, even if a large shareholder has substantial power over the firm's affairs (perhaps vested in it by virtue of the firm's charter provisions), one should not conflate the formal possession of their control rights with the *actual* exercise of those control rights. The distinction stems from the fact that the actual exercise of control entails costs, or at least opportunity costs. As Easterbrook and Fischel have argued, the separation of ownership and control in modern firms arises from, *inter alia*, the gains in specialization, diversification, and the relaxation of wealth constraints brought about by such separation.[96] Thus, while the relative *lack* of control raises the familiar notion of agency costs, the direct exercise of control may also entail opportunity costs.[97] Indeed, recent work by Choi suggests that there is no necessary correlation between a shareholder's long-term cash flow payoffs and its control rights.[98]

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94. Blair and Stout note that "[s]hareholders' rights and powers over directors in publicly held companies are remarkably limited both in theory and in practice, and as a result directors of public firms enjoy an extraordinary degree of discretion to pursue other agendas and to favor other constituencies, especially management, at shareholders' expense." Blair & Stout, *supra* note 91, at 252.

95. Wouter Dessein & Tano Santos, *Adaptive Organizations*, 114 J. Pol. Econ. 956 (2006); Raghuram G. Rajan & Luigi Zingales, *Power in a Theory of the Firm*, 113 Q. J. Econ. 387 (1998); *see also* discussion *infra* Section III.B.

96. Frank H. Easterbrook & Daniel R. Fischel, The Economic Structure of Corporate Law (1996); *see also* discussion *infra* Section III.B.

97. Zohar Goshen & Richard Squire, *Principal Costs: A New Theory for Corporate Law and Governance*, 117 Colum. L. Rev. 767 (2017).

98. *See* Albert H. Choi, *Concentrated Ownership and Long-Term Shareholder Value*, 8 Harv. Bus. L. Rev. 53, 64 (2018) (suggesting a formal separation of cash-flow rights from control rights).
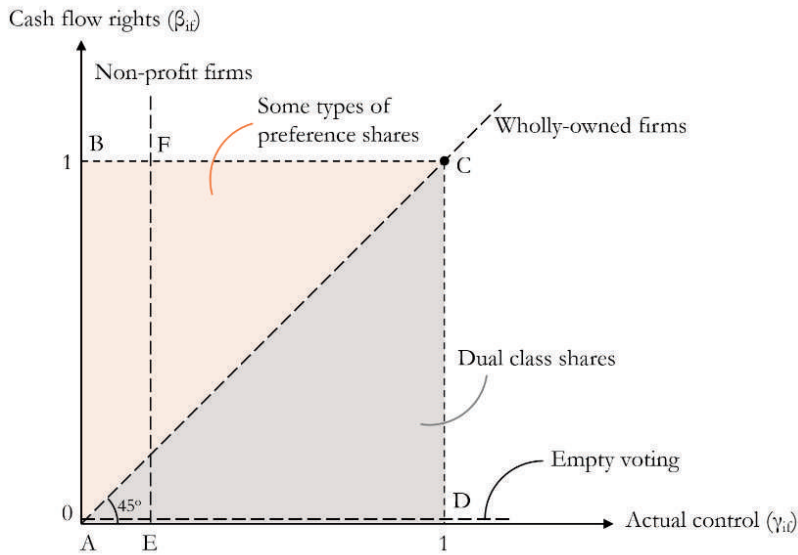
Figure 1. Allocations of Cash Flow and Actual Control

Figure 1 provides a graphical representation of the aforementioned discussion. The x-axis represents the exercise of *actual control* by a given shareholder i for a given firm f (γ_{if}), while the y-axis represents the shareholder's cash-flow payoffs in the same (β_{if}). The values of both actual control and cash-flow payoffs are bounded between zero and one, representing all of the control/cash-flow allocations available for the shareholder in question, assuming the absence of wealth constraints.

The various dashed lines and shaded regions represent the *formal* (i.e., legal) control/cash-flow allocations associated with various organizational structures.[99] Thus, the formal rights of a shareholder who wholly owns a firm *without* any separation of ownership and control is represented by the allocation C at the top right-hand corner of the chart. The 45° line segment *A-C* represents the paradigm situation where each share is accorded with one vote ("one-share-one-vote"), so a shareholder who exercises all of her legal

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99. In other words, the dashed lines and shaded regions represent the *theoretical* "bounds" within which the shareholder would be able to exercise influence over the firm in relation to its shares. This general concept of the law—imposing costs through constraining conduct and economic incentives, and imposing further costs on relevant actors—is a recurring theme throughout this Article.

control rights in accordance with her preferences falls on this line.[100] In contrast, the vertical line segment *E-F* represents allocations accorded to non-profit beneficiaries, who merely have residual "control rights" to enforce a non-distribution constraint (which bars the distribution of profits to controlling persons), but lack the formal right to appoint or dismiss the controllers of the firm.[101] Meanwhile, the horizontal (dotted) line segment *A-D* represents allocations accorded to shareholders who engage in "empty voting."[102] In "empty voting," shareholders may hedge their financial interests in a firm through derivatives while retaining voting rights. Alternatively, they may "borrow" votes from legal owners, without assuming any firm-related economic risks.[103] These methods essentially allow shareholders to control a firm without retaining any cash-flow payoffs. Finally, the shaded regions *ACD* and *ABC* represent formal allocations where control rights outweigh cash flow rights, or vice-versa. Thus, shareholders with dual-class shares are located in the region *ACD*, while shareholders who have certain types of non-voting shares with cash flow rights that disproportionately outweigh control rights are located in region *ABC*.[104]

These representations of formal control rights are useful starting points to conceptualize how a shareholder would exercise actual control. In particular, formal control rights would *constrain* a given shareholder's ability to influence the policies of its firm.[105] However, none of these representations will perfectly correspond with the shareholder's actual exercise of control and cash-flow payoffs. For instance, depending on the transaction costs that a dual-class shareholder would face, it could potentially select *any* point within the shaded region *ACD*.[106] Similarly, even a shareholder with sole ownership of a firm (i.e., with formal allocation *C*)

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100. *See* DEL. CODE. ANN. tit. 8, § 212(a) ("Unless otherwise provided in the certificate of incorporation and subject to § 213 of this title, each stockholder shall be entitled to 1 vote for each share of capital stock held by such stockholder.").

101. *See* Henry B. Hansmann, *The Role of Nonprofit Enterprise*, 89 YALE L.J. 838 (1980) (indicating that the power to appoint the directors can be given to others instead of owners); Henry B. Hansmann, *Reforming Nonprofit Corporation Law*, 129 U. PA. L. REV. 497, 501 (1981) (indicating the same).

102. *See* Henry T. C. Hu & Bernard Black, *The New Vote Buying: Empty Voting and Hidden (Morphable) Ownership*, 79 S. CAL. L. REV. 811, 816 (2006) (indicating that empty voting means voting ownership with no economic ownership).

103. *Id.* at 832.

104. For an overview of organizational structures where shareholders may have disproportionate control rights over their cash-flow rights or where shareholders may have disproportionate cash-flow rights over control rights, see Dorothy S. Lund, *Nonvoting Shares and Efficient Corporate Governance*, 71 STAN. L. REV. 687, 687 (2019).

105. Goshen & Richard Squire, *supra* note 97.

106. A taxonomy of these transaction costs is provided *infra* Parts III, IV.

may rationally exercise little actual control, delegating all of the firm's decision-making to one or more corporate managers while rationally incurring agency costs. Again, such a shareholder could potentially select *any* allocation within the region *ABCD*.

Harking back to the framework described in Section B, for any given ownership share β_{if}, a given shareholder will choose a level of actual control γ_{if} after taking into account its costs of control. As this is difficult to determine ex-ante, scholars have suggested several frameworks that exogenously vary the level of actual control γ_{if}. For instance, in the situation where a shareholder has no power to control or influence the decisions of the firm, O'Brien and Salop have termed the corporate control structure a "silent financial interest," where $\gamma_{if} = 0$.[107] On the other extreme end, the situation where the shareholder has absolute control over all decisions of the firm has been termed "total control," where $\gamma_{if} = 1$.[108] Finally, for the myriad of situations in between the two extremes, O'Brien and Salop provide various variants of partial control ("fiduciary obligation," "coasean joint control," "one-way control," and "proportional control"), where the shareholder has some influence over the decisions of the firm but not total control of it.[109] However, O'Brien and Salop do not motivate *how* actual control arises in the context of common ownership. I turn to that end in Section II.D.

D. Endogenous Control

Unlike the case of polities, patrons in a firm (i.e., shareholders, managers, creditors, directors, etc.) are *voluntary* participants. Thus, a given distribution of power within a firm may reflect the voluntary surrender of rights from some patrons.[110] These patrons relinquish their rights so as to yield a state of affairs which would provide them with greater economic surplus than they would otherwise enjoy under a counterfactual where they retained these rights.[111] For instance, day-to-day decision-making power in

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107.   *See* O'Brien & Salop, *supra* note 52, at 577 (defining "Silent Financial Interest" as a corporate control structure in which the acquiring firm has no control power).

108.   *Id.*

109.   *Id.* at 580–84.

110.   The voluntary surrender of rights from some patrons is subject to the caveat that some rights may be surrendered involuntarily in the context of very "incomplete contracting." Oliver Hart & John Moore, *Foundations of Incomplete Contracts*, 66 REV. ECON. STUD. 115, 115 (1999).

111.   *See* Blair & Stout, *supra* note 91, at 255 ("[T]eam members address the contracting problems inherent in team production by *voluntarily* relinquishing important control rights over firm-specific inputs and over outputs to a neutral decisionmaker who is not herself a member of the team.").

product markets is often vested in the board of directors, not the body of shareholders. As Blair and Stout note, "a public corporation is a team of people who enter into a complex agreement to work together for their mutual gain;" participants "enter into a '*pactum subjectionis*' under which they yield control over outputs and key inputs . . . to the hierarchy" in an effort to "reduce wasteful shirking and rent-seeking."[112]

The tension between the voluntary surrender of rights within the firm and the shareholder's incentives to directly intervene is particularly salient in scenarios of common ownership. In particular, shareholders who have ownership stakes in two or more competing firms clearly enjoy economic gains from internalizing pecuniary externalities in common ownership. If that were the case, however, why would the shareholder not bargain to acquire direct control rights to modify the firm's competitive conduct?[113] For example, a controlling shareholder could simply appoint itself to the board of directors. Relative to direct control rights (assuming the shareholder found it rational to exercise them), many of the proposed mechanisms of harm in the literature are also clearly costly to the shareholder. Take, for instance, the mechanism of "executive compensation." If common owners are attempting to use executive compensation as a tool to align their incentives with management, why is shareholder voting on compensation still largely nonbinding and about high-level terms of compensation?[114] Furthermore, if many employees of a given portfolio firm are involved in making product market decisions, why are high-powered incentives only (ordinarily) granted to members of top management, and not ordinary employees involved in the firm's product market pricing and competitive strategy?[115]

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112. *Id.* at 278 (footnotes omitted).

113. Intuitively, the absence of these arrangements may reflect the failure of efficient bargaining under the Coase theorem, as one would expect with the presence of transaction costs. Stephen Fraidin & Jon D. Hanson, *Toward Unlocking Lockups*, 103 YALE L.J. 1739, 1789 (1994).

114. *See* discussion *infra* Section V.A.2.

115. There are many similar questions. Consider the mechanism of "voice and engagement." If common owners are able to directly influence the decisions of their portfolio firm managers through "voice," why not have the common owner replace the manager in making product market decisions? Alternatively, if product market decision-making has already been credibly delegated to management, why should the manager even take into account a common owner's preferences when setting product market prices? Also consider the mechanism of "voting." If common owners are somehow able to control product market decision-making through voting, why are shareholder votes ordinarily limited to fundamental changes in the corporation? And if index funds are said to have augmented incentives to vote due to the lack of "exit" rights in their portfolio companies, why do they often vote in a similar way to that of active funds? *Cf.* Elhauge, *supra* note 16 at 5–6 (failing to address these questions).

The presence of real-world frictions—that is, transaction costs—between and within firms provide powerful explanations to these questions. How do these transaction costs affect a common owner's incentives to intervene in firm decision-making? To conceptualize these incentives in a world with transaction costs, consider the classic tradeoff between ex-ante and ex-post efficiency where shareholders can acquire positions of common ownership *after* the distribution of power in a given firm is determined.[116] Thus, while a common owner may find it in its economic interest to internalize the pecuniary externalities amongst firms ex-post, it cannot (perfectly) contract for this state of affairs ex-ante, where power is often allocated to patrons other than the common owner. This resembles the reality of modern financial markets, where the trading of stock positions occurs on a continual basis, and where such trades are largely made independent of how power is allocated in individual portfolio firms.[117] This tension between ex-ante and ex-post efficiency is nicely captured by the device of transaction costs, which arise from the incomplete contracting among firm patrons.[118] Where the transaction costs of internalizing such externalities are positive, common owners will trade the gains from internalizing these externalities with the costs involved in doing so. In Parts III and IV, I turn to a characterization of these transaction costs, starting with the costs associated with the implementation of unilateral effects.

III. INFORMATION COSTS

A. Unilateral Effects in Common Ownership

In common ownership, theories of anti-competitive harm that rely on unilateral effects assume the *independent* conduct of non-portfolio rival firms. In other words, it is assumed that portfolio firms not in the common owner's portfolio continue to engage in non-cooperative conduct even if the common owner were to internalize all pecuniary externalities within its

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116. See *infra* Part IX for a conceptual figure as to how these tensions arise.

117. *See* EASTERBROOK & FISCHEL, *supra* note 96, at 83 (suggesting that trading of stock is separated from the control power in portfolio firms).

118. In a world of "complete contracting," patrons would be able to forecast the presence of pecuniary externalities with perfect foresight and without uncertainty in Stage 1. These patrons would in turn create "state-contingent" contracts which would efficiently allocate the gains from internalizing these externalities. *See* Kenneth J. Arrow & Gerard Debreu, *Existence of an Equilibrium for a Competitive Economy*, 22 ECONOMETRICA 265, 265 (1954) (indicating that "complete contracting" gives patrons chances to make profits from pecuniary externalities).

portfolio.[119] For example, consider a hypothetical scenario where bakeries *A*, *B*, and *C* are competing in the same pastry market. If a common owner were to own shares in bakeries *A* and *B*, but not *C*, the common owner would still have a unilateral incentive to increase bakery prices of both *A* and *B*. Any increase in the price of *A*'s products will result in greater demand for *B*'s products. But because the common owner has partial ownership of *B*, it "recaptures" part of the lost demand induced by an increase in bakery *A*'s prices.[120] Similar intuition applies to *B*. Notably, relative to a counterfactual without common ownership, the common owner gains from increasing both *A* and *B*'s prices, even if *C*'s competitive response were to remain the same.

The presence of firm *C* may, however, reduce the level of economic profits available for common owners who rely on unilateral effects. Because *C* may continue to compete fiercely with *A* and *B*, price increases in both firms may be severely constrained if *C*'s products are strong substitutes for *A* and *B*'s products. Indeed, Backus et al. show evidence that the presence of a "maverick—e.g., a fully private or foreign-held firm" has a very strong effect on the price implications following from common ownership.[121] In contrast, common owners can avoid these issues if they are able to facilitate industry-wide collusion.[122]

Nevertheless, mechanisms that rely on unilateral effects do have a comparative advantage when compared to mechanisms that rely on coordinated effects. By assuming that rival portfolio firms maintain non-cooperative strategies, such mechanisms avoid the costs of coordination.[123] This insight is important, because although competing firms can mutually benefit from (tacit or explicit) collusive agreements to not compete, the costs of coordination in a given industry are often high enough to prevent sustained collusion over time.[124] At the risk of over-generalization, these costs relate to the costs of *detecting* and *punishing* deviations from collusive equilibria, and will differ from industry to industry.[125] As I will detail later, portfolio

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119.   HORIZONTAL MERGER GUIDELINES, *supra* note 1, at 20.

120*.   See* Patel, *supra* note 29, at 308 (suggesting that a common owner of partial both *A* and *B* still gets profits even if *A* and *B* are in competition in the market).

121*.   See* Backus et al., *supra* note 7, at 276–77 (supporting that the existence of a fully private or foreign-held firm has a first-order effect on the price implications of a common ownership hypothesis).

122*.   See* discussion *infra* Part IV.

123*.   Id.*

124*.   See* ANDREW I. GAVIL ET AL., ANTITRUST LAW IN PERSPECTIVE: CASES, CONCEPTS, AND PROBLEMS IN COMPETITION POLICY, 296 (3d ed. 2016) (indicating that coordination among firms will not always profitable).

125*.   See* discussion *infra* Part IV.

maximizing common owners will pursue a path of least resistance.[126] Because common owners can play important roles in facilitating mechanisms of *both* types, they will compare the relative (net) gains from pursuing mechanisms that rely on unilateral effects with the gains from pursuing mechanisms that rely on coordinated effects.

The efficacy of unilateral effects ultimately depends on what I term "information costs"—the transaction costs involved in implementing mechanisms of anti-competitive harm that induce unilateral effects. I describe four categories of these costs in the context of institutional investing: Agency Costs within Portfolio Firms, Agency Costs within Institutional Investors, Costs of Collective Decision-Making (within Portfolio Firms and Institutional Investors), and Search Costs.[127] For each category of costs, I describe the nature of the costs involved, why they arise, and how common owners may attempt to overcome them.

B. Agency Costs within Portfolio Firms

Perhaps the most salient category of information costs is that of the agency costs within portfolio firms, reflecting the conflict of interests between the management and shareholders of a portfolio firm.[128] The agency costs within portfolio firms arise because of the separation of ownership and control—that is, the express delegation of decision-making authority to one or more agents of the firm.[129] In a typical corporation, authority to run the firm's day-to-day affairs resides in the corporation's board of directors, who in turn delegate part of this authority to other managers and employees of the firm.[130] In contrast, shareholders of a corporation tend to have very little authority vested in them by law, outside of fundamental changes that materially affect the risk and return of the shareholders' investments. As discussed earlier, the vast majority of firms are likely to vest direct control

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126. *See* discussion *infra* Part V.

127. Henceforth, I will refer to "institutional investors" and "common owners" as synonyms for each other, as the rise in common ownership in contemporary capital markets is largely associated with institutional investor-common owners.

128. *See* Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305, 313 (1976) (characterizing the agency conflict as a conflict between the owner-manager and outside shareholders).

129. *See* BERLE & MEANS, *supra* note 93 (examining problems of ownership in corporations between shareholders and management).

130. The Delaware General Corporation Law provides that "the business and affairs of every corporation organized under this chapter shall be managed by or under the direction of a board of directors, except as may be otherwise provided in this chapter or in its certificate of incorporation." DEL. CODE. ANN. tit. 8, § 141(a).

of the firm's product market decision-making in the board of directors or managers, not common owners.

Although the separation of ownership and control is often taken for granted, there are strong efficiency reasons for why much of the firm's decision-making power is vested in the board of directors or managers, not shareholders.[131] First, vesting authority in managers can improve managerial incentives to induce effort in acquiring information. As Aghion and Tirole explain, the shareholder's retention of authority can "crowd out" the incentives of managers to do so because the managers understand that their effect matters with a lower probability.[132] There is empirical evidence to support this—Bolton and Dewatripont, for instance, suggest that BP/Johnson and Johnson/ABB have adopted organizational strategies in empowering front-line managers to make decisions, lightly staffing their corporate headquarters.[133]

Second, vesting authority in managers can improve the managerial incentives to make relationship-specific investments that would increase the joint payoffs of both shareholders and managers. Rajan and Zingales suggest that firms vest authority in the board of directors in the form of access—the ability to use or work with the firm's resources.[134] Doing so, Rajan and Zingales argue, incentivizes the directors to specializing their human capital to the firm's resources, thus making themselves more valuable to the firm.[135] Similarly, vesting authority in managers can incentivize such relationship-specific investments if the managers can derive private benefits of control that are unavailable to the principal.[136] Third, vesting authority in an agent allows for efficient risk-sharing and information bearing.[137] Essentially, the separation of ownership and control allows shareholders to reduce their financial exposure to each individual firm by diversifying their financial holdings across the entire financial market. While each diversified shareholder would have little incentive in controlling the firm's decision-making, the firm's agents are still able to make decisions on behalf of the

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131. Henceforth, I will refer to the relevant directors or managers as "managers."

132. Philippe Aghion & Jean Tirole, *Formal and Real Authority in Organizations*, 105 J. POL. ECON. 1, 11–12 (1997).

133. Patrick Bolton & Mathias Dewatripont, *Authority in Organizations*, *in* THE HANDBOOK OF ORGANIZATIONAL ECONOMICS 352 (Robert Gibbons & John Roberts eds., 2013).

134. *See* Rajan & Zingales, *supra* note 95.

135. *Id*.

136*. See* Sanford J. Grossman & Oliver D. Hart, *Takeover Bids, the Free-Rider Problem, and the Theory of the Corporation*, 11 BELL J. ECON. 42 (1980) (discussing various managerial incentives to ensure that directors or managers act in the interest of the owners).

137. HANSMANN, *supra* note 25, at 44–45.

firm that are responsive to local information.

Finally, the delegation of authority in an agent can ameliorate the incentives for shareholders to "use [their] power of ownership against each other."[138] As Blair and Stout note, shareholders enter into an agreement under which they yield control over outputs to the directors, so as to reduce wasteful rent-seeking.[139] Under such a contractual arrangement, the directors of a corporation may have the *exclusive* right to determine much of the firm's decisions under product, factor, and even financial markets—not shareholders.[140]

All of these benefits arising from the separation of ownership and control have attendant costs.[141] As agent directors or managers of the firm often have an information advantage over their principal shareholders, they have incentives to exercise control opportunistically in their own self-interest. For example, managers of the firm may shirk by reducing their effort levels in opposition to the principal's interests. Alternatively, they may simply divert some of what was promised to the principal. To reduce the potential for these undesirable outcomes, shareholders may have to engage in costly monitoring of the firm's managers, or they may have to offer high-powered incentives to the firm's managers through the form of "pay-for-performance" compensation devices like stock option places. Collectively, the sum of these costs that shareholders have to bear are commonly known as "agency costs."[142]

Because the relative benefits arising from the separation of ownership and control are likely to differ from firm to firm, shareholders across different firms are likely to tolerate different levels of agency costs. More generally, rational shareholders will trade the gains from the separation of ownership and control with managerial-shareholder agency costs. Accordingly, a firm that derives particularly strong benefits from delegating power to management would be more likely to attract shareholders who would tolerate the associated increase in agency costs. For example, technology firms like Google and Facebook often adopt dual-class structures

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138.   Rajan & Zingales, *supra* note 95, at 35. Note that this is somewhat related to the discussion *infra* Section III.D, where the costs of rent-seeking relate to the costs of decision-making.

139*.   See* Blair & Stout, *supra* note 91, at 278.

140*.   Id.* at 255 (noting that the law may effectively "insula[te] corporate directors from the [shareholders'] direct command and control").

141.   Jensen & Meckling, *supra* note 128, at 313.

142*.   Id.* at 308. Note also that advocates of the benefits arising from the separation of ownership and control have conceded that managerial agency costs increase with the degree of the agent's insulation from the principal. *See* Blair & Stout, *supra* note 91, at 255 (arguing that insulating corporate directors from shareholder control leads to agency costs).

with uncontested control vested in certain managers, who presumably derive large amounts of private benefits of control from these organizational structures.[143] These firms are nevertheless popular with many investors, who recognize that managerial relationship-specific investments are important for the firms' growth. In contrast, firms with controlling owners are often said to have low managerial-shareholder agency costs, as the controlling shareholder usually has direct appointment rights over the selection and removal of the firm's agents. As Hermalin explains, corporate governance institutions are *endogenous*—for the most part, investors and management *choose* the institutions by which their relation is governed.[144]

For the purposes of common ownership, managerial-shareholder agency costs represent a layer of real-world frictions which inhibit the unilateral implementation of a common owner's preferences. Indeed, it is the separation of ownership and control that drives the usual paradigm that shareholders can only intervene in managerial decisions through appointment rights, incentive alignment strategies, or by enforcing constraints on directors imposed by law, not decision rights.[145] More importantly, these mechanisms of intervention are *indirect*, rendering any transmission of preferences costly. For example, a common owner of airlines who wants to change ticket prices from city *A* to *B* may only do so indirectly, say, through a threat to dismiss senior management of a particular airline. In the extreme example of non-profit firms, beneficiaries lack credible means to enforce their preferences, and can be said to face extremely high (managerial) agency costs.[146]

C. Agency Costs within Institutional Investors

A second category of costs concerns agency costs within the class of institutional investors, reflecting the conflict of interests between investment

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143. *See* Choi, *supra* note 98, at 58–59 (arguing that while the extraction of private benefits of control may prejudice minority shareholders, these private benefits of control may also be beneficial to the firm's long-term value by providing some "commitment value" to the firm's long-term growth, and noting that "the larger the private benefits of control, the more likely that the controller will be locked in with the firm for the long term and care about the firm's long-run performance").

144. *See generally* BENJAMIN HERMALIN & MICHAEL WEISBACH, THE HANDBOOK OF THE ECONOMICS OF CORPORATE GOVERNANCE (2017).

145. *See* JOHN ARMOUR ET AL., THE ANATOMY OF CORPORATE LAW: A COMPARATIVE AND FUNCTIONAL APPROACH 37 (2004) (discussing the shareholder's appointment rights and when they may be applied).

146. Hansmann, *The Role of Nonprofit Enterprise*, *supra* note 101.

managers and their clients.[147] Thus far, we have assumed that an institutional investor like Vanguard is an abstract entity that aims to maximize its portfolio value. Under conventional theories of common ownership, institutional investors have incentives to do so by internalizing pecuniary externalities amongst their portfolio firms. Indeed, given the relative concentration of contemporary investors like Blackrock, Vanguard, and State Street in contemporary financial markets, the potential for anti-competitive harm resulting from such incentives would be deeply concerning even in the presence of managerial-shareholder agency costs.[148] As I will explain in this Section, while the *clients* of institutional investors might retain such incentives, it is not clear that the *fund managers* representing them have similar incentives.

Unlike their portfolio firms, institutional investors are *financial intermediaries*, and have different organizational structures when compared to the former.[149] In particular, institutional investors have a dual-layered agency relationship where they both act on behalf of fund investors (termed "clients") and are equity holders in the firms of which they hold blocks.[150] Furthermore, because institutional investors are artificial legal persons, they must act through human agents, who take the form of fund managers. While an investment manager has certain control rights (e.g., voting rights) over its clients' investments, these control rights are only allocated by way of contracts that provide the investment manager with sole authority to direct its clients' fund operations and investment strategy.[151] Importantly, Vanguard, an investment manager, is not a legal owner of the investments it manages. Rather, Vanguard's funds (i.e., the mutual funds, hedge funds and

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147. *See* John P. Freeman & Stewart L. Brown, *Mutual Fund Advisory Fees: The Cost of Conflicts of Interest*, 26 J. CORP. L. 609, 614–18 (2001) (examining how the costs of conflicts of interest between investment managers and clients are passed onto shareholders).

148. Azar, *supra* note 5, at 2.

149. I follow usage of the term by Dasgupta et al., *supra* note 31, at 5.

150. *See id.* at 33–37 ("When institutional investors hold equity blocks they participate in a dual-layered agency relationship."). Note that this concept of a "dual-layered agency relationship" is strained even further by the recognition of the unique organizational structure of investor managers vis-à-vis their clients, who have little to no control over their appointment and dismissal. *See* Morley, *supra* note 31 (broadly discussing the relationship between investment managers and clients and how managers may limit investors' control).

151. As Morley explains, investment funds are organized pursuant to the "separation of funds and managers." Morley, *supra* note 31, 1238. Two distinct legal entities are involved. *Id.* The investments of clients are transferred to a legal entity, a fund that is distinct from a separate management company. *Id.* at 1238–39. Meanwhile, the management company has the sole authority (via contract) to direct the fund's operations and investment strategy. *Id.* at 1239. Legal agreements often limit the fund's ability to remove or replace management companies and their employees. *Id.*

index funds managed by Vanguard) are the true legal owners of these investments.

Because Vanguard does not legally own much of anything, the issue of how Vanguard and its fund managers are remunerated is crucial in defining their objectives. As Bebchuk and Hirst explain in a seminal article, investment managers have adopted a compensation structure that is largely dependent on the total amount of assets under management (AUM).[152] Instead of conditioning compensation on performance like senior management teams in portfolio firms, however, investment managers are only accorded a small percentage of their AUM. Presumably, this compensation structure arises because of the economic efficiencies that follow from relatively passive investment strategies, typified by the rise of index funds in recent years.[153] In index investing, fund management involves mirroring the securities of a particular financial index. The key idea here is that by mimicking the profile of the index, the fund is likely to match the performance of the stock market as a whole, or at least a broad subset of it. In contrast, active investing involves choosing securities which generate the highest possible excess returns over average market performance.

As investment managers act on behalf of *both* active and passive (index) funds, investment managers have the authority to exercise control rights in the portfolio companies that *all* of its funds own.[154] Nevertheless, investment managers have to decide on an appropriate strategy in exercising these control rights. A tradeoff arises here between the potential gains from excess returns and the costs of acquiring firm-specific information. By acquiring more firm-specific information, an investment manager has a greater chance of identifying firms that have the potential to generate excess returns. However, such acquisitions of information are costly, especially when aggregated across thousands of portfolio firms that funds own. Like the intuition provided in Section III.A, rational investment managers will tradeoff these benefits and costs.[155]

152*. See* Lucian Bebchuk & Scott Hirst, *Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy*, 119 COLUM. L. REV. 2029, 2037 ("Index fund managers, however, are remunerated with a very small percentage of their assets under management and thus would capture a correspondingly small fraction of such increases in value.").

153. Jill Fisch et al., *The New Titans of Wall Street: A Theoretical Framework for Passive Investors*, 168 U. PA. L. REV. 17 (2020).

154. Note that the funds continue to choose the securities within their portfolios—the investment manager merely exercises the control rights associated with these securities when they are bought or sold. Morley, *supra* note 17, at 1414.

155. This tradeoff can swing either way. *See* Diane Del Guercio & Jonathan Reuter,

Perhaps due to the large proportion of index funds among a typical investment manager's clients, however, the remuneration of investment managers is not structured to encourage shareholder activism. In particular, fund managers who act on behalf of investment managers only receive a fraction of the revenue received by the investment managers they represent, augmenting the agency costs between investment managers and their clients.[156] There are also additional reasons for this widespread adoption. First, as Fisch et al. note, modern investment managers enjoy economies of scale in "reduc[ing] the effective costs of engagement to a trivial amount on a per-company basis."[157] They do so by engaging in generic governance improvements that apply *across the board* to all of their portfolio firms.[158] For example, passive investors can impose governance "best practices" and stewardship standards that are likely to be applicable to a broad range of portfolio firms with little firm-specific information. Indeed, there is a substantial body of empirical evidence illustrating how passive investors exercise their right to vote, as well as other efforts in leading generic stewardship reforms.[159] Second, each (active) individual investment manager suffers from a collective action problem—any action which would increase the value of a portfolio company would also benefit rival investment managers, who would receive the benefit of the increase in value without any expenditure on their own.[160] Finally, investment managers owe fiduciary duties to their clients. As an investment manager like Vanguard acts on behalf of multiple clients, it is obligated to consider the potential for conflicts of interest when voting on behalf of its clients.[161] As Morley argues, potential shareholder activism from an investment manager could violate the fiduciary duties of loyalty that it owes to each individual client, as activism could

Mutual Fund Performance and the Incentive to Generate Alpha, 69 J. FIN. 1673 (2014) (providing evidence that actively managed funds earn similar after-fee returns as index funds within certain segments of the mutual fund market).

156. Bebchuk & Hirst, *supra* note 152, at 2037.

157. Fisch et al., *supra* note 153, at 38.

158. *See* discussion *infra* Section V.A.

159. *See*, e.g., Stephen L. Nesbitt, *Long-Term Rewards from Shareholder Activism: A Study of the "CalPERS Effect,"* J. APPLIED CORP. FIN. 75, 75–80 (1994) (discussing how investors may vote in order to pass across the board reforms).

160. *See* Bebchuk & Hirst, *supra* note 152, at 2052 ("Furthermore, if stewardship by an index fund manager increases the value of a portfolio company, rival index funds that track the same index (and investors in those funds) will receive the benefit of the increase in value without any expenditure of their own.").

161. Securities regulations do so by imposing fiduciary duties on investment managers. *See* SEC v. Cap. Gains Rsch. Bureau, Inc., 375 U.S. 180, 201 (1963) (stating that business standards preclude investment advisors from trading in the market without revealing his or her personal interests to clients).

damage some of a manager's funds even as it helped others.[162]

In the setting of common ownership, investment manager-client agency costs represent an *additional* layer of real-world frictions that prevent the unilateral implementation of a client's anti-competitive preferences under common ownership. As an abstract entity, Vanguard could, in principle, maximize the collective portfolio value of all its constituent funds by internalizing the pecuniary externalities between its portfolio firms. The issue, as always, is *whether* it has the incentives to do so. As the discussion above has suggested, the renumeration regime *per se* provides little incentive for firm-specific governance, let alone direct interference in firm specific product market decisions. Furthermore, because client funds are always free to manage portfolio firms directly rather than through an intermediary, the presence of these institutions suggest that financial intermediation may give effect to greater benefits relative to costs.

D. Costs of Collective Decision-Making

A third category of costs concerns the costs of collective decision-making, both within portfolio firms and within institutional investors.[163] These costs reflect the conflict of interests between members of a similar class, that is, between shareholders for portfolio firms, and between clients for institutional investors. Unlike agency costs, which resemble *vertical* conflicts between members of different classes, the costs of collective decision-making resemble horizontal conflicts between members of a similar class, typically that of shareholders.[164]

The costs of collective decision-making increase with the heterogeneity of interests amongst members of a given class.[165] In portfolio firms, for instance, multiple shareholders may have wildly different views as to whether the firm should pursue a given investment opportunity. Empirically, Bolton et al. provide evidence that mutual funds exhibit very different preferences in contested votes.[166] If heterogenous shareholders were to be vested with decision rights, a rule of unanimity (as is dominant in bilateral

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162. Note that these conflicts of interest are technically the costs of collective decision-making that arise between investment manager clients. *See* Morley, *supra* note 17, at 1412; *see also* discussion *infra* Section III.D.

163. HANSMANN, *supra* note 25, at 39.

164. Hansmann notes that the "costs of the collective decision making" are governance costs that arise from the heterogeneity of interests among the owners. *Id.* at 40. Leading theories of these costs have been led by the literature on public choice, as they allude to the costs associated with "political failure" (in this case, within the firm). *Id.*

165. *Id.*

166. Patrick Bolton et al., *Investor Ideology*, 137 J. FIN. ECON. 320 (2020).

contracting) could result in an impasse, since any given shareholder who disagreed with other shareholders would be able to prevent a collective decision from being made.[167] As such, disagreements amongst owners in contemporary firms are typically resolved by a voting rule, typically that of the majority rule—requiring the approval of more than 50% of the shareholders. However, the imposition of the majority rule also imposes its own costs—political scientists have long known that the majority rule may not lead to an efficient outcome.[168] In particular, the majority rule allows for the winning (majority) coalition to redistribute wealth from the losing (coalition) via the collective decision, violating a necessary condition for pareto efficiency.[169] The costs of collective decision making can thus be conceived as the costs that arise when a collective decision deviates from a shareholder's "ideal preferences."

In the context of common ownership, the costs of collective decision-making are manifested in the form of *disagreements* between common owners and other (common or non-common) owners. Where portfolio firms are concerned, Hemphill and Kahan suggest that where the interests of common-concentrated owners and non-common concentrated owners conflict, non-common concentrated may be able to "veto" or prevent common owners from carrying out their anti-competitive objectives.[170] More formally, these conflicts of interests can be thought of as differences in how common owners would direct the firm's competitive strategy *if* they were vested with total control. For instance, consider two common owners i and j in two competing portfolio firms, A and B. If i and j had asymmetric ownership shares, differences would arise between the common owners as to how A and B should be controlled. While common owner i would want to control the firms in a way that maximized its own profits at the expense of j, a similar situation would also apply for common owner j. Where the clients of institutional investors are concerned, a similar issue arises where the financial interests of heterogenous funds conflict. Because each fund may have a different financial position, collective control rights exercised by an investor manager may promote the interests of one fund at the expense of another, especially since each fund is likely to have asymmetric common

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167. *See* DENNIS C. MUELLER, PUBLIC CHOICE III 72–73 (2003) (noting that the unanimity rule encourages strategic behavior, including "holdout" conduct where an individual would gamble on the group thus increasing his share of economic surplus rather than risk his continual blocking of the collective outcome).

168. JAMES M. BUCHANAN & GORDON TULOCK, THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY 100 (1962).

169. MUELLER, *supra* note 167, at 79–80.

170. Hemphill & Kahan, *supra* note 10, at 1402–03.

ownership. As pointed out earlier, this potential for conflicts of interest between its client funds may actually disincentivize investment managers from interfering with product market decision-making in portfolio firms.[171]

The costs of collective decision-making are inherent within any arrangement with shared ownership. Because a firm often has to make a single decision on behalf of all owners, any collective decision will inevitably lead to the conflict of interests between owners so long as the owners have heterogenous interests. Shared ownership, in turn, is driven by the wealth constraints of investors and the need for risk reduction through diversification, which provide countervailing benefits to the costs of collective decision-making.[172] As alluded to in Section III.B, however, delegation may play a large role in reducing the costs of collective decision-making, albeit at the expense of raising managerial agency costs. By reducing the dimensionality of issues that invoke disagreements between owners, for instance, the credible delegation of control rights to third parties can prevent owners from "using [their] power of ownership against each other."[173] More importantly, for our purposes, any device that aids in aligning interests across all owners will also sharply reduce the costs of collective decision-making. As I will explain in Part IV of this Article, the potential gains from collusion can play an important role in aligning interests across owners.

E. Search Costs

The fourth and final category of costs concerns search costs, both within portfolio firms and within institutional investors. These costs do not reflect conflicts of interests between the various patrons at hand. Rather, they reflect costs associated with information acquisition—in particular, the costs of "discovering what the relevant prices are."[174]

Search costs are commonly modeled in consumer-facing markets. In contrast to typical "Walrasian" markets where consumers are costless and fully informed about product market prices, these models assume that consumers are not cognizant of the entire set/universe of product prices within a given product market and can only discover these prices at a cost.[175] For instance, a consumer may be required to pay transportation costs to be

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171. Morley, *supra* note 17, at 1412.
172. Edward M. Iacobucci & George G. Triantis, *Economic and Legal Boundaries of Firms*, 93 VA. L. REV. 515, 517 (2007).
173. Blair & Stout, *supra* note 91, at 274.
174. R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386, 390 (1937).
175. *See* George J. Stigler, *The Economics of Information*, 69 J. POL. ECON. 213 (1961).

informed of product prices at a store away from his/her place of accommodation. Traditionally, economists have suggested that even modest search costs can lead to firms charging prices substantially higher than their marginal costs.[176] This applies even in the complete absence of collusion.

In the setting of common ownership, *fully* internalizing *all* pecuniary externalities between portfolio firms requires actual knowledge of the extent to which the various products of competing portfolio firms substitute for another. With thousands of unique portfolio firms belonging to thousands of distinct clients, evaluating these patterns of substitution could be overwhelming, especially in product markets with differentiated products. As mentioned earlier in Section III.B, the distribution of information concerning product market competition is also likely to be structured in a way that would discourage the discovery of prices for common owners, who would simply lack the relationship-specific investments in expertise required to identify appropriate competitive responses.[177] Consider a simple exogenous shock to a "cost factor"—say, an increase in the price of wheels for automobile manufacturers. If adjustments to automobile prices required industry-specific knowledge of whether and how an automobile manufacturer could commence its own wheel production, a common owner would be hard pressed to acquire such knowledge at a cost, given the minute gains in its portfolio value even if it were to acquire such knowledge.[178]

Finally, search costs are also relevant to the fact that portfolio firms are likely to have vertical spillovers. Essentially, a diversified common owner is likely to have portfolio firms that purchase products from other portfolio firms *within* the same portfolio.[179] Consider two such firms in distinct industries, *A* and *B*, where firms in industry *B* are required to purchase a crucial input from firms in industry *A*. Even if the common owner were able to internalize all pecuniary externalities in industry *A*, the common owner would also suffer a loss in its portfolio value for industry *B*, as firms in *B* would experience an attendant increase in costs. To avoid this, the common owner would have to determine prices between its own portfolio firms in industries *A* and *B* that internalized all pecuniary effects on its individual

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176.   WILLIAMSON, *supra* note 19.

177.   Margaret M. Blair & Lynn A. Stout, *Specific Investment: Explaining Anomalies in Corporate Law*, 31 J. CORP. L. 719, 734 (2006).

178.   This is commonly known as the "make-or-buy" decision that firms face. *See, e.g.*, Anil Arya, Brian Mittendorf & David E. M. Sappington, *The Make-or-Buy Decision in the Presence of a Rival: Strategic Outsourcing to a Common Supplier*, 54 MGMT. SCI. 1747, 1747 (2008). This decision has implications for the firm's competitiveness vis-à-vis its rival firms. *Id.* at 1755.

179.   Rock & Rubinfeld, *supra* note 10; Alessandro Romano, *Horizontal Shareholding and Network Theory*, 38 YALE J. ON REG. 363 (2021).

portfolio value.[180] Evidently, any attempt at such fine-grained "tailoring" would be costly to the common owner.[181]

IV. COORDINATION COSTS

A. Coordinated Effects in Common Ownership

Unlike theories of anti-competitive harm that rely on unilateral effects, theories of harm that rely on coordinated effects assume the *cooperative* conduct of non-portfolio rival firms. In other words, it is assumed that portfolio firms not in the common owner's portfolio may engage in cooperative conduct if the common owner were to act in a certain way. Notably, because the conduct of non-portfolio firms would (by definition) be *outside* of the common owner's control, a common owner may still fail to achieve collusive outcomes even with absolute control rights. Consider a hypothetical scenario where firms *A*, *B*, and *C* are competing in the same market. If a common owner were to control firms *A* and *B*, but not *C*, a common owner seeking to induce collusion would be constrained by *C*'s independent competitive response.[182] As per standard theories of oligopolistic competition, the best response of the common owner would depend on whether *C* sought to collude or compete.[183] Accordingly, the potential benefits accruing to the common owner from implementing mechanisms that rely on coordinated effects may be relatively small in industries where collusion is unlikely to succeed.[184]

Although mechanisms that rely on coordinated effects involve a relatively higher risk of failure, they do have a comparative advantage when compared to mechanisms that rely on unilateral effects. This insight is driven by the fact that coordinating firms in a common industry seek to eliminate *all* pecuniary externalities imposed on each other. By cartelizing at the monopoly price forever more, coordination will lead to the highest possible

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180. Note, however, that the common owner would continue to internalize pecuniary externalities to the extent where its portfolio firms were not acting as final consumers. For example, the aforementioned common owner would attempt to influence its portfolio firms in industry *A* to sell their products at a low price to its portfolio firms in industry *B*, but would also attempt to continue selling their products at a high price to other consumers.

181. *See* discussion *infra* Section V.A.

182. Backus et al., *supra* note 7, at 276–77, 295.

183. JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 239–43 (1988).

184. *See* model and discussion *infra* Part VIII (Appendix A). In Appendix A, I model the common owner's subjective beliefs concerning the likelihood of successful collusion through a parameter α. If α is low, the common owner will be relatively more inclined to harness mechanisms that rely on unilateral effects.

(long-term) profits for a given industry, subject to each individual firm's incentives to cheat on the cartel.[185] So long as each portfolio firm adheres to a common "agreement" not to compete, common owners could experience higher portfolio returns than what they would receive under the implementation of unilateral effects, should they be able to successfully induce collusion.[186]

Unlike the setting of unilateral effects, it is also important to realize that portfolio firms may seek collusion anyway, regardless of whether common ownership exists or not.[187] Thus, the coordinated effects following from common ownership refer to the *marginal*, or *incremental* effects that one or more common owners have on the probability of collusion. Intuitively, a higher concentration of common ownership should lead to a higher probability of collusion. But why so? In Sections IV.B and IV.C, I explore how common owners may or may not be able to reduce coordination costs amongst their portfolio firms, facilitating the occurrence of collusion. The facilitation of collusion, in turn, will generate costs for the common owner. I describe two categories of three costs in the context of institutional investing: the costs of creating focal points, and detection and punishment costs. For each category of costs, I describe the difficulties associated with collusion, why they arise amongst firms, and how common owners may rationally expend costs in facilitating collusive outcomes.

B. Costs of Creating Focal Points

The decision of whether to collude or not hinges on a tension between a firm's self-interest and the collective interests of the firm's industry. Consider a hypothetical scenario where multiple firms are competing in the same product market. Although each firm would be better off without competition (that is, if each firm were to collude by setting the supra-competitive monopoly price), each firm has the unilateral incentive to deviate by setting a price below the collusive price to capture the market

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185. *See generally* James W. Friedman, *A Non-Cooperative Equilibrium for Supergames*, 38 REV. ECON. STUD. 1 (1971); Ariel Rubinstein, *Equilibrium in Supergames with the Overtaking Criterion*, 21 J. ECON. THEORY 1 (1979); Stigler, *supra* note 43; TIROLE, *supra* note 183.

186. Note that the term "collusion" is used here in the "economic" sense to encompass any state of affairs whereby cooperative firm conduct results in a decrease in social welfare vis-à-vis a counterfactual where such conduct does not take place, and is distinguished from how legal scholars use the term. Thus, the term includes both tacit and explicit forms of collusion. MASSIMO MOTTA, COMPETITION POLICY: THEORY AND PRACTICE 18 (2004).

187. In contrast, this phenomenon does not arise in the setting where the common owner pursues unilateral effects.

shares of its competitors.[188] In order to sustain collusion, firms have to interact with each other repeatedly, thereby having an opportunity to retaliate against a deviation by any one firm who cheats on the collusive agreement. For any given firm, the decision whether to collude thus comes to down to whether a deviation in the short-term provides it with a sufficient level of supranormal profits so as to outweigh the discounted present value of foregone future profits from rival punishments.[189] Hence, in order to successfully collude, firms need to overcome three obstacles. First, they have to reach a common understanding on the terms of coordination.[190] Second, they should be able to monitor adherence to those terms of coordination.[191] Third, they should be able to effectively punish firms that deviate from the terms of coordination.[192] The first factor relates to the ability of competing firms to reach a collusive equilibrium, while the latter two factors relate to the ability of the competing firms to sustain that collusive equilibrium.

To reach a common understanding on the terms of coordination, firms have to decide *which* price is likely to arise as the market outcome. Where explicit communications amongst firms are possible (e.g., in a cartel agreement), coordination on a single price is easy. While firms might face different marginal costs and have differentiated products, they can nevertheless negotiate to agree on a single price where all parties to the cartel enjoy an increase in profits under the cartel agreement.[193] However, although overt collusion is definitely possible, it is difficult to implement under existing antitrust laws, which explicitly prohibit such arrangements under *per se* rules.[194] Severe financial penalties and jail terms for executives involved in explicit cartelization substantially raise the costs for firms who wish to raise their profits from collusion.[195] On the other hand, liability for non-overt forms of collusion via tacit collusion or conscious parallelism is much more difficult for antitrust authorities to establish under prevailing

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188. TIROLE, *supra* note 183, at 246–47.

189*. Id.*

190. The terms of common understanding are often known as "focal points." THOMAS SCHELLING, THE STRATEGY OF CONFLICT 190–93 (1960).

191. In other words, they should be able to detect deviations from the terms of coordination. Tirole explains how long information lags and infrequent interactions can preclude a firm's ability to detect deviations, thereby reducing the possibility of collusion. TIROLE, *supra* note 183, at 248.

192*. Id.* at 247.

193. As Motta explains, communications allow firms to talk to each other and coordinate on their jointly preferred equilibrium without having to experiment with the market, which is costly. MOTTA, *supra* note 186, at 141.

194. Sherman Antitrust Act of 1890 § 1, 15 U.S.C. § 1; United States v. Socony-Vacuum Oil Co., 310 U.S. 150 (1940).

195*. United States v. Andreas, 216 F.3d 645 (7th Cir. 2000).

standards of proof in antitrust law.[196]

Here, a common owner can play an important role in improving the possibility of collusion amongst its portfolio firms which wish to collude. By creating focal points for collusion, a common owner may be able to facilitate tacit collusion while avoiding the worst excesses of the Sherman Act.[197] As Rock and Rubinfeld explain, common owners can do so through the form of "cheap talk"—a form of communication that is "costless" to make and that may be true or false.[198] "Cheap talk" can ameliorate collusion by aiding parties in selecting a common term to coordinate on—a focal point.[199] For example, consider a scenario where three airlines—Delta, American Airlines, and United—are competing on the same route. A common owner could individually tell each airline that it believed the price set by United was the "appropriate" price for the route, *without* detailing what it told rival airlines. Notably, the statement by the common owner would involve little to no costs on its end. At the same time, although each airline would be in principle free to ignore the common owner's statement, it is likely that they would not do so.[200] The common owner's statement might not seem to be of much value when taken in isolation, but all three airlines would collectively gain by following United's price on the said route—merely by harnessing the common owner's statement as a focal point.

As opposed to non-common owners, common owners have fewer incentives to mislead or lie when making a statement.[201] When a non-common owner makes a statement, it may well have an ulterior motive in misleading the firm.[202] For example, a non-common owner with ownership in the fossil fuel and airline industries could have an ulterior motive in misleading the former so as to benefit the airline industries. In contrast, because the common owner has ownership in firms competing within the recipient's industry, it bears an additional cost from false or misleading statements concerning that industry.[203] Relative to non-common owners, this

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196.   GAVIL ET AL., *supra* note 124, at 322–26.

197.   *See* discussion *supra* note 190.

198.   Edward B. Rock & Daniel L. Rubinfeld, *Common Ownership and Coordinated Effects*, 83 ANTITRUST L.J. 201, 219 (2020).

199.   *See* discussion *supra* note 190.

200.   *See* Rock & Rubinfeld, *supra* note 198, at 219 ("If the message sender has an incentive to lie and bears no risk of costly punishment, the recipients may ignore such messages. When cheap talk is ignored, it does not affect outcomes.").

201.   *Id.*

202.   Here, I refer to "non-common owners" as shareholders without ownership in (industry) rival firms. However, these non-common owners may have share ownership in other non-rival firms.

203.   Rock & Rubinfeld, *supra* note 198, at 220.

renders statements by common owners much more credible.[204]

The costs involved in creating focal points are part of the coordination costs that common owners must overcome in implementing mechanisms which would induce coordinated effects. Much of these costs would involve the search costs in identifying the industries and portfolio firms where collusion would be more likely to succeed, firm managers who would be receptive to the suggestions of common owners, as well as the choice of the focal point in question.[205] Although these search costs might seem ostensibly small, common owners also face additional costs in the form of potential liability if the mechanisms they employ are determined to constitute facilitating practices prohibited under antitrust law.[206] Accordingly, the costs of creating focal points may also include opportunity costs associated with the use of mechanisms that could reduce antitrust liability risk. For instance, while public (as opposed to private) announcements are generally seen to reduce the risk of antitrust liability, these announcements may also benefit "maverick" rival firms who do not wish to partake in the common owner's collusive plans.[207]

C. Costs of Facilitating Detection and Punishment

To sustain a collusive agreement over time, firms also need to monitor adherence to the terms of coordination. Thus, economists have known for a long time that the lack of price transparency may induce breakdowns in collusive activity; this is particularly salient in instances of tacit collusion where firms may not be able to directly observe prices. Stigler, for instance, argued that collusive agreements would break down because of secret price cuts.[208] More generally, Green and Porter have shown that if actual prices are not observable, collusion would be more difficult to sustain.[209] Intuitively, in a setting where a given firm cannot observe the prices charged by its rivals and where market demand levels are also unobservable, a firm would not know if the lower demand that it observed were attributable to a reduction in market demand, or to a price deviation by a rival that has acquired some or

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204. *Id.* at 220–21.

205.   *See* discussion *supra* Section III.E.

206.   *See* discussion *infra* Section V.A.3.

207.   The reduction of search costs created by public announcements, for instance, is often considered stronger than the collusive effects of public announcements. MOTTA, *supra* note 186, at 156. For the effects of "maverick" firms on product competition, see Backus et al., *supra* note 7, at 277.

208.   Stigler, *supra* note 43, at 46.

209.   Edward J. Green & Robert H. Porter, *Noncooperative Collusion under Imperfect Price Information*, ECONOMETRICA: J. ECON. SOC'Y 87, 88 (1984).

all of its sales. Thus, firms may have to tolerate costly "price wars" in order to sustain some form of tacit collusion over time.[210]

Common owners also have a role to play in reducing the costs of detecting and punishing deviations from a collusive agreement. Rock and Rubinfeld explain various ways by which common owners may facilitate detection and punishment of deviations amongst their portfolio firms who collude.[211] First, relative to non-common owners, common owners are likely to have greater access to commercially sensitive information across the industry in question, and can act as a "conduit" for information exchange amongst colluding firms through its interactions with these portfolio firms in the same industry, by way of earnings calls, investor meetings, and other channels.[212] In contrast, under an environment of greater price transparency (without common ownership), potential deviations from a collusive equilibrium would be more difficult for any colluding firm to implement. Second, if a common owner has an ownership stake in all of the colluding firms, it would also have a financial interest in preventing price wars from breaking out amongst them.[213] If a common owner were to have significant control rights over its portfolio firms, for instance, it could prevent or punish cheating via various mechanisms, including that of voting, executive compensation, or the threat of exit.[214] In the extreme scenario, a common owner could be said to play the role of a ringmaster in a "hub and spoke" cartel.[215]

Boller and Scott-Morton suggest a further mechanism of anti-competitive harm that reduces the payoff from deviations, thereby implicitly reducing the costs of punishing deviations.[216] Common owners, they argue, can influence the "patience" of managers by visiting them to discuss strategy, or by creating more confidence that their rivals are not abandoning a collusive equilibrium.[217] By increasing the discount factors for all managers, the likelihood for collusion is also increased, since a deviation in the short-term is less likely to provide a firm with sufficient profits to outweigh the discounted present value of foregone future profits from rival punishments.[218]

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210. *Id.*

211. Rock & Rubinfeld, *supra* note 198, at 216–18.

212. *Id.* at 213–16.

213. *Id.* at 217.

214. *See* discussion *infra* Section V.A.

215. LUKE GARROD ET AL., HUB-AND-SPOKE CARTELS: WHY THEY FORM, HOW THEY OPERATE, AND HOW TO PROSECUTE THEM (2021).

216. Boller & Morton, *supra* note 11, at 8, 42.

217. *Id.*

218. MOTTA, *supra* note 186, at 152.

Like the costs of creating focal points, the costs involved in assisting portfolio firms with the detection and punishment of deviations from collusive outcomes are a subset of the coordination costs which common owners must overcome, and include both search costs and costs from potential antitrust liability.[219] Unlike the creation of focal points, however, facilitating the detection and punishment of deviations from collusion is a dynamic process, requiring the common owner to engage in frequent interactions with the colluding firms in question.[220] This raises additional coordination costs in industries where structural features make collusion inherently difficult. For example, such costs would be particularly high in industries where product market prices are not easily observed, where products are highly differentiated, or where product demand is highly volatile.[221]

V. A FRAMEWORK OF MECHANISMS

A. Candidate Mechanisms

Thus far, I have discussed an array of information and coordination costs that may discourage a common owner from implementing its anti-competitive preferences. As detailed earlier, these costs represent the real-world frictions that arise from the common owner's lack of direct control in relation to its portfolio firms. Nevertheless, transaction costs do not preclude a common owner from implementing anti-competitive outcomes. In fact, we should *expect* common owners to do so, so long as their benefits outweigh these transaction costs. To examine *how* common owners can implement their anti-competitive objectives, scholars have suggested that common owners employ *mechanisms* of corporate governance.[222] These mechanisms reflect the various legal and economic strategies that common owners (as shareholders) can employ to achieve their objectives.[223]

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219. *See* discussion *supra* Part IV.

220. The creation of focal points would possibly require repeated interactions with the portfolio firms as well (perhaps, say, due to cost changes to a given industry), but at a much lower frequency than that required to effectively monitor and punish deviations from collusion.

221. MOTTA, *supra* note 186, at 142–49.

222. In this Article, I will also use the terms "anti-competitive mechanisms" and "mechanisms of anti-competitive harm" as synonyms for "mechanisms of corporate governance." These terms largely describe strategies that "translate common owners' incentives to firms' product market strategies." Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1518.

223. Hemphill & Kahan, *supra* note 10; Elhauge, *supra* note 16.

Mechanisms of corporate governance differ across the board in terms of the transaction costs they invoke. As expounded in Parts III and IV, the transaction costs of different mechanisms arise due to the various economic incentives that common owners face, as well as the legal obligations that common owners are subject to. Four of these mechanisms have been proposed in the literature: "voting," "executive compensation," "voice and engagement," and "exit and passivity."[224] Although these categories are not mutually exclusive, they provide a useful framework to conceptualize the tradeoffs involved in internalizing pecuniary externalities across portfolio firms. In the following sub-sections, I describe the theories of harm associated with each mechanism, its key legal constraints and transaction costs, as well as particular areas of concern which policymakers should scrutinize.

1.   Voting

Voting is a mechanism of corporate governance whereby common owners exercise *direct* influence by determining issues which have been proposed by either management or other shareholders (including common owners). As decision-making by the "voting" mechanism is both conclusive and legally binding on the corporation, its board of directors, and its officers, "voting" stands in stark contrast to other candidate mechanisms—all of which are far more indirect in nature.[225] Indeed, voting is often used as a mechanism of last resort. For example, BlackRock's proxy voting guidelines used to indicate "that [Blackrock] typically only vote[s] against management when direct engagement has failed."[226]

Ostensibly, voting presents a clear pathway for common owners to directly intervene in the decision-making of their portfolio firms. Accordingly, voting has the strongest potential amongst competing mechanisms to fully internalize pecuniary externalities amongst a common owner's portfolio firms. However, scholars who argue that voting is a dominant mechanism of implementing anti-competitive outcomes must address the significant transaction costs that are associated with the legal constraints and economic incentives that common owners face. Insofar as these legal constraints are concerned, common owners who wish to intervene with the competitive strategies of their firms face two fundamental

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224.   Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1518-20.

225.   DEL. CODE. ANN. tit. 8, §§ 211–212.

226.   Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1557 (quoting BlackRock).

constraints. First, on almost all issues that do not involve fundamental changes to the risks and returns of shareholder investments, state corporate law vests corporate decision-making powers in the board of directors, not the body of shareholders. The Delaware General Corporate Law, for instance, provides that "[t]he business and affairs of every corporation organized under this chapter *shall* be managed by or under the direction of a board of directors, except as may be otherwise provided in this chapter or in its certificate of incorporation."[227] Second, securities regulations that regulate shareholder voting in public companies limit the extent of shareholder intervention by proscribing shareholders from "piggybacking" certain types of proposals onto the management's proxy statement for annual shareholder meetings.[228] In particular, shareholder proposals that deal with "ordinary business operations," and proposals that relate to the election of the board of directors, and proposals that are improper under state corporate law (which would include proposals that mandate directors make specific business decisions) are collectively excluded under the SEC's Rule 14a-8, which allows the board of directors to exclude such proposals from the company's proxy.[229] Should shareholders wish to raise such issues with the board of directors, they would have to harness the regulated proxy framework governing proxy contests—a prospect that is generally seen to involve exceedingly high information costs.[230] Finally, even in the situation where institutional investors may have a fiduciary duty to vote their shares in accordance with the best interests of their clients, prevailing empirical evidence suggests a "default bias" in favor of management proposals.[231] In other words, the mere presence of participation in voting does not necessarily imply that common owners induce anti-competitive outcomes through the mechanism of voting.

Beyond the legal constraints that common owners face when putting

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227.   Del. Code. Ann. tit. 8, § 141(a) (emphasis added).

228.   Stephen Jung Choi & Adam C. Pritchard, Securities Regulation: Cases and Analysis 842 (5th ed. 2019).

229.   17 C.F.R. § 240.14a-8.

230.   Recent empirical evidence suggests that such proxy contests are often only fought by activist shareholders when a relatively pro-activist shareholder base already exists. Alon Brav et al., *Picking Friends Before Picking (Proxy) Fights: How Mutual Fund Voting Shapes Proxy* Contests (Eur. Corp. Governance Inst., Finance Working Paper No. 601/2019, 2021), https://dx.doi.org/10.2139/ssrn.3101473.

231.   Davidson Heath et al., *Do Index Funds Monitor?*, 35 Rev. Fin. Stud. 91, 95 (2022). Note, however, that the SEC has taken the view that "there may even be times when refraining from voting a proxy is in the client's best interest, such as when the adviser determines that the cost of voting the proxy exceeds the expected benefit to the client." Proxy Voting by Investment Advisers, 68 Fed. Reg. 6585, 6587 (Feb. 7, 2003) (to be codified at 17 C.F.R. pt. 275).

issues to a vote, common owners also face all of the transaction costs discussed earlier in Parts III and IV—the costs of collective decision-making, search costs, and agency costs (within the institutional investor)—when deciding whether to raise an issue for a vote, how to vote, and whether to participate in voting.[232] Indeed, the economic incentives to not engage in informed voting are so strong that economists have termed the phenomenon "rational apathy"—where it is rational for a given shareholder to not engage in an informed vote given the benefits and costs involved in voting.[233] Accordingly, the prevailing empirical evidence on how common owners vote suggests that common owners who face larger transaction costs in voting—in this case, index funds as compared to active funds—are less likely to vote against firm management on contentious governance issues.[234]

While common owners may *generally* face high transaction costs in using voting as a mechanism to soften competition amongst their portfolio firms, there are two salient situations where common owners may have heightened incentives to engage in voting that would result in anti-competitive outcomes. For these particular issues, both common and non-common owners are likely to have largely homogenous preferences.[235] This widespread consensus greatly reduces the costs of collective decision making.[236]

First, as Azar et al. point out, although common owners may not vote directly on competitive strategies, they do vote on director candidates.[237] As an empirical matter, boards of portfolio firms routinely vet director candidates with major shareholders before those names are placed on the management's proxy statement.[238] Accordingly, director candidates may be able to credibly reveal the nature of competitive strategies that they intend to

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232. *See* discussion *supra* Parts III, IV.

233. In the political context, see William H. Riker & Peter C. Ordeshook, *A Theory of the Calculus of Voting*, 62 AM. POL. SCI. REV. 25 (1968). In the context of corporations, see Konstantinos E. Zachariadis, Dragana Cvijanovic & Moqi Groen-Xu, *Free-Riders and Underdogs: Participation in Corporate* Voting (Eur. Corp. Governance Inst., Finance Working Paper No. 649/2020, 2020), https://dx.doi.org/10.2139/ssrn.2939744.

234. Heath et al., *supra* note 231, at 94.

235. The homogeneity of preferences may also include consensus on the dimensionality of the issue in question. As public choice scholars have noted, this reduces the potential risks of indeterminacy through cycling. Unidimensional preferences, for instance, invokes the efficiency properties of the median voter theorem. *See* MUELLER, *supra* note 167, at 87–92.

236. MUELLER, *supra* note 167, at 87–92.

237. Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1557.

238. Ram Charan et al., *Your Board Should Think Like Activists*, HARV. BUS. REV. (Feb. 9, 2015), https://hbr.org/2015/02/your-board-should-be-full-of-activists [https://perma.cc/3M AJ-VJW5].

pursue if elected.[239] For instance, a director candidate's past track record may indicate their propensity for reducing any spare capacity of the firm, their propensity to reduce R&D expenditure, or their aversion to competitive "price wars" with industry rivals. In principle, common owners could soften competition by voting for directors with such reputations. The incentives for common owners to do so are even stronger for directors who also sit on rival firm boards—a phenomenon termed as "horizontal directorship."[240] Horizontal directors are likely to have *both* information and (some) control over rival firms, reducing the transaction costs involved in internalizing intra-industry pecuniary externalities.[241] Furthermore, the mere fact that these directors have not resigned from their existing positions on rival firm boards may give rise to an inference that these directors are unlikely to compete vigorously in product markets. In pursuing aggressive competition strategies, horizontal directors would be forced to prioritize the interests of one firm over the other, inevitably raising a conflict of interests which could violate their fiduciary duties of loyalty to the relevant firms.[242]

Second, common owners also have heightened incentives to vote for anti-competitive mergers.[243] Unlike ordinary issues concerning a firm's competitive strategy, issues relating to a firm's merger decisions are seen to involve issues that fundamentally change the risks and returns of shareholder investments, and are thus subject to a shareholder vote under state corporate law. Section 251(c) of the Delaware General Corporation Law, for example, requires a merger agreement to be approved by a majority of the shareholders of both the acquiring and target corporations.[244] Although common owners may not be able to unilaterally commence a merger proposal on their own, they may certainly support a proposed merger between two or more portfolio firms within the same industry—without the expenditure of considerable transaction costs.[245] Indeed, the prevailing empirical evidence suggests that horizontal mergers tend to attract widespread shareholder support from both

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239.   Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1557.

240.   Yaron Nili, *Horizontal Directors*, 114 Nw. U. L. Rev. 1179 (2020).

241.   *Id.* at 1195–96.

242.   Nili notes that horizontal directors are at a heightened risk of violating their fiduciary duties (in particular, their duties of loyalty), as a director serving on the board of company X may be exposed to information that may have an impact on company Y. *Id.* at 1202–04.

243.   *See* Gregor Matvos & Michael Ostrovsky, *Cross-Ownership, Returns, and Voting in Mergers*, 89 J. Fin. Econ. 391, 397 (2008) (showing that common owners holding shares in a target firm are more likely to vote for mergers as compared to non-common owners, even when these mergers result in negative returns for the acquirer).

244.   Del. Code. Ann. tit. 8, § 251(c).

245.   *See id.* at § 251(b) (stating that "[t]he board of directors of each corporation which desires to merge or consolidate shall adopt a resolution approving an agreement of merger or consolidation and declaring its advisability").

common and non-common owners.[246]

2. Executive Compensation

Executive Compensation is a mechanism of corporate governance that lies between "voting" and "voice and engagement" in terms of the transaction costs that it invokes. Commonly known as "say on pay," the mechanism involves a "recurring, mandatory, binding or advisory shareholders' vote . . . [that] governs the . . . remuneration package[s] of the executives or managing directors of the corporation."[247] The key distinction between this mechanism and the mechanism of "voting" stems from the *precatory* nature of the vote—as shareholder votes on executive compensation are merely advisory in most corporations, they are not binding on the corporation, its board members, or senior managers.[248] In a typical firm, executive compensation is instead determined by a "compensation committee" set up by the firm's board of directors.[249]

In 2011, section 951 of the Dodd-Frank Act (which included a new section 14A to the Securities Exchange Act of 1934) mandated an advisory say on pay vote for the executive compensation of top managers.[250] Under section 14A of the Exchange Act and Rule 14a-21, the SEC provides detailed requirements that identify the form of the say on pay proposal and the executive officers whose compensation is subject to shareholder vote.[251] Importantly, however, voting on the overall compensation package as described in the proxy statement is binary, and does not allow shareholders to directly voice an opinion on specific elements of executive compensation.[252]

Theoretically, the mechanism of executive compensation provides a pathway for common owners to indirectly influence their portfolio firms by determining the appropriate managerial incentives that would maximize

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246. Nathan Shekita, *Interventions by Common Owners*, 18 J. COMPETITION L. & ECON. 99, 113–16 (2022).

247. Randall S. Thomas & Christoph Van der Elst, *Say on Pay Around the World*, 92 WASH. U. L. REV. 653, 658 (2015).

248*. See* 17 C.F.R. § 240.14a-21.

249. Ronald C. Anderson & John M. Bizjak, *An Empirical Examination of the Role of the CEO and the Compensation Committee in Structuring Executive Pay*, 27 J. BANKING & FIN. 1323, 1324 (2003).

250. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111- 203, § 951, 124 Stat. 1376, 1899 (2010).

251. Securities Exchange Act of 1934 § 14A, 15 U.S.C. § 78n-1; *see also* 17 C.F.R. § 240.14a-21.

252. 17 C.F.R. § 240.14a-21(a).

portfolio value. For example, if common owners could directly control the compensation package of a manager who in turn determines the competitive strategy of a portfolio firm, they could tailor a compensation package in a way that would incentivize the manager to soften competition between the firm and its rivals.[253] In the absence of all transaction costs, a common owner could even implement its "ideal"/"first-best" compensation policy for each of its portfolio firms, incentivizing the managers in charge of the firm to take into account the profits of the rivals it partially owns, while disregarding the profits of rival firms it does not own.[254]

Like the mechanism of voting, however, common owners must address the transaction costs that are associated with the legal constraints and economic incentives associated with the mechanism of executive compensation. As mentioned earlier, from a legal perspective, voting on executive compensation is merely advisory, and not binding on the firm's managers. Given the precatory nature of such votes, there is no *a priori* reason why firm managers would unilaterally adopt shareholder preferences without more. Indeed, prior to the enactment of mandatory say-on-pay rules via the Dodd-Frank Act, shareholders of U.S public corporations had attempted to include issues concerning executive compensation via shareholder proposals under Rule 14a-8.[255] Although these say-on-pay shareholder proposals received significant shareholder support, most managers opposed the proposals on the ground that the board of directors was charged by corporate law with setting terms of pay for managers.[256] These managers argued that shareholder input would diminish the effectiveness of the board's role. Accordingly, most boards initially ignored say-on-pay proposals, although this would eventually change over time.[257]

From an economics perspective, common owners also face all of the

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253. For instance, Aggarwal and Samwick show evidence that managerial compensation contracts are functions of the firm's competitive strategy. In particular, Aggarwal and Samwick show that relative performance-based incentives increase with the degree of competition in the industry. Rajesh K. Aggarwal & Andrew A. Samwick, *Executive Compensation, Strategic Competition, and Relative Performance Evaluation: Theory and Evidence*, 54 J. FIN. 1999, 2002 (1999); *see also* Miguel Anton et al., Common Ownership and Relative Performance Evaluation 28 (Aug. 15, 2016) (unpublished manuscript), https://dx.doi.org/10.2139/ssrn.4163225.

254. This would correspond with the "optimal incentive slopes"/"optimal executive compensation" that would provide managers with perfect incentives to internalize pecuniary externalities between rival firms. *See* Aggarwal & Samwick, *supra* note 253, at 2005; Anton et al., *supra* note 253, at 11.

255. 17 C.F.R. § 240.14a-8.

256. *See* Randall S. Thomas et al., *Dodd-Frank's Say on Pay: Will It Lead to a Greater Role for Shareholders in Corporate Governance*, 97 CORNELL L. REV. 1213, 1220 (2012).

257. *Id.*

transaction costs discussed *supra* Parts III and IV—the costs of collective decision-making, search costs, and agency costs when deciding *whether* and *how* to vote for a given compensation package.[258] Search costs are particularly salient here, as a compensation committee would tend to have superior information over diversified shareholders as to how compensation packages should be structured given the industry that the firm operates in, as well as information over the nature of experience possessed by the executive that would contribute to firm-value.

The advisory nature of the mechanism of "executive compensation" has similarities to the mechanism of "voice and engagement," as one would expect most of the negotiations concerning executive compensation to take place via shareholder engagements *prior* to a shareholder (advisory) vote. For instance, some of the largest common owners have claimed that they address the structure of management pay in 45% of engagement meetings.[259] The results of say-on-pay votes seem to reflect these negotiations, with studies showing that existing pay practices at most firms attracted on average 91.2% support.[260] In contrast, management proposals were only voted down 1.6% of the time—largely due to pay-for-performance concerns.[261] Indeed, this prevailing empirical evidence is consistent with my hypothesis that relative to other candidate mechanisms, intervention in firm-decision making via the mechanism of executive compensation may involve substantial transaction costs.[262]

Although the mechanism of executive compensation involves high-to-moderate transaction costs, one situation arises where common owners may have heightened incentives to influence the levels of executive compensation. The crux of this hypothesis suggests that common owners may play a role in the determination of *relative-performance* compensation yardsticks (RPE), which benchmark a firm's performance against its

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258. *See* discussion *supra* Parts III, IV.

259. Caleb Melby & Alicia Ritcey, *Vanguard, BlackRock Seen Seldom Challenging CEO Pay Plans*, BLOOMBERG (Feb. 17, 20116), https://www.bloomberg.com/news/articles/2016-02-17/vanguard-blackrock-seen-seldom-challenging-companies-on-ceo-pay [https://perma.cc/9H6V-JCHL].

260. *See* Thomas & Van der Elst, *supra* note 247, at 661 ("First, shareholders strongly supported existing pay practices at most firms with Say on Pay votes garnering on average 91.2% support.").

261. *Id.*

262. David I. Walker, *Common Ownership and Executive Incentives: The Implausibility of Compensation as an Anti-competitive Mechanism*, 99 B.U. L. REV. 2373, 2378 (2019) (concluding that while executive pay design is generally an implausible mechanism for linking common ownership to anticompetitive behavior, the empirical question as to the existence of such an association has not been resolved).

industry rivals.[263] Relative to non-common owners, a common owner with large stakes in a firm's rivals could prefer the absence or reduction of RPE in a manager's given compensation package.[264] To see why, consider a manager who faces considerable RPE in their compensation package. If the manager were to adopt a strong competitive strategy for their firm vis-à-vis its rivals, they would receive *more* compensation from RPE relative to the adoption of a weak competitive strategy. In contrast, a manager who faces no RPE would have no such incentives, and would essentially be indifferent between the adoption of a strong or weak competitive strategy.[265] Indeed, there is some empirical evidence to suggest that measures of common ownership are negatively related to the strength of managerial pay-for-performance sensitivity, suggesting that common owners may fail to encourage RPE in executive compensation packages, relative to their non-common owner counterparts.[266]

3. Voice and Engagement

"Voice and engagement" (henceforth, "engagement") is a corporate

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263. This is often known as "relative performance evaluation," or "RPE."

264. *See* generally Aggarwal & Samwick, *supra* note 253; Anton et al., *supra* note 253; Anton et al., *supra* note 64; Lantian (Max) Liang, Common Ownership and Executive Compensation (Oct. 2016) (unpublished manuscript) (on file with the Auckland Center for Financial Research). However, the literature is somewhat controversial, with some papers illustrating that common ownership has little to no effect on relative performance indicators. *See* Heung Jin Kwon, Executive Compensation under Common Ownership 6 (Nov. 29, 2016) (unpublished manuscript) (on file with author) (stating that common ownership does not lead to less use of RPE); Matthew J. Bloomfield et al., Common Ownership, Executive Compensation, and Product Market Competition, 4 (Oct. 5, 2021). (unpublished manuscript) (on file with author) ("Our results fail to uncover any statistically significant disparities between the voting behavior of common owners and non-common owners . . . we find no evidence to support the notion that common owners attempt to mitigate product market competition by altering executive incentives."). In Section VI.C. of my paper, *infra*, I avoid these controversies by suggesting policy proposals that focus on the incentives of *non-common* owners instead.

265. This assumes that rival managers are also indifferent between strong and weak competitive strategies, and so product market strategies resemble (*ceterus paribus*) a counterfactual where common ownership does not exist. *See* Green & Porter, *supra* note 209.

266. *See* Anton et al., *supra* note 64 at 1556 ("Empirically, top managers' wealth-performance sensitivity is negatively related to various measures of common ownership concentration."). Relative to other papers, Anton et al.'s methodology employs (arguably) more robust techniques by harnessing firm-level measures of common ownership as opposed to industry-level measures, and examining wealth-performance sensitivities (including executive equity holdings) as opposed to pay-performance sensitivities. This addresses some of Walker's critiques as to methodologies employed by earlier work. *See* Walker, *supra* note 262.

governance mechanism where common owners convey their preferences to their portfolio firm managers through private engagement meetings or other mediums of communication (e.g., investor calls). As scholars have noted, an engagement with firm management is effectively a "carrot," in stark contrast to "voting," which acts as a "stick."[267] Because the wishes of common owners expressed at engagement meetings are non-binding vis-à-vis the corporation, its board of directors, and managers, "engagement" is a mechanism of corporate governance that has a relatively lower potential of fully internalizing pecuniary externalities between a common owner's portfolio firms. Nevertheless, engagements can play an important role in ameliorating anti-competitive outcomes. For instance, engagement meetings may facilitate possible collusion amongst portfolio firms (within the same industry).[268] These meetings may also facilitate possible coordination amongst other common owners by reducing uncertainty about how other shareholders will respond to their suggestions, in turn influencing voting outcomes that would give rise to anti-competitive effects.[269]

Beyond the role that engagement meetings may play in encouraging coordination, engagements may also be used as a platform to convey the common owner's willingness to carry out a credible threat. For example, a common owner may (at an engagement) suggest the withdrawal of support for a given director should that director oppose the common owner's suggested competitive strategy for the firm in question.[270] Similarly, a common owner may (at an engagement) threaten to object to a given firm management's proposed compensation package should the managers refuse to adhere to the common owner's proposed competitive strategy.[271] Finally, a common owner may (at an engagement) threaten to sell (part of) its position in the firm should management refuse its overtures, possibly reducing the

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267. *See* Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1557 ("In effect, engagement is the carrot and voting is the stick.").

268. *See* discussion *supra* Part IV.

269. The reduction of uncertainty as to voting outcomes reduces the "costs of collective decision-making" detailed *supra* Section III.D. Moskalev provides some evidence illustrating how shareholders with similar common ownership vote in similar ways. *See* Alexandr Moskalev, Funds of A Feather: Influencing Corporate Elections by Voting Together 20–21 (July 13, 2020) (unpublished manuscript) (on file with author) ("Mutual funds portfolio similarity has a sizable association with directors election outcomes."); Alexandr Moskalev, Objective Function of a Non-Price-Taking Firm with Heterogeneous Shareholders 2 (Mar. 5, 2019) (unpublished manuscript) (on file with author) ("Common ownership is associated with lower industry returns, anti-competitive effects in airline industry, higher probability of mutual fund opposing management in elections, higher CEO compensation, and other effects.").

270. *See* discussion *supra* Section V.A.1.

271. *See* discussion *supra* Section V.A.2.

executive compensation of managers linked to the firm's stock market performance.[272]

As distinct from the mechanisms of voting and executive compensation, the legal frameworks regulating communications between common owners and their portfolio firms are largely limited to (1) the antitrust laws precluding facilitating practices that ameliorate collusion and (2) federal securities regulations that regulate proxy solicitations between shareholders of companies. In relation to (1), existing antitrust law regulates communications between common owners and their portfolio firms by rendering certain forms of information exchange as potential violations under section 1 of the Sherman Act and section 5 of the FTC Act.[273] Insofar as section 1 Sherman Act liability is concerned, however, existing antitrust law remains largely concerned with concerted (as opposed to unilateral) exchanges of information, and subjects such information exchanges to a "rule of reason" analysis.[274] To establish antitrust liability under the Sherman Act, a plaintiff would have to not only establish the existence of bilateral communications between the common owner and its portfolio firms, but also establish that the information exchange's anti-competitive effects outweighed its pro-competitive effects.[275] As for liability under the FTC Act, although the Act has been used to achieve some settlements involving invitations to collude, a series of federal court decisions have largely precluded applications of section 5 that go beyond prevailing interpretations of liability under the Sherman Act.[276]

In relation to (2), federal securities regulations also apply to communications between common owners (and non-common owners)

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272. *See* discussion *supra* Section V.A.4.

273. Sherman Antitrust Act of 1890, 15 U.S.C. § 1; Federal Trade Commission Act of 1914 § 5, 15 U.S.C. § 45(a).

274. *See* United States v. U.S. Gypsum Co., 438 U.S. 422, 439 (1978) (stating that fact specific standards like "rule of reason" have been applied to conduct falling within the Act's scope).

275. *Id* at 476.

276. *See, e.g.*, Boise Cascade Corp. v. FTC, 637 F.2d 573, 581–82 (9th Cir. 1980) (holding that FTC order was not supported by substantial evidence absent finding of overt agreement to utilize pricing system to avoid price competition); Official Airline Guides, Inc. v. FTC, 630 F.2d 920, 927–28 (2d Cir. 1980) ("We think that even a monopolist, as long as he has no purpose to restrain competition or to enhance or expand his monopoly, and does not act coercively, retains this right."); E.I. Du Pont de Nemours & Co. v. FTC, 729 F.2d 128, 141–42 (2d Cir. 1984) (holding that FTC must vacate its order without substantial evidence that challenged practices significantly lessened competition in the antiknock industry); FTC v. Abbott Lab'ys, 853 F. Supp. 526, 536 (D.D.C. 1994) (holding that indications of oppressiveness must be found for a business conduct to be labeled as "unfair" within the meaning section 5 of the FTC Act).

where they relate to shareholder voting. Relevant communications are termed "proxy solicitation[s]," and include all "statements made for the purpose of inducing security holders to give . . . a proxy."[277] These statements involve mandatory filings with both the SEC and recipients of the relevant communications, making inter-shareholder communications costly.[278] Nevertheless, under the existing securities regulations regime, many of the exemptions effectively allow common owners to discuss (collective) voting strategies. For instance, Rule 14a-2(b)(2) exemptions solicitations if the total number of [shareholders] is not more than ten, a white harbor easily satisfied with the small number of large common owners.[279] Similarly, Rule 14a-1(l)(2)(iv) excludes public announcements by shareholders on how they intend to vote, including public speeches, press releases and newspaper advertisements.[280]

Accordingly, while these rules do impose some information and coordination costs on common owners who wish to implement anti-competitive outcomes, existing exceptions and evidential burdens to the rules allow common owners to implement most of their anti-competitive outcomes via "engagement." As I will explain in Part VI, eliminating or reducing these exceptions and evidential burdens are crucial in addressing the anti-competitive harms arising from the mechanism of "engagement."

Common owners will also face other transaction costs while engaging with their portfolio firms. Most of these transaction costs relate to the search costs associated with engagements. Diversified common owners will face information costs in determining which issues to raise with specific portfolio firms, which issues to prioritize, and which issues to escalate to a possible vote given conflicts with management.[281] On the other hand, the mechanism of engagement *per se* does not entail any form of shareholder voting, and so avoids the costs of collective decision making inextricably associated with

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277. *See* 17 C.F.R. § 240.14a-1(*l*) (defining proxy "solicitation"); Adoption of Amendments to Proxy Rules, Exchange Act Release No. 5276, 1956 WL 7757, at 1 (Jan. 17, 1956) (defining scope of proxy solicitations).

278. *See* 17 C.F.R. § 240.14a-6 (describing filing requirements); *id.* at § 240.14a-7 (describing obligations of registrants to provide soliciting material to security holders).

279. *Id.* at § 240.14a-2(b)(2) (listing solicitations to which the Act would apply).

280. *Id.* at § 240.14a-1(l)(2)(iv). There is empirical evidence illustrating how firms publicly disclose more price-sensitive information after a rise in cartel enforcement, facilitating tacit collusion. *See* Thomas Bourveau, Guoman She & Alminas Žaldokas, *Corporate Disclosure as a Tacit Coordination Mechanism: Evidence from Cartel Enforcement Regulations*, 58 J. ACCT. RSCH. 295, 295 (2020) ("We find that after a rise in cartel enforcement, U.S. firms start sharing more detailed information in their financial disclosure about their customers, contracts, and products.").

281. *See* discussion *supra* Section III.E.

such votes.[282] When compared to competing mechanisms like "voting" or "executive compensation," the transaction costs associated with engagement are thus relatively low.

Most asset managers regard voice and engagement as the most important mechanism through which they influence the corporate governance of their portfolio firms.[283] Insofar as the firms' competitive strategies are concerned, Shekita provides numerous examples where common owners have arranged meetings with firm executives to pressure them into taking actions that would reduce the firm's competitiveness vis-à-vis its industry rivals.[284] For example, institutional investors like Blackrock have pressed for a merger between two commonly owned pharmaceutical firms. Looking at the earning calls of U.S. airlines, Azar et al. show that investors and management publicly discuss product market strategies.[285] For instance, market-level capacity discussions are a frequent topic of discussion; an institutional investor was even noted on record suggesting that an addition of capacity would jeopardize the relevant airline's stock price.[286]

4.   Exit and Passivity

Finally, common owners may be able to influence the corporate governance of one or more of their portfolio firms by simply exiting—selling part of or their entire stake in the firm on capital markets. The mechanism of "exit" may be implemented with or without the use of other mechanisms like "voting," "executive compensation," or "engagement."[287] For instance, although it would not be surprising for a common owner to sell its shares in the firm should other mechanisms fail to achieve its intended outcomes, a common owner could, at least in theory, also exit its position in one or more firms *without* engaging the firm's management at all. Thus, unlike its competing mechanisms, the mechanism of "exit" may involve little to no transaction costs.

As mentioned earlier, the mechanism of "exit" can subtly influence the corporate governance of portfolio firms by depressing the stock price of the

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282. *See* discussion *supra* Section III.D.

283. *See* Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1554 ("According to large asset managers, making their voices heard in private engagement meetings is the most important mechanism through which they influence corporate governance.").

284. *See* Shekita, *supra* note 246, at 7.

285. Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11, at 1555–56.

286. *Id.*

287. *See* discussion *supra* Section V.A.1–3.

firm upon the common owner's exit, in turn reducing the executive compensation of managers linked to the firm's stock market performance.[288] Accordingly, managers of portfolio firms may take the potential for exit into account in determining the firms' competitive strategies. As McCahery et al. have noted, 56% of institutional investors have tried to influence corporate managers by selling their shares to express dissatisfaction with the firm's corporate governance or performance.[289]

While the mechanism of "exit" is relatively unconstrained by law, index funds are constructed to track the components of a financial index. This precludes them from exiting firms as a reaction to corporate behavior that they do not favor. In contrast, index funds are far more likely to pursue a mechanism of "passivity" instead.[290] The mechanism of "passivity" involves doing nothing, and thus involves no transaction costs at all. Could a mechanism of "passivity" implement anti-competitive outcomes? Here, it is important to recall the earlier construction of a counterfactual *without* common ownership. In a world without common ownership, non-common owners would have no pecuniary externalities across firms to internalize. Nevertheless, non-common owners would *continue* to face agency costs within portfolio firms.[291] These non-common owners would be able to improve their portfolio values by monitoring and bonding their portfolio managers, in stark contrast to a strategy of remaining completely passive.[292] Hence, relative to a counterfactual without common ownership, we should expect higher product market prices and softer competition in a world where common owners remain completely passive.

In an important article, Anton et al. illustrate that mere shareholder passivity may give effect to anti-competitive outcomes.[293] Anton et al. argue that relative to non-common owners, a common owner is likely to push for less performance-sensitive compensation for firm executives.[294] The

288. *See* Elhauge, *supra* note 16, at 20 ("Managers might reasonably fear that if they displeased their horizontal shareholders by competing too aggressively, those shareholders might sell their investments, which would depress the stock price and the value of executive stock options that are a major component of their compensation.").

289. *See* Joseph A. McCahery et al., *Behind the Scenes: The Corporate Governance Preferences of Institutional Investors*, 71 J. FIN. 2905, 2913 (2016) (explaining that 56% of investors have used selling shares to express dissatisfaction).

290. Note that this comparison is made with reference to the competing mechanism of "exit." Index funds may continue to pursue other mechanisms like that of "voting," "executive compensation," and "engagement" as well.

291. *See* discussion *supra* Section III.B.

292. *See* Jensen & Meckling, *supra* note 128, at 308.

293. Anton et al., *supra* note 64.

294. *See id.* at 2 (arguing that common owners are more willing to accept slack and efficiency at the managerial level).

resulting compensation incentives increase the product market prices of the firm by increasing the firm's marginal costs from less cost-cutting efforts by managers.[295] Indeed, this strategy is costly for the common owner; the common owner suffers losses from the high and performance-insensitive pay packages provided to firm managers under passivity. Nevertheless, as Anton et al. elucidate, common owners are willing to *tolerate* this in exchange for softer competition amongst their portfolio firms, trading off these losses with the gains from the partial internalization of pecuniary externalities.[296] Anton et al. provide evidence supporting this hypothesis, documenting that managerial incentives are less performance-sensitive in firms with greater common ownership.[297]

B. Analysis

As illustrated in Section V.A, disparate transaction costs are associated with different mechanisms of corporate governance. A general tradeoff arises for the common owner—mechanisms that invoke higher transaction costs are also associated with a higher level of profits resulting from the internalization of pecuniary externalities. Contemplating these tradeoffs, a rational common owner would implement mechanisms that would maximize the level of pecuniary externalities internalized while minimizing the transaction costs invoked by the said mechanisms.

To characterize the tradeoffs that common owners face in internalizing pecuniary externalities at a cost, I introduce a new parameter in my analysis: "*tailoring*." The degree of tailoring reflects the extent to which a common owner would *rationally* incur transaction costs in attempting to exert *actual* control.[298] Highly tailored mechanisms tend to target particular areas of conduct in specific firms. These mechanisms invoke more information or coordination costs, but also internalize more of the pecuniary externalities

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295. *Id.* at 17–18.
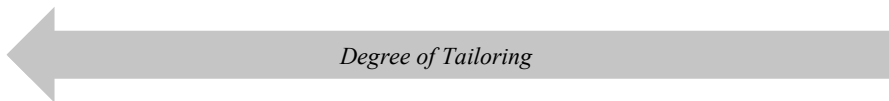
296. *Id.* at 3.

297. *Id.* at 40–49.

298. In other words, the term "tailoring" is used here as a way to describe the *degree of precision* to which a common owner would influence a portfolio firm's conduct in line with the common owner's unilateral preferences, and therefore applies both within and across the common owner's portfolio firms. *See* Ian Ayres, *Preliminary Thoughts on Optimal Tailoring of Contractual Rules*, 3 S. CAL. INTERDISC. L.J. 1, 1 (1993) (providing a theory for optimal tailoring). This is distinguished from Hemphill and Kahan where the learned authors introduce the notion of a "targeted strategy," a strategy merely directed at specific actions of the firm. *See* Hemphill & Kahan, *supra* note 10, at 1419 (explaining what targeted mechanisms are and how they are differentiated from across-the-board mechanisms).

that exist between competing portfolio firms.[299] In contrast, untailored mechanisms would be far more general in their application, applying to all portfolio firms, or at least broad categories of portfolio firms. Untailored strategies incur less information costs or coordination costs, but also internalize less pecuniary externalities between competing portfolio firms.[300]

Table 1. Five Candidate Mechanisms of Harm

Degree of Tailoring			
	Voting	Executive Compensation	Voice & Engagement	Exit & Passivity
Expected Costs (Transaction Costs)	Very Costly	High-Average Costs	Low-Average Costs	Little to No Costs
Expected Benefits (Effectiveness)	High	High-Average	Low-Average	Low
Markups	Very High	High-Average	Low-Average	Low (by lowering productivity thus affecting marginal costs)
Tailored Variant	Proxy Fight to Appoint New Slate of Directors	Targeted Incentive Slopes	Private Investor Meetings	N.A.
Untailored Variant	Non-Binding/ Advisory Votes	Blanket Policy Precluding RPE for all Portfolio Firms	Public Announcements	N.A.

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299. *See* discussion *supra* Section V.A.

300. Note that any pecuniary externalities left "un-internalized" can be thought of as "gains from trade" left uncaptured by the common owner. *See* Myerson & Satterthwaite, *supra* note 22.

	Voting	Executive Compensation	Voice & Engagement	Exit & Passivity
Unilateral Variant	Voting to Appoint Complaint Board of Directors	Firm Specific Incentive Slopes	Exhortation to Soften Competition	N.A.
Coordinated Variant	Voting to Punish Deviations from Cartel	Industry-value-maximizing Incentive Slopes	"Cheap Talk" inducing Coordination	N.A.

Table 1 provides a summary of the transaction costs involved in implementing the four candidate mechanisms discussed in Section V.A. The mechanisms of harm are ranked in terms of their relative degree of tailoring, with the most tailored mechanisms positioned on the left, and the most untailored mechanisms positioned on the right. As mentioned earlier, highly tailored mechanisms are highly effective in internalizing pecuniary externalities, but also incur relatively more transaction costs. Thus, common owners may induce the highest possible markups through the mechanism of "voting" (perhaps by campaigning to elect a complaint board of directors), but only by expending very high transaction costs.[301] In contrast, the markups induced through the mechanism of "passivity" are likely to be much lower. However, passivity is likely to involve little to no transaction costs.

Two features in Table 1 require some clarification. First, we should understand "tailoring" as a continuous variable that exhibits a continuum of intensity—it is not a binary or categorical variable that reflects whether a given mechanism is "tailored" or not. In Table 1, I provide examples of tailored and untailored variants of candidate mechanisms. For instance, the mechanism of "executive compensation" has an untailored variant where the common owner implements a blanket policy precluding "relative performance evaluation" measures for all of its portfolio firms.[302] As one would expect, such a policy would be *both* over and under-inclusive, and so would be less effective in internalizing the common owner's pecuniary externalities within its portfolio. In contrast, the tailored variant involves a scenario where the common owner implements its ideal compensation policy

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301. A "markup" is the ratio between the firm's profit margin (price minus marginal cost) and its prices. TIROLE, *supra* note 183, at 66.

302. Hemphill and Kahan define a similar (but distinct) notion of "across-the-board" mechanisms. *See* Hemphill & Kahan, *supra* note 10.

for each of its individual portfolio firms.[303] Such a mechanism would internalize more pecuniary externalities, but at a greater cost. For example, the identification of a compensation package that would incentivize firm managers to determine product market prices in a way that internalized the common owner's pecuniary externalities in a particular industry would involve substantial search costs as to how the firm's products in that industry substituted for one another.[304]

Second, each of the candidate mechanisms has a unilateral and coordinated variant associated with them. Consider the candidate mechanism of "engagement." A unilateral variant of this mechanism could take the form of an exhortation by the common owner to unilaterally soften competition.[305] The effectiveness of such an exhortation would be dependent on the credibility of an implied threat—for instance, a threat of the common owner to exit the firm (thereby potentially reducing any stock-based compensation firm managers might receive by lowering stock prices), or a threat of the common owner to vote against the appointment of future directors. In contrast, a coordinated variant of this mechanism could adopt the form of a common owner playing a facilitating role in ameliorating price coordination amongst its portfolio firms and other shareholders (both common and non-common) of the firms in question, acting as a "hub" in a "hub-and-spoke" cartel.[306]

What mechanisms are institutional investors likely to pursue in inducing anti-competitive outcomes? While this largely remains an empirical question, three hypotheses emerge from my framework.[307] First, as large institutional investors face very large transaction costs in implementing highly tailored mechanisms that internalize most of the pecuniary

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303. *See* Matvos & Ostrovsky, *supra* note 243.

304. Such a compensation package would also invoke opportunity costs associated with the reduction of managerial agency costs if relative performance indicators were inextricably tied to measures of managerial performance. *See, e.g.*, Bengt Holmstrom, *Moral Hazard in Teams*, 13 BELL J. ECON. 324, 334–38 (1982) (arguing that relative performance measures could filter out noise from industry or market movements over which executives have no control).

305. For instance, Shekita notes how a portfolio manager at Hodges Capital Management indicated in an investor call that he would "like to see [Southwest Airlines] boost their fares but also cut capacity." Shekita, *supra* note 246, at 4.

306. *See* GARROD ET AL., *supra* note 215 (explaining why hub-and-spoke cartels form, how they operate, and how they are prosecuted). While I suggest that the implementation of coordinated (variants of) mechanisms may be less costly than their uncoordinated counterparts, an involved analysis of the relationship between coordinated and unilateral mechanisms is complex and is left to future work.

307. *See* model and discussion *infra* Part VIII (Appendix A). In Appendix A, I provide a simple model that formalizes the intuition behind these hypotheses.

externalities amongst their portfolio firms, they are far more likely to advance their anti-competitive interests as common owners through subtler means. In particular, institutional investors are likely to induce anti-competitive outcomes by pursuing untailored mechanisms that would apply across-the-board to their portfolio firms.[308] Thus, an institutional investor like BlackRock is likely to pursue policies that would encourage firms to *not* adopt relative-performance or performance-sensitive benchmarks for firm executives.[309] It is also likely to issue non-binding "advisory" statements that could soften competition, perhaps to multiple firms that it has stakes in within a given industry. For example, BlackRock could issue a public statement suggesting that excess capacity within the airline industry were hurting profits, under the guise of engaging in "cost-cutting" corporate governance.[310] Finally, it is also likely to *not* engage in efforts to stimulate vigorous competition amongst its portfolio firms. For instance, Blackrock is unlikely to support a competing slate of directors who are campaigning to increase firm profitability by investing heavily in productivity improvements so as to provide the firm in question with a competitive edge.[311] Indeed, many of the mechanisms suggested above are consistent with the prevailing empirical evidence.[312]

Second, institutional investors are likely to adopt mechanisms that provide the most "bang for the buck"—that is, mechanisms that provide the greatest return relative to their transaction costs.[313] Here, variants of mechanisms that promote coordinated effects are particularly attractive. Relative to their "uncoordinated" counterparts, mechanisms that induce coordinated effects avoid the costs of collective decision-making associated with shareholder disagreements.[314] Intuitively, these mechanisms facilitate consensus amongst market participants by promoting industry-wide collusion—a scenario where firm managers, other common owners, and non-common owners *all* stand to gain.[315] Accordingly, these mechanisms also greatly reduce the agency costs within portfolio firms, as the incentives of managers would be largely aligned with most of the firm's shareholders

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308. *See* O'Brien & Salop, *supra* note 52.

309. *See* Anton et al., *supra* note 64, at 40–49 (explaining that common ownership can influence product market competition through managerial mechanisms).

310. Bourveau et al., *supra* note 280, at 317; Shekita, *supra* note 246, at 4.

311. *See* discussion *supra* Section V.A.4.

312. *See supra* notes 297–298 and accompanying text.

313. One can conceive of this as the ratio of benefits to costs associated with a particular variant of the chosen mechanism.

314. *See* discussion *supra* Section III.D.

315. *See* discussion *supra* Part IV.

should they engage in tacit or explicit collusion.[316] More importantly, the pecuniary gains associated with the internalization of all possible pecuniary externalities within a given industry are likely to be greater than the gains associated with the internalization of these externalities for a single common owner.[317] Absent any legal constraints imposed by antitrust laws, an institutional investor is thus likely to favor the implementation of such mechanisms. Indeed, as elucidated earlier, there is considerable empirical evidence that investors and management publicly discuss product market strategies, possibly through "cheap talk" engagements that ameliorate tacit collusion.[318] Unfortunately, much of the existing literature on common ownership has focused solely on the implementation of mechanisms associated with unilateral effects, with hardly any empirical evidence linking common ownership with collusive outcomes.

Finally, it is important to note that mechanisms of corporate governance serve *multiple* purposes—not merely the implementation of anti-competitive outcomes. As an example, an institutional investor like BlackRock has preferences not only over its portfolio firms' profits, but also over the productivity of its firm managers and employees (reflecting the agency costs within portfolio firms), its firms' Environmental, Social, and Governance (ESG) policies, and its firms' investments in research and development.[319] Thus, while BlackRock may wish to implement anti-competitive outcomes through one or more mechanisms, these objectives may conflict with its other objectives to reduce managerial shirking or to improve its portfolio's ESG performance.[320] In other words, a given mechanism of corporate governance

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316. *See* Boller & Morton, *supra* note 11, at 42 (arguing that participants in tacit collusion will be cooperative because of expected future profits).

317. *See* discussion *supra* note 184. As Boller and Scott Morton note, "a general softening of competition so that every firm competes less hard and earns more profit is beneficial to every owner, including those that are entirely focused on holding one competitor." Boller & Morton, *supra* note 11, at 42.

318. *See* Bourveau et al., *supra* note 280, at 317.

319. For a description of the preferences of these institutional investors, see Bolton et al., *supra* note 166; Ryan Bubb & Emiliano M. Catan, *The Party Structure of Mutual Funds*, 35 REV. FIN. STUD. 2839 (2021).

320. As Schmalz notes:

> It is therefore not always clear whether a result is a common ownership effect or a blockholder effect. . . . It would be less surprising to find or predict that institutions holding blocks greater than 5% in multiple firms are more active in governance, compared to institutions holding blocks of 5% or less, simply because of the fixed-cost component of governance activities. Therefore, if common ownership is defined using only blockholders, the finding will mix a blockholder and a common ownership effect.

Schmalz, *supra* note 24, at 16.

may be associated with an opportunity cost for the common owner if the mechanism is *inextricably* tied to the loss of a benefit.[321] For instance, consider the mechanism of "passivity." The likelihood of this mechanism is dependent on the strength of the common owner's conflicting objectives. Although the common owner could *increase* portfolio value by actively monitoring firm managers (reducing the level of managerial shirking), this would also *decrease* portfolio value by increasing the firm's competitiveness vis-à-vis its rivals.[322] For "passivity" to be a viable strategy, the losses from this decrease in portfolio value from passivity must outweigh the gains in portfolio value from such monitoring.

VI. POLICY RESPONSES TO THE ANTI-COMPETITIVE EFFECTS OF COMMON OWNERSHIP

A. Economic Intuition

How *should* the law respond to the anti-competitive risks from common ownership in a setting with substantial transaction costs? Where these transaction costs are assumed to be extremely high, prior literature has suggested one course of action—that the law should simply do nothing. For example, Bebchuk et al. suggest that "it is implausible to expect that index fund managers would seek to facilitate significant anti-competitive behavior."[323] Similarly, Bebchuk and Hirst note that common ownership "alarmism may push index fund managers to act even more deferentially than they have to date. . . . [moving] stewardship in the wrong direction."[324] Lambert argues that the lack of legal intervention is desirable from a social welfare standpoint, as "condemning mere common ownership under the antitrust laws would likely entail significant costs . . . [while] the benefits [from] such condemnation [would be] speculative."[325] There is some ostensible validity to these arguments—even in a world *without* transaction costs, there would be some decision costs and error costs associated with any legal intervention that attempted to address the anti-competitive concerns arising from common ownership. Given unequivocal empirical evidence that

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321.   These opportunity costs may also be conceived as "transaction costs" that a common owner would take into account in deciding which mechanisms to employ. *See* discussion *supra* Parts III, IV.

322.   Anton et al., *supra* note 64, at 3.

323.   Bebchuk et al., *supra* note 10, at 109.

324.   Bebchuk & Hirst, *supra* note 152, at 2133.

325.   Thomas A. Lambert, *Mere Common Ownership and the Antitrust Laws*, 61 B.C. L. REV. 2913, 2914 (2020).

common owners behaved in a way similar to non-common owners, one would be hard-pressed to justify legal intervention against common owners.

In contrast to the older literature, however, recent empirical evidence has illustrated that this implicit assumption is untenable.[326] Many of the transaction costs associated with the implementation of anti-competitive mechanisms are sufficiently low for most common owners to overcome.[327] Furthermore, in many industries like the airline, banking, grain, pharmaceuticals, and even healthcare, prevailing evidence suggests that the pecuniary externalities available for internalization are far higher when compared to the transaction costs associated with one or more mechanisms of corporate governance.[328] In these situations, we should *expect* rational common owners to implement one or mechanisms of corporate governance to achieve their anti-competitive objectives.

Accordingly, the starting point of potential policy proposals should stem from the *expected* harms that would arise from common ownership in a world with transaction costs. Given the fact that most common owners are institutional investors in contemporary capital markets, legal reforms should focus on disincentivizing the mechanisms that these common owners *actually* harness in achieving their anti-competitive objectives. As detailed earlier, common owners will implement mechanisms that provide the greatest return (in internalizing pecuniary externalities) relative to their transaction costs. Here, the law can play a critical role in changing the incentives of common owners by *increasing the transaction costs* of implementing particular mechanisms of anti-competitive harm, and in changing the incentives of non-common owners by *decreasing the transaction costs* of implementing pro-competitive mechanisms. Crucially, because any form of regulation will inevitably be associated with welfare-reducing costs, I argue for the creation of mechanism-specific remedies—precise rules that target the specific mechanisms likely to be harnessed, as opposed to broad-based rules that affect other corporate governance objectives.[329]

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326. For a summary of these developments, see Schmalz, *supra* note 24, at 20–21.

327. Schmalz, *supra* note 24.

328*. See* Azar et al., *Anticompetitive Effects of Common Ownership*, *supra* note 11 (showing the effects and implications of common ownership in the airline, banking, and pharmaceutical industries); Azar et al., *supra* note 61; Mohammad Torshizi & Jennifer Clapp, *Price Effects of Common Ownership in the Seed Sector*, 66 ANTITRUST BULL. 39 (2021) (discussing the same for the grain industry); Newham et al., *supra* note 61; Mengde Liu, The Topics in Common Ownership (Apr. 10, 2020) (Ph.D. dissertation, Tulane University) (ProQuest) (discussing the same for the hospital industry).

329. In other words, I target the incentives of common owners in situations where they are

I suggest three guidelines in formulating mechanism-specific remedies. First, following the analysis in Section V.B, policy makers should emphasize legal reforms that target general mechanisms that most common owners are likely to implement. For instance, relative to mechanisms like "voting," "engagement" is a particularly attractive mechanism for institutional investors given the relatively low transaction costs involved. Thus, in the absence of countervailing factors, reforms that target relatively untailored mechanisms like "engagement" should be prioritized over reforms that target relatively tailored mechanisms like "voting." Second, this prioritization is not absolute, as common owners are nevertheless likely to engage costly variants of mechanisms that continue to be profitable.[330] As I will detail in Section VI.F, distinguishing these variants for legal reform is crucial if the law is to preserve shareholder incentives to engage in corporate governance. Third, mechanism-specific remedies will not only entail reforms to antitrust law, but also to the federal securities regulations regime and possibly state corporate law. All of these legal regimes heavily influence the transaction-cost-environment of a common owner, and accordingly, the common owner's incentives.[331]

B. Voting-Related Proposals

While the tailored mechanism of "voting" is particularly costly for most common owners to implement, common owners may nevertheless have heightened incentives to soften competition through voting in two specific contexts. As noted earlier, common owners face particularly strong incentives to do so when they are presented with opportunities to vote for directors who also sit on rival firm boards, or when they are granted opportunities to approve proposed mergers between two or more portfolio firms within the same industry.[332] Intuitively, the potential gains from internalizing pecuniary externalities between portfolio firms are particularly high in these specific contexts, making it rational for common owners to implement their objectives through this mechanism.

Legal reforms addressing the anti-competitive effects from these variants of the voting mechanism could increase the transaction costs of voting for common owners on the aforementioned issues. For instance, the

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most likely to give rise to anti-competitive harm, and the incentives of non-common owners in situations where they are most likely to give rise to pro-competitive benefits.

330. *See* discussion *supra* Section V.A.1.

331. Similar reasoning applies to non-common owners insofar as their incentives are concerned.

332. *See* discussion *supra* Section V.A.1.

law could, subject to a rebuttable presumption, simply preclude common owners from voting on these issues. As Lund has suggested, in the context of index fund voting, an argument could be made that active and informed voting would *prima facie* increase the costs of the fund's clients without corresponding benefits and would therefore breach the fund's fiduciary duties, thereby creating a legal presumption restricting passive funds from voting their shares.[333] Lund argues that such a prohibition against index fund voting would be rebuttable if a fund could show that its strategy incorporated meaningful portfolio company research.[334] Similarly in this context, a common owner with overlapping ownership beyond a certain threshold would be presumed to have anti-competitive incentives in exercising its votes on these particular issues, and would be compelled to evidence pro-competitive reasons for voting before it would be permitted to proceed.[335] The implementation of these rules would follow existing rules in Merger Control, where merging parties are required to provide the FTC or the DOJ with evidence of merger-specific efficiencies.[336]

It is important to note that aside from the two limited contexts, common owners should be entitled to preserve their full voting rights in relation to all other issues relating to ESG policies, vertical mergers, dilution of shares, appointment of non-horizontal directors, and other issues.[337] As I will argue in Section VI.F, in contrast to existing proposals, my modest reforms tend to preserve the important role which common owners play as stewards in reducing agency costs, while targeting anti-competitive harm where it is most likely to occur.

C. Executive-Compensation-Related Proposals

Although the "executive compensation" mechanism is likely to invoke lower transaction costs than the mechanism of "voting," the nature of the mechanism largely involves the *failure* of common owners to stimulate competition amongst their portfolio firms. This fundamentally changes the

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333.   *See* Dorothy S. Lund, *The Case against Passive Shareholder Voting*, 43 J. CORP. L. 493, 528 (2018) (providing the disadvantages of having educated and informed shareholders in increasing the cost and risk within the fund).

334.   *Id.* at 529.

335.   Such a threshold could harness the use of existing metrics of common ownership, such as the MHHI/MHHIΔ in O'Brien & Salop, *supra* note 52, or other metrics like the κ profit weights in Backus et al., *supra* note 7.

336.   HORIZONTAL MERGER GUIDELINES, *supra* note 1 at 29–31.

337.   More modest reforms (relative to the presumption of illegality) may relate to inter-shareholder communications concerning a prospective vote. I consider these reforms under "engagement-related proposals" *infra* Section VI.D.

nature of potential reforms. As detailed in Section V.A.3, existing pay practices at most firms tend to attract overwhelming support. At the same time, management proposals on executive compensation are rarely subject to shareholder disapproval.[338] Thus, in contrast to reforms targeted at voting, legal reforms here ought to focus on decreasing the transaction costs of implementing pro-competitive behavior.

The aforementioned approach is particularly salient in a situation where common owners may have heightened incentives to influence the levels of executive compensation by endorsing the removal of RPE, which benchmark a firm's performance against its industry rivals. The removal of RPE could adopt many forms. For example, firm managers could propose a compensation package that benchmarked *non-industry* peer companies.[339] As explained earlier, relative to a counterfactual with the presence of RPE, the removal of RPE incentivizes firm managers to compete less aggressively vis-à-vis their rivals.[340] Furthermore, even if RPE were implemented in firms with common owners, RPE is likely to be less intense relative to a counterfactual without common ownership.

Legal reforms could address the anti-competitive effects that arise here by reducing the transaction costs associated with the implementation of RPE. Here, the focus is on the incentives of non-common owners and "maverick" shareholders who also own part of the common owners' portfolio firms.[341] If non-common owners were to favor some managers to compete more intensely relative to other firms, legal reforms could make it less costly for non-common owners to implement their preferences by making "say on pay" votes binding on corporations, insofar as they related to the adoption of RPE.[342] In other words, a shareholder would be able to force a binding vote on whether firm managers would be subjected to relative-performance indicators. A harsher variant of the rule would even preclude common

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338. *See* discussion *supra* Section V.A.3.

339. Contrary to Walker's assertion, *supra* note 262, at 2394 (stating RPE's exacerbation of hyper-competition against peer groups in a particular industry), Bizjak et al. find that most firms that used RPE employed custom peer groups to benchmark their executives' performance, rather than a peer group explicitly tied to an industry, John M. Bizjak et al., *The Choice of Peers for Relative Performance Evaluation in Executive Compensation*, 26 Rev. Fin. 1217, 1217–18 (2022) (establishing RPE's legitimate use in benchmarking an executive's performance). In 2017, only 53.2% of firms used RPE, and of those firms, only 36.9% used an industry peer group (thus, only 19.6% of firms used RPE relevant to common ownership incentives). *Id.* at 1224 tbl.1.

340. *See* discussion *supra* Section V.A.2.

341. *See* Backus et al., *supra* note 7, at 277 (detailing how non-common owners and "maverick" firms play an important role in reducing the anti-competitive effects from common ownership).

342. 17 C.F.R. § 240.14a-21.

owners (exceeding a certain threshold of overlapping ownership) from voting on these issues, allowing the interests of non-common owners to dominate.[343] The SEC could also lower the transaction costs of pro-competitive shareholder conduct by exempting issues relating to relative-performance compensation from the proxy solicitation regime, allowing corporate reimbursements for such proxy solicitations, mandating the "piggybacking" of these issues onto the firms' management proxy statements, and even allowing shareholders to directly voice an opinion on the intensity or magnitude of relative-performance components.[344] These proposed reforms are distinct from reforms that would permit common owners to directly influence managerial compensation, as common owners are unlikely to be interested in implementing these pro-competitive benchmarks.[345]

D. Engagement-Related Proposals

The relatively untailored mechanism of "engagement" is particularly attractive for common owners given its relatively low transaction costs. Indeed, as elucidated earlier, most asset managers regard "engagement" as the most important mechanism through which they influence the corporate governance of their portfolio firms.[346] These engagements often extend to overtures that attempt to influence the competitive behavior of firm managers.

Legal reforms in this area could focus on reducing the exceptions and evidential burdens associated with antitrust laws governing information exchanges, thereby increasing the transaction costs for common owners who use "engagements" in implementing their anti-competitive objectives. Gavil et al. suggest that section 5 of the FTC Act may play an important role here in prohibiting facilitating practices that neither constituted unlawful agreements within the reach of section 1 of the Sherman Act nor violated the section 2 preclusion on attempted monopolization.[347] Accordingly, common owners (exceeding a certain threshold of overlapping ownership) who

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343. *See* discussion *supra* Section VI.B.

344. 17 C.F.R. § 240.14a-8; *see also* discussion *supra* Section V.A.3; CHOI & PRITCHARD, *supra* note 228, at 832–34 (providing an insurgent's role in facilitating shareholder voting and solicitation of proxy votes).

345. For instance, a common owner with ownership in Delta and United Airlines (but not American Airlines) may wish Delta to compete aggressively with American Airlines on a certain route, especially if the risks or transaction costs associated with implementing coordinated effects are very high.

346. *See* discussion *supra* Section V.A.3.

347. GAVIL ET AL., *supra* note 124, at 429.

harnessed engagements with portfolio firms to discuss competitive strategies would potentially fall afoul of section 5's prohibition on "unfair methods of competition."[348] On a similar note, the onerous evidential burdens associated with existing antitrust law on information exchanges could also be revisited for such common owners.[349] Legal reforms here would resemble competition laws adopted by the European Union, where a rebuttable presumption of illegality is drawn in relation to commercially sensitive conduct which would materially influence a firm's competitive strategy.[350] For instance, a common owner would be presumed to have engaged in illegal conduct if it engaged in communications with its portfolio firms that concerned future strategic intentions of the firm's competitive parameters, such as its product market prices, quantities, or capacities.[351]

More modest reforms to disincentivize common owners from engaging in anti-competitive communications could also modify federal securities regulations in raising the transaction costs of communications between common owners, particularly for specific issues that would raise anti-competitive concerns. As mentioned in Section V.A.1, common owners have heightened incentives to elect horizontal directors and to consummate anti-competitive mergers even in the absence of inter-shareholder communications. The coordination of voting strategies amongst common owners on these issues would compound this problem, as it would increase the probability of shareholder consensus necessary to induce these anti-competitive outcomes.[352] Although existing proxy regulations may render shareholder solicitations costly, securities regulations provide a plethora of exemptions to these regulations, effectively allowing common owners to coordinate voting strategies.[353] A proposal to increase the transaction costs of common-owner communications could foreclose these exemptions, making it more difficult for common owners to implement their anti-

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348.   Federal Trade Commission Act, 15 U.S.C. § 45(a).

349.   *See* U.S. Gypsum Co., 438 U.S. 422 (discussing standards).

350.   European Union courts have held that information exchanges would give rise to a presumption of illegality so long as it was capable of removing uncertainties with regard to the firms' future competitive conduct. *See, e.g.*, Case C-8/08, T-Mobile Netherlands BV v. Raad van Bestuur van de Nederlandse Mededingingsautoriteit, ECLI:EU:C:2009:110 (Feb. 19. 2009); Case C-67/13 P, Groupement des Cartes Bancaires v. Eur. Comm'n, ECLI:EU:C:2014:2204 (Sept. 11, 2014); Case C-286/13 P, Dole Food Co., Inc. v. Eur. Comm'n, ECLI:EU:C:2015:184 (Mar. 19, 2015).

351.   *See* discussion *supra* note 350 and accompanying text.

352.   *See* Moskalev, *Funds of A Feather*, *supra* note 269 ("Mutual funds portfolio similarity has a sizable association with directors election outcomes."); Moskalev, *Objective Function of a Non-Price-Taking Firm with Heterogeneous Shareholders*, *supra* note 269 (noting that common ownership would lead to a variety of anti-competitive results).

353.   *See* discussion *supra* Section V.A.3 and notes 279–280.

competitive objectives through such engagements.

E. Exit-and-Passivity-Related Proposals

Like the mechanism of "executive compensation," the nature of the "exit and passivity" mechanism involves the failure of common owners to stimulate competition amongst their portfolio firms. As such, policy proposals here ought to focus on decreasing the transaction costs of implementing pro-competitive behavior.

Unlike other candidate mechanisms, the mechanism of "exit and passivity" is particularly difficult to address via legal reforms. Extreme measures such as the prohibition of exit rights or liability-creating rules for the failure to monitor portfolio firms would be particularly onerous, even if applied only to common owners with substantial overlapping ownership. Beyond concerns as to their constitutional validity, these rules would also create significant distortions in financial markets, reducing the informational efficiency of stock prices and encouraging opportunistic conduct by non-common owners and firm managers.[354]

To address the anti-competitive effects that arise from "exit and passivity," policies should aim to reduce the transaction costs associated with the *voluntary* adoption of charter provisions that would vest more rights in non-common owners relative to common owners. For instance, non-common owners often enjoy disproportionate control rights for their shares (relative to their cash-flow rights) through dual-class shares.[355] Common owners implicitly *consent* to the adoption of these rights, as most common owners purchase shares in companies with dual-class share structures after these structures have already been adopted by the relevant companies.[356] As such, it should come as no surprise that many of these common owners have suggested the imposition of mandatory rules which would provide common owners with relatively more control. For instance, the Council of

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354. Exit rights act as important complements to control rights, a position recognized by earlier work such as Easterbrook and Fischel as well as Hirschman. *See* EASTERBROOK & FISCHEL, *supra* note 96 (contrasting the powerless investors who own a small portion of the company and the managers who control a great portion); ALBERT O. HIRSCHMAN, EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES (1970). For a general survey of the literature on the relationship between voice and exit, see Alex Edmans & Clifford Holderness, *Blockholders: A Survey of Theory and Evidence*, *in* THE HANDBOOK OF THE ECONOMICS OF CORPORATE GOVERNANCE 541 (Benjamin Hermalin & Michael Weisbach eds., 2017).

355. *See* discussion *supra* Section II.C.

356. *See* Choi, *supra* note 98, at 54–55 (noting that Google raised more than $1.67 billion from the sale of dual-class stock).

Institutional Investors has suggested that new listings of companies with multiple voting rights should be prohibited, and that mandatory "sunset provisions" (which provide an expiry date on dual-class share control rights) be instituted for existing companies with dual-class share structures.[357] While the mandatory rules could potentially reduce managerial agency costs, my framework suggests that the adoption of these rules may be undesirable for social welfare.[358] Intuitively, dual-class shares may act as an effective bulwark against the anti-competitive effects of common ownership as they provide founders and key insiders with disproportionate control of the relevant firms, effectively weakening the relative control of common owners.[359] Indeed, even if some managerial agency costs would be inevitably associated with dual-class share structures, the pro-competitive benefits from such a policy could well outweigh the anti-competitive effects from a legal regime that disincentivized them.

F. Comparison with Competing Proposals

The proposals I have set forth have numerous advantages over competing proposals in the literature. Central to my proposals is an implicit tradeoff. On one hand, the legal regulation of common ownership is costly, and therefore mandates justification.[360] On the other hand, the absence of legal regulation in the context of common ownership will inevitably give rise to *some* anti-competitive harm. Mechanism-specific remedies attempt to minimize the costs of regulation while maximizing its benefits by disincentivizing common owners from acting where their anti-competitive incentives are particularly salient, while incentivizing non-common owner actions where their pro-competitive incentives can influence firm

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357.   E-mail from the Council of Institutional Invs. to Claudia Crowley, Chief Regulatory Officer of NYSE & CEO of NYSE Regul. (Oct. 2, 2012) (on file with author) (arguing that "[c]orporations should not have classes of common stock with disparate voting rights"). The same email was sent also to Edward S. Knight. E-mail from the Council of Institutional Invs. to Edward S. Knight, Exec. Vice President, Gen. Couns. & Chief Regul. Officer of NASDAQ (Oct. 2, 2012) (on file with author).

358.   See Lucian A. Bebchuk & Kobi Kastiel, *The Untenable Case for Perpetual Dual-Class Stock*, 103 VA. L. REV. 585 (2017), for the view that managerial agency costs are reduced in the long-run with "sunset provisions."

359.   *See* Vittoria Battocletti, Luca Enriques & Alessandro Romano, *Dual Class Shares in the Age of Common Ownership*, 5–6 (Eur. Corp. Governance Inst., Law Working Paper No. 628/2022, 2022), http://dx.doi.org/10.2139/ssrn.4046244 (stating that anti-competitive effects associated with common ownership occurs where there are no dual-class structures amongst the leading competitors).

360.   *See* Lambert, *supra* note 325, at 2958 (detailing a multitude of various factors as to why condemning common ownership would result in substantial cost increases).

behavior.[361] In this Section, I contrast my proposals to two contrasting sets of policy proposals in the literature.

1.   Blanket Prohibitions on Voting

Some commentators have suggested that a blanket-prohibition on voting be imposed on common owners to weaken their relative influence over portfolio firms. As discussed earlier, in the context of index-fund voting, Lund has proposed a presumption of illegality which would preclude all index funds from voting their shares.[362] Consider a similar rule for common owners—although this might ostensibly vest relatively more control in non-common owners, non-common owners would have strong incentives to act opportunistically vis-à-vis their common owner counterparts with their newfound control of the common owners' portfolio firms. For instance, a non-common owner could exploit its disproportionately large control rights in diverting firm wealth to itself or related third parties, increasing the risks of "tunneling."[363] As Schmalz rightly points out, such a policy would arguably "lead to a greater divergence between cash flow and control rights . . . creating greater corporate governance frictions, and [preventing] socially beneficial governance activities by the large institutional investors."[364]

The key distinction between such a blanket-prohibition on voting and my proposals lies in the *issue-specificity* of my proposals. As I have explained in Section VI.B, it is critical that common owners retain all their voting rights where they do not have particularly acute incentives to act in an anti-competitive fashion. To see why, consider the class of common owners with the least incentives to engage in stewardship—passive funds.[365] Despite their ostensible incentives, however, recent work illustrates the important role that these funds play in the corporate governance of their portfolio firms through their voting behavior. Although passive funds are more likely to support incumbent management, Brav et al. show evidence

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361. *See* discussion *supra* Sections VI.B–E.

362. *See* Lund, *supra* note 333, at 136 (proposing that index fund holders should be precluded from voting entirely).

363. Johnson et al., *supra* note 81, at 22–23; Backus et al., *supra* note 7, at 293.

364. Schmalz, *supra* note 2, at 439. Note that Posner et al.'s proposal to allow common ownership by "purely passive" funds (such as index funds) if they were to refrain from shareholder activism suffers from the same problem with regard to the incentivization of tunneling. Posner et al., *supra* note 10, at 712.

365. *See* Bebchuk & Hirst, *supra* note 152, at 2050 (highlighting index funds managers' preferences in investing in value-maximizing funds rather than stewardship funds).

that passive funds are not weak monitors.[366] Indeed, when compared to active funds, passive funds are significantly more sensitive to operating performance than to stock-price performance, suggesting that they place more emphasis on firm fundamentals than on stock-market perceptions.[367] Furthermore, Brav et al. also show evidence that the sensitivity of passive funds' votes to firm performance was similar to that of active funds.[368] These results are consistent with a hypothesis that even untailored variants of the "voting" mechanism may induce significant reductions in managerial agency costs.

2.   Punitive Remedies and Divestitures

Other scholars have suggested even more drastic measures to address the anti-competitive harms arising from common ownership. A prominent variant is proposed by Elhauge, who contends that Clayton Act liability should arise where horizontal stock acquisitions has led to MHHI and MHHIΔ levels in excess of 2,500 and 200 (respectively), and where there are indications that common ownership has or threatens an adverse price effect in the market.[369] As Clayton Act liability may potentially lead to financial penalties, disgorgement of profits, and (more commonly) divestures of the common owner's shares, Elhauge's proposals would fundamentally change the existing business models of institutional investors.

These far-reaching remedies could be tenable if the welfare-enhancing consequences of Clayton Act liability were to exceed the attendant costs brought about by these legal reforms. To Elhauge's credit, the magnitude of these costs has often been overstated. Consider the scenario where common owners were to refrain from holding shares of multiple firms competing in concentrated markets. Given this scenario, some scholars have argued that retail investors would lose access to the diversified investment opportunities which institutional investors currently provide for them.[370] However, as Posner et al. have pointed out, the loss of diversification benefits due to diversifying across industries alone would be negligible compared to the increase in economic efficiency from more competitive product markets.[371]

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366.   *See* Brav et al., *supra* note 230, at 4 (discussing the comparable sensitivity of the votes of passive funds and active funds to firm performance and dissident track records).

367.   *Id.*

368.   *Id.*

369.   Clayton Act § 7, 15 U.S.C. § 18; Einer Elhauge, Essay, *Horizontal Shareholding*, 129 Harv. L. Rev. 1267, 1303 (2016).

370.   Lambert, *supra* note 325, at 2960–61.

371.   Posner et al., *supra* note 10, at 710–11.

Putting aside diversification costs, the decision-costs of Clayton Act liability would remain substantial. As Lambert has noted, courts and antitrust regulators would still have to resolve inevitable litigation disputes as to whether and to what extent common ownership were likely to raise prices.[372] This could involve the costly assessment of complicated econometric evidence and competing expert testimonies.[373] Common owners would also have to expend decision costs. For example, a common owner would have to monitor changes in ownership induced by *other* owners of its portfolio firms that could lead to its potential liability under the Clayton Act.[374] Indeed, the latter problem has motivated Posner et al. to suggest a safe haven for institutional investors who would limit their holdings in any one portfolio firm to 1% of its outstanding stock; or alternatively, to concentrate their holdings in one firm per industry.[375] Finally, error-costs would be associated with both wrongful convictions and wrongful acquittals in adjudicatory decisions made by courts and antitrust regulators.[376] Although I acknowledge that decision and error costs also arise with my proposals, the scope of these costs is largely constrained by the far smaller number of issues which would attract potential common owner liability.[377] For instance, my proposals to preclude common owners from participating in votes to approve (potentially) anti-competitive mergers would draw on existing merger control rules in antitrust law.[378]

Turning to the marginal benefits of Clayton Act liability, Elhauge's proposals do not consider the transaction costs involved in the implementation of anti-competitive mechanisms. Indeed, while the structural remedies associated with Clayton Act liability (e.g., in the form of mandatory divestitures) would be very effective if common owners were to face little to no transaction costs in influencing the competitive strategies of their portfolio firms, our discussion thus far has suggested that institutional investors are likely to adopt relatively untailored mechanisms given the large transaction costs they face in implementing direct forms of control.[379] Accordingly, a rule which compelled common owners to divest their shares would not significantly change the conduct of the common owners' portfolio

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372.   Lambert, *supra* note 325, at 2959.

373.   *Id.*

374.   *Id.* at 2960.

375.   Posner et al., *supra* note 10, at 708.

376.   Lambert, *supra* note 325, at 2962.

377.   *See* discussion *supra* Section VI.B.

378.   *See* HORIZONTAL MERGER GUIDELINES, *supra* note 1 at 29–31.

379.   For an overview on these structural remedies, see U.S. DEP'T OF JUSTICE, MERGER REMEDIES MANUAL 6–13 (2020).

firms, detracting from the attractiveness of Elhauge's proposals.[380]

To illustrate the aforementioned reasoning, consider a common owner with a 3% stake in a duopoly who uses "engagement" as a dominant mechanism to influence the competitive conduct of its portfolio firms—perhaps as a way to ameliorate the potential for tacit collusion.[381] A forced divesture of shares from a 3% to a 1% stake is unlikely to affect a common owner's incentives in relation to this mechanism. As the benefits from (potential) industry-wide collusion in the duopoly continue to outweigh the costs of engagement even after divesture, the common owner would be likely to continue these engagements with the duopoly firms, even if it does so with less intensity. In contrast, my proposals to target the precise mechanism of "engagement" by way of prohibiting certain information exchanges is likely to be far more effective in disincentivizing a common owner from implementing such conduct.[382] The intuition here lies with the *elasticity* of common owners' conduct to various remedies.[383] My targeted proposals attempt to directly influence aspects of common owner behavior which are highly attractive for them, making common owner conduct highly elastic to my proposed remedies. On the other hand, common owners respond to structural remedies in a relatively inelastic way, diminishing from the utility of such remedies.

VII. CONCLUSION

As Schmalz notes, "the question of whether present-day common-ownership links violate existing antitrust laws is different from the question of whether enforcing these laws would improve economic welfare."[384] In this Article, I have attempted to provide a novel analytical framework that addresses the latter question. As this Article illustrates, real-world "frictions" (i.e., transaction costs) that exist both within and between firms have a significant impact on how common owners behave in the real world. I suggest that institutional investors implement their anti-competitive objectives through subtle means, choosing untailored mechanisms of corporate governance that tend to induce coordinated effects. This insight

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380. While such a divesture *would* change the conduct of the common owners (towards pro-competitive objectives), I argue that the *incremental* changes in behavior would not be significant.

381. *See* discussion *supra* Section V.A.3.

382. *See* discussion *supra* Section VI.D.

383. The elasticity of common owners' conduct to various remedies reflects the responsiveness of common owner conduct to changes in a policy or legal remedy. ROBERT COOTER & THOMAS ULEN, L. & ECON. 25 (6th ed. 2012).

384. Schmalz, *supra* note 2, at 438.

has significant implications for the appropriate policy response to the anti-competitive effects of common ownership, as blanket prohibitions on common owner conduct will inevitably give rise to associated costs that would reduce social welfare. Thus, I contend that policy responses to the anti-competitive effects of common ownership should focus on mechanisms that institutional investors *actually* use in reducing competition between their portfolio firms. The mechanism-specific remedies that I propose target the incentives of common owners in situations where they are most likely to give rise to anti-competitive harm, and the incentives of non-common owners in situations where they are most likely to give rise to pro-competitive benefits.

While my analysis largely draws on existing economic theories and empirical evidence, more empirical work is needed to identify and quantify the transaction costs associated with mechanisms of corporate governance. Several inroads have already been made in the area. Lewellen and Lewellen, for instance, show that the average institutional investor gains an extra $129,000 in annual management fees if a stockholding increases 1% in value.[385] Such studies illustrate how the magnitude of some transaction costs—in this case, the agency costs within institutional investors—may be overstated.[386] More work is also required to identify the precise relationship between coordinated and unilateral variants of mechanisms, perhaps through an exogenous policy change that would affect one and not the other.[387]

Corporate governance structures are also likely to influence the transaction costs that common owners face.[388] Accordingly, further research should examine the relationship between common ownership, governance structures, and product market outcomes across industries.[389] Indeed, common owners could play a role in determining governance structures that would provide them with stronger control rights. Alternatively, they might simply prefer to purchase shares in firms that would allow them to exert control.[390] On the theoretical front, Levit et al. have shown that trading and

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385. *See* Jonathan Lewellen & Katharina Lewellen, *Institutional Investors and Corporate Governance: The Incentive to Be Engaged*, 77 J. FIN. 213, 260 (2022) (suggesting that institutions' incentives can be strong for larger firms and institutions).

386. *Cf.* Bebchuk & Hirst, *supra* note 152 at 2037 (discussing index funds and their lack of incentives to undertake adequate stewardship activities).

387. Bourveau et al., for instance, exploit changes in leniency law regimes as an exogenous shock to the level of collusion costs. Bourveau et al., *supra* note 280, at 297–98.

388. *See* discussion *supra* Section II.D.

389. Schmalz argues that this is a daunting task, as "building realistic structural models of product market competition under common ownership that also feature governance frictions, endogenous ownership structure, and perhaps even endogenous asset prices" will be very difficult. Schmalz, *supra* note 24, at 25.

390. In other words, ownership and governance structures are both selected by and thus endogenous to the common owner. *See* discussion *supra* Section II.D.

voting in capital markets may give rise to self-fulfilling expectations—
essentially giving rise to the homogeneity of shareholder preferences within
firms.[391] This would dramatically reduce the costs of collective decision-
making faced by a common owner.[392] Although these hypotheses remain
subject to empirical verification, the potential dangers of this state of affairs
should not be ignored.

VIII. APPENDIX A

In this Appendix, I set out a toy model of optimal mechanism selection
by a common owner. As expounded earlier in Section II.D, it is assumed that
common owners choose an allocation of cash flow and control rights, as well
as their ownership stakes *prior* to the selection of mechanisms (see Figure 2
in Appendix B). More formally, it is assumed that the common owner i takes
parameters $c_m(t)$, β_{if}, β_{ig} (where $g \neq f$) as given. These parameters are
exogenous to my model. In my model, the common owner i faces a tradeoff
between the gains from internalizing any outstanding pecuniary externalities
among its portfolio firms and the transaction costs from doing so. The
common owner i's decision problem can thus be written as:

$$\pi_i = \max_{\sum_m t_m^u \in [0,1]; t_m^c \in [0,1]} \left(1 - \alpha(t_m^c)\right)\left(\sum_m [\pi_m^{umax} - c_m^u(t_m^u)]\right)$$

$$+ (\alpha(t_m^c))\left(\sum_m [\pi_m^{cmax} - c_m^c(t_m^c)]\right)$$

$$\text{s.t. } \left(1 - \alpha(t_m^c)\right)\sum_m[c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right)\sum_m[c_m^c(t_m^c)]$$

$$\leq \left(1 - \alpha(t_m^c)\right)\sum_m [\pi_m^{umax}] + \left(\alpha(t_m^c)\right)\sum_m [\pi_m^{cmax}]$$

$$\text{where } c_m^u(t_m^u) = i_m(t_m^u) - \pi_m^u(t_m^u)$$

$$\text{and } c_m^c(t_m^c) = q_m(t_m^c) - \pi_m^c(t_m^c)$$

In this maximization problem, π_i represents the *incremental* profits
facing common owner i following its shareholdings in firms f and g, β_{if}
and β_{ig} ($g \neq f$). These are the additional profits that the common owner
may be able to capture by internalizing some or all of the pecuniary

391. *See* Doron Levit, Nadya Malenko & Ernst G. Maug, *Trading and Shareholder
Democracy* 22–23 (Eur. Corp. Governance Inst. Finance Working Paper No. 631/2019, 2022),
http://dx.doi.org/10.2139/ssrn.3463129 (explaining that shareholders proposal approvals may
become self-fulfilling as shareholders who believe that their objections will not matter will
simply sell their shares).

392. *See* discussion *supra* Section III.D.

externalities that arise from its common ownership relative to a counterfactual *without* common ownership. The variable t_m^u is a continuous variable of choice representing the level of tailoring that the common owner chooses for a unilateral variant of candidate mechanism m (henceforth, "unilateral mechanisms"), while t_m^c is a continuous variable of choice representing the level of tailoring that the common owner chooses for a coordinated variant of the same (henceforth, "coordinated mechanisms"). Both t_m^u and t_m^c have supports [0,1], with 0 representing the complete lack of tailoring, and 1 representing the maximum level of tailoring. Meanwhile, $\alpha(t_m^c)$ is a parameter that represents common owner i's subjective belief that industry-wide collusion would succeed. We can think of $\alpha(t_m^c)$ as the probability that common owner i's non-portfolio firms play cooperative (as opposed to non-cooperative) strategies. As the common owner may be able to influence its own belief that collusion would succeed by investing in coordinated mechanisms, $\alpha(t_m^c)$ increases with the level of t_m^c.

The maximum level of pecuniary externalities that common owner i would be able to (respectively) internalize from both unilateral and coordinated mechanisms is represented by π_m^{umax} and π_m^{cmax}. In relation to unilateral mechanisms, $c_m^u(t_m^u)$ is an aggregated cost function that reflects the tradeoff between the expected benefits and costs of tailoring. As the level of tailoring increases, so does the level of information costs ($i_m(t_m^u)$), but more pecuniary externalities are internalized ($\pi_m^u(t_m^u)$). Similar intuition applies for $c_m^c(t_m^c)$ insofar as coordinated mechanisms are concerned, with $q_m(t_m^c)$ reflecting the level of coordination costs. There are also $M = \{1 \ldots m \ldots M\}$ mechanisms available for the common owner to implement its anti-competitive preferences. Finally, the budget constraint reflects the common owner's limitations in relation to the transaction costs it faces. A rational common owner would not be willing to expend more transaction costs than the maximum level of pecuniary externalities available for internalization.

I make several assumptions: (1) I assume that $i_m(t_m^u)$ and $q_m(t_m^c)$ are both monotonically increasing and strictly convex in t_m^u and t_m^c; that is, $i_m'(t_m^u) > 0$, and $i_m''(t_m^u) > 0 \; \forall \; t_m^u$ (the same applies for $q_m(t_m^c)$). (2) Both $\pi_m^u(t_m^u)$ and $\pi_m^c(t_m^c)$ are assumed to be linearly increasing in t_m^u and t_m^c. Collectively, the two assumptions imply that $c_m^u(t_m^u)$ and $c_m^c(t_m^c)$ are strictly convex in t_m^u and t_m^c. Accordingly, both $[\pi_m^{umax} - c_m^u(t_m^u)]$ and $[\pi_m^{cmax} - c_m^c(t_m^c)]$ are also strictly concave. (3) I assume that $i_m(t_m^u) = 0$ and $-\pi_m^u(t_m^u) = \pi_m^{umax}$ when $t_m^u = 0 \; \forall \; m$ (the same applies for $q_m(t_m^c)$).(4) I assume that $-\pi_m^u(t_m^u) = 0$ when $t_m^u = 1 \; \forall \; m$ (the same applies for $-\pi_m^c(t_m^c)$). (5) I assume that $\pi_m^u(t_m^u) \leq \pi_m^{umax}$ and $\pi_m^c(t_m^c) \leq \pi_m^{cmax}$ for all values of t_m^u, t_m^c and m. (6) Finally, I assume that $\alpha(t_m^c)$ is

both increasing and strictly concave in t_m^c; that is, $\alpha'(t_m^u) > 0$, and $\alpha''(t_m^u) < 0 \; \forall \; t_m^c$.

These assumptions are justified by Parts III and IV of this Article. As the level of tailoring increases, it becomes increasingly more difficult to discover the "optimal prices" that would maximize portfolio value. For any given common owner, it is far easier to implement a relatively untailored policy that would give rise to *some* incremental profits. Hence, as the common owner gets "closer" to its (theoretically) optimal set of prices, it will have to expend more transaction costs.

Given these assumptions, two central results follow from the toy model. I discuss them in turn.

A. Case 1

In the case where the budget constraint is binding, that is, where:

$$\left(1 - \alpha(t_m^c)\right) \sum_m [c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right) \sum_m [c_m^c(t_m^c)] \geq \left(1 - \alpha(t_m^c)\right) \sum_m [\pi_m^{umax}] + (\alpha(t_m^c)) \sum_m [\pi_m^{cmax}],$$

the common owner will do nothing in equilibrium. First, consider the instance where $\left(1 - \alpha(t_m^c)\right) \sum_m [c_m^u(t_m^u)] + (\alpha(t_m^c)) \sum_m [c_m^c(t_m^c)] = \left(1 - \alpha(t_m^c)\right) \sum_m [\pi_m^{umax}] + (\alpha(t_m^c)) \sum_m [\pi_m^{cmax}]$. If the budget constraint is binding, $\pi_i = 0$ by way of substitution, then all gains from internalizing externalities disappear. Since any positive level of tailoring (for both unilateral and coordinated mechanisms) above zero is costly, following assumption (1), that $i_m'(t_m^u) > 0$ and $q_m'(t_m^u) > 0$, the optimal level of tailoring must be zero, that is, $t_m^u = 0, t_m^c = 0 \; \forall \; m$. Next, consider the instance where:

$$\left(1 - \alpha(t_m^c)\right) \sum_m [c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right) \sum_m [c_m^c(t_m^c)] > \left(1 - \alpha(t_m^c)\right) \sum_m [\pi_m^{umax}] + (\alpha(t_m^c)) \sum_m [\pi_m^{cmax}].$$

By way of substitution, $\pi_i \leq 0$ for all possible levels of $t_m^u \in [0,1]$ and $t_m^c \in [0,1]$, so the common owner's best course of action here is to choose a level of tailoring that is equal to zero. Following assumption (3), where $-\pi_m^u(t_m^u) = \pi_m^{umax}$ and $-\pi_m^c(t_m^c) = \pi_m^{cmax}$ when $t_m = 0 \; \forall \; m$, this would minimize this common owner's losses at $\pi_i = 0$.

Intuitively, doing nothing is a rational strategy if the pecuniary externalities are very small or if the costs of internalizing them are very large. As an example of the case where the pecuniary externalities are very small, consider the incentives of diversified retail investors, who are often seen to play a negligible role in exercising their rights of corporate governance. Case 1 provides a formal justification for this stylized fact. Similarly, where the

costs of internalizing pecuniary externalities are very large, like in the case where all control rights are irreversibly and credibly delegated to firm managers via dual-class share structures, it is likely that a common owner would not do anything to internalize these pecuniary externalities.

B. *Case 2*

In the case where the budget constraint is not binding, the common owner will select an interior solution where either $t_m^{u*} \in (0,1]$ or $t_m^{c*} \in (0,1]$ for each mechanism m. To see why, consider the Lagrangian function associated with the common owner i's maximization problem:

$$L = \left(1 - \alpha(t_m^c)\right) \Sigma_m [\pi_m^{umax} - c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right)\left(\Sigma_m[\pi_m^{cmax} - c_m^c(t_m^c)]\right) - \lambda[\left(1 - \alpha(t_m^c)\right)\Sigma_m[c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right)\Sigma_m[c_m^c(t_m^c)] - \left(1 - \alpha(t_m^c)\right)\Sigma_m[\pi_m^{umax}] - \left(\alpha(t_m^c)\right)\Sigma_m[\pi_m^{cmax}]]$$

(1)

The Kuhn-Tucker first-order-conditions are given by, for each mechanism m and each common owner i:[393]

$$\left(1 - \alpha(t_m^c)\right)\left[\frac{\partial i_m}{\partial t_m^u} - \frac{\partial \pi_m^u}{\partial t_m^u}\right] - \lambda[\left(1 - \alpha(t_m^c)\right)\left[\frac{\partial i_m}{\partial t_m^u} - \frac{\partial \pi_m^u}{\partial t_m^u}\right] = 0$$

(2)

$$\left(\alpha(t_m^c)\right)\left[\frac{\partial q_m}{\partial t_m^c} - \frac{\partial \pi_m^c}{\partial t_m^c}\right] + \left[\frac{\partial \alpha(t_m^c)}{\partial t_m^c}\right]\left(\pi_m^{cmax} - c_m^c(t_m^c)\right)$$
$$-\lambda[-\left(\frac{\partial \alpha(t_m^c)}{\partial t_m^c}\right)\left(c_m^u(t_m^u)\right)$$
$$+\left(\alpha(t_m^c)\right)\left(\frac{\partial q_m}{\partial t_m^c} - \frac{\partial \pi_m^c}{\partial t_m^c}\right) + \left(\frac{\partial \alpha(t_m^c)}{\partial t_m^c}\right)\left(c_m^c(t_m^c)\right)$$
$$-\left(\frac{\partial \alpha(t_m^c)}{\partial t_m^c}\right)\left(\pi_m^{umax}\right) - \left(\frac{\partial \alpha(t_m^c)}{\partial t_m^c}\right)\left(\pi_m^{cmax}\right)] = 0$$

(3)

$$\left(1 - \alpha(t_m^c)\right)\Sigma_m[c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right)\Sigma_m[c_m^c(t_m^c)]$$
$$-\left(1 - \alpha(t_m^c)\right)\sum_m [\pi_m^{umax}] - \left(\alpha(t_m^c)\right)\sum_m [\pi_m^{cmax}] \le 0$$

(4)

$$\lambda \ge 0$$

(5)

$$\lambda[\left(1 - \alpha(t_m^c)\right)\Sigma_m[c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right)\Sigma_m[c_m^c(t_m^c)]$$
$$-\left(1 - \alpha(t_m^c)\right)\sum_m [\pi_m^{umax}] - \left(\alpha(t_m^c)\right)\sum_m [\pi_m^{cmax}]] = 0$$

(6)

Given that the budget constraint is not binding,

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393. The existence of these conditions is ensured by assumptions (1) and (2).

$$\left(1 - \alpha(t_m^c)\right) \sum_m [c_m^u(t_m^u)] + \left(\alpha(t_m^c)\right) \sum_m [c_m^c(t_m^c)] - \left(1 - \alpha(t_m^c)\right) \sum_m [\pi_m^{umax}] - \left(\alpha(t_m^c)\right) \sum_m [\pi_m^{cmax}] < 0.$$

Thus, the "complimentary slackness" conditions arising from equations (5) and (6) entail that $\lambda = 0$. Since $\lambda = 0$, equations (2) and (3) can be reduced to:

$$\left(1 - \alpha(t_m^c)\right) \left[\frac{\partial i_m}{\partial t_m^u} - \frac{\partial \pi_m^u}{\partial t_m^u}\right] = 0 \tag{7}$$

$$\left(\alpha(t_m^c)\right) \left[\frac{\partial q_m}{\partial t_m^c} - \frac{\partial \pi_m^c}{\partial t_m^c}\right] + \left[\frac{\partial \alpha(t_m^c)}{\partial t_m^c}\right] \left(\pi_m^{cmax} - c_m^c(t_m^c)\right) = 0 \tag{8}$$

Equations (7) and (8) reveal two fundamental tradeoffs that a common owner would face when implementing mechanisms of anti-competitive harm. First, regardless of whether unilateral or coordinated mechanisms are used, a common owner faces an inherent tradeoff in determining the optimal level of tailoring. An increase in the level of tailoring (t_m^u or t_m^u) would internalize more pecuniary externalities associated with said mechanism but would also increase the level of transaction costs. For instance, as shown in equation (7), a common owner will invest in a unilateral mechanism until the marginal benefits from tailoring $\left(1 - \alpha(t_m^c)\right) \left[\frac{\partial \pi_m^u}{\partial t_m^u}\right]$ are equal to its marginal costs $\left(1 - \alpha(t_m^c)\right) \left[\frac{\partial i_m}{\partial t_m^u}\right]$.

Second, increasing the level of tailoring in mechanisms associated with coordinated effects has an *additional* impact on the level of $\alpha(t_m^c)$, the probability that a common owner would place on non-portfolio firms playing co-operative (as opposed to non-cooperative) strategies. The common owner considers this marginal effect of t_m^c on $\alpha(t_m^c)$ when trading off its investments in unilateral mechanisms vis-à-vis its coordinated counterparts. As the common owner will invest in unilateral mechanisms until its marginal returns are equal to the marginal returns from coordinated mechanisms (i.e., $\left(1 - \alpha(t_m^c)\right) \left[\frac{\partial i_m}{\partial t_m^u} - \frac{\partial \pi_m^u}{\partial t_m^u}\right] = \left(\alpha(t_m^c)\right) \left[\frac{\partial q_m}{\partial t_m^c} - \frac{\partial \pi_m^c}{\partial t_m^c}\right] + \left[\frac{\partial \alpha(t_m^c)}{\partial t_m^c}\right] \left(\pi_m^{cmax} - c_m^c(t_m^c)\right)$), a common owner is, *ceterus paribus*, more likely to favor coordinated mechanisms over unilateral mechanisms given the strict concavity of $\alpha(t_m^c)$ (assumption (6)). Intuitively, the common owner has an additional incentive to place greater weight on its (net) returns from coordinated mechanisms as it is able to positively influence its own beliefs as to the possibility that collusion might occur.

C. Comparative Statics and Remedies

My model is able to formalize the central arguments I have put forth in this Article. First, consider an exogenous increase in information costs. As an example, this could reflect the sale of shares in a family-owned firm to an institutional investor. As $i_m(t_m^u)$ is strictly convex in t_m^u (assumption (1)), an exogenous increase in $i_m(t_m^u)$ will result in an increase of $\frac{\partial i_m}{\partial t_m^u}$ for all levels of tailoring t_m^u. As $\frac{\partial i_m}{\partial t_m^u} > 0$ and $\frac{\partial \pi_m^u(t_m^u)}{\partial t_m^u} > 0$ (assumption (2)), equation (7) suggests that the common owner would *decrease* its level of tailoring t_m^u in equilibrium, pursuing relatively untailored mechanisms instead.

Next, consider a decrease in coordination costs. For instance, a judicial decision may result in defendant-friendly antitrust laws which could ameliorate collusion. The decrease in coordination costs has two effects on the common owner's decision. First, as $q(t_m^c)$ is strictly convex in t_m^c (assumption (1)), an exogenous decrease in $q_m(t_m^c)$ will result in a decrease of $\frac{\partial q_m}{\partial t_m^c}$ for all levels of tailoring t_m^c. As $\frac{\partial q_m}{\partial t_m^c} > 0$ and $\frac{\partial \pi_m^c(t_m^c)}{\partial t_m^c} > 0$ (assumption (2)), equation (8) suggests that (holding $\alpha(t_m^c)$ constant) the common owner will increase its level of tailoring t_m^u in equilibrium. Second, as $\alpha(t_m^c)$ is strictly concave in t_m^c (assumption (6)), an increase in t_m^c will also lead to a corresponding increase in $\alpha(t_m^c)$. Given that the marginal returns from coordinated mechanisms are now relatively more attractive to the common owner, equations (7) and (8) collectively suggest that the common owner will be incentivized to substitute investments from unilateral mechanisms to that of coordinated mechanisms.

Finally, consider the mechanism-remedies proposed in Part V of this Article. These remedies seek to increase both $c_m^u(t_m^u)$ and $c_m^c(t_m^c)$. Beyond their effects in reducing the level of tailoring which common owners would pursue, the remedies also increase the probability that the common owner's budget constraint would be binding for a given mechanism, whereupon Case 1 applies. As expounded earlier, a rational common owner is likely to do nothing in this instance.

IX. APPENDIX B

Stage 1 (Ex-Ante)

Contractual determination of the *formal* allocation of power amongst patrons of firms (directors, managers, shareholders, creditors, etc.).
(a) Allocate control rights.
(b) Allocate cash flow rights.
$c_i(t)$ implicitly determined.

Stage 2

Shareholders acquire ownership positions (β_{if}, β_{ig}) in one or more firms.

Stage 3 (Ex-Post)

Common owner (shareholder) i decides whether to exercise *actual control*, intervening to influence product market decision-making (through various mechanisms) at a cost $c_i(t)$.

Stage 4

Firms compete in product markets *given* control rights and cash flow rights allocated in Stage 1, and effectiveness of common owner interventions in Stage 3.
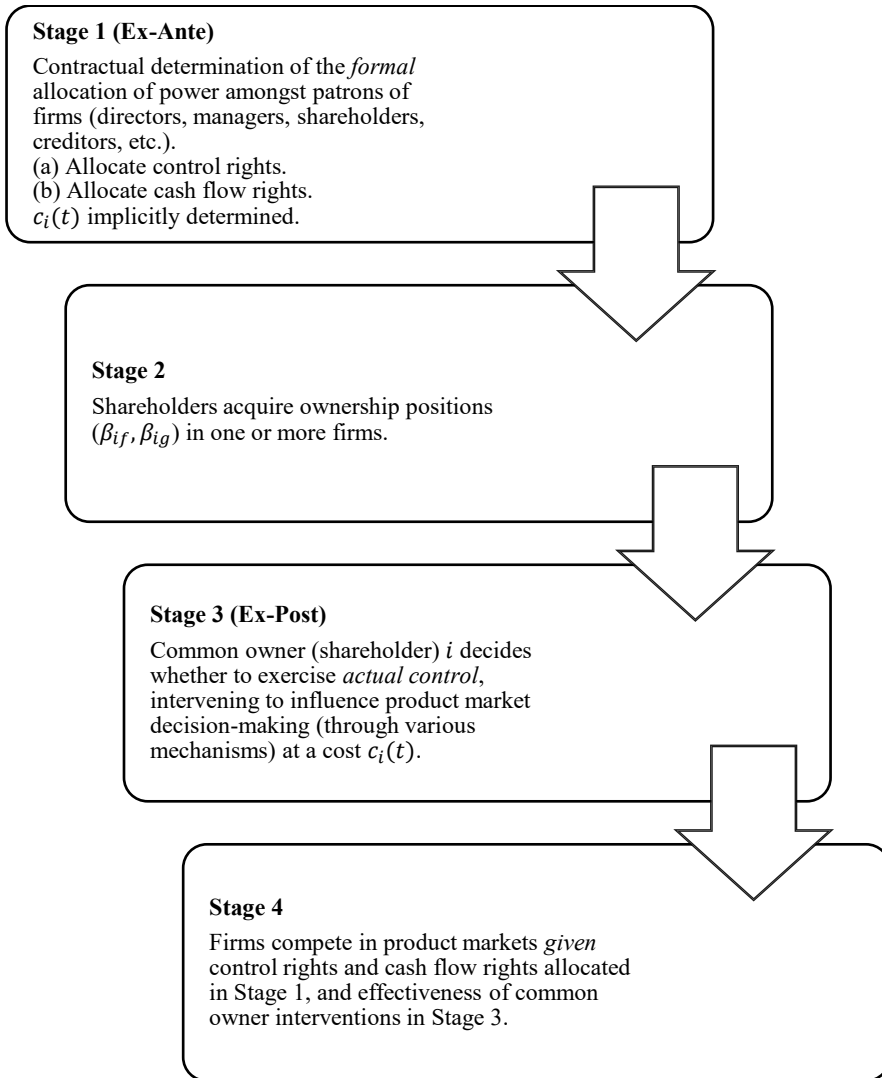
Figure 2. Ex-Ante vs. Ex-Post Decisions in Common Ownership

Figure 2 illustrates a stylized flowchart which depicts the decision-making process of patrons within firms, as well as the decision-making process amongst firms. In Stage 1, patrons within a given firm contract to determine an ex-ante allocation of power—for instance, through the amendment of charter provisions. As explained earlier, this will depend on

the relative (expected) costs and benefits of allocating decision-making power to one or more patrons.[394] In the large majority of firms, we should expect to observe the credible delegation of product market decisions to firm managers. Importantly, any allocation of cash flow and control rights will be associated with a transaction cost $c_i(t)$ if a shareholder i were to intervene in subsequent stages.

In Stage 2, shareholders acquire shareholding positions in one or more firms (β_{if}, β_{ig} where $g \neq f$), including positions where portfolio firms compete with each other in the same industry.[395]

In Stage 3, shareholders who own financial positions in two or more competing firms (common owners) may choose to intervene in influencing product market decision-making. Since this stage occurs after Stages 1 and 2, common owners take formal allocations of control and ownership positions as *given*. Notably, if control rights are vested in patrons of the firm *other* than the common owner in question, actual control will involve a positive level of transaction costs $c_i(t)$. Thus, $c_i(t)$ may range from zero, where direct control of product market decisions is (entirely) vested in the common owner, to ∞, where any level of control in product market decision-making is impossible for the common owner in question.[396]

Finally, in Stage 4, firms compete in product markets *given* the formal allocations of cash flow and control rights in Stage 1, and the effectiveness of common owner interventions in Stage 3. In Part VIII (Appendix A) of this Article, I articulate a simple model of decision-making by common owners in Stage 3 of Figure 2, given the level of (exogenous) transaction costs determined in Stage 1 and the extent of pecuniary externalities available from Stage 2.[397]

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394. Some of these costs and benefits for institutional-investor common owners are considered *supra* Parts V–VI.

395. Although I do not endogenize ownership in the model I expound *supra* Part VIII (Appendix A), a complete model contemplating Stages 1 to 4 of Figure 2 will endogenize (common) ownership.

396. This may be possible if, for example, a majority of the outstanding shares in the portfolio firm in question are controlled by a "maverick" controlling shareholder with preferences to compete aggressively. These non-common owners may play an important role in stimulating product competition where regulation of common owner conduct is too costly. *See* discussion *Supra* Sections VI.C–E; *see also* Backus et al., *supra* note 7, at 277 (explaining how the internalization of cross-incentives tends to make stockholders more aggressive even if their own share will be damaged).

397. *See* model and discussion *supra* Part VIII (Appendix A).