Common Ownership: A Guide for Antitrust Practitioners*

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Abstract

This chapter reviews recent theoretical and empirical research on the competitive effects of common ownership, the situation in which investors hold substantial stakes in multiple firms that compete in the same markets. We first describe how economists measure common ownership and document its sharp rise over the past several decades, particularly driven by institutional investors. We then survey the growing body of empirical work examining whether common ownership measurably softens competition. Studies across industries such as airlines, banking, pharmaceuticals, and venture capital find evidence that common ownership can raise prices, reduce entry, alter managerial incentives, and influence innovation, though results remain contested and depend on identification strategies and industry context. We also discuss mechanisms through which common ownership may affect firm behavior, such as voting, direct engagement, executive compensation, and board interlocks, as well as broader implications for labor markets, production networks, and corporate governance. The chapter concludes by outlining implications for antitrust enforcement, highlighting both the legal challenges posed by minority shareholdings and the evolving treatment of common ownership in merger review and policy debates.

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1 Introduction

Common ownership refers to investors holding significant shares in multiple competing firms. Antitrust concerns arise to the extent common ownership softens competition among the commonly-owned, competing firms (referred to as the "common ownership hypothesis"). Common ownership concerns do not require explicit coordination or collusion; instead, common ownership might align the incentives of competing firms in a way that softens competition, thereby leading to higher prices, lower levels of investment, less innovation, or other anticompetitive effects. Several mechanisms have been proposed through which this softening of competition may occur, including direct communication between investors and portfolio companies, shareholder voting, executive incentive schemes, and overlapping board members. Importantly, a number of academic papers have found measurable anticompetitive effects of such common ownership.

Antitrust enforcers and policymakers have been paying attention to common ownership concerns. Soon after the first empirical studies finding anticompetitive effects of common ownership were published, the U.S. Federal Trade Commission (FTC) made common ownership the topic of one of their hearings, and the U.S. Department of Justice (DOJ) Assistant Attorney General for Antitrust at the time remarked that the DOJ was following the topic with interest.[1] Likewise, the European Commission expressed interest in the topic and included analysis of the effects of common ownership in a merger decision.[2]

The U.S. Merger Guidelines introduced the term "common ownership" in their 2023 edition, and the February 2025 U.S. merger filing rules include provisions for the U.S. antitrust agencies to gather more information on minority investors on all mergers that trigger U.S. filing requirements. Notably, in 2024, several Republican-led U.S. states sued large institutional investors under both Clayton Act Section 7 and Sherman Act Section 1, as well as several state antitrust laws, alleging that these institutional investors' holdings in, and resulting engagements with, several competing coal companies were anticompetitive. In May 2025, the DOJ and the FTC filed a statement of interest in the case, explaining that while antitrust safe harbors for passive investment protect most index fund investing and beneficial corporate governance advocacy, they do not protect the use of commonly managed stock in competitors to encourage market-wide reductions in output.

[1] Federal Trade Commission, FTC Hearing #8: Common Ownership, (Dec. 6, 2018), https://www.ftc.gov/news-events/events-calendar/ftc-hearing-8-competition-consumer-protection-21st-century; Makan Delrahim, Assistant Attorney General, Remarks at Fordham University School of Law (May 1, 2019), https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-fordham-university-school-law.

[2] Margrethe Vestager, European Commission Competition Commissioner, Competition in Changing Times, Address at the FIW Symposium (Feb. 16, 2018), https://ec.europa.eu/newsroom/comp/items/614523/; Case M.7932—Dow/DuPont, Commission Decision, ¶ 2349 (Mar. 27, 2017) (Summary: 2017 O.J. (C 353) 9), http://ec.europa.eu/competition/mergers/cases/decisions/m7932_13668_3.pdf.

The notion that shareholder common ownership can cause firms to soften competition is not new—it goes back to at least the early 1980s. The driving assumption is that firms, instead of maximizing their own profits, maximize a weighted average of their shareholders' profits. Combined with a desire of shareholders to diversify their investments across multiple competing firms in a sector, for example in order to mitigate risk, the common ownership hypothesis suggests that firms will seek to maximize joint profits, and (in the extreme) mimic an industry- (or economy-) wide monopoly.

Empirical evidence for the common ownership hypothesis is debated among economists and legal scholars. Some studies have found evidence consistent with the hypothesis in industries like airlines and banking, while other studies have criticized the methodology of these studies or found little to no effect of common ownership on competition. The debate continues as more research is conducted in this area.

This chapter provides an overview of the current state of economic research on the common ownership hypothesis and its relevance for antitrust practitioners. After briefly explaining how economists measure common ownership (Section 2), we describe the increase of common ownership over the last decades, which has led to the expanded interest in common ownership (Section 3). Sections 4 to 6 of this chapter review the recent academic research on common ownership in more depth: Section 4 looks at studies that seek to provide empirical evidence for the competitive effects of common ownership in traditional horizontal product markets. This section is further broken out into studies that investigate within-industry price effects (e.g., on airline ticket prices), studies that examine within-industry entry effects (e.g., on entry of pharmaceutical firms), and studies that look across industries (e.g., on stock prices). Section 5 summarizes the literature on specific mechanisms by which common ownership may adversely affect competition, including voting and direct engagement, managerial incentives and passivity, and shared board directors ("director interlocks"). Section 6 provides an overview of other aspects of firm behavior that may be affected by common ownership and touch on competition in a broader sense, such as innovation, vertical relationships, and labor markets, highlighting potential pro-competitive effects of common ownership.

Finally, we examine implications for antitrust enforcement in Section 7. We discuss how different types of common owners may receive different levels of antitrust scrutiny. We then look at common ownership in merger reviews as well as legal challenges to consummated common ownership, and touch on the recently increased enforcement against director interlocks as one aspect in which common ownership may be manifested. Section 8 concludes.

2 Measurement of Common Ownership

The fundamental assumption of the common ownership hypothesis is that a firm, rather than maximizing its own profits, maximizes a weighted sum of its shareholders' profits including the interests its shareholders have in other firms.[3] Specifically, a firm weighs each shareholder's profits proportional to the degree of control or influence that that shareholder has over the firm (the "control share" or "control weight"). Each shareholder's profits are the sum of profits across the firms in which they have ownership stakes (i.e., their portfolio firms), weighted by the shareholder's financial interest in each (the "ownership share").

The ownership and control shares that shareholders have in the subject firm and in the subject firm's competitors are key to understanding the degree to which competition may be affected by common ownership.[4] The ownership shares are simply the shares of a firm's profits accruing to each shareholder. Generally, these are determined by the fraction of outstanding shares of the firm that a shareholder owns.[5] The extent of "control" is not as easily quantifiable. For example, does a shareholder who owns 49% of a company have control over it? The answer will depend on whether there is another shareholder that owns 51%, or whether the remaining shares are held by multiple shareholders with smaller ownership stakes. Abstracting from these issues, most empirical studies of common ownership assume control is proportional to ownership, adopting the assumption of "one share, one vote" which characterizes most publicly traded firms in the U.S. economy.

To account for common ownership in estimates of market concentration, economists often use a modified version of the Herfindahl-Hirschman Index ("HHI") that incorporates these ownership and control shares, in addition to firm's market shares used by the traditional HHI.[6] The modified HHI ("MHHI"), as the HHI, however, depends on a particular market definition (i.e., the group of firms over which to calculate shares) and only has an economic interpretation in a particular model of competition. Thus, researchers have developed a variety of alternative methods to measure the extent of common ownership in a more agnostic manner. The most widely adopted approach in the empirical literature has been to focus on "profit weights" between two firms that measure the weight that one firm places on the profits

[3] Critiques of the common ownership hypothesis question the plausibility of this assumption, given that a firm's management and its shareholders may not have the same incentives or even the same information, a well-known problem in economics. The common ownership hypothesis presupposes that shareholders have a way to overcome frictions that may lead a firm's management to make choices that are suboptimal for the shareholders, for example by designing appropriate management incentives contracts. The assumption that firms internalize their shareholders' objectives can also be based on a model of shareholder voting; see, for example Azar and Ribeiro (2022).

[4] We set out the mathematical underpinnings in the Technical Appendix.

[5] However, the situation can be more complicated for private companies with more complicated ownership structures (e.g., limited partnerships).

[6] See the Technical Appendix for details.

of the other firm, due to common ownership between them (Backus, Conlon and Sinkinson, 2021b).[7] These "profit weights" are a function of the ownership and control shares described above, as detailed in the Technical Appendix.

3 Increase of Common Ownership in Recent Decades

Beginning in the early 1980s, various authors have commented on how shareholder diversification can—at least in theory—lead firms to internalize the externalities they impose on each other.[8] Policy concerns did not arise, however, largely because of the comparatively low levels of common ownership in the economy. That has changed: several studies document a significant increase in common ownership in recent decades as institutional shareholder stakes in multiple competing firms in the same industry have become large. For example, Backus et al. (2021b) study the ownership of all firms in the S&P 500 index, based on regulatory 13-F filings, from 1980 through the end of 2017. For each pair of firms in each quarter, they compute the profit weights that each firm would place on the other, as implied by the common ownership hypothesis. A profit weight of zero corresponds to one firm placing no weight on its rival's profits when maximizing its own profits. This is what we would expect in a world of profit-maximizing firms without common ownership. In contrast, a profit weight of one corresponds to the firm fully accounting for the profits of its rival in its profit maximization, which is comparable to a merger or acquired subsidiary business (or, full collusion). Backus et al. (2021b) find that the average pairwise profit weight implied by the common ownership hypothesis more than tripled among S&P 500 firms, from just over 0.2 in 1980 to almost 0.7 in 2017.[9] This analysis does not speak to common ownership among competitors specifically, but illustrates that the potential for competitive harm from common ownership has increased meaningfully over the last forty years.[10]

One shortcoming of the Backus et al. (2021b) study is that it is limited to SEC 13-F

[7] Other approaches include the HJL measure of Harford, Jenter and Li (2011), the connectedness measure of Antón and Polk (2014), the GGL attention measure of Gilje, Gormley and Levit (2020), and the investor cosine similarity measure of Boller and Scott Morton (2020).

[8] Rubinstein and Yaari (1983) observed that two investors, each owning a competitor, might acquire shares in each other's firms, reducing incentives to compete and enabling them to realize monopoly profits. Rotemberg (1984) points out that a more benign motivation—mere diversification benefits—can similarly motivate risk-averse shareholders to diversify their portfolios. The original motivation for diversification notwithstanding, the effect is the same: full diversification can lead to an industry- (or economy-) wide monopoly. Various authors have since elaborated on these points, including Farrell (1985), Gordon (2003, 1990; see also 2003), Macho-Stadler and Verdier (1991), Hansen and Lott (1996), Rubin (2006), Kraus and Rubin (2010), and Antón, Ederer, Giné and Schmalz (2023b).

[9] Weighting the observations by either market capitalization or revenue does not qualitatively change the result and an analysis of percentiles of the distribution of profit weights over time shows a broad increase in these measures for all parts of the firm ownership distribution.

[10] Earlier studies finding similar results include Harford et al. (2011), Azar (2012), and Gilje et al. (2020).

filings by institutional investors managing over USD 100 million in assets. Thus, their study does not capture shareholding by other types of owners. Amel-Zadeh, Kasperk and Schmalz (2022) fill this gap by merging the ownership information from 13-F filings by institutional investors with 13-D and 13-G filings by blockholders, as well as Form 3, 4, and 5 filings by corporate insiders, for the period 2003–2020.[11] Equipped with these data, the Amel-Zadeh et al. (2022) study makes the following observations:

- Only examining institutional investor portfolios misses an important aspect of ownership: Between 10% and 20% of firms have a dominant activist, non-financial block holder or insider among the largest shareholders. While non-financial block holders' and insiders' portfolios tend to be much less diversified than institutional investors' portfolios, activists hold surprisingly diversified portfolios, frequently comprising multiple firms in the same industry and thus increasing common ownership. As a result, studying only institutional investors may over- or understate the true extent of common ownership.

- Common ownership in the same industry is generally higher than common ownership across industries (the authors term the latter "universal ownership"). This finding implies that policy makers could reduce common ownership of industry rivals without reducing index investing, as index investing involves holding a widely diversified portfolio of all firms rather than concentrated holdings in one industry.[12]

Although documenting the rise of common ownership is already a difficult task for public firms, the same task is even more difficult for private firms where ownership data is less accessible. Nonetheless, Li, Liu and Taylor (2023) and Eldar and Grennan (2024) document significant common ownership in venture capital portfolio holdings. Antón, Ederer, Giné and Ramirez-Chiang (2025a) extend the analysis to studying common ownership in 49 countries and show that common ownership is rising around the world. All these studies illuminate the increasing trend and complexities of common ownership within the corporate landscape over recent decades. Common and universal ownership continues to rise across the spectrum of public firms and is neither driven by a single factor nor by a single type of investor.

[11] Specifically, they scrape, parse and clean all ownership records from the SEC's EDGAR system between 2003 and 2020 for all single-class S&P 500 firms.

[12] Other interesting points that emerge from this study are that the holdings of the "Big Three" institutional asset managers (BlackRock, Vanguard and State Street) increase both universal and common ownership, over and above the level explained by textbook indexing. The paper also finds that consolidation through mergers in the asset management industry increases both common ownership and universal ownership persistently.

4 Empirical Evidence Pointing to Anticompetitive Effects of Common Ownership

Given the arguments from economic theory that common ownership can reduce competition and the significant increase in common ownership over the past decades, a fundamental question arises: Can we empirically ascertain effects of common ownership on competition? Sparked by a paper that pointed to anticompetitive effects of common ownership in the U.S. airline industry (Azar, Schmalz and Tecu, 2018a), academic studies on this question have proliferated over the last decade. While likely industry-specific, the prevalence and importance of such effects remain subject to debate. Here, we focus the discussion on empirical studies that find anticompetitive effects, while acknowledging studies that do not find such effects.[13] We first discuss studies looking at whether common ownership is associated with higher prices across different markets in the same industry, such as airlines or banking. Next, we consider studies that look at another dimension of competition, namely entry. Finally, we turn to discuss studies that try to estimate economy-wide effects of common ownership. Our review necessarily only scratches the surface of the rapidly growing economic literature.[14]

4.1 Price Effects in Specific Industries

The first study to investigate empirically whether common ownership has an effect on competition, specifically prices, is Azar et al. (2018a)'s study of the U.S. airline industry. They find that airline fares are in fact higher on routes and in quarters in which common ownership is more pronounced, thus suggesting measurable anticompetitive effects of common ownership by institutional investors in airlines. Azar et al. (2018a) use the modified HHI described in the Technical Appendix to measure common ownership between airlines that serve a given route in a given quarter. They document that accounting for common ownership increases market concentration by about 2,000 HHI points on average, across routes in 2014. In other words, if airlines behave according to the "textbook" common ownership hypothesis and maximize their owners' profits rather than their own, the potential for competitive harm is an order of magnitude larger than in a typical merger that U.S. antitrust

[13] Critiques of the common ownership hypothesis can be roughly categorized into: (1) conceptual arguments for why common ownership should not have measurable anticompetitive effects in practice (for example, see Rock and Rubinfeld (2018) and Hemphill and Kahan (2019)), (2) rebuttal studies of specific empirical papers that challenge those papers' conclusions (for example, Dennis, Gerardi and Schenone (2022) and Grundl and Gramlich (2024)), and (3) empirical studies that suggest that anticompetitive effects of common ownership are not widespread (for example, Backus, Conlon and Sinkinson (2021a), Koch, Panayides and Thomas (2020), and Lewellen and Lowry (2021). We address categories (2) and (3) in more detail below.

[14] For a more in-depth review, see Schmalz (2021).

agencies would consider to be presumptively anticompetitive.[15] Azar et al. (2018a) then find that changes in the modified HHI explain increases in prices over time, on a given route. To address the concern that these findings could be explained by changes in prices driving changes in common ownership, rather than the other way around, the authors use a merger between assets managers as a "natural experiment" that caused a sizable increase in common ownership unrelated to airline prices. In sum, their results suggest that airlines act on the reduced competitive incentives created by common ownership, and that consumers may be harmed by higher prices induced by increased common ownership.

Other studies soon followed. For example, Azar, Raina and Schmalz (2021b) apply a similar methodology as Azar et al. (2018a) to the U.S. banking industry. They find that increased common ownership among banks is associated with lower deposit rates.[16] Torshizi and Clapp (2019) document price effects of common ownership in the seed sector, while Liu and Yao (2024) find evidence that common ownership increases hospital prices.

These studies are not without criticism. The most fundamental methodological critique relates to the use of the modified HHI to measure common ownership in regressions of prices: The modified HHI ("MHHI") is a function of market shares, and market shares are determined by prices, thus leaving the theoretical relationship between MHHI and prices indeterminate. In other words, a competitor that reduces its price will likely gain market share, and this change in market share will enter into the MHHI, causing a feedback loop from price to the MHHI, in addition to the relationship between MHHI and price that Azar et al. (2018a) sought to capture. Azar et al. (2018a) acknowledge but only partially address this issue. Some studies suggest that the endogenous relationship between market shares and the MHHI can entirely explain their results (Dennis et al., 2022; Kennedy, O'Brien, Song and Waehrer, 2017).[17] However, other studies have found that the results documented by Azar et al. (2018a) hold up when the endogeneity of market shares is addressed. In particular, Park and Seo (2019) use a structural model which avoids certain endogeneity concerns and find results that are consistent with Azar et al. (2018a). To avoid the problem of endogenous market shares, the more recent academic literature has generally turned away from regres-

[15] The 2010 Horizontal Merger Guidelines consider mergers that increase market concentration by over 200 HHI points in markets with a post-merger HHI over 2,500 to be presumptively anticompetitive (see Section 5.3 of the 2010 HMGs). The 2023 Merger Guidelines use a lower threshold: They consider mergers that increase market concentration by over 100 HHI points in markets with a post-merger HHI over 1,800 (or where the merged firm's post-merger market share is more than 30 percent) to be presumptively anticompetitive (see Section 2.1 of the 2023 Merger Guidelines.

[16] Grundl and Gramlich (2024), however, find no significant correlation between deposit rates and common ownership.

[17] These studies have also criticized a number of the data cleaning and modeling decisions made by Azar et al. (2018a). For a response, see Azar, Schmalz and Tecu (2021a) and Azar, Schmalz and Tecu (2018b) responding to an earlier version of Dennis et al. (2022) that included multiple claims that the current version no longer makes.

sions of market outcomes on the MHHI. Instead, these papers employ structural models or focus on common ownership profit weights directly. For example, Backus et al. (2021b) estimate a structural model and find that ready-to-eat cereal prices are more consistent with firms maximizing their individual profits rather than their owners' profits. However, they cannot reject that firms price in line with "partial" common ownership, whereby they place some positive weight on commonly owned competitors albeit less than suggested by "full" common ownership. Also , as already mentioned above, Park and Seo (2019) employ a structural model to study the airline industry and find anticompetitive effects of common ownership. Azar and Ribeiro (2022) also structurally estimate common ownership effects in the U.S. airline industry and also find evidence in favor of the common ownership hypothesis. However, their estimates of the impact of common ownership are substantially smaller than those implied by the full-internalization case (i.e., by profit weights on other competitors exactly as predicted by ownership and control weights that we described in Section 2).

4.2 Effects on Entry

In addition to changing how firms compete, there is also empirical evidence that common ownership can change the set of firms that compete with each other. For example, Newham, Seldeslachts and Banal-Estanol (2025) analyze the impact of common ownership on market entry in the pharmaceutical industry. They consider the entry decisions of generic pharmaceutical firms into drug markets that are opened up by the end of regulatory protection and which were previously dominated by a single firm selling the brand name drug. Newham et al. (2025) find that an increase in common ownership leads to a significant reduction in generic entry. Thus, in addition to softening competition between existing competitors, common ownership can also mitigate the competitive pressures of market entry.

In a similar vein, Xie and Gerakos (2020) find that institutional investors' common holdings between pharmaceutical generic and brand companies increase the likelihood of settlement agreements when a generic company has disputed the brand's patent validity. Their study showcases a plausible way through which entry can be deterred in pharmaceutical markets.

Ruiz-Pérez (2019) provides evidence consistent with a positive relationship between common ownership and airline prices, showing this effect stems mostly from how common ownership affects entry decisions. The paper finds that the data are best explained by a structural model in which airlines act exactly according to the common owner profit shares for entry decisions but then choose prices to maximize only their own firm profits. Thus, the primary anticompetitive effect of common ownership in several industries may not come from quantity or pricing decisions given the existing market structure but instead common ownership may act to change market structure itself.

4.3 Economy-wide Effects

Industry-specific studies of common ownership raise the question how widespread anticompetitive effects of common ownership may be: To what extent can one extrapolate from airlines or banking to industries that have not (yet) been studied by academics? This question is complicated because how firms compete and how common owners may be incentivized and be able to influence the firms that they own is a highly fact-specific question. Also, attempts to compare common ownership levels and competition across industries have to be treated with caution due to measurement and conceptual problems.[18]

Boller and Scott Morton (2020) address these challenges by studying abnormal stock price returns as a proxy for a firm's expected future profits. They find that when common ownership among competing firms increases due to a new entrant in the S&P 500, abnormal returns increase as well, and such increases are higher the greater is the increase in common ownership. These findings suggest that effects of common ownership are not confined to specific industries but are potentially widespread.

The abundance of studies documenting the increase in common ownership and the presence of anticompetitive effects of common ownership in several industries raises the question how significant the economy-wide welfare cost of common ownership is. Ederer and Pellegrino (2025) attempt to answer this question by analyzing the overlapping networks of product market competition and ownership that exist among public firms in the United States in a tractable general equilibrium model of oligopoly. In their model, common ownership of competing firms, particularly those producing less differentiated products, induces unilateral incentives to soften competition, and the magnitude of the common ownership effect depends on how much the two networks overlap. Ederer and Pellegrino (2025) estimate their model for the universe of U.S. public corporations using a combination of firm financials, investor holdings, and text-based product similarity data. This allows them to perform counterfactual calculations to evaluate how the efficiency and the distributional impact of common ownership have evolved over time.

Under the assumption that firms maximize a share-weighted average of their shareholders' income (i.e., control shares proportional to ownership shares), they find that the welfare cost of common ownership, measured as the ratio of deadweight loss to total surplus, has increased about ninefold between 1995 and 2021, and has also led to a significant reallocation of surplus from consumers to producers. They also explore how alternative assumptions

[18]For example, Koch et al. (2020) investigate the relation between common institutional ownership and product market competition across industries and do not find that common ownership is robustly correlated with industry profitability, prices, or measures of non-price competition in the ways one would expect if common ownership reduced competition (see also Lewellen and Lowry (2021)). Such cross-industry studies, however, tend to invoke the "structure-conduct-performance" paradigm, which has generally been discredited by economists. See, for example, Berry, Gaynor and Morton (2019).

about corporate governance, in particular the influence that large investors have on strategic production and pricing decisions, alter their results. For example, rather than investors influencing firm decisions exactly in proportion to their ownership stakes, larger investors may exert influence that exceeds the size of their stake. Alternatively, only blockholders (i.e., shareholders holding 5% or more of a company's stock) may influence firm decisions, or frictions arising from managerial entrenchment may limit the influence of common shareholders. Even under these more realistic assumptions of corporate governance, the estimated deadweight loss of common ownership ranges between 3.5% and 13.2% of total surplus in 2021.

5 Mechanisms of Common Ownership

A critical question raised by empirical studies on common ownership is how shareholder interests translate into firm behavior. In other words, is it really plausible to assume that firms maximize a weighted sum of shareholder profits, rather than maximizing the firm's individual profits? How could shareholders get firms to do so? Early theoretical and empirical contributions remain relatively silent on this issue and prompted then-FTC Commissioner Noah Phillips, in a 2018 Federal Trade Commission hearing on common ownership, to ask researchers "whether a clear mechanism of harm can be identified."

Skepticism that common ownership affects market outcomes may be warranted given the lack of a clear mechanism that recognizes the agency problems and informational constraints that exist in most corporate settings where there is a separation between ownership and managerial control. Azar et al. (2018a) suggest several possible corporate governance mechanisms that can implement the anticompetitive incentives from common ownership: voting, direct engagement, managerial compensation, and passivity. Shekita (2022) documents and taxonomizes thirty cases of common owner intervention to uncover the channels through which common owners influence firm behavior. These cases span a broad set of industries and classify the mechanisms through which a common owner operates. Similar to Azar et al. (2018a), the examples identified by Shekita (2022) illustrate that common owners use voting, direct engagement, and managerial compensation to influence firm decision-making. As expected, these channels vary depending on the identity of the owners and highlight the importance of the data analysis of Amel-Zadeh et al. (2022) who find that common ownership is also a concern for owners other than institutional investors. For example, Li et al. (2023) find that common venture capital owners actively engage to hold back projects, withhold funding, and redirect innovation at lagging startups. Eldar and Grennan (2024) also find that common venture capital investors exercise significant control through the appointment of common board directors. As a result, director interlocks may be another mechanism, which

we discuss in more detail below.

5.1 Unilateral or Coordinated?

Before diving into the various mechanisms further, it may be helpful to remember that the common ownership hypothesis generally assumes that firms act in their unilateral interest by maximizing a weighted sum of their shareholder's profits. That is, while the outcome may be like collusion (placing a weight on competitor profits and thus optimally charging higher prices or producing lower quantities), the common ownership hypothesis does not assume or necessitate that firms coordinate their competitive actions. In the language of antitrust economics, most of the common ownership literature is concerned with unilateral effects—arising from the changes in incentives of an individual firm due to common ownership—rather than coordinated effects—arising from the changes in interactions between firms due to common ownership.

In fact, the theoretical effect of common ownership on the likelihood for firms to (explicitly or tacitly) collude is ambiguous: On the one hand, common ownership links lead firms to internalize some of the cost of deviating from a coordinated equilibrium which would tend to make collusion more stable. On the other hand, common ownership allows firms to charge higher prices in the competitive equilibrium, thereby reducing the benefit from coordination, and also making any punishment from deviating from a coordinated equilibrium less severe, which would tend to make collusion less stable.[19] In addition, if one assumes that various frictions prevent firms from maximizing their shareholder profits unilaterally, common owners may act as "cartel coordinators" and thus make it easier for firms to overcome obstacles to collusion Rock and Rubinfeld (2018).

In any event, a clear distinction between "unilateral effects" and "coordinated effects" may be less helpful in the context of common ownership, as the boundaries between them are blurred: common ownership can be modeled as changing a firm's unilateral profit maximization problem, as done by most of the academic literature, but common ownership could also be considered as firms acting in a coordinated fashion that is enabled by the common ownership links between them.

5.2 Voting and Direct Engagement

How and why institutional investors vote their shares in the way they do is a topic of increased study in recent years. Shekita (2022) documents multiple cases in which large institutional investors voted in line with their interests in competitors. For example, BlackRock, Vanguard

[19] See, for example, Reynolds and Snapp (1986), Malueg (1992), Reitman (1994), Gilo, Moshe and Spiegel (2006), de Haas and Paha (2016), and Brito, Ribeiro and Vasconcelos (2018b).

and State Street voted against activist investor Nelson Peltz in a proxy fight at DuPont, where Peltz reportedly wanted to help DuPont achieve higher revenue growth, presumably at the expense of competitors in which BlackRock, Vanguard and State Street also held ownership. Votes in favor of mergers and acquisitions are other frequent examples of common owners voting in ways that may suppress competition to the benefit of common owners (Antón, Ederer, Giné and Pellegrino, 2023a; Antón, Azar, Giné and Lin, 2022).

Institutional investors publicly tout their engagement efforts with the firms in which they invest. For example, BlackRock's Investment Stewardship Annual Report states that BlackRock engaged with over 2,500 unique companies over the course of 2023.[20] Shekita (2022) provides examples for how these direct engagements may adversely impact competition. He documents several "calls to action" by common owners, including calls to cut capacity on airlines' earnings calls and calls to set emission targets for oil and gas companies. Sometimes owners seem to have gathered the management of competing companies for discussions.

5.3 Managerial Incentives and Passivity

Passivity, or "doing nothing," is a plausible mechanism through which common ownership produces anticompetitive effects. If competition is costly for managers, they may prefer a "quiet life" unless incentivized otherwise (Bertrand and Mullainathan, 2003; Hicks, 1935). Common ownership can weaken management incentives to compete more aggressively by replacing undiversified shareholders who favor aggressive competition with diversified shareholders with common ownership stakes who do not favor aggressive competition. This mechanism may work alongside efforts by common owners to design executive compensation that dulls competitive drive.

Antón et al. (2023b) explore this idea theoretically and empirically. Their model highlights how firms' hierarchical structures, with decision-making delegated to middle managers, and limited investor transparency can allow managerial incentives to shape competition. Crucially, the mechanism their paper explores does not require coordination or active intervention by investors or top managers. Instead, common owners passively approve compensation plans that offer high, performance-insensitive pay, making governance passivity an optimal strategy. Their model centers on the idea that performance-based pay motivates productivity. While it benefits all owners under fixed prices, under endogenous prices, performance-based pay intensifies competition and harms the interests of common owners. Hence, common owners tolerate managerial slack to soften competition, preferring less performance-sensitive compensation.

Empirically, Antón et al. (2023b) find a strong negative relationship between common

[20] BlackRock, Investment Stewardship Annual Report, January 1 – December 31, 2023, https://www.blackrock.com/corporate/literature/publication/annual-stewardship-report-2023-summary.pdf.

ownership and CEO wealth-performance sensitivity. A shift from the 25th to the 75th percentile of common ownership correlates with a 10.5% decline in such incentives. This effect persists even under quasi-experimental variation—such as when industry competitors are added to the S&P 500—supporting a causal link between common ownership and executive compensation. Their findings imply that weak incentives and soft competition are jointly optimal for common owners, posing a challenge for antitrust enforcers, especially in the absence of clear evidence of intent. They also show that common ownership may raise prices by reducing productivity and increasing costs, without necessarily increasing markups. Thus, focusing solely on markups may understate the anticompetitive harm of common ownership.

Another potential channel for lessened competition between commonly owned firms is the role of proxy advisors, particularly Institutional Shareholder Services ("ISS"), which provides voting recommendations to approximately 70% of institutional investors. A proxy advisor seeking to maximize overall client value may rationally promote softer competition among commonly held firms. Forsbacka (2024) finds that proxy advisor ISS is more likely to support mergers, oppose performance-sensitive executive compensation, and endorse director interlocks at firms with higher levels of common ownership, each of which may contribute to reduced competitive pressure.

5.4 Director Interlocks

Another potential mechanism that has received increasing attention is the prevalence of shared board directors among competing firms, also referred to as "director interlocks." While overlapping directors need not be directly attributable to common owners, Azar (2022) and Eldar, Nili and Xu (2025) document that common ownership correlates positively with shared directors.

The early empirical literature on common ownership did not examine the role of the director interlocks mechanism because U.S. antitrust laws generally prohibit director interlocks among competitors under Section 8 of the Clayton Act.[21] Despite these legal restrictions, overlapping directors are relatively frequent, as documented by Nili (2020) for the S&P 1500 and Manjunath, Kahrobai, Lemley and Kumar (2024) for the life science industry. Nili (2020) who coined the term "horizontal directors" for shared directors in the same industry, finds that in 2016, 16% of companies in the S&P 1500 shared at least one director with other companies in the same four-digit SIC code. Manjunath et al. (2024) address more directly whether companies are in fact close competitors by looking at life science companies that sponsored clinical trials in the same disease categories. The authors find that many disease indications have dozens of director interlocks.

[21] In Canada and the EU, director interlocks among competitors are not explicitly prohibited but may nevertheless be scrutinized. See, for example, Katz (2008) and Thépot (2023).

Director interlocks could translate the anticompetitive incentives created by common ownership into firms' competitive strategies by facilitating information sharing across firms.[22] In addition, investors directly vote for board candidates, so by voting for interlocking directors, common owners may seek to influence management in line with their incentives. However, director interlocks may be more easily associated with efficiencies than other mechanisms of common ownership. Directors who have industry experience may be particularly likely to add value for the companies they oversee.[23]

The empirical literature on the competitive effects of interlocking directors is still in its infancy, but some recent publications and working papers are notable. Eldar and Grennan (2024) find that start-ups tend to benefit from sharing the same venture capital investor, and that the primary mechanism is through the presence of shared directors. Directors seem to be a key conduit for sharing information and thereby facilitating an efficient allocation of resources among startups. Gopalan, Li and Zaldokas (2024) focus more directly on product market competition and find that a firm's margins and prices increase after it forms a new director interlock with a competitor, suggesting anticompetitive effects. Their analysis also documents effects of newly formed indirect board connections, whereby two competitors do not share a director directly but both share directors with a common third company. These effects may be driven by increased coordination or even outright collusion among firms that are connected via shared directors.

Poberejsky (2024) finds that director interlocks with a competitor improve firm performance and dampen competition. Having shared directors with competitors leads firms to patent in more distant technologies, thereby avoiding redundancy and competition. These findings are another illustration of the trade-off between shared directors increasing efficiency and innovation on the one hand and reducing competition on the other hand.

Certainly, much work remains to be done to further understand the mechanisms by which common ownership may impact competition, and the associated trade-offs. For example, private equity and activist hedge funds are much more likely to exert direct control over the firms in which they invest, including via board seats, compared to passive index funds. Thus, one may want to consider such differences between different types of owners when considering common ownership effects.

[22] Information sharing is also one of the concerns associated with acquisitions involving minority interests mentioned in the 2023 Merger Guidelines.

[23] See, e.g. , Ma, Shi, Yu and Zhou (2024) for a recent review of the financial, accounting, and management literature on interlocking directors.

6 Beyond Horizontal Product Market Effects of Common Ownership

Much of the literature described above has focused on the product market effects of common ownership in separate industries. More recently, several authors have explored the role of common ownership in a variety of other settings including innovation, vertical relationships, labor market power, and the interplay between intra- and inter-industry common ownership. This section samples such studies and highlights where looking at effects outside of horizonal product markets may predict ambiguous or even pro-competitive effects of common ownership.

6.1 Innovation

Perhaps the most important determinant of competitive dynamics is the degree to which firms innovate. Firms have inefficiently low incentives to innovate in the presence of technological spillovers, i.e., when other firms benefit from their inventions and the innovating firm does not capture the full surplus from its innovations. Common ownership of firms mitigates this impediment to corporate innovation. By contrast, without technological spillovers, innovation has the effect of stealing market share from rivals; in that case, more common ownership reduces innovation. López and Vives (2019) consider cost-reducing R&D investment with technological spillovers between firms in a Cournot oligopoly with overlapping ownership. They show that overlapping ownership leads to internalization of rivals' profits by firms. Increases in common ownership increase innovation and output but only if spillovers are sufficiently large. They also find that under the consumer surplus standard the desirability of common ownership is relatively small even when product market concentration is low.

Antón, Ederer, Giné and Schmalz (2025b) extend the symmetric single-industry analysis of López and Vives (2019) by allowing for common ownership of firms in the entire economy, including potentially in separate industries, as well as for product differentiation, technology spillovers, and common ownership to vary across firms. Their paper provides empirical evidence for the two opposing channels between common ownership and corporate innovation: All else equal, common ownership between firms that are closer product market competitors decreases innovation, but common ownership between firms that are closer in technology space increases innovation. Thus, the direction and magnitude of the relationship between common ownership and corporate innovation varies considerably across the universe of firms depending on how close (i.e., substitutable) the firms are with respect to technology and products. These complex and ambiguous innovation effects are in line with the evidence presented in Gibbon and Schain (2023), who, studying European manufacturing firms, find that

common ownership increases the number of citation-weighted patents while also increasing markups.

A number of other studies document innovation effects of common ownership. Li et al. (2023) study common venture capital ownership of pharmaceutical startups and find evidence suggesting that common ownership improves innovation efficiency. He and Huang (2017) examine the question of whether common blockholders have an effect on corporate innovation on average and likewise find evidence suggesting that common ownership improves innovation productivity. Kostovetsky and Manconi (2020) show that increases in shared institutional ownership arising from the addition of a firm to an index are followed by more citations of the patents of the firm that was added to the index. Borochin, Yang and Zhang (2020) provide evidence that whether common ownership increases or decrease patent output and patent citations to other firms depends on the type of institutional owner that creates the common ownership link. Chiao, Qiu and Wang (2021) argue that common ownership is, on average, negatively related to patent grants, citations, and R&D expenditures. They find that common ownership reduces the likelihood that firms are involved in patent litigation and increases the speed of settlement between commonly owned firms. Their empirical evidence suggests that common ownership can mitigate hold-up problems between firms owning complementary patent portfolios.

6.2 Vertical Relationships and Input-Output Networks

Several papers have documented some effects of common ownership in vertical relationships (for example, Geng, Hau and Lai (2017), Kedia, Rajgopal and Zhou (2017) and Chen (2024)). Product market effects of vertical common ownership may include pro-competitive effects such as the mitigation or outright elimination of double marginalization, much in the same way that vertical integration eliminates double marginalization in the full ownership case. However, vertical integration can also have anticompetitive effects, including exclusionary conduct like foreclosure and raising rivals' costs. For example, Crawford, Lee, Whinston and Yurukoglu (2018) provide a comprehensive welfare analysis incorporating both positive and negative effects under partial vertical integration. A similar logic would also apply to quasi-vertical integration through common ownership. Even if quasi-vertical integration through common ownership only has the beneficial effect of eliminating double marginalization, this effect will not completely offset any negative horizontal common ownership effect. This is because (consumer-facing) firms charge a markup to final consumers, even if markups are reduced to zero elsewhere in the vertical chain.

Horizontal common ownership can still have anticompetitive effects even if vertical common ownership: (i) does not have any anticompetitive effects, (ii) perfectly eliminates double marginalization along the vertical chain, and (iii) consumers are also shareholders. This re-

sults because consumer interests as shareholders are only fully internalized if there is perfect homogeneity (in particular with regards to equity ownership) across consumer-shareholders as shown by Farrell (1985).

Bizzarri and Vega-Redondo (2024) further extend this analysis and formally consider common ownership in input-output networks. In their model, efficiency would require decreasing as much as possible any coordination among horizontally related firms, while at the same time maximizing the coordination between vertically related firms. However, the input-output network structure of production creates a trade-off between increasing one and decreasing the other. As a result, common ownership across different firms with different network positions and patterns of connections can have very heterogeneous effects on consumer welfare.

6.3 Labor Market Power and General Equilibrium

Some antitrust policies have considered labor market power; thus, it is no surprise that concerns about the anticompetitive effects of common ownership in labor markets have also surfaced. Azar and Vives (2021a) develop a theoretical general equilibrium framework in which oligopolistic firms have market power with respect to both products and labor. Common ownership between firms enhances their market power, leading to wage markdowns for workers and, in a one-sector model of the economy, common ownership leads to declines in employment, real wages, and the labor share. Azar and Vives (2019) extend this model to allow for investment and show that common ownership leads to lower equilibrium wages, real interest rates, lower output, lower labor share, and lower capital share as well. A calibrated version of their model suggests that the rise in common ownership may account for the broad evolution of labor and capital shares.

Azar, Qiu and Sojourner (2022) provide some empirical evidence for labor market effects. They find that common ownership more than doubled in U.S. labor markets over the last quarter century. Plausibly exogenous increases in common ownership lead to a decrease in average annual earnings per employee at local competitors. This effect is stronger in local labor markets where the employment shares of S&P 500 firms were higher or union coverage rates were lower ex ante. Increases in common ownership also lead to higher separation and hiring rates, resulting in an overall positive effect on total employment. These effects are consistent with a generalized model of oligopsony under common ownership.

However, the analysis of Azar and Vives (2021a) also reveals a pro-competitive general equilibrium effect of common ownership and an important distinction between inter- and intra-industry common ownership. In an extended version of their model with multiple sectors, an intersectoral pecuniary externality arises such that, provided the elasticity of labor supply is high relative to the elasticity of substitution in product markets, an increase

in inter-industry common ownership can lead to greater output and lower product market prices. Azar and Vives (2021b) use data from the airline industry and find that consistent with these predictions, intra-industry common ownership increases prices, but inter-industry common ownership reduces prices.

6.4 Endogenous Ownership

Although ownership of firms is generally assumed to be exogenous in the common ownership literature, this assumption is likely to be violated in practice. Investors are likely to respond to profit opportunities created by lax competition under common ownership. Piccolo and Schneemeier (2020) develop a framework to explore how financial markets shape the ownership structure of industry rivals. When investors influence competition, the return of diversified portfolios and the risk of undiversified portfolios may increase with the industry's degree of common ownership. This crowding out of undiversified investors is shown to exacerbate the anticompetitive effects of common ownership.

7 Common Ownership in Antitrust Practice

In light of the broad and growing academic literature on common ownership, what are the take-aways for antitrust practitioners? In this section, we first map out different "types" of owners for whom the common ownership debate may be more or less relevant. We then summarize how common ownership may become relevant in merger review and antitrust enforcement more broadly.

7.1 Different Types of Common Ownership

An important take-away from the economic research, as well as practical intuition, is that the degree to which common ownership affects competition depends on the interest and attention of investors to competition between their portfolio companies, as well as the mix of different types of investors in a given company. While the economic literature seeks to capture these differences through measures of "control," in practice it may be helpful to distinguish a few different owner types that roughly align with different degrees of control and financial interests.

First, consider mutual funds and other passive investors. These types of owners have grown dramatically over recent decades and are responsible for much of the increase in observed common ownership. The fear that these types of investors exercise influence over their portfolio firms to the detriment of competition and consumers is what has motivated much of the recent debate about common ownership. The litigation brought by Texas and

several other states against BlackRock et al. targets this type of ownership. While this is the only case of its kind so far,[24] the mere fact that antitrust enforcers have started to pay attention to these issues may lead these investors to restrain the influence they could wield on competition. Another important consideration is that even if these investors may not follow a specific agenda to reduce competition between portfolio firms, they typically hold relatively large blocks of voting shares in companies throughout the economy, and thus their position on questions of corporate governance and strategy is easily pivotal.

Second, activist investors may choose to invest in multiple competitors and thereby create or increase common ownership. These cases may be viewed as inherently more problematic because activist investors have the stated goals of influencing company strategy, which makes for a clear mechanism by which their common ownership may act to reduce competition between portfolio companies.[25] Although activist investors may concentrate their holdings in just one firm in an industry, recent research has shown that they also contribute substantially to common ownership (Amel-Zadeh et al., 2022).

Similar to activist hedge fund investors, private equity investors also typically take an active role in shaping the strategies of their portfolio firms. They tend to focus on larger ownership stakes in privately held firms, but are also increasingly investing in publicly traded firms, blurring the boundaries to activist hedge funds. Private equity has recently come into the crosshairs of antitrust enforcers, in particular for pursuing "roll-up" strategies that may involve buying up stakes in competitors or outright combining rival firms. Depending on the size of their ownership interests and control structure, private equity transactions may be analyzed like full mergers. However, private equity transactions present some of the same questions as raised in the common ownership literature, namely who is influencing a firm's competitive decisions, and what are their incentives.

7.2 Common Ownership in Merger Review

The U.S. Merger Guidelines discuss how the U.S. antitrust authorities analyze mergers involving partial ownership interests. The 2010 version of the guidelines outlined the agencies' analysis of partial acquisitions.[26] The 2023 version adopts that discussion and expands its scope from "partial acquisitions" to "acquisitions involving partial ownership and minority interests" and explicitly states that the agencies are concerned with "both cross-ownership,

[24] State of Texas/Ken Paxton Attorney General et al. v. BlackRock, Inc. et al., Docket No. 6:24-cv-00437 (E.D. Tex. Nov 27, 2024). For more details on this case see below.

[25] For example, the DOJ sued ValueAct for allegedly violating the "only for investment" exception and failing to file HSR filings when it acquired substantive holdings in Halliburton and Baker Hughes. United States v. VA Partners, Case No. 16-cv-01672 (WHA) (Northern District of California, San Francisco Division, filed Apr 4, 2016).

[26] 2020 Horizontal Merger Guidelines §13.

which refers to holding a non-controlling interest in a competitor, as well as common ownership, which occurs when individual investors hold non-controlling interests in firms that have a competitive relationship that could be affected by those joint holdings."[27]

Acquisitions of shares are exempt from premerger review if they are solely for the purpose of investment and if the acquiring person will hold ten percent or less of the outstanding voting securities. FTC guidance states that doing any of the following is evidence that an acquiring entity does not have an investment only intent: nominating a candidate for the board of directors, holding a board seat or being an officer, proposing corporate action that requires shareholder approval, soliciting proxies, or being a competitor of the issuer.[28] Furthermore, the test for the investment-only exemption is the acquirer's intention, and the FTC's determination may not turn on any particular conduct. While traditionally this exemption has been understood to apply to the holdings of institutional investors, the common ownership literature questions exactly that: If investors are able to influence competition in an industry, their holdings are presumably not "solely for the purpose of investment."

The presence of common ownership links through institutional investors can also impact how competition authorities look at a proposed (full) merger of portfolio firms. The European Commission took this route in its Dow/DuPont decision, where it analyzed common ownership links as part of the context of the proposed merger.[29] However, the presence of common ownership in general has ambiguous effects on the competitive impact of mergers, and common ownership concerns are likely of second order, compared to an analysis of the merger itself.[30] In any case, we have not seen enforcement agencies routinely look at common ownership created by institutional investors when they analyze a merger: Dow/DuPont seems to remain the exception rather than the rule.

The most "active" area where common ownership comes to bear on merger review is private equity deals. Private equity investors often take partial positions in portfolio companies but an active role in management , which suggests that the potential for anticompetitive effects from the same private equity firm owning stakes in two competitors is relatively high. In fact, private equity investors in particular seem to have motivated the increased disclosure requirements of minority investors in the new HSR rules that became effective in February 2025.[31] Given the complex structure of private equity deals, they require a careful analy-

[27] 2023 Merger Guidelines §2.11.

[28] Federal Trade Commission, "'Investment-only' means just that," (August 24, 2015), https://www.ftc.gov/enforcement/competition-matters/2015/08/investment-only-means-just.

[29] Case M.7932—Dow/DuPont, Commission Decision, ¶2349 (Mar. 27, 2017) (Summary: 2017 O.J. (C 353) 9), http://ec.europa.eu/competition/mergers/cases/decisions/m7932_13668_3.pdf.

[30] See Azar and Tzanaki (2022). The common ownership literature also bears on which mergers are being proposed in the first place. For example, Antón et al. (2022) observe that common ownership links may lead an acquirer to propose "bad deals" because its shareholders may benefit via their ownership stakes in rivals. For additional evidence see Antón et al. (2023a).

[31] Federal Trade Commission, 16 CFR Parts 801 and 803, RIN 3084-AB46, Premerger Notification; Re-

sis of ownership and control rights. Once reasonable assumptions for these are established, economists typically account for ownership in the merger analysis by using the MHHI, or a similarly ownership-modified version of upward pricing pressure indices, instead of their traditional counterparts.[32]

7.3 Legal Challenges to Consummated Common Ownership

7.3.1 Commentary by Legal Scholars

Legal scholars weighed in on the implications of the economic research that found anticompetitive effects of common ownership soon after it was first published. In particular, Elhauge (2016) argues that stock acquisitions that create anticompetitive common ownership (which he refers to as "horizontal shareholdings") are illegal under current antitrust laws and recommended antitrust enforcement actions to undo them. Scott Morton and Hovenkamp (2018) consider how the antitrust laws may apply to common ownership, and discuss anticipated litigation challenges. They find that both Clayton Act Section 7 and Sherman Act Section 1 could potentially be brought to bear. They also point out that Section 7 may not require plaintiffs to pinpoint an exact mechanism by which common ownership harms competition, as long as there is evidence for likely anticompetitive effects. Elhauge (2020) takes a similar position to that of Scott Morton and Hovenkamp (2018), finding that enforcement against common ownership could be pursued under both Section 7 of the Clayton Act (as acquisitions that "may substantially lessen competition") or Section 1 of the Sherman Act (as an agreement or combination to restrain trade) in the U.S., as well as under Articles 101 and 102 TFEU in the EU, and responds to certain legal critiques to his earlier arguments.

However, as other commentators have pointed out, there are several challenges for antitrust lawsuits against common ownership. For example, courts are new to the factual setting that common ownership presents, and may struggle to understand the economic theory or not be convinced by any evidence for anticompetitive effects (Posner, 2021). In particular, the incremental nature of the investments that lead institutional investors to hold substantial shares in competitors as well as the fact that these positions are largely held by index funds, which do not make active investment decisions, may make courts reluctant to hold these investors liable for alleged anticompetitive effects.

porting and Waiting Period Requirements, Final rule, https://www.ftc.gov/system/files/ftc_gov/pdf/p110014hsrfinalrule.pdf, pages 23–32.

[32] O'Brien and Salop (2000) also develop an ownership-modified version of the Pricing Pressure Index. Asoni and Sarafidis (2017) apply their model to the Gross Upward Pricing Pressure to develop the mGUPPI.

7.3.2 Texas v. BlackRock et al.

Some uncertainty as to how courts may receive common ownership cases may be resolved as Texas v BlackRock makes its way through the courts. In this case, the plaintiffs bring both Section 7 and Section 1 claims against the "Big Three" institutional investors, namely BlackRock, Vanguard and State Street, over their ownership of coal companies.[33] In particular, the plaintiffs claim that each defendant's acquisition and use of shareholdings in domestic coal producers, considered alone and in isolation, has violated Section 7 of the Clayton Act. Plaintiffs also allege that the defendants entered into an agreement to use their collective ownership to induce output reductions, in violation of Section 1 of the Sherman Act. Notably, the Section 1 claim is concerned with an alleged agreement between investors such that this claim goes beyond the Section 1 claims suggested by Scott Morton and Hovenkamp (2018) and Elhauge (2020) described above, which are primarily concerned with an agreement between an investor and multiple competing portfolio companies. Nevertheless, as this case is the first to bring a Section 7 claim against institutional investors holding relatively small ownership stakes, and as the Court has allowed this case to proceed beyond the motion-to-dismiss stage, it seems appropriate to look at the States' Complaint in more detail, without taking a stance on their merits.[34]

The States' Complaint focuses on the defendants' ownership stakes in publicly traded U.S. coal producers. According to the Complaint, there are nine such coal companies, and the defendants' combined ownership stakes range from 8% (in Hallador Energy) to 34% (in Arch Resources).[35] The relevant markets that plaintiffs allege are South Powder River Basin (SPRB) coal as well as thermal coal produced in the United States. SPRB coal is produced only in the South Powder River Basin located in northeastern Wyoming. Thermal coal, a broader category that includes SPRB coal, includes coal that is burned to generate heat (as opposed to metallurgical coal, which is used for coke production) and accounts for most of the coal produced in the United States.

In the alleged SPRM market, three of the publicly traded U.S. coal companies are active, and together account for about 63% of SPRB coal production in 2022, per the Complaint. The remainder is produced by four privately held companies. Not accounting for common ownership, the HHI for SPRB coal is around 2,400, indicating a "highly concentrated" market per the 2023 Merger Guidelines. The defendants' combined ownership share in each of the publicly traded SPRB coal producers is over 30% (ranging from 30.4% to 34.1%). Rather than calculating the MHHI, though, the Complaint argues that if the three commonly owned

[33] State of Texas/Ken Paxton Attorney General et al. v. BlackRock, Inc. et al., Docket No. 6:24-cv-00437 (E.D. Tex. Nov 27, 2024), Amended Complaint (henceforth, "Complaint").

[34] The Court denied the defendants' motion to dismiss the case on August 1, 2025.

[35] Complaint paras. 4, 20–57.

producers were to outright merge or come under common control, the increase in HHI would be above 2,000 (and the merged entity would account for over 60% share), and such a transaction would be presumptively unlawful.[36]

The Complaint supports its allegation that the defendants' ownership stakes resulted in reduced competition with the following evidence. First, the Complaint points to statements made by the commonly owned coal companies in investor calls and elsewhere that discuss their output restriction in thermal coal and link them to ESG priorities.[37] Second, the Complaint presents production data to show that the commonly owned coal companies reduced production while the privately held coal companies did not, while prices increased.[38] And finally, the Complaint presents data to show that the coal companies' profits increased even as their production decreased.[39] The Complaint attempts to link these observed changes to common ownership by comparing commonly-owned firms to non-commonly owned firms, and thermal coal to metallurgical coal.[40]

The Complaint also sketches out mechanisms by which common ownership has allegedly brought about the claimed anticompetitive effects, most prominently direct engagement by the institutional investors with the coal companies and proxy voting.[41] In particular, it cites examples of public statements by the defendants that describe engagements with the coal companies, and examples of the defendants voting against board members at several coal companies for not meeting the defendants' expectations for climate risk disclosures.[42] In addition to the unilateral theory underlying the common ownership literature discussed in this chapter, the Complaint also layers in an alleged agreement between the defendants to coerce the coal companies into output reductions and to share information about these efforts, as evidenced by their participation in the Net Zero Asset Managers Initiative and Climate Action 100+.[43]

The federal U.S. antitrust enforcement agencies issued a statement of interest in this case, explaining their view on how the antitrust laws apply to the allegations in the Complaint. The statement asserts that the "solely for investment" exception to Clayton Act Section 7 does

[36]The alleged national market for thermal coal is more fragmented: eight publicly traded coal companies are active producers of thermal coal to the open market, jointly accounting for 46% of U.S. production. The Complaint suggests that there are at least eleven other producers but is silent on their identity or market shares. It also does not present the HHI levels in this alleged market but only observes that if the seven commonly owned producers were to outright merge, the increase in HHI would be 1,594 and the new level would have to be above 2,116 (since the seven commonly owned companies by themselves would already yield an HHI of that magnitude) and thus be presumptively unlawful.

[37]Complaint, paras. 183–191.

[38]Complaint, paras. 225–229.

[39]Complaint, paras. 232–240.

[40]Complaint, para. 242.

[41]Complaint, paras. 152, 167, 175.

[42]Complaint, paras. 155–181.

[43]Complaint, paras. 113–151, 253–263.

not provide "bright line protection to passive minority investors, without subjecting them to further analysis," as the defendants argue in their motion to dismiss the case.[44] It affirms that the Clayton Act prohibits the anticompetitive use of minority interest acquisitions to substantially lessen competition, arguing that a plaintiff can satisfy its initial burden by showing that horizontal shareholdings purchased solely for investment were in fact used to cause a substantial lessening of competition.[45] The statement of interest also takes the view that the alleged anticompetitive effects need not be linked to any discrete, single transaction, but rather can be the result of the use of ownership shares that were accumulated in multiple transactions over time.[46]

Most informative for the direction of potential future federal enforcement, the statement of interest explicitly affirms the benefits of index fund investing and the role that asset managers play in corporate governance and discusses the distinction between "typical" asset manager behavior that is not prohibited by the antitrust laws and what it considers to be anticompetitive use of stock.[47] It reaffirms the U.S. agencies' 2017 Submission on Common Ownership to the Organization for Economic Cooperation and Development (OECD), which cautioned against across-the-board limitations on common ownership at the cost of easy access to risk diversification by consumers but contemplated enforcement "where sufficient evidence exists that the effect [...] may be substantially to lessen competition." Thus, evidence of anticompetitive effects seems to be the dividing line between asset manager behavior that the agencies deem unproblematic and asset manager behavior that they deem to violate Section 7. The agencies specifically do not assert a position as to when an investor's acquisition of stock in competing firms alone—without evidence of subsequent anticompetitive use—would implicate Clayton Act Section 7. The statement even affirms that asset manager activity that leads to output reductions or price increases does not violate the antitrust laws unless these reductions or increases are caused by harm to competition.[48]

7.4 Enforcement Against Director Interlocks

Director interlocks represent the common ownership mechanism that is most clearly and straightforwardly addressed in U.S. antitrust law. Section 8 of the Clayton Act generally prohibits any person from serving as a director or officer in competitors "per se" (i.e., without

[44]State of Texas/Ken Paxton Attorney General et al. v. BlackRock, Inc. et al., Docket No. 6:24-cv-00437 (E.D. Tex. Nov 27, 2024), Statement of Interest of the Federal Trade Commission and the United States of America ("Statement of Interest"), p. 8.

[45]Statement of Interest, p. 13.

[46]Statement of Interest, p. 16.

[47]Statement of Interest, Section I.C. (pps. 17–21).

[48]For example, an institutional investor could pressure a business to exit a particular market in favor of another, more profitable market, as long as the investor does not hold shares in the company's competitors and benefited from the exit via reduced competition. Statement of Interest, p. 21.

requiring a test for actual anticompetitive effects).[49] It is presumably also the mechanism with the easiest fix: The interlocking director can relatively easily resign from boards to remove the interlock. However, removing these director interlocks may also have efficiency-destroying effects as highlighted by Eldar and Grennan (2024).

In 2022, then-AAG Jonathan Kanter called Section 8 an "important, but underenforced, part of our antitrust laws" and announced that the DOJ's Antitrust Division was "undertaking an extensive review of interlocking directorates across the entire economy and will enforce the law."[50] Since then, the DOJ announced several director resignations in response to its concerns.[51] These illustrate what seems to be the general approach to Section 8 violations: Companies will typically retire directors rather than fight the DOJ in court over them.

Interlocking directors, however, featured in a supporting role in the DOJ's case against Silicon Valley companies for alleged non-poach agreements of high-tech workers. The DOJ brought the case under Sherman Act Section 1, alleging an illegal agreement between the companies to refrain from cold-calling each other's employees, and settled it by prohibiting the companies to enter into non-solicitation agreements for employees.[52] While the case itself was not centered on a violation of Clayton Act Section 8, academic research finds that connections between Apple, Google, and other high-tech companies created by shared directors possibly facilitated communications between the companies to reduce competition in respect of certain workers (Herrera-Caicedo, Jeffers and Prager, 2025).

8 Conclusion

The common ownership hypothesis has policy implications that go above and beyond whether specific cases or industries warrant antitrust enforcement: Given the challenges associated with bringing antitrust cases in this realm, should lawmakers pass laws to limit common ownership? Should they prohibit communication or engagement of investors with the firms

[49] There are exceptions for small firms or for firms for which the competitive revenues are very small, see Federal Trade Commission, Revised Jurisdictional Thresholds for Section 8 of the Clayton Act, https://www.federalregister.gov/documents/2024/01/22/2024-00929/revised-jurisdictional-thresholds-for-section-8-of-the-clayton-act.

[50] U.S. Department of Justice: Press Release, Directors Resign from the Boards of Five Companies in Response to Justice Department Concerns about Potentially Illegal Interlocking Directorates, (October 19, 2022), https://www.justice.gov/archives/opa/pr/directors-resign-boards-five-companies-response-justice-department-concerns-about-potentially.

[51] Statement of Interest of the United States and Federal Trade Commission, Elon Musk, et al. v. Samuel Altman, et al., 4:24-cv-04722-YGR (N.D. Cal.), https://www.justice.gov/atr/media/1383966/dl?inline. This statement further explains the U.S. antitrust agencies' view on the standard for Section 8.

[52] U.S. Department of Justice: Press Release, Justice Department Requires Six High Tech Companies to Stop Entering into Anticompetitive Employee Solicitation Agreements, (September 24, 2010), https://www.justice.gov/archives/opa/pr/justice-department-requires-six-high-tech-companies-stop-entering-anticompetitive-employee.

in which they invest? Should they regulate management compensation to prohibit structures that may stifle competition?[53]

These questions point to the broader "trilemma" raised by the common ownership hypothesis: Portfolio diversification, shareholder representation, and product market competition are fundamentally in tension with each other. As Azar (2020) points out, it is impossible to prioritize all three goals; to perfectly achieve two of them inevitably compromises the third. The rise of common ownership and the increased concentration in the asset manager industry suggest that the balance has shifted towards financial diversification and shareholder control, potentially at the cost of competition. Determining how to balance these is complex, and distributional considerations also play a role: Consumers at the lower end of the income distribution arguably benefit more from product market competition than from diversifying or protecting their (non-existent) investment portfolios. Thus, the common ownership hypothesis connects antitrust policy with larger macroeconomic and societal questions that it is likely not fully equipped to address at this juncture.

A Technical Appendix

Mathematically, economists depict the firm's profit maximization as comprised of two terms as shown below: the first term depicts the sum of profits over all shareholders with investments in the firm, and the second term depicts the sum of profits that the firm's shareholders have interests in through their other investments. Denoting the control weights of shareholder o in firm i as γ_{io} and the ownership share of firm i accruing to shareholder o as β_{io}, firm i's objective is to maximize:

$$\sum_{o} \gamma_{io} \sum_{j} \beta_{jo} \pi_j$$

where the first sum is summing over all shareholders of the firm, and the second sum is summing over all other firms in which its shareholders have financial interests.[54] This objective function is equivalent to maximizing

$$\pi_i + \sum_{j \neq i} \kappa_{ij} \pi_j$$

where π_i is the profit of firm i and κ_{ij} is a function of the control weights and ownership shares and intuitively interpreted as the profit weight that firm i places on (its industry

[53] For a review and evaluation of different policy proposals regarding common ownership, see Posner (2021).

[54] Since firm i's competitive decisions generally do not impact profits of firms other than its competitors, it makes sense to consider as firms j the competitors of firm i.

competitor) j's profits. This profit weight is given by

$$\kappa_{ij} = \frac{\sum_o \gamma_{io}\beta_{jo}}{\sum_o \gamma_{io}\beta_{io}}$$

where, as mentioned previously, β_{io} is the ownership share of shareholder o in firm i and γ_{io} is the control share or control weight of shareholder o over firm i.

The ownership shares β_{io} and the control shares γ_{io} are the fundamental parameters for common ownership. The ownership shares are simply the share of a firm's profits accruing to each shareholder and can thus generally be determined based on the fraction of outstanding shares that are held by a certain shareholder.[55] The control shares, however, are not as easily quantifiable. For example, does a shareholder who owns 49% of a company have control over it? How does that answer depend on whether there is another shareholder that owns 51%, or whether the remaining shares are held by small shareholders? Lacking data on control rights, most empirical studies of common ownership assume proportional control (i.e., $\gamma_{io} = \beta_{io}$) which is motivated by the "one share, one vote" rule which characterizes most publicly traded firms in the U.S. economy. However, alternative assumptions may be appropriate, in particular in an antitrust analysis with a limited set of owners and firms.[56]

In practice, antitrust enforcers often look to the Herfindahl-Hirschman Index (HHI) as a tool to assess market concentration and to screen mergers for potential anticompetitive effects.[57] O'Brien and Salop (2000) expanded the HHI to account for the firm's objective function above, into the "ownership-modified" HHI or "MHHI."[58] The MHHI can be expressed as the traditional HHI (which equals the sum of the squares of market shares) plus an additional term, the "MHHI delta", which is the sum of the product of competitor market shares, weighted by the profit weights:

$$MHHI = HHI + \sum_i \sum_{j \neq i} \kappa_{ij} s_j s_i$$

[55] However, the situation can be more complicated for private companies with more complicated ownership structures (e.g., limited partnerships).

[56] Backus et al. (2021a) and Ederer and Pellegrino (2025) show that different control weights corresponding to different models of corporate governance do not substantially change the conclusions about the tremendous rise of common ownership among U.S. public companies.

[57] For example, the U.S. Merger Guidelines use HHI thresholds to define presumptively anticompetitive mergers.

[58] See also Bresnahan and Salop (1986). This work was in the context of cross-ownership, where competitors own shares in each other, but can straightforwardly be applied to the case of common ownership, where competitors are jointly owned by financial investors. The mHHI has further been generalized to account for simultaneous cross-ownership and common ownership by Azar et al. (2021b) and Brito, Osório, Ribeiro and Vasconcelos (2018a).

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