Varieties and Mechanisms of Common Ownership: A Calibration Exercise for Competition Policy

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I. Introduction

Minority shareholdings have been on the regulatory agenda of competition authorities for some time. Recent empirical studies, however, draw attention to a new, thought provoking theory of harm: common ownership by institutional investors holding small, parallel equity positions in several competing firms within concentrated industries.[1] Critics of the alleged "common ownership hypothesis"[2] raise a range of skeptical arguments: i) that such small institutional shareholdings are "passive"; ii) that the concrete mechanisms through which "partial" ownership translates into control are not clear or well established; iii) that the assumption of "proportional control" used in empirical literature to estimate competition effects of common minority shareholding is not supported by theory. Yet, the European Commission has already made use of the common ownership theory in its merger enforcement practice suggesting that the economic literature on cross-shareholdings applies to common shareholdings[3] while the US antitrust agencies have proposed amending their merger control reporting thresholds to account for aggregate institutional holdings.[4]

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[1] José Azar, Martin C Schmalz and Isabel Tecu, 'Anticompetitive Effects of Common Ownership' (2018) 73 The Journal of Finance 1513; José Azar, Sahil Raina and Martin C Schmalz, 'Ultimate Ownership and Bank Competition' (2019) Working paper.

[2] Matthew Backus, Christopher Conlon and Michael Sinkinson, 'The Common Ownership Hypothesis: Theory and Evidence' [2019] Brookings Economic Studies Report.

[3] Case M.7932 *Dow/DuPont*, Commission decision of 27 March 2017, Annex 5, paras 45 and 56; Case M.8084 *Bayer/Monsanto*, Commission decision of 21 March 2018, para 223.

[4] Federal Trade Commission, Notice of Proposed Rulemaking, Federal Register Vol. 85, No. 231 (Tuesday, December 1, 2020): Proposed Rules, 77053-77093.

Inspired by this set of perplexing issues, this article aims to explore five broad themes. First, I briefly consider the legal and policy basis for merger control and problematize the observed great variance in legal treatment of partial acquisitions and minority shareholdings across jurisdictions as compared to full mergers. Why control as a jurisdictional criterion? What level of ownership should trigger merger scrutiny or imply absence of harm? Taking the case of a complete acquisition as a baseline for comparison, I define and visually present two distinct varieties of common ownership - "concentrated" and "diffuse" common ownership. I illustrate that while the former neatly fits within existing paradigms of competition and corporate laws, the latter is a new phenomenon squarely pushing their boundaries. As explained, the contemporary debate on the competitive effects arising from minority shareholdings by common institutional investors falls within the paradigm of "diffuse" common ownership. Nevertheless, the common thread weaving together both varieties of common ownership and full mergers is their conceptual link to the theory of partial ownership.

Second, I provide an overview of different merger control regimes of major jurisdictions (EU, Germany, UK, U.S.) in order to illuminate the spectrum of legal control conceptions and the extent to which they may capture partial acquisitions involving controlling or non-controlling shareholdings. In particular, I shed light on the diverse applicable legal tests for establishing control or influence and also the varying shareholding levels and ownership thresholds that may prompt merger control review. I also discuss related case law and recent policy developments while I summarize the key findings of the legal analysis in Figure 4, highlighting the main differences and similarities across jurisdictions.

Third, I closely examine the potential competitive effects of partial minority shareholding with a focus on small, purely financial interests (so called passive investment) in rivals. While it is commonly thought that such non-controlling or silent shareholdings are innocuous at very low levels, I show that this conclusion is neither solid nor justified across the board. This is particularly so in case of passive acquisition by a firm's controller in a rival firm due to a "dilution effect" pointed out by Professor David Gilo. I further explore and clarify the factual settings and conditions under which the unilateral effects of passive investment may be significant and underscore that direct influence by the acquirer over the target's behavior is not indispensable to establish harm under economic theory. I also expose potential grounds or dated factual and conceptual premises – such as the presence of perfect competition in product markets and the presence of dominant shareholders in firm governance – for why legal thinking

and merger control design may have been influenced by the view that passivity of minority shareholding presumably equals lack of competitive harm, hence their reliance on active influence theories and shareholding thresholds.

Fourth, I analyze plausible anticompetitive strategies of common owners-investors from a corporate governance perspective taking into account the likely dynamics between different groups of shareholders (diversified versus undiversified) as well as between shareholders and management. I highlight "passive" common ownership strategies in a setting of oligopolistic competition and the role of institutional investors and especially index funds in this regard. Further, I explore and discuss the solid vis-à-vis the rather idiosyncratic nature of "partial control" relating to the concentrated and diffuse common ownership paradigms – sole ownership versus perfect symmetry benchmark – respectively. Minority control by diffuse common owners (under a proportional control or alternative assumptions) may plausibly lead to anticompetitive effects, however the degree of internalization of rivals' profits may well be watered down by managerial agency costs (common shared control). The economic bounds of control as divided among different corporate actors – along a continuum of shareholding levels – under different models of governance, ownership and competition are shown in Figure 5.

Fifth, I conclude with policy implications from the preceding competition and corporate law and economics analysis. The main conclusion drawn is that the control metric as traditionally perceived in competition enforcement needs to be reconsidered. Diffuse common ownership makes some of the properties of control to lose their analytical vigor. For this reason, sensible and informed competition policy should recognize and clearly differentiate between the two varieties of common ownership when applying merger control law. A first step is to embrace the distinct competition concerns and supporting mechanisms linked to diffuse common ownership and identify the specific settings that those may arise. As a general matter, merger control should be open to new theories but given the context specific manifestation of competitive harm, case-by-case analysis of potentially problematic common ownership cases would be more appropriate than across-the-board structural solutions that may also prove to be ineffective. In any event, competition authorities will need to develop guidelines. Until views on a major rethinking of merger control design to independently address common ownership are settled, the short-term route would be taking it into account during merger control scrutiny of notified mergers between portfolio companies of common owners. In addition, modified structural and price pressure indices often employed in merger review will need further

refinement to account for richer control scenarios in line with appropriate models of corporate governance and the particular facts of each case. Common ownership creates challenges and opportunities for competition policy. It may render merger enforcement considerably more complex, yet if the competitive effects arising from such horizontal ownership structures are plausible, merger control without it may simply be a futile exercise.

Against this backdrop, Part II below introduces the two varieties of common ownership I identify and discuss in this article presented through the lens of merger control. Part III examines different merger control regimes and the spectrum of legal control as regards partial acquisitions. Part IV analyses the competition effects of partial and common shareholding and possible channels of transmission. Part V addresses plausible anticompetitive strategies of common owners and the economic bounds of control. Part V rounds up with policy implications and recommendations for merger control.

II. Varieties of common ownership and merger control

A mainstay in competition policy is merger control. Modern enforcement practice and merger control guidelines focus on market concentration and unilateral effects theories of harm. Yet, Stigler has pointedly remarked that "outright merger" is the most comprehensive form of collusion, in the sense that merged firms permanently abandon their independence and jointly determine outputs and prices.[5] Nevertheless, competition laws employ rigid behavioural rules (*per se*) to deter horizontal price fixing and cartels across markets whereas more flexible rules to scrutinise horizontal mergers and structural changes only in concentrated industries. This difference in legal treatment is in tune with economic theory and principles. Thus, while it is well recognized that merger is one way in which "competitors may be able to reduce the level of competition among themselves", notably by reducing firms' incentives for competitive pricing, they can also create important efficiencies.[6]

A further curiosity is the notable lack of uniformity of merger control regimes across different jurisdictions around the world, again in stark contrast to anti-cartel laws. The discrepancies are most striking when considering the treatment of minority shareholding transactions. Why such variance if the aims of merger control policy are common? What is the end goal of merger laws

[5] George J Stigler, 'A Theory of Oligopoly' (1964) 72 Journal of Political Economy 44, 45.
[6] Michael D Whinston, 'Chapter 36: Antitrust Policy toward Horizontal Mergers' in Robert H Porter and Mark Armstrong (eds), *Handbook of Industrial Organization*, vol 3 (Elsevier 2007) 2372 (noting that the antitrust laws are designed to address either "exclusion" or "collusion" [broadly defined], the latter category mainly concerned with horizontal price fixing [cartels] and mergers).

that may justify and appropriately determine their scope? Answers may seem straightforward in case of "full" mergers but are less obvious for "partial" acquisitions. On the one hand, the criterion of control is used in some legal systems to create a strict dichotomy in the merger review of minority shareholdings (controlling vs non-controlling). On the other hand, notions of economic control do not fully overlap with legal definitions while competition and corporate theories of control inform different but interrelated questions (ownership structure-firm performance, industry structure-market competition). In particular, "minority" ownership and "partial" control may point to distinct problems and challenges for corporate governance and industrial organization (agency costs, partial integration).

In this light, two follow-up questions arise as to the purpose and scope of merger review: Why "control" as a jurisdictional criterion? Is there an "ownership threshold" that may clearly indicate (the absence of) control or competitive harm? In order to better appreciate the modern debate on common ownership as a special form of horizontal minority shareholdings that have progressively come to "fall between the cracks" of corporate and competition laws,[7] one needs to have a clear view of the current landscape as regards the legal spectrum and the economic bounds of control under applicable merger control regimes and prevalent theoretical frameworks. The following sections explore these issues in turn.

But first let us define the two "varieties" of common ownership that is the basic analytical distinction and core contribution of this article. Before delving into the details and in order to animate the subsequent discussion, it is useful to draw a graphical image of (what I identify in this article as) "concentrated" and "diffuse" common ownership, by comparison to the case of a full merger. All three scenarios may be perceived as special cases of "common ownership", which directly derives from the theory of "partial ownership".[8] Common ownership may be defined as the simultaneous holding of (part of the) shares of competing firms by the same

[7] Anna Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law: Looking Through the Past to Return to the Future?' in Marco Claudio Corradi and Julian Nowag (eds), *The Intersections between Competition Law and Corporate Law and Finance* (Cambridge University Press 2021) 10.

[8] Daniel P O'Brien and Keith Waehrer, 'The Competitive Effects of Common Ownership: We Know Less Than We Think' (2017) 81(3) Antitrust Law Journal 729, 731, fn 9: "The theory of 'partial ownership' on which the airline, banking, and compensation papers rely for their key explanatory variable was developed in Bresnahan and Salop (1986) and O'Brien and Salop (2000). These papers examine the roles of financial interest and corporate control in determining a firm's pricing incentives. The theory of partial ownership in these papers encompasses what this line of research calls 'common ownership' as a case where two or more firms have a common owner [a third-party investor] that partially owns each of them. Complete mergers also arise as a special case where the merging firms have the same set of owners after the merger."

(sub)set of third-party investors.[9] In a "full" merger or "complete" acquisition, a (set of) common shareholder-investor(s) comes to fully own and control post-merger the two firms that were previously independent. Or said differently, the merged firms have the same common owner(s) post-merger, which happens to be equivalent to a "sole owner" (100% ownership) of each firm, as shown in Figure 1.

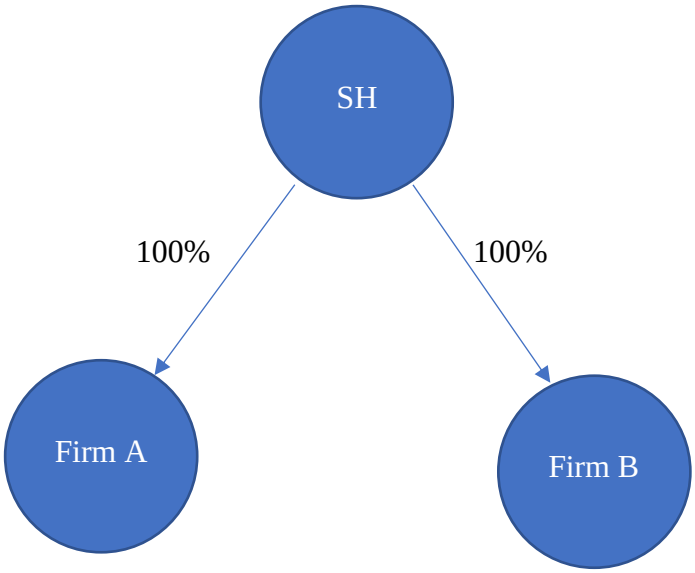

Figure 1. Full merger

(100% ownership, 100% control in both firms)

By definition, common ownership typically refers to cases of less than 100% (partial) ownership in at least one of the commonly held firms (otherwise we would simply have a full merger).[10] Accordingly, in the case of "concentrated" common ownership shown in Figure 2, the common shareholders are depicted to have (up to) full ownership and control (as a 100% sole owner) over one of the commonly held firm yet a totally passive (non-controlling) interest in the other competing firm.[11]

[9] ibid 735, fn 17: "'common ownership' [means] that a common owner holds shares in two or more entities that compete with each other in a market. It is understood that common ownership may involve partial ownership interests by common shareholders in more than one firm."

[10] Daniel P O'Brien and Steven C Salop, 'Competitive Effects of Partial Ownership: Financial Interest and Corporate Control' (2000) 67 Antitrust Law Journal 559, 563: "in our framework, a full merger is a special case of a 'partial' investment of 100 percent that gives the acquiring firm complete control. Partial ownership forces the analyst to grapple with the question of the degree of control or influence that partial owners have over managers, how partial ownership translates into control or influence, and how this influence translates into competitive effects. Thus, unlike most merger analysis, a central part of the analysis of partial ownership is an assessment of which owners have what type of control over the corporation and how this control translates into management decisions."

[11] We assume that the non-controlling stake is of <10% level based on the legal analysis of merger control regimes developed in the section III. This is a rough working definition and thus generalized by necessity for visual

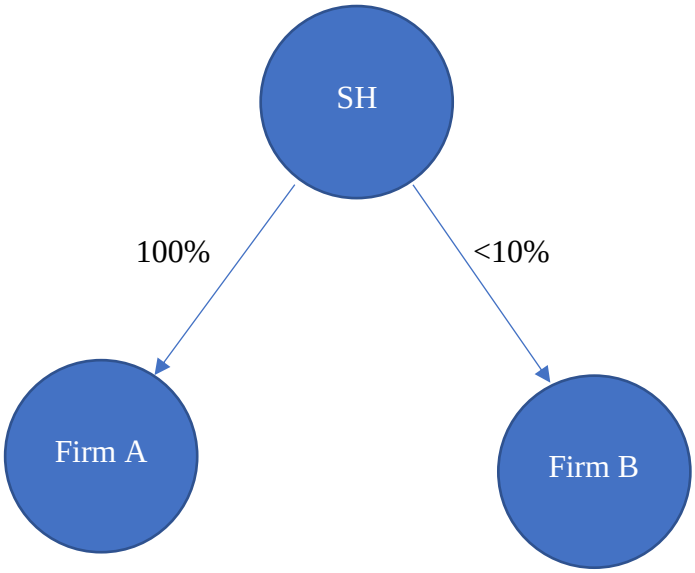

Figure 2. Concentrated common ownership

(full ownership + sole control in one firm, small passive interest in other)

By contrast, in the case of "diffuse" common ownership shown in Figure 3, the common shareholders have minority ownership and control (below 50%) in both commonly held firms at the same time.[12] In differentiating between the two varieties as this article develops, I also explain that it is "diffuse" common ownership that is related to the contemporaneous debate

purposes. We discuss later in detail the potentially relevant thresholds for so called "passive" investments and "non-controlling" shareholdings. Also, the 100% assumption regarding the controlled firm is for illustrative purposes (an assumption of above 50% majority ownership and control would also typically do) to make the analysis more clear and tractable by having full ownership and control over one firm (sole owner) and a small ownership stake with no formal control over the other rival firm (passive owner), for reasons that will become clear in section IV.

[12] O'Brien and Waehrer (n 8) 731: "While it is widely accepted that common ownership can have anticompetitive effects when the owners have control over at least one of the firms they own (a complete merger is a special case), antitrust authorities historically have taken limited interest in common ownership by minority shareholders whose control seems to be limited to voting rights. Thus, if the empirical findings and conclusions in the emerging research are correct and robust, they could have dramatic implications for the antitrust analysis of mergers and acquisitions. The findings could be interpreted to suggest that antitrust authorities should scrutinize not only situations in which a common owner of competing firms control at least one of the entities it owns, but also situations in which all of the common owner's shareholdings are small minority positions. As noted in the first paragraph, such a policy shift is already occurring."; Nicoletta Rosati and others, 'Common Shareholding in Europe' (Publications Office of the European Union 2020) EUR - Scientific and Technical Research Reports (JRC121476) 15: "Scholars have raised concerns that common shareholding can have anticompetitive effects when the owners have majority control over at least one of the firms they own in the same competing market. Yet, little is known about common shareholding by institutional investors: their control seems to be limited to minority shareholdings; however, they collect the voting rights of their customers, therefore gaining some influence over the management decisions of the firms they are mandated to invest in. [...] a major concern [raised in the recent economic literature] is that these common shareholdings, though in minority shares, may create competition distortions in certain sectors."

on the competitive effects arising from minority shareholdings held by common institutional investors (diffuse institutional ownership).[13]

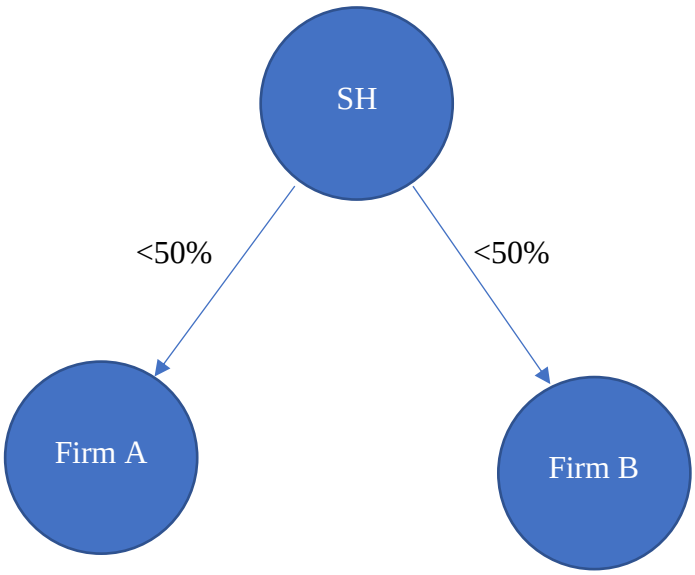

Figure 3. Diffuse common ownership

(minority ownership + partial control in both firms)

There is a double rationale for the choice of terminology for the distinction between the two varieties of common ownership. "Concentrated" common ownership suggests: i) concentration of control in a single *dominant* shareholder ("sole control" - a sole 100% owner being an extreme case of concentrated common ownership, but sole control may also be established in case of "partial" majority control); ii) concentration of (full) ownership and control in a single firm over which control is established *relative* to other commonly held firms that are partially owned by means of lower shareholding participations (<100% - in which case the common owner's "relative financial interest" in the linked firms is clear). On the other hand, "diffuse" common ownership means: i) diffusion of (partial) ownership and control across *many firms* commonly held simultaneously and in parallel, possibly by means of symmetric holdings as in the case of investment via index funds (full shareholder diversification being an extreme scenario whereby all shareholders of all firms hold the market portfolio)[14]; ii) dilution of control to less than fully or solely controlling levels in which case *many common shareholders*

[13] Alessandro Romano, 'Horizontal Shareholding and Network Theory' [2020] Yale Journal on Regulation, Forthcoming (using the term "diffuse institutional ownership" to analyze common ownership by institutional investors or what has also been called in the legal scholarship "horizontal shareholding", specifically referring to common institutional ownership within the same product market). See also Einer Elhauge, 'Horizontal Shareholding' (2016) 129 Harvard Law Review 1267; Fiona Scott Morton and Herbert Hovenkamp, 'Horizontal Shareholding and Antitrust Policy' (2018) 127(7) Yale Law Journal 2026.
[14] José Azar, 'The Common Ownership Trilemma' (2020) 87 The University of Chicago Law Review 263.

may have minority control over the commonly held firms relative to other dispersed shareholders.[15]

It follows from the above that the relative benchmark for assessing the two varieties of common ownership is very different. This is because the most anticompetitive harm potential is reached in case of "focused" majority ownership and concentrated power over at least one commonly owned firm (asymmetric common control) for concentrated common ownership[16] while in case of perfectly "symmetric" and parallel ownership of all the commonly held firms (symmetric common control) for diffuse common ownership, other things being equal.[17] In the special case of a full merger, these qualities happen to coincide: full common control and identical financial interests are found in the complete union of the previously independent merging firms.[18]

[15] O'Brien and Waehrer (n 8) 741: "As the number of non-common owners becomes larger (as $I1$ becomes larger), the incentive term $C12$ grows. This captures the idea that a common owner's influence over the manager rises as the other owners' shareholdings become more diffuse.". Absent a large dominant shareholder in firm governance (with majority ownership and control) and given the corporate law "one-share-one-vote" principle, the competitive effects of common minority ownership are estimated based on a "proportional control" assumption, which essentially implies for any positive level of common ownership among rival firms there is some potentially anticompetitive effect even if produced by small, minority shareholdings. More generally, the magnitude and likelihood of the effect depends on particular corporate governance and control assumptions. Azar, Schmalz and Tecu (n 1) (using the "proportional control" assumption, which holds that effective control is proportional to the fraction of control rights held or to the fraction of votes held [i.e. proportional to the number of shares the respective investor beneficially owns], in empirical research to calculate the MHHI; but also relaxing it and testing alternative control scenarios e.g. by using Banzhaf indices of voting power [defined as the probability that a shareholder is pivotal in an election with two options [perhaps directors] when the other shareholders randomize their voting with equal probability for each option] and finding that the proportional control assumption is not driving the baseline results).

[16] O'Brien and Salop (n 10) 578 ("Total control sometimes leads to the largest and potentially the least competitive incentives and outcome of all the control scenarios. Prices are highest and output is lowest"); Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law' (n 7) 21 (suggesting that with the rise of portfolio diversification and common ownership "the resultant widely diversified ownership structures [shareholder overlaps in many competing firms across industries] may well make firm specific or market structure irrelevant, signaling a fundamental change not from firm 'independence' to inter-firm 'control' [the focal point of traditional antitrust analysis], but from shareholder 'focus' to investor 'indifference' [the new corporate reality brought about by financial innovation]").

[17] Lysle Boller and Fiona Scott Morton, 'Testing the Theory of Common Stock Ownership' [2019] NBER Working Paper No. w27515 6–7: "One interesting property of MHHI is its sensitivity to ownership symmetry. If common owners are exactly symmetric in holding the same percentage of the same set of companies, ownership is equal to control, and other owners [retail investors] are atomistic, then in this model the monopoly outcome is achieved. This is true whether the common owners each hold 2% or 20% of the competing companies."; Matthew Backus, Christopher Conlon and Michael Sinkinson, 'Common Ownership in America: 1980-2017' American Economic Journal: Microeconomics, forthcoming 9: "relative investor concentration is responsible for all asymmetry between profit weights [of linked firms]"; O'Brien and Salop (n 10) 612 (noting that the "MHHI and PPI deltas depend [...] on the ratios of the within-firm and across-firms concentration of ownership and control").

[18] Stanley M Besen and others, 'Vertical and Horizontal Ownership in Cable TV: Time Warner-Turner (1996)' in John E Kwoka and Lawrence J White (eds), *The Antitrust Revolution: Economics, Competition, and Policy* (3rd ed, Oxford University Press 1999) 464: "A complete merger creates common control over and identical financial interests between two previously independent firms."; 467: "The difference between the changes [deltas] in the HHI and the MHHI arises from the difference between the factors that are used to multiply the products of the merging firm's shares. The product of the market shares is multiplied by 2 in calculating the HHI to take into account the fact that each firm is effectively a half-owner of the other and has full control over its output. The product of the market shares is multiplied by the partial ownership share in calculating the MHHI to take into

Moreover, seen from a post-merger (*ex post* legal) perspective, "concentrated" and "diffuse" common ownership may be thought to roughly correspond to situations of a partial "controlling" acquisition or a partial "non-controlling" acquisition respectively.[19]

III. Merger control regimes and the spectrum of control

Merger review is the "one-off", usually *ex ante*, "process to determine whether a more durable combination of previously independent assets is likely to materially change incentives as to how the assets are used in the competitive process".[20] The aim of merger control is thus to target and scrutinize transactions such as full mergers or acquisitions of ownership and control that are "sufficiently material", in terms of size of the parties or the transaction or shareholding, and "may harm competition" through structural changes in the market that may create durable market power.[21] The concept of "control" is a key foundation both for the legal definition of a notifiable merger transaction and also for the economic theories of harm associated with mergers and acquisitions. The underlying economic logic is that "in most horizontal mergers, two competitors come under common ownership and control, completely and permanently eliminating competition between them".[22] Accordingly, legal jurisdictions generally agree that full mergers and "majority" acquisitions be subject to their merger control rules.

In contrast, the treatment of "minority" acquisitions varies greatly under different merger control regimes. Certain forms of "controlling" or competitively "influential" minority shareholdings are to different degrees captured by merger control statutes. On the other hand, although the potential anticompetitive effects of "non-controlling" or purely "passive"

account the fact that one firm has a [passive] partial ownership interest in its rival and neither firm has any control over the output of the other." It is in this sense that a full merger may be seen as a departure from previous complete independence and towards a perfect form of collusion, as Stigler had noted (n 4 above).

[19] O'Brien and Waehrer (n 8) 737–738: "Building on Bresnahan and Salop (1986), O'Brien and Salop (2000) generalized the framework for assessing the effects of partial ownership to cover cases where 3rd party investors acquire multiple firms in the same industry. They also proposed a way to quantify how a shareholder's fractional financial interest in a firm translates into the shareholder's control over the firm's managers. [...] The theory accommodates complete mergers, controlling partial investments, and non-controlling partial investments as special cases."

[20] OECD, 'Definition of Transaction for the Purpose of Merger Control Review' (2014) Policy Roundtable DAF/COMP(2013)25 5.

[21] ibid 5–6. Merger control regimes use different "objective" (numerical) criteria and/or more "economic" criteria (open-ended standards) to single out M&A transactions for review. For instance, the first category is used to specify (ownership) percentage thresholds for share acquisitions in the target, while the second category aims to select potentially problematic transactions (e.g. "by focusing on whether a transaction will enable a firm to acquire the ability to exercise some form of influence over a previously independent firm").

[22] US Horizontal Merger Guidelines 2010 §13. See also UK Enterprise Act 2002, Section 26(1).

shareholdings have long been recognized,[23] the harm potential is often not considered likely, material or predictable enough to justify scrutiny of *all* minority shareholding transactions under *ex ante* merger control procedures.[24] Indeed, the institutional design of merger control systems underscores a tension between effectively addressing competitive concerns and additional administrative cost or lack of practicality.[25] Competition regulators have diverging opinions in striking this balance. Nonetheless, it is important to note that if the relative proportions of any of the elements that are weighed on both sides of the scale (e.g. increased likelihood or materiality of harm, possibility of a workable solution) change, revisions of existing merger control rules may be justified in "error-cost" terms.[26]

Figure 4 provides a visual overview of some prominent merger control systems and the legal tests they apply to capture majority or minority acquisitions. As it may be seen, the range of applicable ownership thresholds as well as the extent and intensity of control or influence examined for varying levels of shareholding acquisitions differs widely, depending also on the surrounding legal, economic and administrative environment (e.g. complementary corporate and securities laws, financial markets context, multilevel governance as between the EU and its Member States). Although a comparative analysis has been extensively treated elsewhere,[27]

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[23] Robert J Reynolds and Bruce R Snapp, 'The Competitive Effects of Partial Equity Interests and Joint Ventures' (1986) 4 International Journal of Industrial Organization 141; Timothy F Bresnahan and Steven C Salop, 'Quantifying the Competitive Effects of Production Joint Ventures' (1986) 4 International Journal of Industrial Organization 155; David Flath, 'When Is It Rational for Firms to Acquire Silent Interests in Rivals?' (1991) 9 International Journal of Industrial Organization 573; O'Brien and Salop (n 10); David Gilo, 'The Anticompetitive Effect of Passive Investment' (2000) 99(1) Michigan Law Review 1.

[24] European Commission, Green Paper on the Review of Council Regulation (EEC) No 4064/89, COM(2001) 745 final, paras 107-109: "The Merger Regulation, however, does not apply to acquisitions of minority shareholdings, unless, due to other factors, a situation of legal or *de facto* control is established. Still, it may be the case that a minority shareholding (potentially coupled with interlocking directorships) may alter the linked companies' incentives to compete and thus have an impact upon market conditions. [...] At this stage the Commission is not in the possession of comprehensive data as to the prevalence of minority shareholdings and interlocking directorships. However, based on current experience, it appears that only a limited number of such transactions would be liable to raise competition concerns that could not be satisfactorily addressed under Articles [101] and [102 TFEU]. Under this assumption it would appear disproportionate to subject all acquisitions of minority shareholdings to the *ex ante* control of the Merger Regulation. At the same time it appears doubtful whether an appropriate definition could be established capable of identifying those instances where minority shareholdings and interlocking directorships would warrant such treatment."

[25] European Commission, White Paper, 'Towards More Effective EU Merger Control', COM(2014) 449 final.

[26] For Easterbrook's pioneering contribution and a recent synopsis of the "error-cost" framework of antitrust analysis and related literature, see Frank H Easterbrook, 'The Limits of Antitrust' (1984) 63 Texas Law Review 1; Jonathan B Baker, 'Taking the Error Out of "Error Cost" Analysis: What's Wrong with Antitrust's Right' (2015) 80 Antitrust Law Journal 1.

[27] Anna Tzanaki, 'The Legal Treatment of Minority Shareholdings Under EU Competition Law: Present and Future' [2015] Essays in Honour of Professor Panayiotis I. Kanellopoulos, Sakkoulas Publications, Athens 861, 878–881; European Commission, 'Support Study for Impact Assessment Concerning the Review of Merger Regulation Regarding Minority Shareholdings' (2016) Report by Spark Legal Network and Queen Mary University of London; OECD, 'Antitrust Issues Involving Minority Shareholdings and Interlocking Directorates' (2009) Policy Roundtable DAF/COMP(2008)30.

I provide below a summary of the main positions and key differences among the merger control regimes of major jurisdictions in Europe and the United States where evidence and policy attention to the significance of the common ownership phenomenon has been gathering.[28]

Figure 4. Spectrum of (legal) control or influence –
Merger control tests for varying levels of shareholding acquisitions

No merger ⟷ Full merger

0% 10% 25% 50% 100%

Legal jurisdiction	**Minority shareholdings**			**Majority acquisitions**
EU	Non-controlling acquisitions	Decisive influence (negative/ joint) - *De facto* control - Minority block position * *de facto* blocking minority <25% / "plus factors" for >5-20% under EUMR reform proposal		Decisive influence (*de jure*) - Full merger - Sole control
Germany	No influence (*soft* safe harbor)	Competitively significant influence (*de facto*: *as if* >25% / jointly)	Minority block position >25% (presumed legal influence)	Control acquisitions - Full merger - Sole control
UK	No influence	Material influence/ *de facto* control - Presumed: >25%		Controlling interest (*de jure*) - Full merger

[28] Simona Frazzani and others, 'Barriers to Competition through Joint Ownership by Institutional Investors' (2020) Study for the Committee on Economic and Monetary Affairs, European Parliament, Luxembourg; Rosati and others (n 12); Germany's Monopolkommission, 'Biennial Report XXII: Competition 2018' (3 July 2018), Chapter II; Note by the United Kingdom, 'OECD Roundtable on Common Ownership by Institutional Investors and Its Impact on Competition' (2017) DAF/COMP/WD(2017)92 9–12; 'U.S. FTC Hearings on Competition and Consumer Protection in the 21st Century, Panel #8: Common Ownership' (*Federal Trade Commission*, 6 December 2018).

	(*soft* safe harbor)	- "Plus factors": >15%	- Sole control
USA	Partial acquisitions - no notification: ≤10% (passive investment) or ≤15% for institutional investors * reporting: >1% *aggregate* institutional holdings under HSR reform proposal (unless passive)		Control acquisitions - Full merger - Sole control

The most conservative is the EU approach that employs a "decisive influence" test to determine which transactions fall within its merger control regime.[29] Under the EU Merger Regulation ("EUMR"),[30] the "possibility of exercising decisive influence" may be established either on a standalone basis ("sole control")[31] or jointly with other shareholders ("joint control"). Acquisitions of below 50% of voting shares may lead to a finding of effective control ("*de facto* control") if the remaining shareholder base is very dispersed and the acquirer has in practice the largest (minority) stake in the target, which effectively means that it is "highly likely to achieve a lasting majority of the votes cast at the shareholders' meetings, given the evidenced presence of shareholders at past meetings and the voting patterns in previous years".[32] In addition, "joint control" may be found on the basis of : i) "equal voting or board representation rights", i.e. equality of two parent companies in a joint venture; ii) "strategic veto rights", i.e. power to block strategic decisions, when a supermajority of votes is required, resulting in deadlock situations (*de jure* blocking power); iii) "joint exercise of voting rights" or "stable coalitions" between minority shareholders, i.e. if they act together as a group and are able to jointly achieve an *ex ante* certain and stable majority in corporate decision-making (majority voting bloc); or iv) "strong common (strategic) interests", i.e. if they are expected not to act against each other in exercising their rights and are required to cooperate in practice

[29] For detailed guidance on its application, see European Commission, Consolidated Jurisdictional Notice under Council Regulation 139/2004 on the control of concentrations between undertakings [2008] OJ C 95/1.
[30] Council Regulation (EC) No 139/2004 of 20 January 2004 on the Control of Concentrations Between Undertakings [2004] OJ L 24/1.
[31] *De jure* sole control is clearly established for "majority" share acquisitions (above 50% of voting shares) but may also be established by means of contracts or special rights attached to "minority" shareholdings (e.g. disproportionate voting or special veto rights, special management or board representation rights). See Articles 3(1)(b) and 3(2) of the EUMR.
[32] Tzanaki, 'The Legal Treatment of Minority Shareholdings Under EU Competition Law' (n 27) 867 (footnote 36).

(*de facto* collective action).[33] "Non-controlling" minority shareholdings or "changing (voting) coalitions" are not captured by the EUMR.[34] However, in recent reform proposals the European Commission considered of extending the EUMR to situations of shareholdings giving rise to a "*de facto* blocking minority" (as in some Member States, below a legal threshold of 25%) or shareholdings above 5% that combined with "additional factors" may establish a "competitively significant link".[35]

EU Member States such as Germany and Austria apply lower control thresholds than "decisive influence". In Germany,[36] any acquisition of shares of 25% is automatically subject to its merger control rules, whereas shareholdings below 25% are reviewable if they give rise to a "competitively significant influence",[37] which is construed by case law as a position of *de facto* influence comparable to that of a shareholder of 25% shares or voting rights.[38] In practice, this latter test only rarely will capture minority interests below 10%,[39] although, in theory, there is no "safe harbor".[40] Furthermore, "competitively significant influence" may be found to be exercised jointly by several companies, in which case a "joint possibility of influence" may be established on a *de facto* basis or requires a "common interest which goes beyond the joint participation as such", according to the case law.[41]

Similarly, UK merger control rules may apply to acquisitions of minority shareholdings that confer the ability to exercise "material influence" over the target.[42] Such influence is presumed for shareholdings with voting rights above 25% but may also be found for shareholdings of

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[33] Jurisdictional Notice (n 29), paras 62-82.
[34] Anna Tzanaki, 'The Regulation of Minority Shareholdings and Other Structural Links between Competing Undertakings: A Law & Economics Analysis' (Doctoral Thesis, UCL (University College London) 2017); Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law' (n 7) 15 (footnote 64).
[35] White Paper (n 25), para 47; European Commission, Staff Working Document accompanying the White Paper, 'Towards More Effective EU Merger Control', SWD(2014) 221 final, paras 90-93.
[36] The Austrian merger control regime is basically similar to the German one.
[37] Act against Restraints of Competition (Gesetz gegen Wettbewerbsbeschränkungen, "GWB") §37(1)3.b and 4.
[38] Sabine Zigelski, 'Der Wettbewerblich Erhebliche Einfluss Wird 20' (2009) 59 Wirtschaft und Wettbewerb 1261; Jens Peter Schmidt, 'Germany: Merger Control Analysis of Minority Shareholdings – A Model for the EU?' (2013) 2 Concurrences N° 51496 207, 208 ("the influence must be established by means of corporate law [...] The acquisition must further grant the acquirer[s] in light of additional *de jure* or *de facto* circumstances [so-called 'plus factors'] on a lasting basis the status of a minority shareholder with a blocking minority.").
[39] OECD (n 27) 22 and 93.
[40] Thomas Wilson and James Parkinson, 'Minority Shareholdings: An Overview of EU and National Case Law' [2020] e-Competitions Bulletin, Art. N° 95354 4.
[41] Note by Germany, 'OECD Roundtable on Common Ownership by Institutional Investors and Its Impact on Competition' (2017) DAF/COMP/WD(2017)87 7 (footnote 22).
[42] Enterprise Act 2002, Section 26(3). A relevant "merger situation" may exist under the Act on the basis of three levels of control: i) a "controlling interest" (*de jure* control); ii) "ability to control" (*de facto* control); or iii) "material influence" (minority control).

15% or more (e.g. based on the "acquirer's ability to influence the target's policy through exercising voting rights at shareholders' meetings", together with "any additional supporting factors"). Exceptionally, also shareholdings below 15% may attract scrutiny.[43] The CMA has wide "discretion" in applying the "material influence" test and in theory there is no minimum shareholding threshold that excludes such influence.[44]

The US merger control regime is the most far-reaching. In the United States, any acquisition of stock is subject to scrutiny and may be challenged under Section 7 of the Clayton Act, where the effect "may be substantially to lessen competition".[45] The Horizontal Merger Guidelines include a section on "partial acquisitions"[46] that provides the circumstances under which these are analysed as mergers, i.e. if they result in "effective control", or pursuant to a distinct analysis considering "any way they may affect competition". In the latter case, the US agencies focus on "three principal effects": i) the acquirer's ability to influence the competitive conduct of the target (e.g. through a "voting interest" or "specific governance rights"); ii) a reduction in the acquirer's incentive to compete (e.g. "because it shares in the losses" inflicted on the rival, in which it acquires a minority position); iii) the acquirer's access to the target's non-public, competitively sensitive information.[47] In general, the Hart-Scott-Rodino ("HSR") Act[48] requires premerger notification for acquisitions of "voting securities" above certain thresholds, irrespective of obtaining any control or influence[49] or the existence of a "competitive link" between the parties.[50] However, the reporting rules exempt acquisitions of 10% or less that are made "solely for the purpose of investment"[51] (filing exemption) or analogously acquisitions of 15% or less made by "institutional investors"[52]. Although the US regime provides for a

[43] UK Competition and Markets Authority ("CMA"), Mergers: Guidance on the CMA's jurisdiction and procedure, January 2014, paras 4.15-4.22. In assessing a particular minority shareholding, the CMA will have regard to all circumstances of the case and relevant factors may include: i) the distribution and holders of the remaining shares, ii) patterns of attendance and voting at shareholders' meetings, iii) existence of any special voting or veto rights, iv) other special provisions in the target company's constitution conferring material influence, v) the acquirer's status and expertise, and its influence with other shareholders.
[44] UK Merger Assessment Guidelines, September 2010, Section 3.2.6.
[45] 15 U.S.C. §18.
[46] US Horizontal Merger Guidelines 2010 §13: "The Agencies therefore also review acquisitions of minority positions involving competing firms, even if such minority positions do not *necessarily* or *completely* eliminate competition between the parties to the transaction".
[47] Ibid.
[48] 15 U.S.C. §18a.
[49] OECD (n 27) 197.
[50] European Commission (n 28) 33.
[51] 15 U.S.C. § 18a(c)(9). The US agencies' implementing rules provide that "voting securities are held or acquired "solely for the purpose of investment" if the [holder or acquirer] "has no intention to participate in the formulation, determination, or direction of the basic business decisions of the issuer" (16 C.F.R. § 801(1)(i)).
[52] 16 C.F.R. § 802.64(b).

similar "solely for the purpose of investment" exemption from liability under Section 7 of the Clayton Act (substantive exemption), this is inapplicable in case of "any influence", e.g. by "passive" institutional investors who are "active owners" in their governance activities, or "actual anticompetitive effects" even after completion of the acquisition.[53] Interestingly, the US antitrust agencies have recently proposed two amendments to the HSR Act reporting rules: 1) requiring aggregation of holdings of all "associates"[54] within the more-broadly defined acquiring "person"; and 2) introducing a new "*de minimis* exemption" for acquisitions 10% or less "without an examination of intent", "when they are unlikely to violate the antitrust laws", unless: i) the acquiring person has a "competitively significant relationship" with the issuer; or ii) "the acquiring person (and its associates) hold more than 1% in a competitor of the issuer on an aggregate basis"; or iii) "someone from the acquiring person is an officer or director of the issuer or a competitor of the issuer".[55] The second exception to the proposed exemption is expressly motivated by the current debate on common ownership and seeks to "ensure the Agencies receive filings that provide insights into the influence of holdings in competitors".

IV. Competition effects and channels of transmission

Given the above analysis, what could be the economic rationale(s) for the disparate legal treatment of minority acquisitions that involve *small* shareholdings (e.g. below 10%) or affording varying degrees and kinds of influence ability (e.g. "*non-controlling*" or *de facto* "influential"[56] or "passive" shareholdings), if any? Is it that the marginal or overall effects on competition and welfare of such small or lesser influential minority acquisitions are less problematic from an economic point of view? While such views have been expressed in the

[53] Elhauge, 'Horizontal Shareholding' (n 13) 1305–1312 (who extensively analyzes the scope of both the substantive and the filing "passive investment" exemptions, and suggests a change in the US agencies' interpretation of the latter so that filing is required "whenever a set of large shareholders plans to vote shares that, in aggregate, are more than 10% of the stock in multiple competing corporations". Currently, the agencies' guidance suggests that merely voting does not automatically exclude "passive intent", but that the filing exemption is inapplicable when: [1] Nominating a candidate for the board of directors of the issuer; [2] proposing corporate action requiring shareholder approval; [3] soliciting proxies; [4] having a controlling shareholder, director, officer or employee simultaneously serving as an officer or director of the issuer; [5] being a competitor of the issuer; or [6] doing any of the foregoing with respect to any entity directly or indirectly controlling the issuer. Nonetheless, as Elhauge notes, horizontal investors individually holding less than 10-15% "can nonetheless significantly alter the competitive incentives of corporate management by simply voting their shares" and this effect is amplified considering that "collectively their share of corporate stock may be far higher than 10–15%".).

[54] Previously, reporting was required only for "associates" with controlling or minority interests in entities active in the same line of business as the target (a similar reporting requirement exists in the EU for "affiliates" of the parties to a notifiable merger). See Tzanaki, 'The Legal Treatment of Minority Shareholdings Under EU Competition Law' (n 27) 881 (footnote 138).

[55] FTC Notice of Proposed Rulemaking (n 4).

[56] Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law' (n 7) 13–27 (distinguishing between different shareholding types and analyzing the antitrust implications of "controlling", "passive" and "influential" minority shareholdings).

literature, such overgeneralization of the competitive implications of partial acquisitions is not justified in principle. The economic analysis is more complex and needs to be granular, which means that the economic and legal or institutional context and specific details in each individual case may matter to determine the impact of partial acquisitions on both industry and firm performance.

More specifically, the potential competition effects of partial acquisitions are the product of three particular factors: i) market structure, ii) ownership structure, and iii) governance structure.[57] For instance, in (almost) perfectly *competitive markets* the effects of such acquisitions between actual or potential competitors may be unlikely or negligible as aggressive product market competition (and the competitive constraints posed by other independent competitors) is expected to discipline any anticompetitive instincts of the partially linked rival firms. Furthermore, in corporate settings where there is a discernibly dominant shareholder with total control of the firm (or a homogenous group of shareholders with majority control over the board of directors and corporate management), the likely competitive threat or impact of minority shareholding acquisitions is also considered to be insignificant or inconsequential in terms of its implications for business strategy or general firm governance. Under these conditions, minority shareholdings albeit in rivals can be safely considered "passive" in the antitrust sense (no *market power* motive or effect) in that they are not prone to produce material competitive concerns.[58]

[57] Heiko Karle, Tobias J Klein and Konrad O Stahl, 'Ownership and Control in a Competitive Industry' [2011] ZEW Discussion Paper No. 11-071; Nadav Levy, Yossi Spiegel and David Gilo, 'Partial Vertical Integration, Ownership Structure, and Foreclosure' (2018) 10 American Economic Journal: Microeconomics 132.

[58] Enzo Moavero Milanesi and Alexander Winterstein, 'Minority Shareholding, Interlocking Directorships and the EC Competition Rules - Recent Commission Practice' (2002) 1 Competition Policy Newsletter 15, 15 ("it follows [from EU case law] that there is a 'safe haven' for minority shareholdings in competitive markets and without accompanying voting/representation rights, interlocking directorships, special rights [such as share options] or post-transaction cooperation arrangements."); Tzanaki, 'The Regulation of Minority Shareholdings and Other Structural Links between Competing Undertakings' (n 34) 16 (drawing a clear distinction between the antitrust versus the commonly used corporate law and finance definition of "passivity" as regards minority shareholdings, and suggesting that the latter "is least useful or in fact misleading from a competition policy perspective, for two major reasons: i) it focuses on direct influence (corporate/economic control) or incentives (short-run unilateral effects) and ignores any indirect or informal influence and incentives (strategic effects, long-run market interactions) potentially produced by minority share acquisitions; and ii] it implies that 'passive' shareholdings are innocuous or have less significant competitive implications." That is because, while the criterion for corporate or investment passivity is the [absence of] active influence over the target firm in which the shareholding is acquired, passivity in the antitrust sense focuses on the [absence of] actual or potential economic effect on competitive outcomes, i.e. any competitively relevant influence on the linked firms' incentives to compete or strategically interact. It is therefore possible that a formally "passive" shareholding in the corporate sense may actually be "influential" in the antitrust sense depending on the surrounding market and other circumstances.).

In this light, a public policy supporting the more lenient legal treatment of small, non-controlling minority acquisitions and justifying the current merger law structure in certain jurisdictions may implicitly rest on the following double premise and default assumptions: i) the presence of *competitive constraints* in rigorously functioning product markets, ii) the presence of some *controlling shareholder(s)* disciplining and directing firm management and behavior within corporate governance.[59] Both of these forces – competition in product markets and antagonism in corporate governance[60] – would plausibly and presumably counteract competitive concerns arising from non-controlling minority shareholdings.[61] Besides,

[59] Further governance constraints may exist in the form of corporate law fiduciary duties; however, not all legal systems uniformly recognize such duties to be imposed on minority shareholders (for all types of corporations). For a comparison of US and German law, as two major representative jurisdictions with common law versus civil law systems, see Sophia Dai and Christian Helfrich, 'The Structure of Corporate Ownership and Control' [2016] Comparative Corporate Governance and Financial Regulation. Paper 9. 6, 12–13 ("Under US corporate law, minority holders like activists would not owe any fiduciary duties to other shareholders. [...] In the U.S., the courts give significant guidance on the fiduciary duties directors owe to corporations to maximize value. Although traditionally expressed as duties to the corporation, the only group allowed to bring derivative suits against directors and management for breaches of their duties are shareholders [and creditors of insolvent companies]. The same fiduciary duties that are owed to shareholders by the board are not owed equivocally by the shareholders to each other or to the corporation. What this means is that investors often have the freedom to vote for governance or business decisions that will primarily benefit themselves, even if at the expense of the corporation, other shareholders, and stakeholders. [...] The duty prohibits controlling shareholders [i.e. investors generally holding more than 50% of shares, unless they hold a large enough voting block that they can influence the board without soliciting help from other shareholders] from exercising their controlling influence in such a way to extract private gains for themselves that are in detriment to the minority's interests, but this application of duties on shareholders is rare."); JAC Hetherington, 'The Minority's Duty of Loyalty in Close Corporations' (1972) 1972 (5) Duke Law Journal 921, 933–935 (noting that duties on minority shareholders regarding the exercise of their voting rights are exceptional on the assumption that they have congruent interests with other shareholders in promoting firm and stock value, and may arise only when their vote is decisive); Andreas Cahn, 'The Shareholders' Fiduciary Duty in German Company Law' in Hanne S Birkmose (ed), *Shareholders' Duties* (Kluwer Law International 2017) 354 (In case minority shareholders have blocking power, "the rationale underlying the shareholders' fiduciary duty, namely the need to ensure that the power to affect the investment of one's fellow shareholders is not abused by promoting individual interests at the expense of the company, applies not only to the majority but also to the minority.").

[60] Theory and evidence suggest that there is an interplay between these two forces. First, perfect competition acts as a substitute for corporate governance (no agency costs) and second, it is imperfect competition that creates the corporate governance antagonism (competition for rents). On the competition for (monopolistic or oligopolistic) rents not only between firms but also among actors (shareholders, managers, employees) inside firms, see Mark J Roe, *Political Determinants of Corporate Governance: Political Context, Corporate Impact* (Oxford University Press 2006) 125–129. On how industry structure carries over to and creates a fit with corporate governance institutions in maximizing social welfare, see Mark J Roe, 'The Shareholder Wealth Maximization Norm and Industrial Organization' (2001) 149 University of Pennsylvania Law Review 2063, who further suggests that "high monopoly rents fit less well with shareholder primacy than does a competitive product market" and that "strong capital markets [cannot] easily overcome weak product markets and induce strong shareholder results". For empirical evidence showing that corporate governance significantly increases firm value in non-competitive industries only and that product market competition substitutes for corporate governance quality, see Manuel Ammann, David Oesch and Markus M Schmid, 'Product Market Competition, Corporate Governance, and Firm Value: Evidence from the EU Area' (2013) 19 European Financial Management 452; Julia Chou and others, 'Product Market Competition and Corporate Governance' (2011) 1 Review of Development Finance 114.

[61] In this context, the presence of many (independent) firms and/or many (diverse) shareholders keeps the competitive tone high effectively stymieing any tendencies to influence market or governance outcomes by exercising market power or corporate power (and securing private benefits in the form of supra-competitive profits or private benefits of control that may occur if industry or corporate ownership is concentrated but are not sustainable otherwise).

economic theory suggests that intense rivalry among market players and shareholder control over corporate managers ensure that firm behavior is generally induced and constrained to maximize profits and minimize cost and managerial slack.[62] In fact, intense product market competition may as a general matter reduce "private benefits of control", meaning any kind of corporate "agency costs" regardless of whether their source is management (usually in publicly listed, widely held firms) or controlling blockholders (in firms with concentrated ownership) being in control of the firm.[63]

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[62] Luís MB Cabral, *Introduction to Industrial Organization* (MIT Press 2000) 38 ("Product market competition may also contribute to aligning shareholders' and manager's objectives. The idea is that, when product market competition is intense, firms cannot survive unless they maximize profits. [...] A second reason [...] is that competitors provide useful signals about the firm's productivity. In other words, they reduce the shareholders' informational disadvantage with respect to the manager."), 40 ("Although management and ownership are normally separated, there are reasons to believe that deviations from profit maximization cannot be too large. These reasons include management incentive contracts, labor market discipline, product market discipline, and capital market discipline. The precise meaning of 'not too large,' that is, the extent to which profit maximization is a good approximation, remains an unresolved empirical question."); Dennis W Carlton and Jeffrey M Perloff, *Modern Industrial Organization* (Pearson/Addison Wesley 2005) 17 ("This control over the board of directors and over the managers may be inadequate to ensure profit-maximizing behavior. Therefore, according to Berle and Means, the actions of corporations cannot be predicted by a traditional economic analysis based on profit maximization. […] One interpretation of Berle and Means is that they were focusing attention on the monitoring problems and conflicts that arise as a firm grows. There is nothing inefficient about incurring costs as long as they are offset by benefits [e.g. of larger size and the ability to raise money cheaply]."); Paul L Joskow and Alvin K Klevorick, 'A Framework for Analyzing Predatory Pricing Policy' (1979) 89(2) Yale Law Journal 213, 233–234, fn 50 ("In the macroeconomic theory of firm behavior, cost minimization follows from one of two assumptions: [i] the objective of the firm's management is to maximize short-run profits or, alternatively, [ii] there are numerous competitors or there is easy entry so that those firms that survive in the long run will be cost minimizers whether or not specific individual firms observed at any particular time are cost minimizers. [...] In reality, neither of these assumptions necessarily holds in those markets that are likely to be of most concern to antitrust monopoly policy. Managerial objectives may include other variables besides profits [...]. See [e.g.] Williamson, *Managerial Discretion and Business Behavior*, 53 AM. ECON. REV. 1032, 1033-38 [1963]. Or, there may be so few competitors, or entry may be so difficult, that competition does not perform its 'natural selection' role. As a result, a dominant firm may depart from cost minimization and waste resources; this phenomenon has been referred to as 'X-inefficiency,' see Leibenstein, *Allocative Efficiency vs. 'X-Efficiency*,' 56 AM. ECON. REV. 392 [1966], or 'organizational slack,' see R. CYERT & J. MARCH, A BEHAVIORAL THEORY OF THE FIRM 36-38 [1963]. [...] Whatever the reason, departures from cost minimization, which seem most likely to occur in markets with monopoly characteristics, represent real social costs of monopoly, costs which antitrust policy should seek to eliminate."); Bengt R Holmstrom and Jean Tirole, 'The Theory of the Firm' in Richard Schmalensee and Robert D Willig (eds), *Handbook of Industrial Organization*, vol 1 (Elsevier 1989) 95–97 (similarly discussing the interplay between product market discipline and organizational slack and the possible channels through which competition may reduce managerial incentives to slack off, e.g. explicit incentive schemes, concern for reputation, the price mechanism as an implicit incentive scheme and a signal of other firms' productivity and performance; but also cautioning that "[t]he complete argument is more complicated, because one has to consider changes in the incentive schemes in response to competition. The particular preference structure [assumed] plays a critical role here [and different assumptions may lead to reversed conclusions]. This was pointed out by Scharfstein."); see David Scharfstein, 'Product-Market Competition and Managerial Slack' (1988) 19 The RAND Journal of Economics 147.

[63] This is a two-way relationship in that product market competition affects the private benefits of control and *vice versa*. See respectively, Maria Guadalupe and Francisco Perez-Gonzalez, 'Competition and Private Benefits of Control' [2010] AFA 2007 Chicago Meetings Paper (showing that increases in the intensity of competition reduce both the level and the dispersion of private benefits of control); Jacques Thépot, 'Private Benefits and Product Market Competition' (2013) 79 Recherches économiques de Louvain/ Louvain Economic Review 5 (discussing how private benefits affect the value of the firms in imperfect competitive industries and emphasizing that

Against this backdrop, it may be accurate to state that the minority shareholdings' threat to competition is not continually present or substantial.[64] Also, the line drawn between controlling and non-controlling acquisitions and the interpretation of the Horizontal Merger Guidelines in this regard becomes meaningful. That is, merger policy generally recognizes that unlike full mergers or controlling acquisitions where independent competition is "completely and permanently" substituted by common control,[65] partial minority acquisitions may not "necessarily or completely" eliminate competition between the parties to the transaction.[66] Said differently, "minority" ownership and "partial" control may prove problematic only in certain but not all market and corporate settings. This further suggests that when the ownership or control acquired is not complete, the *absolute* size of the ownership or control stake in isolation is not a good proxy for (the lack of) competitive harm. Indeed, the key driver of any effects on competition will be the industry structure in combination with the *relative* ownership or control stake in a rival firm.[67] At the same time, differences in the structure of merger control systems could be in principle justified, at least in part, based on the relative empirical prevalence and potency of the above two forces (vibrant market competition and strong corporate governance) and related institutional and organizational factors (e.g. varieties of capitalism, embracing to varying degrees a shareholder or stakeholder model of governance and corporate regulation,

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[shareholder or] managerial opportunism may not necessarily hurt firm value or undermine shareholder value because part of the [oligopoly] rent is restored precisely due to such opportunism, and further noting at 19 "[p]rivate benefits generate costs which create in turn [cost and] price distortions on the product market and this may affect the profits of the firms in a positive sense since the firms adopt less aggressive strategies. In this context corporate governance rules are useless when the intensity of competition in the product market is strong enough.").

[64] Phillip E Areeda and Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application*, vol 5 (3rd ed., Aspen Publishers 2009) ¶1203d, 288-289: "To state such possible anticompetitive effects [of partial stock acquisitions] is not to suggest that they will always or usually be present or substantial. […] Indeed, more lenient treatment might be defended on the ground that the competitive threat is weaker. A total acquisition necessarily substitutes common control for independent competition. A noncontrolling acquisition has no intrinsic threat to competition at all. And a very small holding or a small share of another — whether rival, supplier, customer, or occupant of a market into which entry is contemplated — is not likely to affect anyone's behavior. Unfortunately, there is no formula that can describe the likelihood of such effects for the generality of cases or even for the particular case." This position is similar to the EU's stance reflected in the 2001 Green Paper (n 24) where the perceived diminished likelihood and uncertain manifestation of harm in isolated cases of non-controlling shareholdings combined with the difficulty of legal definition targeting only the potentially anticompetitive cases leaned against a holistic change of the *ex ante* EU merger control regime. Nonetheless, in its 2014 White Paper (n 25 and 35 above) the Commission put forward a proposal for a more flexible "targeted transparency regime" for any shareholding above 5% that qualifies as a "competitively significant link" in connection with "additional factors". Areeda and Hovenkamp's solution to the practical administrability concerns (difficulty in proving partial control or influence, and quantifying anticompetitive effects) is a "structural presumption" whereby any partial interest above 5% is considered "substantial" and to be analyzed *as if* it were a full or controlling acquisition (assuming control), while creating a 5% *de minimis* safe harbor for thus (conclusively presumed) "passive" financial interests.

[65] ibid 289.

[66] US Horizontal Merger Guidelines 2010 §13.

[67] Bresnahan and Salop (n 23) 166: "the competitive effects of any particular ownership and control structure depend on industry structure".

the strength and centrality of market forces and the relative proportion of firms with concentrated or widely dispersed ownership)[68] in each specific country or jurisdiction.[69]

Importantly, however, a sweepingly generous policy stance towards non-controlling partial acquisitions is not defensible in other industry (*concentrated markets*)[70] or firm settings (widely held public corporations)[71] where the afore-mentioned assumptions are not tenable either

[68] Peter A Hall and David Soskice, *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage* (Oxford University Press 2001); Maria Maher and Thomas Andersson, 'Corporate Governance: Effects on Firm Performance and Economic Growth' [1999] OECD, later published in Joseph A McCahery and others (eds), Corporate Governance Regimes: Convergence and Diversity (Oxford University Press 2002).

[69] Seen in this light, differences between EU merger control systems versus the US one may be logically reconcilable. For instance, EU regimes focusing on influence-based thresholds for merger scrutiny of minority acquisitions may be the result of path dependence and the relative predominance of concentrated ownership and control structures among continental European firms whereas US merger law capturing any partial acquisitions above and beyond a criterion of control or influence may be understood given the strong presence of external capital markets, the historical absence of blockholders due to legal and political restrictions and the generally fragmented and diffuse ownership structure of US publicly listed firms, factors which thus indicate the increased and realistic possibility that lower levels of shareholding may raise competitive concerns. The hybrid case of the UK regime with influence-based, although flexible, merger control thresholds can be seen as the combination of: i) currently dispersed ownership structures but earlier family-dominated firms with ownership and control structures closer to continental structures than to American ones, and also ii) the greater interaction with continental EU merger control systems. On the roots and potential persistence of ownership and governance patterns and country-specific characteristics, see Roe, *Political Determinants of Corporate Governance* (n 60); Lucian Arye Bebchuk and Mark J Roe, 'A Theory of Path Dependence in Corporate Ownership and Governance' (1999) 52 Stanford Law Review 127. On the hybrid case of the Britain and the transformation of its large firms' ownership and control structures from concentrated to diffuse ones, see Mark J Roe, 'Political Preconditions to Separating Ownership from Corporate Control' (2000) 53 Stanford Law Review 539, 34–36; Of course, with the rise of large institutional investors especially mutual and index funds (the so called "Big Three"), transatlantic shifts may be observed complicating the familiar landscape. See Jan Fichtner, Eelke M Heemskerk and Javier Garcia-Bernardo, 'Hidden Power of the Big Three? Passive Index Funds, Re-Concentration of Corporate Ownership, and New Financial Risk' (2017) 19 Business and Politics 298 (documenting the [common] ownership of the Big Three in the United States and finding that together they constitute the largest shareholder in 88 percent of the S&P 500 firms); Albert Banal-Estañol, Nuria Boot and Jo Seldeslachts, 'Common Ownership Patterns in European Banks: Pre- vs Post- Great Financial Crisis' [2021] Journal of Competition Law and Economics, forthcoming (finding overall that common investors [investment managers] have gained importance in Europe while non-common investors [governments, individuals, corporations] still remain important – although patterns differ considerably across EU countries). See also Roe, 'The Shareholder Wealth Maximization Norm and Industrial Organization' (n 60), who suggests that greater skepticism towards the shareholder wealth maximization norm in continental Europe may be explained, among others, by their historically and comparatively less competitive product markets and more concentrated industry; but also noting that changes in the relative product market concentration (e.g. towards more competitive structures) may increase demand or tolerance for shareholder primacy institutions in Europe. Furthermore, these ongoing shifts in markets and institutions could also (partially) rationalize policy discussions in the US to expand the reporting requirements under merger control and in the EU to potentially extend the scope of the EUMR.

[70] David Gilo, 'Chapter 67: Passive Investment', *Issues in Competition Law and Policy*, vol 3 (ABA Section of Antitrust Law 2008) 1637–1639. As Gilo explains, under perfect competition, there are no profits to share with a rival firm (via a passive investment) since "competition [drives] price all the way down to marginal cost"; therefore, the acquirer "places no weight" in its shareholding in the rival and there are no unilateral effects. In contrast, in many oligopolistic markets (e.g. characterized by product differentiation or capacity constraints) with imperfect competition the equilibrium prices are above marginal cost; in this setting, a partial non-controlling acquisition in a rival may produce incentives to raise price compared to its pre-acquisition level as any lost customers will be partially recaptured via its financial interest investment in the rival and thus the acquirer will also recoup part of its lost profits.

[71] As it will be explained later in the next section.

theoretically or empirically. Specifically, in oligopolistic markets with high entry barriers shareholding links between actual or potential competitors may have clear competitive implications as they are likely to lead to reduced output and higher prices.[72] Indeed, even acquisitions of *small and purely "financial interests"* ("silent minority shareholdings" or "passive investments")[73] in a rival are expected to alter the acquirer's incentives to compete - without any collusion, communication or control prerequisites - resulting in unilateral price-increasing effects. The reason is that the acquirer will take into account the financial interest (level of the non-controlling minority shareholding) in the rival while setting its market strategy and the effect its business decisions may have on the profits of the rival that the acquirer now stands to partially internalize as a return on its passive investment.

Therefore, "passive" investments in competitors in oligopolies in the corporate sense (no influence) are not really passive in the antitrust sense (competition effects):[74] the unilateral pricing effects may be quantitatively *lower* than in case of full or partial mergers,[75] but they are *always* predicted.[76] In this case, even absent any control or influence over the partially

[72] Reynolds and Snapp (n 23) 142: "in markets where entry is difficult, partial ownership arrangements could result in less output and higher prices than otherwise. These effects arise solely because these arrangements link the fortunes of actual or potential competitors, producing a positive correlation among their profits. In this sense, the effects are purely structural: they arise not because of increased opportunities for collusion or changes in the concentration of control, but because the linking of profits gives each firm an incentive to compete less vigorously and adopt behavior more conducive to joint profit maximization than otherwise would be the case."

[73] All this alternative terminology refers essentially to the same phenomenon: the holding or acquisition of equity share interests in a firm without any corresponding control rights (e.g. non-voting stock). For the first two terms and for aptly introducing the systematic distinction between financial participation in and control ability over a firm, see O'Brien and Salop (n 10); while for the latter term and an insightful analysis of the competitive effects of what was till then generally considered innocuous passive investment from an antitrust perspective, see Gilo (n 23).

[74] For instance, non-voting stock in a rival in an oligopoly is likely to produce unilateral effects as this part of the analysis explains (hence not passive in the antitrust sense). Moreover, acquisition of voting stock even without further governance rights may reinforce such unilateral effects given the dynamically influential power of a voting shareholding that may translate in present influence under certain appropriate conditions (in which case the shareholding is not really passive in the antitrust sense because first, it may generate anticompetitive effects and second, it may induce active influence over the partially acquired firm). For further exposition of the basis for this distinction, see n 58 above and Tzanaki, 'The Regulation of Minority Shareholdings and Other Structural Links between Competing Undertakings' (n 34) 16; Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law' (n 7) 13–26.

[75] See Table 1 and 2 in O'Brien and Salop (n 11) 595, 599 (providing a set of economic formulas, based on modified HHI and PPI methodologies modelling Cournot homogeneous and Bertrand differentiated product markets respectively, that quantify the unilateral pricing incentives flowing from each type of partial minority shareholding, with different estimations for cases of silent or passive [no control], partially controlling [proportional or one-way control], totally controlling [disproportional, total control] and jointly controlling [equal, full control] shareholding compared to the full merger estimation; in this range, the lowest expected price increasing effect is caused by a purely financial interest [non-controlling shareholding]).

[76] Gilo (n 23) 5 ("Passive investment in a competitor, when there are only a few firms in the market, will almost always reduce quantities and raise prices, even when there is no ongoing cartel [tacit or explicit] in the industry. [...] this price-increasing effect of passive investment will exist even if only one firm in the industry unilaterally invests in a competitor. Moreover, this effect exists even where the motivation behind the investment was not anticompetitive [e.g., where passive investment was motivated by an expected positive return on the

acquired rival the shareholding link induces the acquirer to competitive behavior that is less aggressive (reduced incentives to expand market share or lower price).[77] On the same logic but via different means (and unilateral theories of harm), this price-increasing effect may also be produced indirectly as the shareholding may diminish the intensity of competition by affecting strategic variables other than price or quantity. For instance, a non-controlling shareholding may reduce competition when firms compete in non-price dimensions (e.g. innovation or quality) and may also lessen incentives to compete with the partially acquired rival over geographic markets or product segments or entail reduced incentives for the acquirer to enter the incumbent firm's market in which it holds a financial interest.[78] In all these cases, existing or potential competitive constraints are effectively reduced.

Essentially the shareholding link similarly to a full merger may produce a softening of competition, due to the "internalization of competitive externalities"[79] it induces and the

investment.]") 21 ("Acquisition of a competitor's stock [...] makes the stock acquirer share the competitor's ongoing profit flow. This profit flow is presumably always reduced by vigorous competition.").

[77] Gregory J Werden, 'Chapter 55: Unilateral Competitive Effects of Horizontal Mergers I: Basic Concepts and Models', *Issues in Competition Law and Policy* (2008) 1328: "A critical insight is that a purely financial interest causes a unilateral anticompetitive effect, even though the interest does not provide a means to control or influence the rival's actions."

[78] Gilo (n 24) 11 fn 25. On unilateral effects based on reduced innovation incentives, see Case M.7932 Dow/DuPont, Commission decision of 27 March 2017; Case M.8084 Bayer/Monsanto, Commission decision of 21 March 2018; Frazzani and others (n 29) 73–77; Miguel Anton and others, 'Innovation: The Bright Side of Common Ownership?' [2018] IESE Working Paper (relating the sign of the common ownership effect [positive or negative] on innovation to the relative strength of technological and product market spillovers); on market segmentation incentives and strategies, see Cases IV/33.440, Warner-Lambert/Gilette and IV/33.486, BIC/Gillette [1993] OJ L 116/21, para 30; Steven Van Uytsel, 'Horizontal Shareholding Among Fintech Firms in Asia: A Preliminary Competition Law Assessment' in Mark Fenwick, Steven Van Uytsel and Bi Ying (eds), *Regulating FinTech in Asia: Global Context, Local Perspectives* (Springer 2020); on entry effects and loss of potential competition, see Melissa Newham, Jo Seldeslachts and Albert Banal-Estanol, 'Common Ownership and Market Entry: Evidence from Pharmaceutical Industry' (2018) DIW Berlin Discussion Paper 1738; Alexandro Ruiz-Pérez, 'Market Structure and Common Ownership' <https://www.cemfi.es/~ruiz-perez/alexandro_ruiz_perez_JMP_nov2019.pdf>.

[79] OECD (n 27) 24 ("through the acquisition of an equity interest in competitors, firms 'internalise' a competitive 'externality', namely the profits that firms generate for rivals as a result of unilateral output restrictions."); Gregory J Werden and Luke M Froeb, 'Unilateral Competitive Effects of Horizontal Mergers' in Paolo Buccirossi (ed), *Handbook of Antitrust Economics* (MIT Press 2008) 46 ("What makes the merger anticompetitive is that it internalizes the rivalry between the merging firms and thereby causes them to alter their actions."). This external effect on rivals is shown to entail the unprofitability of horizontal mergers in a symmetric Cournot oligopoly unless merging to near monopoly (the so called "Cournot merger paradox" - since competition is eliminated between the merging parties and their output is reduced due to the merger, rivals come to benefit from this output restriction in the post-merger equilibrium because they expand and capture all private gains from the merger), see Stephen W Salant, Sheldon Switzer and Robert J Reynolds, 'Losses from Horizontal Merger: The Effects of an Exogenous Change in Industry Structure on Cournot-Nash Equilibrium' (1983) 98 The Quarterly Journal of Economics 185; and thus the presumption of efficiencies (and an increase in total welfare) for mergers actually taking place, see Joseph Farrell and Carl Shapiro, 'Horizontal Mergers: An Equilibrium Analysis' (1990) 80 The American Economic Review 107; Joseph Farrell and Carl Shapiro, 'Scale Economies and Synergies in Horizontal Merger Analysis' (2001) 68 Antitrust Law Journal 685. Partial cross-ownership and common ownership in rivals help rationalize and eliminate the paradox, see Gregor Matvos and Michael Ostrovsky, 'Cross-Ownership, Returns, and Voting in Mergers' (2008) 89 Journal of Financial Economics 391; Miguel Anton and others,

tempering of the natural "business-stealing"[80] instinct among competitors, to the detriment of consumers. These unilateral effects are purely "*structural*",[81] i.e. they depend solely on the partial or common owner's incentive structure and not on any further (governance or strategic) action by the acquirer or the partially acquired firm, and as such they are "probabilistic" in nature.[82] Another way to see this is that the financial interest in the rival creates an "*opportunity cost*" to the acquiring firm of increasing its output or reducing its price.[83] If in turn the acquirer increases output or lowers price, it will divert customers and sales away from the target firm reducing the rival's profits and accordingly its own share in such profits as an investor.[84] Thus

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'Acquisitions, Common Ownership, and the Cournot Merger Paradox' <https://papers.ssrn.com/abstract=3226390>. This is because mergers given partial or common shareholding may be profitable overall for the shareholders of the acquiring firm that are also invested in the rival target firm (and as a result share in its profits and increased value), although the transaction as such may be unprofitable for the acquiring firm. This fact however may put into question the policy presumption about the private profitability of mergers in the presence of common ownership. See José Azar and Anna Tzanaki, 'Common Ownership and Merger Control Enforcement' in Ioannis Kokkoris (ed), *Research Handbook in Competition Enforcement* (Edward Elgar Publishing, forthcoming).

[80] Anton and others (n 79).

[81] Elhauge, 'Horizontal Shareholding' (n 13) 1270, 1274, 1302 ("The anticompetitive incentive created by this horizontal shareholding is purely structural, changing the price-setting incentive of each firm acting separately. [...] The basic anticompetitive effects arise from the fact that interlocking shareholdings diminish each individual firm's incentives to cut prices or expand output by increasing the costs of taking away sales from rivals [...] a cause of action could be brought against stock acquisitions that create horizontal shareholdings if their structural effect is anticompetitive [...] under Clayton Act § 7, which was created precisely to address stock acquisitions that create anticompetitive market structures.").

[82] Gilo (n 23) 31-33. In his penetrating analysis, Gilo emphasizes that the anticompetitive effects of passive investment are "probabilistic in nature" as is prospective merger control review, which is conducted in the U.S. pursuant to an "incipiency test" under Clayton Act's Section 7 that generally requires only "likely" adverse effects on competition; however, for partial stock acquisitions that fall within the "solely for investment" exemption, an "actual" lessening of competition is required according to the case law ("actual effects test"). Gilo critically notes that: (i) given the difficulty of such proof in practical terms, this requirement may be "tantamount to a *de facto* exemption for all passive stock acquisitions"; (ii) the leading cases "seem to be concerned only with the active influence the acquirer of the stock might gain over the behavior of the firm in which the investment was made" and thus to "presume" that the stock acquisitions are "passive"; and (iii) they "neglect the effect stock acquisition will have on the stock acquirer itself, namely, making the stock acquirer a less vigorous competitor" and that "[e]ven totally passive stock acquisitions may be used strategically by the stock acquirer as a commitment device to reduce competition". Gilo thus concludes that the acquirer's unilateral effects and strategic motives of such acquisitions are ignored while this is not justified by their economic analysis. His recommendation is that "such a stock acquisition[s] must be scrutinized under the main effects clause of section 7 of the Clayton Act. That is, there must be a full-blown investigation of market conditions to establish whether the stock acquisition, although passive, may (in the probabilistic sense) substantially lessen competition.". Elhauge, 'Horizontal Shareholding' (n 13) 1307–1308, on the other hand, suggests that empirical economic evidence showing (unilateral) anticompetitive effects (due to lessened incentives of the firms to compete) may satisfy the "actual" effects test applied to presumably purely passive acquisitions (no voting or use of the stock to actively influence the business conduct or obtain any confidential information of the target), in which case this proof "would negate the [substantive] passive investor exception and leave the horizontal shareholders subject to challenge under § 7 of the Clayton Act."

[83] O'Brien and Salop (n 10) 607: "The financial interest in firm-B has the same effect on firm's optimal [profit-maximizing] price as would an increase in its costs. [...] The cross-ownership opportunity cost measures the reduction in firm-A's profit on its investment in firm-B from increasing its sales by one unit. [...] We can use this cross-ownership opportunity cost to quantify the increased pricing pressure on firm-A's price induced by the financial interest." In a sense, the acquirer may in functional terms "inflate" its own cost structure via the partial shareholding acquisition.

[84] ibid.

the acquirer will weigh the (own) additional profits versus the (reduced or internalized) opportunity costs of a potential price increase in deciding its strategy *given* the minority shareholding in the rival.[85]

In terms of quantitative impact, the output and price effects of a *single* small, non-controlling shareholding acquisition in a rival may be (the most) modest, compared to a full merger or a controlling acquisition.[86] However, the magnitude of the unilateral effects of *multiple* minority shareholdings on equilibrium output levels may be significant depending on a number of factors such as: i) the number of firms in the market (market concentration), ii) the number of firms linked (cross- or common ownership), iii) the level of the shareholding links (percentage ownership and control interests),[87] iv) the reciprocity of such links (mutuality of the

[85] Frank Maier-Rigaud, Ulrich Schwalbe and Felix Forster, 'The Role of Non-Coordinated Effects in the Assessment of Minority Shareholdings' (2016) 14 Zeitschrift für Wettbewerbsrecht 246, 248, 253.
[86] See n 75 above.
[87] OECD (n 27) 25: "Another factor that affects the level of output reductions is the level of the equity ownership. The higher the level of ownership, the higher the incentives of the firms to lower their output given the output of the other firms.". While this statement refers to and is generally true for purely financial interests, this need not be true for the case of controlling or influential minority shareholdings as pointed out and theoretically shown by O'Brien and Salop. Varying levels of control associated with the financial equity interest may result in differing degrees of competitive effects on output and price. In fact, control and the relative ability of the acquirer to over- or underrepresent its partial ownership stake in a rival may be a "disruptor" in this linear, progressive relationship between the level of ownership acquired and the degree of competitive effects. That is, control ability that is legally or *de facto* disproportionate to the acquirer's partial ownership interest may either increase or decrease the financial interest (degree of internalized rival profits) typically reflected by its nominal equity stake (percentage of shareholding). For instance, the ability to exercise "total control" over the partially acquired firm suggests that the estimated impact of the partial acquisition on competition would be the greatest compared to other types of partially controlling shareholding and even greater compared to a full merger situation. On the other hand, "no control" ability may imply considering the circumstances of the particular case that the competitive effects of a purely financial interest may be overstated. See O'Brien and Salop (n 10); Daniel P O'Brien and Steven C Salop, 'The Competitive Effects of Passive Minority Equity Interests: Reply' (2001) 69 Antitrust Law Journal 611, 625 ("If the acquiring firm is unable to control the target's use of its profits and potentially recapture its fair share of the higher profits it creates, the acquiring firm's incentives to sacrifice its profits in order to increase the profits of the target may be dampened somewhat. Where the seriousness of this problem can be demonstrated with credible evidence, the MHHIs and PPIs can be adjusted downward accordingly."); Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law' (n 7) fn 68 ("O'Brien and Salop suggest [in their Reply] applying a 'discount rate' in estimating the competitive effects of a *de facto* 'passive' shareholding, i.e. when the acquirer has no ability to exercise control over the target management in practice, thus no influence over the use and distribution of the target's profits; 'discounting' the target's increased profits [out of which the acquirer cannot potentially capture its share from its investment] due to lack of control is said to have the same effect as effectively reducing the acquirer's nominal financial interest for purposes of calculating the MHHI"). In this latter case, control reflects not only the (reduced) legal rights and governance power within the firm (non-voting stock) but also the *de facto* profit internalization ability of the acquirer (reduced returns from its investment in the rival, compared to its nominal share in the target's profits, in deviation from the norm of "pro rata distribution" of firm profits and dividends to shareholders) and thus also the acquirer's (diminished) incentives to raise price. O'Brien and Salop 624 further suggest using a "control premium" measure in order to estimate the "appropriate discount rate" to incorporate in the modified HHI and PPI analysis. This "should reflect the reduction in value from not having control or influence over the earnings" (discount for non-control) and "could be obtained from market data on the magnitude of the control premium in equity acquisitions" (the price premium of voting over nonvoting stock in public companies). Doron Levit, Nadya Malenko and Ernst G Maug, 'The Voting Premium' [2020] European Corporate Governance Institute – Finance Working Paper No. 720/2021 Relatedly, for a literature review and a model of "voting premium" (capturing the price effects of voting rights)

internalization as in a full merger or a 50/50 joint venture),[88] and iv) the firm's (and manager's) objective function given the partial minority shareholding.[89] For instance, the unilateral effects

with both blockholders and dispersed shareholders that can be marginal voters (note that with atomistic shareholders such premium cannot arise while it is zero when the blockholder has a large voting stake and is pivotal), see <https://papers.ssrn.com/abstract=3759761> ("the voting premium does not emerge from exercising control, but from influencing who exercises control. [...] common measures of the voting premium may underestimate the actual value of voting rights to their owners. [...] a positive voting premium does not necessarily indicate a more concentrated ownership structure."). O'Brien and Salop 624 further suggest using a "control premium" measure in order to estimate the "appropriate discount rate" to incorporate in the modified HHI and PPI analysis. This "should reflect the reduction in value from not having control or influence over the earnings" (discount for non-control) and "could be obtained from market data on the magnitude of the control premium in equity acquisitions" (the price premium of voting over nonvoting stock in public companies).

[88] Reynolds and Snapp (n 23) 146–147: "equilibrium output would decline only 0.1 percent if one of ten equally sized and previously unlinked firms acquired a ten percent interest in one competitor. Were there but five firms in the market, the drop would be 0.2 percent. Were the firm whose stock was acquired to reciprocate, the drop in market output would be double the original. [...] for the case of linear demand, if five Cournot competitors had ten percent equity interests in each other, equilibrium market output would be 10.0 percent less than the level that would occur without partial ownership."

[89] ibid 144 fn 11: "[it is assumed that] the managers of firm i maximize profits net of those going to competitors. This formulation is clearly appropriate in the case of joint ventures, and it is also probably appropriate where owners are also managers. Even when ownership and management are effectively divorced, managers could view stockholdings by competitors as somehow different. If managers treat all stockholders alike, the [vki] terms [representing the kth firm's ownership interest in the ith firm or joint venture plants controlled by the ith firm] should be dropped from all equations. This modification does not alter the nature of our results, but it reduces the magnitude of output effects associated with partial equity interests relative to those from joint ventures."; Rosati and others (n 12) 149: "The link between common shareholding and competition is related to a firm's objective function. As noticed by Azar et al. (2018), if a firm acts in the interest of its main shareholder, then what should be maximised is not the firm's own value but the shareholder's utility. With institutional investors, this corresponds to the maximization of their portfolio value. Clearly, firms' profit maximization and portfolio maximization do not always coincide; in particular, an aggressive price behaviour could benefit a firm's own profit but reduce the value of common shareholders' portfolios. [...] O'Brien and Salop (2000) show that if a firm maximises its shareholders' portfolio profits (and not its own profit), industry markup is proportional to a modified Herfindahl-Hirschman Index (HHI), where the markup depends on the density of the network of ownership and control of the firms in the considered market. When this is the case, higher markup should be observed in markets with higher common shareholding (Azar et al., 2018)."; Gilo (n 23) 24–25 (examining the objective function of a firm's controlling shareholder that has a purely financial stake in a rival, discussed in more detail later in this section). As a general matter, the anticompetitive effects of partial cross- or common shareholding crucially depend on the particular shape of the objective function of the firm resulting from the change in ownership structure. The prevalent market structure and governance structures within firms affect the assumptions and conclusions drawn in this regard. Under separate ownership in oligopoly shareholders unanimously agree to maximize profits (firm value); with partial ownership in rivals, however, there is disagreement among shareholders. See Azar, Schmalz and Tecu (n 1) 1519: "Under imperfect competition, when shareholders hold more than one firm, they may disagree about the firm's objective (see, for example, Hart [1979]). A theory of shareholder preference aggregation is therefore necessary.". In such cases, economic theory suggests that that the firm manager's objective is determined by the relative influence or control of each shareholder over corporate decision-making and/or the degree of portfolio diversification among shareholders. See O'Brien and Salop (n 10) (providing a range of assumptions regarding the firm's manager objective corresponding to different possible corporate control structures, and assuming managers account for shareholders' incentives as per their "control weights"); Julio J Rotemberg, 'Financial Transaction Costs and Industrial Performance' [1984] MIT Sloan School of Management Working Paper No. 1554-84 (providing a model with shareholder diversification and proportional control in which the firm's manager maximizes a weighted average of shareholders' utilities); Albert Banal-Estañol, Jo Seldeslachts and Xavier Vives, 'Diversification, Common Ownership, and Strategic Incentives' (2020) 110 AEA Papers and Proceedings 561 (for a model with shareholder diversification accommodating different investor types and distinguishing between active and passive investors, with the latter having less control than their financial common shareholdings in the rivals); Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) (providing for a profit weight framework with symmetric and asymmetric components to reflect common ownership incentives, i.e. an "ownership similarity" term and "investor concentration" measure,

may be of limited magnitude when "few firms are linked, and those links are small" but significantly greater "when the links include virtually all the firms in the market".[90] In the limit, "when ownership shares are at the maximum level which is feasible, given the number of firms in the market, the monopoly output level will result regardless of the number of firms".[91] This result suggests that in case shareholding links among competitors are pervasive in an industry, the number of firms operating in the market may indicate an oligopoly structure, however the competitive effect produced by those inter-firm linkages indicates a monopoly outcome, i.e. profit-maximizing firm operation equivalent to that of a monopolist.[92] On the other hand,

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and assuming firms maximize own profits plus a weighted portfolio of rivals' profits); Newham, Seldeslachts and Banal-Estanol (n 78) 9–11 (providing two common ownership measures, based on different channels of investor influence [active engagement versus no explicit engagement], "to capture how common investors' interests in the two firms affect the weight that the generic firm places on joint rather than on individual firm profits", i.e. a "production function approach" that transforms each common investor's shareholdings in the two firms [inputs] into a "joint profit steering index" [output], and a "weighted sum of interests" approach following O'Brien and Salop assuming control proportional to financial interest). While assumptions regarding firm and manager objectives in the presence of a purely financial stake ("passive" shareholdings) and a firm's controller's passive investment in a rival ("total" control) are not controversial (as the control structure is clear), the assumption of "proportional control" is more controversial because there is no well-established economic theory for partial ownership-partial control situations. See Azar and Tzanaki (n 79) fn 10 ("It is noted that there is no consensus on the proper firm objective function when shareholders have divergent interests, or any settled theory of the firm in oligopoly under partial ownership for intermediate cases of control [i.e. between 'no control' or a 'silent financial interest' and 'full control']. See Joseph Farrell and Carl Shapiro, 'Asset Ownership and Market Structure in Oligopoly' [1990] 21 The RAND Journal of Economics 275, 286; Daniel P O'Brien and Keith Waehrer, 'The Competitive Effects of Common Ownership: We Know Less Than We Think' [2017] 81[3] Antitrust Law Journal 729, 760."); Martin C Schmalz, 'Common-Ownership Concentration and Corporate Conduct' (2018) 10 Annual Review of Financial Economics 413, 424 ("Whereas there is no consensus in the literature on how shareholder structure translates into control shares, a popular and intuitive assumption is that more votes correspond to more control. [...] This assumption is only valid in special cases, however, such as when all shareholders are small. Moreover, increasing control rights can also have the counterintuitive effect of reducing control shares: Parsons, Maxwell & O'Brien [1999] point out such apparent paradoxes that arise when cross-ownership links are present at the same time as common-ownership links and Shapley values are used to quantify control."). A major part of the criticism versus the common ownership hypothesis questions the basis for this assumption. However, "proportional control" may be justified as a working assumption in the absence of large dominant shareholders in firm governance, hence given the relative greater influence of institutional versus retail investors in widely held firms with a dispersed shareholder structure, and the corporate decision-making norm of "one share-one vote" in the absence of dual class stock or other asymmetric governance structures. See Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) 7–8 ("a model of common ownership must specify the Pareto weight a firm places on each of its shareholders, sometimes called the control weight. Any formulation of γ is implicitly a model of corporate governance, and one where theory offers precious little guidance. Absent an obvious alternative, much of the literature assumes [control weights equal cash flow rights [$\gamma=\beta$] of the shareholders]. This assumption is sometimes motivated by intuitive appeals to proportional control – the 'one share, one vote' rule which characterizes most publicly traded firms in the U.S. economy.").

[90] Reynolds and Snapp (n 23) 146.

[91] ibid 147.

[92] ibid 147, 151–152 (suggesting the partial shareholding links effectively "close the gap" between the monopoly and standard Cournot market outputs); Azar, 'The Common Ownership Trilemma' (n 14) 283–285 (suggesting that perfect portfolio diversification across firms in an oligopoly, i.e. when all shareholders are the same and hold market portfolios, leads to the monopoly outcome absent managerial entrenchment). The MHHI introduced by Bresnahan and Salop and further developed by O'Brien and Salop and PPI or GUPPI methodologies, applying to Cournot homogeneous product markets and Bertrand differentiated product markets respectively, aim precisely at capturing this increase in "effective" concentration and market power due to partial cross- or common ownership. See also Rosati and others (n 12) 76 (differentiating between "product market concentration among firms" and "common ownership concentration across firms" in a market).

countervailing factors such as welfare increasing efficiencies or managerial entrenchment may mitigate these anticompetitive effects.[93]

As a general matter, acquiring additional minority shareholdings in other rival firms in the market or (the controllers of) rival firms *simultaneously* holding non-controlling shareholdings in further competitors tends to reinforce the unilateral effects as the "*network*" of partial shareholdings (number of links) in the market will increase. Similarly, if the level of shareholdings held in horizontal competitors increases, the extent of "internalization" of rivals' profits among the linked firms (level of links) will also increase.[94] In addition, the acquisition

[93] For a discussion of such mitigating factors of the unilateral effects of common ownership in the context of merger control enforcement, see Azar and Tzanaki (n 79). It is also noted that while the overall welfare effects and the general equilibrium effects of common ownership within and across industries may be more mixed or nuanced, competition policy focuses on consumer welfare and competition enforcement is "market-specific" in that only efficiency gains within the same relevant market (and for the same group of consumers) may offset potential anticompetitive unilateral effects (consumer harm) found in that market. Efficiencies associated with common ownership (e.g. improved corporate governance, greater diversification, increased liquidity) may be substantial but are "out-of-market" efficiencies and as such generally not credited by antitrust enforcers. Besides, common ownership is unlikely to generate "merger-like" synergies. In addition, as Baker notes, within-industry diversification benefits are generally limited because stock and profits of rival firms in the same industry are highly positively correlated and if common ownership lessens competition, these diversification benefits are further reduced because the positive correlation in profits across firms increases. See Elhauge, 'Horizontal Shareholding' (n 13) 1303–1304; Jonathan B Baker, 'Overlapping Financial Investor Ownership, Market Power, and Antitrust Enforcement: My Qualified Agreement with Professor Elhauge' (2016) 129 Harvard Law Review Forum 212, 227–231; US Horizontal Merger Guidelines 2010 §13 ("partial acquisitions usually do not enable many of the types of efficiencies associated with mergers"). Other welfare enhancing and competition relevant efficiencies (that exist in the presence of positive spillovers that may be internalized due to common ownership) such as cost reducing R&D investment and innovation, are unlikely to offset anticompetitive harm in industries with high concentration and low levels of spillovers, see Ángel L López and Xavier Vives, 'Overlapping Ownership, R&D Spillovers, and Antitrust Policy' (2019) 127 Journal of Political Economy 2394. On managerial entrenchment, see Azar, 'The Common Ownership Trilemma' (n 14) 286–293 (showing that managerial agency costs may mitigate but not completely eliminate the anticompetitive effects of common ownership). For other potentially reinforcing or countervailing factors to the anticompetitive effects of partial ownership acquisitions, e.g. structural (concentration, entry, demand, nature of competition, diversion ratios) or transaction specific factors (firms' relative size, costs and margins, their market shares, type of firm acquiring the minority shareholding), see OECD (n 27) 36–38 and fn 97; Joseph Farrell and Carl Shapiro, 'Asset Ownership and Market Structure in Oligopoly' (1990) 21 The RAND Journal of Economics 275.

[94] That is, both the scope and the amount of internalization will increase. Therefore, a full equilibrium analysis will be required to account for the overall incentive to increase price given all existing partial shareholdings among rivals in the industry. See Maier-Rigaud, Schwalbe and Forster (n 85) 252; Roman Inderst and Stefan Thomas, 'Common Ownership and Mergers between Portfolio Companies' (2019) 42 World Competition 551, 558–559; Roman Inderst and Stefan Thomas, 'Price Pressure Indices, Innovation, and Mergers Between Commonly Owned Firms' (2019) 10 Journal of European Competition Law & Practice 572, 577–578 (analyzing the potential "widening" of the "nexus" of common ownership to remaining competitors and resulting degree of internalization among the linked rivals in the context of a merger transaction); Azar and Tzanaki (n 79) (discussing both the welfare and unilateral effects of common ownership in connection to merger control enforcement and the implications for merger policy). For a network analysis of common ownership links within the same industry see Albert Banal-Estañol, Melissa Newham and Jo Seldeslachts, 'Common Ownership in the US Pharmaceutical Industry: A Network Analysis' (2020) Barcelona GSE Working Paper 1216; José Azar, 'A New Look at Oligopoly: Implicit Collusion Through Portfolio Diversification' (PhD Dissertation, Princeton University 2012) chapter 4 (finding that within-industry network densities are generally higher and therefore, that firms are more likely connected if they are in the same industry); for various network-based indices for measuring common ownership, see Rosati and others (n 12) section 2.4 (deriving new indicators based on network and sparsity methodologies to measure the extent of common shareholding, which are then aggregated at market level); Lianos

of more symmetric links (symmetry of links) or the presence of more symmetric ownership structures in the industry, by increasing the similarity in equity share positions held by each investor (same percentage shareholding or equal financial interests) across the linked firms and the uniformity of portfolios held by all common investors (same shareholding positions held in the same set of firms).[95]

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and others in this issue (proposing a centrality network measure of investor influence on firms [III] as an alternative to the modified HHI delta [MHHIΔ] that can be applied to vertical markets and multi-level market networks); for network effects and inter-market spillovers due to common ownership links among portfolio firms in different industries, see Luca Enriques and Alessandro Romano, 'Institutional Investor Voting Behavior: A Network Theory Perspective' (2019) 1 Illinois Law Review 223 (noting that market boundaries play a limited role for institutional investors' competition strategies given common ownership of portfolio firms across industries); Romano (n 13) (proposing "Network Sensitive Regulations" rather than traditional market-centric rules, as regulatory tools to address the anticompetitive effects of horizontal shareholding in a manner that would be sensitive to the nuances of inter-market effects); José Azar and Xavier Vives, 'General Equilibrium Oligopoly and Ownership Structure' [2020] Economica, forthcoming (analyzing the general equilibrium effects of common ownership and showing that "common ownership always has an anti-competitive effect when increasing intra-industry diversification but that it can have a pro-competitive effect when increasing economy-wide diversification.").

[95] Therefore, both the symmetry in equity positions and investor portfolios across firms will affect and increase profit internalization, other things being equal. See Boller and Morton (n 117) 6-7 ("One interesting property of MHHI is its sensitivity to ownership symmetry. If common owners are exactly symmetric in holding the same percentage of the same set of companies, ownership is equal to control, and other owners [retail investors] are atomistic, then in this model the monopoly outcome is achieved. This is true whether the common owners each hold 2% or 20% of the competing companies.") 38-39 ("Ownership similarity is the 'symmetric' component of the profit weight [...] and will increase the objective functions of both firms in the industry. [...] To the extent that the asymmetric incentives of the profit-weight model [the relative shareholder concentration term] might be limited by legal restrictions or managerial behavior, we might instead expect the first-order effects of common ownership to propagate through investor similarity."); Backus, Conlon and Sinkinson, 'Common Ownership in America: 1980-2017' (n 17) 9 ("As the investor positions become more similar, the angle between those portfolios shrinks and [the cosine similarity tends to 1]. This suggests a link between indexing strategies, e.g. investing in the "market portfolio," and common ownership profit weights [...] Overlapping ownership is what, in general, the literature construes to be "common ownership." It is the origin of the incentive to internalize the profits of another firm. However, as we will show, it only makes up a little over half of the empirical variation in common ownership profit weights. The remainder comes from variation in the ability of common owners to exert control, implicitly modeled as a function of investor concentration. [...] relative investor concentration is responsible for all asymmetry between profit weights [of linked firms, i.e. that a firm places more weight on its competitors' profits than their own - despite the fact that the cosine similarity is never greater than one.]") 18 ("Cosine similarity [...] measures how similar the investors' positions in firm f are to those in firm g. For long-only portfolios it ranges from [0, 1] and is maximized when [...] all of the investors agree on all of the portfolio weights for their investments but have differently sized portfolios. [...] [An alternative measure of] investor similarity [...] is largest when all investors hold the same fraction of both firms.") 20-21 ("two main trends [are] driving long run changes in common ownership profit weights: [1] the positions of investors in firms [f, g] become more similar to each other over time and [2] the similarity is largely driven by a broad trend towards indexing among asset managers. [We find] that indexing, not the rise of the Big Three - or any individual institutional investor - explains the broader trend in the rise of common ownership."); for a "uniformity index" measuring the degree of uniformity of a portfolio and reflecting the investors' underlying strategies, e.g. passive indexing or active investment strategies, see Rosati and others (n 12) 44 ("The index is based on the shares held by an investor in each company in the market, and assesses the relative weight of larger participation shares over the shares total, showing smaller values for more concentrated distributions. A value of the index closer to one denotes an even distribution of investments within the portfolio [uniformity]. In the limit, if the investor only holds shares in one company, and zero shares in all remaining companies, the uniformity index will have a value of zero. On the other hand, when an investor holds participation in all firms of the given market, and all with equal shares ['democratic' investor], the index attains its highest value, equal to one. The smaller the values of the index, the more concentrated the investment strategy of a shareholder, i.e. the more the shareholder discriminates between different companies and

Estimating the "degree of internalization" of rivals' profits (i.e. the "*profit weight*") due to partial or common shareholding is a critical starting point for unilateral and competitive effects analysis.[96] This is the weight the acquirer (a firm or a firm's controller) places on the partially

chooses only some, typically with large participation shares. A large value of uniformity instead generally corresponds to many firms, all held with small shares.") 80 ("a single owner by definition has the maximum concentration of investments, i.e. a value of 0% uniformity)."]. In case of perfect symmetry (all shareholders hold the market portfolio], control drops out of the equation in that the objective function of the linked firms becomes the same (regardless of shareholder unanimity], see Azar, 'The Common Ownership Trilemma' (n 14) 283 ("We assume that the objective function of firm j, which we denote is some function Fj that aggregates the utilities of its shareholders. [...] We can think of this function as summarizing the institutional and legal framework that determines control of a firm as a function of its ownership structure. The ownership shares are parameters of the function. As an example, in O'Brien and Salop under proportional control, the function Fj would be the same for all firms [...] Note that, although the aggregating function is the same, the objective function of the firms is not the same unless the firms have exactly the same shareholders. What is the same across firms is the way ownership translates into control."] 285 ("Intuitively, portfolio diversification implies all the firms have the same shareholders, and so they all maximize the same objective function. It also happens to be the same objective function that a monopolist would maximize. In the earlier literature, examples of cases in which portfolio diversification leads to a monopoly outcome consider cases in which shareholders are identical or make enough assumptions so that they are unanimous about joint profit maximization. It is therefore important to emphasize that this result actually has nothing to do with shareholder unanimity. More precisely, unanimity is neither necessary nor sufficient for the result."].

[96] Strategic or coordinated effects may also arise from purely financial interests without any additional control or explicit information exchange. With regard to strategic effects, this is because with a non-controlling shareholding acquisition at period one of a (multi-period) game, the acquirer alters its own incentive structure which in later periods may influence the rival's (re)actions. The acquisition effectively, at a cost, shifts the partial owner's own reaction function in the future and indirectly influences the rival's strategic reactions but without directly affecting the rival's profit or objective function, i.e. it does not alter the rival's incentives or opportunities (which could occur in the case with control). In such scenario of a strategic, oligopolistic environment with repeated interaction among rivals in a non-cooperative game where history matters, the investment has "commitment value" and operates as a "sunk cost" that is to the benefit of the acquirer and "preempts" the rival's future choices. More generally, the strategic incentives of firms to engage in such "self-manipulation" (incentives to over- or under-invest) will largely depend on the nature of competition among the rivals (e.g. "strategic substitutes" or "strategic complements"). Thus, in deciding the level of investment, the acquirer will consider the *marginal* effect (benefit or harm) of its "strategic" investment on its own profits while accounting for the rival's "tactical" response in the future *given* its increased investment. In short, commitments in early dates "influence the competition to follow" and strategic behavior is not contingent on a "control channel." Of course, such investments need to be observable to rivals to have strategic value (credible communication to support strategic commitments), which is generally the case for shareholding acquisitions in public firms. On the above, see Carl Shapiro, 'Theories of Oligopoly Behavior' in Richard Schmalensee and Robert D Willig (eds), *Handbook of Industrial Organization*, vol 1 (Elsevier 1989) 381–389; and on the particular point about observability of passive investments in rival firms (or managers' stakes in rival firms and equivalently, rivals' profitability components in managers' compensation schemes), see Gilo (n 23) 26, 28. Similar strategic and also collusive effects can be generated with non-controlling shareholdings in case of multimarket contact, see Jeremy I Bulow, John D Geanakoplos and Paul D Klemperer, 'Multimarket Oligopoly: Strategic Substitutes and Complements' (1985) 93 Journal of Political Economy 488. Philip M Parker and Lars-Hendrik Röller, 'Collusive Conduct in Duopolies: Multimarket Contact and Cross-Ownership in the Mobile Telephone Industry' (1997) 28 The RAND Journal of Economics 304; Furthermore, even a unilateral increase in cross-ownership holdings, by one firm but not by others, that results in a more asymmetric incentive structure will typically facilitate collusion. This is because an increased shareholding in rivals will generally make it "less attractive to deviate from a collusive price" and also "less feasible to escape punishments". On one hand, the shareholding acquisition will increase the weight the acquirer places on the profit streams of rivals and thus the acquirer of the shareholding unambiguously increases its ability to collude. On the other hand, the shareholding (weakly) decreases the weight the target places on its own profits relative to competitors' profits in the firm's objective function (unless the acquisition is hostile). In essence, both the incentives to collude and the incentives to deviate will generally be positively affected by the shareholding acquisition. This result is robust and depends precisely on the fact that such shareholdings are non-controlling, in contrast to full mergers. More specifically, mergers that are concentration increasing and asymmetry-increasing, unless the initial asymmetry is large pre-acquisition, can lead to lower prices and lower joint profits and hence,

acquired rival firm's profits *relative* to its own profits.[97] In the case of common ownership, these weights are theoretically linked to and may increase (or decrease) with portfolio diversification, investor concentration and market concentration, i.e. as a function of ownership, governance and market structure.[98] A zero profit weight implies that firms operate independently (own profit maximization) such as when there are no common owners of competing firms (separate ownership).[99] Reversely, a profit equal to one means that the common shareholding has the same effect as if the linked firms were effectively merged (joint

they are "not justified by a motivation for increased profits from coordinated effects." As such, they make collusion less likely. In addition, it is emphasized that analysis of cross-shareholdings based on Nash reversion punishment strategies can be misleading, i.e.: "[u]nder Nash reversion an increase in cross-shareholdings increases the profits from a one-shot Nash equilibrium [implying greater gains from deviation]. Hence the intensity of punishment is reduced with cross-shareholdings [smaller future losses from punishment]. For this reason earlier authors (e.g., Malueg 1992) had pointed out countervailing effects of cross-shareholdings on collusion. No such countervailing effects exist when we look at the whole set of equilibria." As is the case, for instance, with more severe punishment strategies besides Nash reversion. Therefore, contrary to what is often commonly believed, non-controlling cross-shareholding links do not generally have ambiguous effects on collusion. On the coordinated effects analysis, see Kai-Uwe Kühn, 'The Coordinated Effects of Mergers' in Paolo Buccirossi (ed), *Handbook of Antitrust Economics* (MIT Press 2008) 117–118. For application and further exposition of these insights on coordinated and strategic effects in case of non-controlling minority shareholdings and unilateral or multilateral passive investments, see Gilo (n 70); David Gilo, Yossi Moshe and Yossi Spiegel, 'Partial Cross Ownership and Tacit Collusion' (2006) 37 RAND Journal of Economics 81; Tzanaki, 'The Regulation of Minority Shareholdings and Other Structural Links between Competing Undertakings' (n 34) (also discussing other cases of positive and negative strategic effects linked to non-controlling shareholding). Besides, unilateral effects analysis of minority shareholdings conferring influence will be relevant also for assessing the likelihood of coordinated effects theories of harm when coordination is the result of (partial) coordination among the linked firms only and not industry-wide (in which a case coordinated and non-coordinated effects are mutually exclusive) because the same factors inform the analysis, see Maier-Rigaud, Schwalbe and Forster (n 85) 254–255.

[97] Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) 4 ("the profit weights approach, which starts with the objective function of the firm, is the only one that offers a fully general path forward for empirical study of the common ownership hypothesis. We emphasize that while we are the first to construct our measure - the common ownership profit weights - at this level of breadth, neither the innovation nor their use in empirical work is novel here. The theory goes back as far as Rotemberg [1984], is implicit in the MHHI measure of Bresnahan and Salop [1986], has been applied to cross-ownership in O'Brien and Salop [2000], and has seen application in various tests of the common ownership hypothesis."); Xavier Vives, 'Common Ownership, Market Power, and Innovation' (2020) 70 International Journal of Industrial Organization 3 ("It is the weight of the profit of firm k in the objective function of the manager of firm j relative to the own profit of firm j. The relative concentration of ownership and control in firm k versus firm j is what determines the coefficient's value [...] more investors and higher investment stakes imply higher λ. [...] More control leads to more internalization of rivals' profits [other things being equal]").

[98] López and Vives (n 93) 2395–2396 ("The key parameter is the degree of internalization of rivals' profits λ in our model, ranging from independent ownership, λ=0, to cartelization [or full merger], λ=1). The parameter λ corresponds to what Edgeworth (1881) termed the coefficient of "effective sympathy" among individuals. Higher degrees of overlapping ownership (common or cross-ownership) lead to a higher λ."]; Azar and Vives (n 94) 3 ("The extent to which firms internalize rival firms' profits depends on market concentration and investor diversification."]; Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) 8–9 ("profit weights [are decomposed] into two economically meaningful components: overlapping ownership and relative IHHI or relative investor concentration."].

[99] Or managers operate firms as if there were no common owners, e.g. because of managerial agency costs or because of compensation schemes based on own firm performance. See Eric A Posner, Fiona M Scott Morton and E Glen Weyl, 'A Proposal to Limit the Anti-Competitive Power of Institutional Investors' (2017) 81(3) Antitrust Law Journal 669, 681.

profit maximization).[100] That is, assuming firms act in the interests of their shareholders, each firm puts a weight of 1 on the profits of the other resulting in full internalization such as when there are perfectly overlapping and diversified common owners (portfolio diversification).

Further, a profit weight exceeding one implies asymmetric internalization and inflated overlapping ownership[101] incentives, i.e. incentives for shifting profits across the interlocked firms and thus expropriation of atomistic, undiversified shareholders, due to the outsized *relative control* ability of the overlapping owners ("tunneling" or private benefits of control).[102] This result arises in situations of partial ownership with "total control" as pointed out by O'Brien and Salop because the misalignment of ownership and control creates a "free-rider problem" and for this reason, distorted incentives and the least competitive outcomes.[103] It is also notable that while private benefits of control have typically been associated with concentrated ownership (large dominant shareholders),[104] now incentives for tunneling may also be found in widely held, public firm settings due to common ownership even in the absence of an outright controlling interest (minority common owners).[105]

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[100] Assuming Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) 4 ("a profit weight of 0 corresponds to what we expect in a world of profit-maximizing firms, and a profit weight of 1 corresponds to the weight that a merged firm places on an acquired subsidiary business [or, equivalently, full collusion].").

[101] I use the term overlapping ownership here to refer to both cross- and common ownership, as the key insights apply equally to both, before I later treat common ownership more specifically.

[102] Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) 21–24 and passim.

[103] O'Brien and Salop (n 10) 578–579 ("Total control sometimes leads to the largest and potentially the least competitive incentives and outcome of all the control scenarios. Prices are highest and output is lowest, if other competitive factors remain constant. This outcome flows from a type of free-rider problem arising because the acquiring firm gains a benefit from the acquired firm charging a higher price but only pays a share of the cost. A higher price for the acquired firm leads to more sales for the acquiring firm. [...] if the acquiring firm's financial interest is small, it takes a free ride on the losses suffered by the acquired firm and borne mainly by others. [...] In the limit, if the acquiring firm holds a minuscule financial interest but has total control, this free-rider problem even may lead the acquiring firm to want to shut down the acquired firm."). O'Brien and Salop analyze total control in case of partial *cross-ownership*, which implicitly assumes that the acquiring firm, which obtains total control over the rival acquired firm, is fully and solely owned and controlled (100% ownership and complete control over own firm). As explained in what follows, the analysis of common ownership is different because by definition common ownership only exists if the ownership structure of the rival firms is partial for *both* (otherwise it would simply coincide with partial cross-ownership at least analytically). Hence, the underlying incentives are very different.

[104] Alexander Dyck and Luigi Zingales, 'Private Benefits of Control: An International Comparison' (2004) 59 The Journal of Finance 537 (also finding that better legal protection of minority shareholders and more intense product market competition are among the institutional variables that seem to be associated with a lower level of private benefits of control).

[105] Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) 23–24 ("tunneling is not typically believed to occur in the U.S. for two reasons: strong investor protections that facilitate healthy financial markets [Porta, Lopez-De-Silanes and Schleifer, 1999] and the near-universal absence of a controlling interest in publicly-traded firms, as the U.S. is the land of the 'widely-held' firm [Berle and Means, 1932]. [...] In [prior literature], tunneling tended to be isolated within small groups of firms that had a common controlling interest."). In the case of common ownership by institutional investors, the tunneling effect is driven by the relatively asymmetric partial ownership incentives, relative control is the enabling/ enforcement mechanism due to the absence of any large controlling shareholder(s) and the fragmentation of the retail share of passive shareholders.

The mechanics of this free-rider effect become more clear in case of acquisition of a purely financial interest in a rival by a firm's "controller"[106] as a passive investor.[107] Gilo has emphasized that the competitive effects of such passive investment by a *firm's controller* (be it a dominant shareholder or a manager[108]) are more serious and concerning when the controller's stake in its controlled firm is smaller (e.g. less than full ownership while still remaining controlling)[109] because of a "*dilution effect*": by diluting its stake in the firm it controls, the controller effectively commits to place relatively less weight on its controlled firm and thus more weight on its passive stake in the rival.[110] Therefore, assuming the controller takes its own interests into account while running the firm, it will induce the firm to maximize its own profits from its (partial) controlling interest in the firm it controls (excluding the

[106] This can be seen as a special case of *common ownership* with a *single* common owner (investor) having parallel interests in two rival firms, with no control over the one (passive investment) and total control over the other (either complete control, i.e. 100% ownership as in a full merger case, or total control, usually >50% ownership and majority control). This is what I describe in this article as "concentrated common ownership". Common ownership by institutional investors adds two extra layers to the problem: i) there are *several* common owners (typically minority investors with <50% ownership); ii) there are *agents* (institutional investors) acting on behalf of the common owners (individual, retail investors). For these reasons the analysis is more complex and needs to be case specific. For a law and economics analysis of the interplay of these factors from a property rights perspective, see Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law' (n 7). This latter type is what I call in this article "diffuse common ownership."

[107] Because the control effect is isolated and focused on one firm over which the investor has clear control ability while the cash flow rights in the passively invested firm remain constant.

[108] Gilo (n 23) 6: "Firms can replicate this anticompetitive effect by including components in their executive compensation packages that are positively linked to industry or competitors' profitability. Such compensation arrangements are analogous to the case in which a controller of a firm holds a stake in a competing firm. [...] The anticompetitive effect of such components will be greater the smaller the 'stake' - stock, options, or components in the compensation package that are positively linked to the firm's profits - the manager holds in the firm she manages.". For a theoretical model and empirical evidence showing unilateral incentives arising from managerial compensation as a potential governance mechanism through which common ownership can influence product market competition, see Miguel Antón and others, 'Common Ownership, Competition, and Top Management Incentives' [2017] ECGI Working Paper in Finance N° 511/2017 (noting also that it is strategic product market competition and diversification within the same industry that drives their model, which does not require any communication or coordination but merely that top managers know and respond to their own incentives). See also Rajesh K Aggarwal and Andrew A Samwick, 'Executive Compensation, Strategic Competition, and Relative Performance Evaluation: Theory and Evidence' (1999) 54 The Journal of Finance 1999 (showing that "strategic interactions among firms [under separate ownership] can explain the lack of relative performance-based incentives in which compensation decreases with rival firm performance"). On coordinated effects associated with manager compensation schemes under common ownership and in general, see Werner Neus and Manfred Stadler, 'Common Holdings and Strategic Manager Compensation: The Case of an Asymmetric Triopoly' (2018) 39 Managerial and Decision Economics 814; Giancarlo Spagnolo, 'Stock-Related Compensation and Product-Market Competition' (2000) 31 The RAND Journal of Economics 22.

[109] Gilo (n 23) 4: "such passive investment causes the investor to compete less vigorously with the firm in which the investment was made because such aggressive competition would lower the value of the investor's investment."; 23: "[the controller] can strategically strengthen its commitment to run [the controlled firm] less competitively by selling out part of [the controlled firm] to passive shareholders (be they public, or other minority shareholders)."

[110] The key characteristic of this dilution effect is that it can *disproportionately* affect the degree of profit internalization from the controller's parallel and direct stakes in the firm it controls and in its rival (common ownership). In contrast, when it is the firm itself that invests in its rival (cross-ownership) and thus the firm's controller only has an indirect stake in the rival via the firm, "the controller's stake in the firm it controls will be irrelevant" as the dilution of its indirect stake in the rival will always be proportionate. ibid 22–23.

interests of non-controlling shareholders) plus its financial interest in the rival. Although this may be seen as an "agency cost" in firm governance, other shareholders also benefit from the higher supracompetitive profits even in the case without collusion and therefore, they are not expected to oppose such behavior by the firm and its controller.[111] It is important to note that the controller, precisely because of being in a position of sole control, may "self-manipulate"[112] its ownership stake in the controlled firm to the level of its choice considering the profit maximization calculus that is most beneficial to itself (rather than the company as a whole). Thus, by diluting its stake and altering its own incentives the controller may directly influence its own profit function (and its controlled firm's objective function[113]) and indirectly competitive outcomes.

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[111] ibid 24–25: "Interestingly, when a controlling shareholder takes account of its own interests in running the firm under its control, or disregards the profits flowing to minority shareholders in the firm it controls, this is normally seen as an 'agency cost,' or breach of the controller's fiduciary duty, which lowers the value of the minority's shares. The analysis here shows, however, that this 'agency cost' may be valuable to [the controlled firm] as a whole, as well as to its minority shareholders. [...] This is because these 'agency problems' may enable [the controlled firm] to earn supracompetitive profits. [...] it would be difficult to claim that [the controller] is in breach of its fiduciary duty toward [the controlled firm]. [Besides, t]hese minority shareholders would find it extremely hard to prove in court that the controller's conduct was not the optimal strategy for the firm.". If fiduciary duties are seen: i] as negative property claims (a form of residual claim] by non-common owners vis-à-vis the positive property rights of common owners; and ii) as default rules for allocating property rights (and managing conflicts) that shareholders can consent to amend or waive with the aim to increase profitability, see Jonathan Macey, 'Fiduciary Duties as Residual Claims: Obligations to Non-Shareholder Constituencies from a Theory of the Firm Perspective' (1997) 38 Boston College Law Review 595; then there is indeed bargaining space for achieving an amendment of the firm objective in a way that is mutually beneficial for both groups of shareholders and also for the corporation (Pareto outcome). Such agreement is "self-enforcing", see LG Telser, 'A Theory of Self-Enforcing Agreements' (1980) 53 Journal of Business 27 as the division of profits is set (and internalized by shareholders as per the objective function) and thus cannot be undermined by opportunistic behavior of shareholders and managers are expected to be on board (due to compensation schemes or career concerns) since all shareholders are better off. Also, unlike (ongoing) tacit collusion in the market based on partial shareholding and "Coasian joint control" that could be unsustainable due to conflicting incentives and transaction costs, see O'Brien and Salop (n 10) 582, this is one-off and no direct influence or outside "enforcement" is needed since interests are aligned (so if undiversified shareholders are also better off they will agree to the new objective function and stick to that agreement, otherwise we would expect them to sell out). Further, any coordination problems among shareholders are solved due to the presence of a single common owner that is also the dominant shareholder and can credibly implement the "agreed" objective function. Competition effects based on such (internal to the corporation) agreement are still unilateral.

[112] See relatedly n 96 above and Shapiro (n 96); on acting strategically taking into account rivals' tactical responses to one's own behavior, see more generally Thomas C Schelling, *The Strategy of Conflict* (Harvard University Press 1980).

[113] This means a shift from total firm value maximization to maximization of the controlling shareholder's profits (single common owner). Another way to see the standard economic objective function of the firm (that all shareholders unanimously agree upon under the "Fisher Separation Theorem" in perfect competition) is that maximizing total firm value effectively safeguards against the "dilution effect" produced by a firm's controller noted here. As explained, a deviation from this principle need not be constrained by corporate law fiduciary duties on the controller as both the controlled firm and its minority shareholders come to share in the higher (firm and industry) profits produced in an oligopolistic market setting. Given that the theorem is inapplicable under conditions of imperfect competition and non-separate ownership, the realistic question of an "updated" objective function of the firm arises with common ownership. Azar suggests such a theory of the firm, which also "provides a possible microfoundation for O'Brien and Salop (2000)'s indices as the outcome of a competition for corporate control among potential managers", see José Azar, 'Portfolio Diversification, Market Power, and the Theory of

What is striking, therefore, in this case is that the "*controller effect*" is not in fact an effect due to control over the target rival firm in which the controller is passively invested but only due to control over the "own" firm where the controller is the dominant shareholder.[114] In other words, it is not the result of active influence or coercion on the rival firm but a "*self-commitment*" by the controller-common investor to compete less aggressively itself made "credible" by the control mechanism (given that the controller has sole and total control over the own firm) which may in turn reassure rivals and induce them to compete less aggressively[115]: a way of giving "hostages" (bonds) to support "exchange" (by acquiring parallel investments in rivals).[116] While coordinated effects (tacit collusion) may (or may not) follow,[117] the effect can be purely unilateral in an oligopoly setting (e.g. refraining from price-

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the Firm' (2016) 1–2 <http://papers.ssrn.com/abstract=2811221> ("The assumption that shareholders want firms to maximize their own profits needs to be relaxed, because the internalization of externalities that firms' strategies generate on their competitors is now of first-order importance. I develop a tractable model of firm behavior in which the objective of the firms is determined endogenously by the outcome of majority voting by their shareholders. This provides a positive theory of corporate control, in which firms act as if they maximized a weighted average of shareholder utilities."); on the need for revision of the objectives of the firm in light of common ownership and testing alternative theories, see also Antón and others (n 108). Indeed, if shareholder value is only a proxy for firm value, it is reasonable to ask whether given the structural changes and behavioral preferences created by common ownership in a context of oligopoly an amended objective function is a better approximation of corporate and business reality.

[114] cf O'Brien and Salop (n 10) 578–579. Importantly, Gilo's controller does not use control to force a higher price in rival (as O'Brien and Salop's free riding example; in Gilo the investment in the rival is passive) but rather to commit not to undercut price itself that may in turn induce the rival to not to undercut its price also. That is, the control mechanism here works not to make the target less aggressive but oneself as a controller of the firm one controls! The driver is always the relative financial interest of the controller-common investor in the two rival firms. Of course, if the controller has control ability over more linked firms, it may choose to adjust its stake accordingly in any of such firms in a way that is privately profitable to itself. This latter case of a multi-firm controller is what O'Brien and Salop analyze with the difference that control over the focal (own) firm is full and fixed (under an assumption that the firm controller is a sole owner, i.e. 100% ownership and control); in this case, only control over the target is adjustable but this obscures the fact that the controller may manipulate its own profit calculus that is the principal driver of the anticompetitive effects. Essentially, O'Brien and Salop study the reverse scenario from Gilo: in both cases the relative profit ratio creates the distortions but the identity of the firms is reversed (i.e. for O'Brien and Salop, the stake in the target rival firm is small rather than controller's stake in the own controlled firm is small). This however also leads to reversed policy prescriptions: while O'Brien and Salop suggest that increasing the stake in the rival firm may be competitively beneficial as it reduces the free-rider effect, Gilo cautions that any dilution of the controller's own stake in the controlled firm may strengthen the anticompetitive effect, because it reduces the relative weight in the profits of the controlled firm and simultaneously increases the weight it places on the rival's profits, or reversely that an increase in the controller's stake in the own firm will be pro-competitive.

[115] Gilo (n 23) 5.

[116] For the analytical differentiation of "credible commitments", from "credible threats", to support exchange and cooperation, see Oliver E Williamson, 'Credible Commitments: Using Hostages to Support Exchange' (1983) 73 American Economic Review 519. In this setting, control over the rival is a credible threat (conflict) whereas control over oneself is a credible commitment (incentive structure). The shareholding acquisitions by reducing the opportunity cost of competing commit the common investor to reduce the risk of opportunistic behavior.

[117] Boller and Morton (n 17) 7 ("Static Nash competition in prices or quantities is a central element both in recent literature as well as in earlier work by Bresnahan and Salop [1986] and O'Brien and Salop [2000]. These models do not incorporate tacit collusion. However, the possibility of common owners enabling tacit collusion was made long ago in the literature [Malueg, 1992]. Gilo et al. [2006] explicitly consider the ability of common ownership to facilitate tacit collusion in a supergame. The paper shows that the cross-holdings of common ownership expand the range of discount factors for which tacit collusion can be sustained. In their framework, common owners

cutting) and all actors involved may benefit by the softening of competition (non-controlling shareholders of own firm and the firm as a whole, rival firm and its shareholders, and potentially other competitors or the firm's managers to the extent they are partially compensated based on industry or rivals' profits as well as own firm profits). As a result, this effect and mechanism may also be mutually beneficial for the linked rival firms albeit presumably to differing degrees. The competitive outcome may be more collusive (market power), but the mechanism is unilateral (individual behavior).

V. Anticompetitive strategies and the economic bounds of control

Following the taxonomy of Hemphill and Kahan based on a corporate governance perspective, the above result would correspond to "value-increasing", "passive", "across-the-board" mechanisms or "selective omission", i.e. general or targeted passive anticompetitive strategies respectively.[118] The driver of the anticompetitive effect is strategic competition (oligopolistic market interactions) and the opportunity cost created for oneself by acquiring partial or common shareholding (*selective passivity*) – a form of self-committed profit sharing with rivals

introduce incentives to increase the patience of managers who might otherwise deviate from a collusive equilibrium.").

[118] C Scott Hemphill and Marcel Kahan, 'The Strategies of Anticompetitive Common Ownership' (2020) 129 Yale Law Journal 1392 (suggesting these are the most plausible strategies for common ownership to generate anticompetitive effects without engaging in governance interventions that may undermine firm value of any competing firms and run afoul corporate law rules and principles). For the definitions and the distinction, see 1400 ("A mechanism that we call 'selective omission' is consistent with both theory and empirical evidence [of common ownership's anticompetitive effects]. A CCO engaged in selective omission presses for firm actions that increase both firm value and portfolio value, while remaining silent as to actions where the two conflict. Aside from selective omission, some across-the-board mechanisms may plausibly be employed, but substantial empirical evidence of their use is currently lacking."), 1409 ("The most commonly mentioned across-the-board mechanism is the structure of executive compensation—in particular, whether managers are paid for performance and thereby encouraged to compete aggressively in order to maximize firm value."), 1438-1441 ("across-the-board passive mechanisms and selective omission, which merely involve a failure to take actions that would increase the value of a portfolio company, do not create material fiduciary-duty risks. [...] across-the-board passive mechanisms and selective omission pose a lower risk of detection—their implementation requires no illicit communications or arrangements with the targeted firm—and a lower risk of sanction. [...] Selective omission is effective, feasible, and consistent with the empirical evidence; it may not be easily detected; and it could conceivably generate benefits for institutional investors that exceed the legal and reputational risks. Although substantial empirical support is currently lacking, some specific across-the-board mechanisms are also theoretically feasible and, at least for certain CCOs, likely to be effective."). In addition, the Anton et al. compensation mechanism for unilateral effects is another example of the same kind of strategies (having the same effect of softening competition by failing to price cut due to common ownership). See Antón and others (n 108). This mechanism importantly relies on failing to adopt performance-sensitive managerial compensation that encourages productivity-improving managerial effort which could lead to increased firm profitability and value but at the expense of rival firms' profitability and their common owner's portfolio value. Therefore, common ownership resulting in weaker managerial incentives, by common diversified shareholders optimally choosing to be passive owners who are more willing to tolerate managerial slack and productive inefficiency at their portfolio firms, can soften competition in a strategic product market competition environment. Importantly, and in contrast to partial cross-ownership, common ownership is found to affect managerial incentive contracts and competitive outcomes, irrespective of the mode of competition ("strategic complements" or "strategic substitutes").

– and not primarily the quality of governance and the level or cost of active engagement (active influence).[119] Thus rationally and predictably, although this strategy may entail suboptimal management performance (some *agency cost*), this is tolerable as the overall value to common owners from this ownership and institutional structure is presumably higher:[120] the effect (gain) of less competition (rents from suboptimal industry performance) is on balance of greater significance and magnitude than any governance and agency frictions (cost).[121]

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[119] Lucian A Bebchuk, Alma Cohen and Scott Hirst, 'The Agency Problems of Institutional Investors' (2017) 31 Journal of Economic Perspectives 89; Lucian A Bebchuk and Scott Hirst, 'Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy' (2019) 119 Columbia Law Review 2029. Bebchuk and coauthors suggest that an agency-costs analysis of index funds shows strong incentives to "underinvest" in stewardship and also to "defer" excessively to corporate management. They conclude that institutional investors have insufficient incentives to exert influence over portfolio firms to increase firm-specific value and therefore, anticompetitive effects of common ownership through an "active influence" mechanism are implausible. However, for contrary views suggesting that: (i) "passivity" does not exclude competitive harm, and that (ii) "index funds incentives" do not prevent anticompetitive effects, see respectively Antón and others (n 108) 27 ("Our theoretical framework explains why common owners have an incentive to remain passive and not to intervene with portfolio companies [but] it does not follow that this passivity makes the anticompetitive effects of common ownership implausible. In our model, it is precisely the lack of intervention when setting high-powered incentives for top managers [or 'excessively deferential treatment of managers,' as Bebchuk and Hirst (2019) call it] that leads to less competitive product market behavior. In other words, there is no paradox between favoring more effective engagement by institutional investors and being concerned about the anticompetitive effects of common ownership. Weak governance and weak competition are jointly optimal for common owners."); Einer Elhauge, 'The Causal Mechanisms of Horizontal Shareholding' (2021) 82 Ohio State Law Journal, forthcoming 39–58. Elhauge critically notes among others that "what matters is *relative* shareholder influence (the incremental effect of common owners relative to other shareholders), not whether shareholder effort is *fully* optimal" (compared to the incentives of a sole 100% owner). Indeed, along this line of argument and as this article points out, Bebchuk et al.'s analysis would be the right benchmark for the case of "concentrated common owners" but not useful or an appropriate benchmark for analyzing "diffuse common ownership" that is not primarily driven by (sole) control as explained.

[120] It is also crucial to note that the "separation of ownership and control" in large corporations, albeit it creates positive monitoring costs and conflicts between principals-owners and agents-managers, is not inefficient if it is offset by other organizational benefits and thus it is a rational choice of incorporating owners that opt to delegate decision-making power. What matters for the owners-principals and residual claimants of corporate profits is the overall efficiency of this organizational scheme being superior to others (e.g. partnership, sole proprietorship etc.). See Carlton and Perloff (n 62) 17; Tzanaki, 'Common Ownership and Minority Shareholding at the Intersection of Competition and Corporate Law' (n 7) 7 fn 10. See also Roe, 'Political Preconditions to Separating Ownership from Corporate Control' (n 69) who makes this point sharply: 15 ("when American industries were less competitive, large firm oligopolies lost something from managerial agency costs, but gained oligopoly profits to spread around to shareholders, managers, and employees.") 38 ("Weaker competition produced more organizational slack, some of which was 'spent' in looser ownership and organizational arrangements.").

[121] Eric A Posner, 'Policy Implications of the Common Ownership Debate' [2020] Antitrust Bulletin Symposium on Horizontal Ownership Concentration, forthcoming 5: "AEGS point out that blunter incentives both reduce incentives to cut cost and to compete, and from the common owner's standpoint, the gain from less competition may exceed the cost from less effort—especially as the underlying product market becomes more concentrated. Thus, even a relatively passive common owner—one who more or less deferred to management in all respects, normally voting with them when they proposed self-interested blunt incentives in their compensation packages—would produce the common ownership effect of less competition in product markets. But because managers will tend to propose incentives that are too blunt, common owners may, on the margin, intervene with more active measures—like threats to fire managers, or attempts to negotiate compensation packages directly.". See further on managerial incentives and agency costs, Antón and others (n 108); Azar, 'The Common Ownership Trilemma' (n 14). See also Mark J Roe, 'From Antitrust to Corporation Governance? The Corporation and the Law: 1959-1994' in Carl Kaysen (ed), *The American Corporation Today* (Oxford University Press 1996) 121–122, 125 and passim, who sheds (historical) light on the tradeoff between product market competition and managerial slack –

The key insight from the preceding analysis is that the appropriate benchmark here is not perfect competition and a "no agency cost" - "sole owner" (100%) paradigm, [122] in which case by definition competitive harm is impossible. Rather, under imperfect competition and partial overlapping ownership, the "*profit sharing*" force drawing together the linked firms and their shareholders (rivals' profit internalization) may be stronger than and dominant regardless of any "*cost sharing*" due to ownership dilution (<100%) and partial control (free riding on partial owner's good governance efforts and managerial agency costs). With less unpredictable value changes (profits)[123] given the internalization caused by the common ownership links in oligopoly, the partial common owners may be safe in the knowledge that not only they need

"private profits of oligopoly" versus "private (and public) costs of poorly organized firms" – from the perspective of shareholders and public policy. Shareholders (and other corporate actors inside the firm) were to benefit from the oligopolistic rents from lesser competition that outweighed any increased agency costs (from the lack of intense competition). Ironically, however, "it was oligopoly [...] that gave the large firm slack and the perception of power" that created the need for a public response, and also it was the "perception of oligopoly [that] was one reason why hostile takeovers appeared later". Oligopolistic success created management's discretion over profits (and slack), whose potential (ab)use of power and distribution of profits became cause of public concern. On the other hand, the market for corporate control does not function well in oligopoly: if a takeover entrepreneur were to disrupt the trust among managers of oligopolistic firms enjoying supracompetitive profits, even though it could possibly improve the productivity of operations, it would risk destroying the higher order of the game (causing a price war that would be to its detriment). In contrast, when intense international competition and technological change (inducing domestic competition) "took away oligopoly", "then takeovers became more plausible". Consequently, oligopoly was a source of managerial underperformance in a double sense: i) suboptimal competition induced less management effort in concentrated markets, ii) suboptimal operation of the market for corporate control disciplined underperforming management less (or not at all). Roe notes another sort of "conceptual irony" against this backdrop, making for a "trade-off in what causes slack and underperformance: in the 1980s, relaxation of the antitrust rules made for enhanced monitoring of management, at the potential price of decreased domestic product market competition. (In industries where international competition was sufficient, there was no trade-off.)". This suggests that competition (and competition policy) cannot be as effectively replaced by private monitoring (and corporate governance) to restore managerial efficiency in the public interest.

[122] John C Coates, 'The Future of Corporate Governance Part I: The Problem of Twelve' [2018] Harvard Public Law Working Paper No. 19-07 2 ("While such a ['sole owner'] benchmark may be useful, it can be misleading. Indexed owners are typically displacing not sole owners but dispersed owners -- individuals and institutions with incentives that are as weak or weaker than those of indexed funds. Against that real-world benchmark, indexation represents a significant shift towards more shareholder power, not less."). As noted in section II and n 119 above, the "sole owner" benchmark (that fits the "concentrated" common ownership type with asymmetric common control) is not appropriate for assessing "diffuse" common ownership that rests on a lack of large asymmetric blockholders, and the common owners' parallel financial interests and minority control (symmetric common control) relative to other public, dispersed shareholders (retail investors). To better understand this, note that 100% (full) "sole ownership" of all commonly held firms is not possible and further that "no control" whatsoever (passive ownership) across all commonly held firms is equally impossible. That is, the phenomenon of "diffuse" common ownership entails partial ownership and partial control. For this reason, in fact, remedy proposals against "diffuse" common ownership suggest regulatory limits or antitrust enforcement aimed at re-concentrating common ownership and investment in a single firm in each (oligopolistic) product market (i.e. transforming "diffuse" common ownership into "concentrated" common ownership). See Posner, Scott Morton and Weyl (n 99) 678, 701; Elhauge, 'The Causal Mechanisms of Horizontal Shareholding' (n 119) 53. The bottom line is using a "sole owner" benchmark to assess the anticompetitive effects of "diffuse" common ownership completely misses the mark.

[123] Armen A Alchian, 'Corporate Management and Property Rights' in Henry G Manne (ed), *Economic Policy and the Regulation of Corporate Securities* (American Enterprise Institute 1969) 342 ("The economic concept of 'profits' refers to a particular value phenomenon - unpredicted value changes. Whoever has the title to goods is the person who bears the profits and losses. 'Owner' is the name given to that person.").

not exert the same effort competing (less aggressive competition) but also engaging in the governance of particular firms (suboptimal shareholder governance) as what matters most is the supracompetitive industry profits and total portfolio profits than any firm-specific costs or gains.

This model may fit well index investment funds (with a minimum cost governance model) and diversified shareholders across firms who rationally diversify their stock portfolios[124] (*"passive" diffuse common ownership*). Notably, in this case both ownership and control over the linked firms is "partial", albeit (to some degree) common.[125] The driving motive is external to the firm (partial parallel ownership of multiple firms), hence an analytical focus on entity-centric[126], action-based and shareholder concentration perspectives ("active" concentrated common ownership) may be distracting, if not misleading.[127] On the other hand, it is quite

[124] Azar, 'The Common Ownership Trilemma' (n 14) 265 ("The enormous success of index funds and other instruments to achieve better and cheaper diversification is the practical counterpart to the triumph of the ideas of Modern Portfolio Theory, which showed that rational shareholders would want [under some assumption, of course] to hold the market portfolio."), 268 ("In the CAPM [Sharpe-Lintner Capital Asset Pricing Model], every rational shareholder holds the market portfolio in equilibrium. At the same time, empirical work by Gene Fama supported the Efficient Markets Hypothesis, implying that prices quickly adjusted to available information, and therefore future price changes are unpredictable. This combination of theory and empirics supported the view that even the best money managers could not beat the returns obtained by strategy of buying and holding market portfolio."), 271 ("The trend towards increasingly diversified portfolios is therefore largely due to the rational behavior of investors. The rise of index funds is simply a response to the demand for a cheap and convenient way to hold the market portfolio. And the rise of concentrated overlapping ownership is mostly due to the rise of the index funds, with the economies of scale in investing that inevitably go with that.").

[125] See n 122 above.

[126] A narrow control-oriented competition analysis of common ownership may be misleading in two particular respects. For instance, control is not important when i) the anticompetitive mechanism relies on "pure passivity" in that the effects transcend firm boundaries and structure; ii) manifestation of the competitive harm (partly) relies on "committed managers" that internalize the common owners' objectives in which case common shareholders' concentration is immaterial. Accordingly, competition policy solutions taking an entity-centric view or focusing on common owners' concentration may not be wholly effective. See Hemphill and Kahan (n 118) 1452 ("For companies in the oligopolistic industries that raise competition concerns, fragmentation [break up] could lead to fewer anticompetitive results. However, this benefit does not arise if CCOs employ a passive across-the-board mechanism or if managers, of their own accord, decide to compete less aggressively to further the interests of their shareholders. As we have explained, combining two CCOs into a larger one, or splitting a CCO in two, has no impact on anticompetitive effects achieved through pure passivity."); and n 139 below. It is also for this reason that traditional structural indices (HHI) that rely on the nominal number of firms in an industry to measure market concentration (single-firm control) do not capture well the effects generated by common ownership across firms. Indeed, modified concentration indices (MHHI, GHHI) have been developed and used to capture the additional "effective" concentration (and market power) created by cross- or common ownership links between competing firms (no separate ownership structure) under different corporate control assumptions (impact of across-firm common ownership on individual firm decision-making). See Bresnahan and Salop (n 23); O'Brien and Salop (n 10); Azar, Raina and Schmalz (n 1); Duarte Brito and others, 'Unilateral Effects Screens for Partial Horizontal Acquisitions: The Generalized HHI and GUPPI' [2015] Faculdade de Economia e Gestão, Universidade Católica Portuguesa (Porto), Working Paper Nº 02/2015.

[127] See n 122 above. This is not to say that within-firm shareholder concentration is completely irrelevant (indeed it matters in order to appreciate the relative degree of partial common owners' control vis-à-vis other shareholders and management – i.e. it relates to the supporting governance mechanism and the distribution of the oligopolistic profits) but it is a secondary consideration to common owners' parallel interests that induce the anticompetitive effects in the first place (common ownership incentives inducing the unilateral pricing effects and the pursuit of

interesting to reflect upon the (rather idiosyncratic and elusive) nature of "*common control*" in the case of diffuse common ownership based on diversification. Unlike full mergers, common control in this case is:

i) Partial rather than complete control (assuming common owners have some control over the partially held firms absent other more prominent shareholders in their governance structure). This partial control of common diversified investors and index funds is often modeled based on a "proportional control" baseline assumption – control being equal to the equity share.[128] The criticism against the proportional control assumption underlying (empirical and theoretical) economic research is not wholly justified. This is for a number of reasons. Given the "power vacuum" that institutional investors and large index funds in particular come to fill by replacing atomistic, retail shareholders (meaning that there is no real antagonistic force in firm governance by other shareholders with larger shareholdings and more influence that can press forward and implement their preferences), and given the fact that control has to lie with some shareholder representative (meaning that not all shareholders can be passive in all firms at the same time) and given that institutional investors are the most likely candidate to exert control or influence in the context of large, public, widely held firms (assuming they possess disproportionate governance power than implied by their seemingly small common financial holdings), then the "proportional control" assumption may be simply understood as a lower bound for potential anticompetitive effects.[129] That is, diffuse common owners may be assumed

supracompetitive oligopolistic profits). That is, the main driver is diversification, not shareholder concentration. Cf Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17); O'Brien and Salop (n 10) 612.

[128] See n 15 above.

[129] See also n 122 and 147. That said, such "proportional control" assumption is only a starting basis for economic analysis; facts in the specific case may suggest the presence of large, undiversified blockholders in many commonly held firms (in which case common owners may effectively have "zero control") or reversely, the presence of other asymmetric shareholder dynamics (indicating *de facto* disproportionate control of common owners relative to other shareholders nearing that of "total control" in the limit, as Banzhaf indices suggest when control approaches 50% majority ownership) or to a similar effect, the presence of asymmetric governance structures (e.g. dual-class shares, non-voting stock, contractual arrangements providing disproportionate control or decision-making rights). Accordingly, in such circumstances the "proportional control" assumption could and should be revised downwards or upwards to reflect the reality of the specific case and context. Such updated control assumptions and resulting competitive harm estimations may bring the effects analysis closer to the actual or likely effect. In light of the above however, until we have a better understanding of the (ambiguous) partial common control implications of common ownership and given the "one-share-one-vote" corporate governance principle, proportional control for common owners with parallel, symmetric interests and no asymmetric counterweight in governance is a reasonable analytical assumption. On the other hand, assertions that corporate voting relies on majority rule and thus the outcome is not a function of proportional control weights is inapposite and incorrect because it takes an *ex post* view. See claim by the merging parties cited in Case M.7932 *Dow/DuPont*, Commission decision of 27 March 2017, Annex 5, para 78: "[i]f a majority of shareholders prefers a strategy different than that preferred by some other set of shareholders, then the majority will prevail. The outcome of voting in this case is not a decision that weighs the incentives of shareholders in proportion to their ownership shares, but one that reflects majority rule.") From an *ex ante* perspective, however, it may be reasonable that managers care about and seek to maximize the *expected* vote share or likelihood of gathering majority

to have relative control, for instance by being the largest shareholder(s), among other "more passive" shareholders.[130]

Were "partial common control" to be established, diffuse common ownership would effectively have the same effect as a *partial merger*. Although it is "partial integration" without hierarchy à la Williamson but via diversification.[131] Intriguingly, were common owners able to effectively implement anticompetitive strategies based on selective passivity (across-the-board or selective omission) as described above, then Williamson's idea of "*selective intervention*" that was thought impossible in a standard merger context,[132] may now be feasible in case of

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shareholder support and remaining in office, in which case they will take into account the relative minority power of common owners and other shareholders (assuming none has straight majority control) in proportion to their shares (again assuming no asymmetric governance structures or contracts among shareholders granting disproportional control). Said differently, although the concrete voting outcome may and will usually change, the chances of securing a majority outcome weighted by the relative power of each shareholder is what matters from a manager point of view and what will shape its incentives and behavior. In an extreme scenario, shareholders may choose not even to exercise their right to vote, but the probability and threat of doing so may in itself discipline firm management and its strategic choices. See Einer Elhauge, 'The Growing Problem of Horizontal Shareholding' (2017) Index Funds-A New Antitrust Frontier? CPI Antitrust Chronicle 4: "the voting of horizontal shareholders is likely to influence managers. New scholarship mathematically proves that if managers try to maximize either their expected vote share or their probability of winning re-election, managers will maximize the weighted average of their shareholders' profits from all their stockholdings. If all shareholders have equivalent horizontal holdings across all firms (such as with indexing), then this will lead managers to have each firm price at monopoly levels despite nominal competition. If managers maximize their expected vote share, shareholders will be weighted proportionally to their voting shares, so increased horizontal shareholding will proportionally increase prices. If managers maximize their probability of re-election, shareholders will be weighted by the odds that the particular shareholder's vote will be pivotal, which gives extra weight to the largest shareholders, who typically are now horizontal shareholders."; Azar, 'Portfolio Diversification, Market Power, and the Theory of the Firm' (n 113) (developing voting models of firm behavior in oligopoly whereby managers take common shareholding into account).

[130] Frank H Easterbrook and Daniel R Fischel, 'Voting in Corporate Law' (1983) 26 The Journal of Law & Economics 395, 406: "One final point on the relation between voting and residual claims. Shareholders do not always have equal power. Sometimes stable coalitions (a group of inside shareholders and some institutional allies) may hold effective control for long periods. This is beneficial, for reasons we have explained, because it alleviates the collective action problem. It is not troublesome if the gains from corporate action are divided proportionally among all shareholders. Even when gains are not proportionally divided, the aggregation of 'voting power' is uninteresting if coalitions can change. So long as each share has an equal chance of participating in a winning coalition, the gains from monitoring will be apportioned so as to preserve appropriate incentives at the margin." The critical point about common ownership is that although "effective control" by common, diversified shareholders may be beneficial for all shareholders assuming they discipline management and minimize agency costs, the concentration of voting power also have negative implications for undiversified shareholders in two ways: i) the distribution of corporate profits may not be proportional (indeed this is the main claim of the common ownership literature that it changes the objective function of the firm so that portfolio rather than firm profits are maximized); ii) the chance of being part of a winning voting coalition may also be unequal (as between passive institutional and retail shareholders). In other words, the relative concentration of shareholder power may bear its own agency costs (private benefits of control) that will be against the interest of the minority (in this case retail undiversified investors). Thus, the singularity of shareholders as a homogenous group of residual claimants could also be brought into question.

[131] Oliver E Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications* (Free Press 1975).

[132] Oliver E Williamson, *The Economic Institutions of Capitalism* (The Free Press 1985) 135: "Suppose instead that the parent firm deals with each of its parts by exercising forbearance with respect to those activities where no net gains are in prospect (in which event the parent directs the operating part to replicate small firm behavior) and intervenes wherever coordination yields net gains."; 161: "Selective intervention whereby integration realizes adaptive gains but experiences no losses, is not feasible. Instead, the transfer of a transaction out of the market

"effective integration" due to across-firms diversification. In other words, common ownership could act as a (partial) merger substitute with the additional advantage that "selective intervention" (intervening when the net expected gains exceed the costs) is possible.[133]

ii) Factual (*de facto* minority or "effective control"[134])[135] rather than legal in nature or straight control (*de jure* sole or majority control, as would be the case in "concentrated" common ownership situations). Accordingly, in attempting to estimate the competitive effects of diffuse common ownership, the analyst must by necessity examine the facts of the case that will also inform the plausibility and reasonableness of the control assumptions.

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and into the firm is regularly attended by an impairment of incentives."; Oliver E Williamson, 'Economic Institutions: Spontaneous and Intentional Governance' (1991) 7 Journal of Law, Economics & Organization 159, 165: "The puzzle of selective intervention is a variant on the theme, 'Why aren't more degrees of freedom always better than less?' In the context of firm and market organization, the puzzle is, 'Why can't a large firm do everything that a collection of small firms can do and more?' By merely replicating the market, the firm can do no worse than the market. And if the firm can intervene selectively (namely, intervene always but only when expected net gains can be projected), then the firm will sometimes do better. Taken together, the firm will do at least as well as, and will sometimes do better than, the market. A troublesome implication of this result is that firms will grow without limit (Coase, 1952). As developed elsewhere (Williamson, 1985, 1988), selective intervention is impossible. Not only do asset dissipation losses obtain if transactions are taken out of markets and organized internally (if, simultaneously, market-like incentives are kept in place), but the high-powered incentives of markets are unavoidably degraded by any effort to exercise selective intervention. The latter obtains because the option to intervene can be exercised both for good cause (to support expected net gains) and for bad (to support the subgoals of the intervenor) [see Grossman and Hart (1986) for a formal model]. Unable to disallow strategic intervention, claims over net receipts in firms are weaker than in markets, ceteris paribus."

[133] In essence, common ownership combines elements of market autonomy by preserving formal firm independence post-acquisition with intervening selectively (always and only) when the net gains are greater (e.g. profit sharing of oligopolistic rents due to internalization of competitive externalities and maximization of portfolio profits of common owners).

[134] Williamson, *Markets and Hierarchies, Analysis and Antitrust Implications* (n 131) 252: "A third approach that comes out of the property rights literature is that it is 'effective control' that matters. My initial work on managerial discretion (Williamson, 1964) is an example.". Similarly, the Berle and Means thesis on the "separation of ownership and control" in the modern, large, public corporation speaks of such *de facto* or "effective control" of managers (managerial discretion and agency costs) vis-à-vis small, dispersed public shareholders invested in the firm. See Adolf A Berle and Gardiner C Means, *The Modern Corporation and Private Property* (Macmillan Co 1932).

[135] Gardiner C Means, 'The Separation of Ownership and Control in American Industry' (1931) 46 The Quarterly Journal of Economics 68, 72, 80–81: "When control is thus defined [by typically determining 'who does actually have the power to select the directors'], a wide variety of kinds and conditions of [corporate] control situations can be found - forms derived wholly or in part from ownership, forms which depend on legal devices, and forms which are extra-legal in character. Five major types can be distinguished, tho no sharp dividing line separates type from type. These include (1) control through almost complete ownership, (2) majority control, (3) control through a legal device without majority ownership, (4) minority control, and (5) management control. Of these, the first three are forms of control resting on a legal base and revolve about the right to vote a majority of the voting stock. The last two, minority and management control, are extra legal, resting on a factual rather than a legal base." [...] In the typical large corporation, however, control does not rest upon legal status. […] As in the case of legal control, factual control apart from legal control may involve varying degrees of ownership, tho never more than 50 per cent of the voting stock. Factual control may rest to a very considerable extent on the ownership of a large minority stock interest ("minority control"), or, when stock ownership is widely distributed, it may lie in the hands of the management ("management control"). No sharp dividing line exists between these two situations. [...] In such companies [...], it is necessary to examine in greater detail the conditions surrounding the election of the board of directors." .

iii) Shared between the common owners-shareholders and other groups with (partially) heterogeneous goals such as undiversified shareholders or management of the commonly held firms[136] ("joint control"[137]). This view suggests that no one shareholder enjoys total majority control (no sole shareholder control) and also that there is no full separation of ownership and control (some management control). Accordingly, the degree of separation of ownership and control (managerial entrenchment) and the relative strength of *de facto* shareholder control among minority common owners on the basis of voting coalitions (shareholder minority bloc) may mitigate or reinforce the potential anticompetitive effects of common ownership (from partial to full internalization of rivals' profits).[138]

[136] Williamson, *The Economic Institutions of Capitalism* (n 132) 145: "Unremarked merger consequences of three kinds warrant consideration. For one thing, to observe that ownership and management are separated does not establish that ownership is thereafter wholly lacking in control. […] The absence of continuous (hands-on) control permits those to whom decision powers are delegated to exercise discretion. But a total absence of control is not thereby implied. To the contrary, if ownership control is reasserted when performance approaches or falls below threshold standards, then the relevant questions are ones of thresholds and competence to intervene. Ceteris paribus, weak standards imply greater opportunities for managerial discretion. Ownership interest are commonly activated, however, before bankruptcy becomes imminent." See also n 120 above underscoring that this "separation of ownership and control" is not inefficient and may rationalized and thus, there is no absolute lack or loss of control by shareholders-principals.

[137] Means (n 135) 89, 93: "Sometimes factual control is not found in the hands of any single group. We have seen how dependent a controlling minority may be upon the cooperation of the management and how a controlling management may have to accede in a measure to the demands of a strong minority in order to maintain its measure of control. It is not unusual for two or more strong minority interests to enter into a working arrangement by which they jointly maintain control; or a minority and a management may combine as 'the' control. In such cases we may say that control is divided and can refer to the situation as 'joint control.' […] The dividing line between minority and management control was drawn roughly at 20 per cent, tho in a few special instances a smaller holding was credited with the power of control. It is notable that in none of the companies classed under management control was the dominant stock interest known to be greater than 5 per cent of the voting stock. Cases falling between 20 and 5 per cent were usually classed as joint minority-management control."

[138] Azar, 'The Common Ownership Trilemma' (n 14) 286–293; Azar and Tzanaki (n 79) 38: "Azar shows that in a voting model where the objective function of the firm is determined by both the objectives of shareholders and of managers, a number of factors need to be accounted for, besides any (heterogeneous) shareholder preferences, such as: i] the within-firm concentration of shareholders, ii) the cost of shareholder dissent for managers , iii] how large the deterministic component of shareholder voting is. The higher any of these parameters are, reflecting the level of shareholder power and their ability or probability to discipline management, the greater the weight of shareholder objectives in the firm objective function. Also, the higher the within-firm concentration of ownership, the higher the MHHI delta. On the other hand, if managers directly own stock in their own firm or have other personal objectives (e.g. they are 'empire-builders' or they wish to enjoy the 'quiet life'], those will also affect the firm objective to the extent management is entrenched (agency frictions] and shareholders are more dispersed (less concentrated shareholder influence]."; Matthew Backus, Christopher Conlon and Michael Sinkinson, 'Common Ownership and Competition in the Ready-To-Eat Cereal Industry' [2021] Working Paper (suggesting that their empirical tests reject the 'exact' common ownership hypothesis (full internalization of common owners' incentives by managers) but not more moderate versions whereby only up to 30% of common owners' profit weights are transmitted to managers; thus proving some empirical confirmation as to the existence and importance of managerial agency costs (partial internalization of common ownership incentives)].

On the other hand, in the diffuse common ownership setting, "uncommitted" owners (with joint minority control) are not focused or identified with the self-interest of any individual firm in their diversified portfolio (although this lack of commitment may be to the firm's benefit as the unilateral effects analysis has indicated). To the extent that managers are "*committed*" to such diversified and indifferent shareholders[139] (an idiosyncratic kind of agency cost since strictly speaking a subset of owners is favored, yet again this selective attention and preference may be to the corporate entity's and all its shareholders benefit)[140], the anticompetitive effect of common ownership may be robust at any level of within firm shareholder concentration (as long as there is no large, asymmetric and undiversified blockholder) and across firm concentration: the size of common shareholding is irrelevant as long as common owners have greater relative influence in the governance of the linked firms. In fact, as we reach perfect symmetry, the effect of relative investor concentration is not ambiguous but rather becomes irrelevant.[141] Given that the *ratio* of common shareholding participations is equal, the weight

[139] Hemphill and Kahan (n 118) fn 168 ("To the extent that managers indeed seek to further the interests of their shareholders of their own accord, as opposed to being induced as a matter of self-interest, it is unclear if anything can be done to reduce the anticompetitive effects of common ownership. As long as managers believe that their ultimate beneficial owners hold broadly diversified portfolios, they will understand that these owners benefit from less aggressive competition and act to confer that benefit. On this view, it does not matter whether common ownership is concentrated. Small, highly dispersed common owners would have this effect as well. Nor does it matter whether the common owner is a financial intermediary. An ultimate beneficial owner invested in multiple mutual funds—with each mutual fund holding, for example, a different airline—would have the same adverse effect on managerial decisionmaking.").

[140] On controllers' agency costs and fiduciary duties that are unlikely to act as an effective constraint against competition effects (controllers being conceived as either controlling shareholders or corporate managers), see n 111 above and further Einer R Elhauge, 'How Horizontal Shareholding Harms Our Economy - And Why Antitrust Law Can Fix It' (2020) 10 Harvard Business Law Review 207, 45: "this argument [that managers' fiduciary duties prevent anticompetitive effects of common ownership] logically conflicts with well-established antitrust law deeming anticompetitive concerns to arise when one firm acquires a controlling interest of less than 100% in a competitor. If this argument were right, such acquisitions would raise no anticompetitive concerns because fiduciary duties to the noncontrolling non-horizontal shareholders of the competitor would prevent the acquirer from ever using their control to lessen competition. The reality that antitrust law takes the opposite position means that it necessarily rejects the claim that fiduciary duties to the non-horizontal shareholders suffice to prevent anticompetitive effects."; Elhauge, 'The Growing Problem of Horizontal Shareholding' (n 129) 6: "although horizontal shareholding lessens competition that would be profitable for a firm acting individually, it also lessens competition from rival firms, so the net effect of horizontal shareholding is to increase the profits of all the affected firms. The critics do not explain why they think non-horizontal shareholders would complain about conduct that on balance benefited them, let alone how they could show injury from any claimed fiduciary duty violation. In any event, the operational decisions affected by horizontal shareholding are protected from fiduciary duty claims by the business judgment rule."

[141] Backus, Conlon and Sinkinson, 'Common Ownership in America' (n 17) 17 ("it is the increase in overlapping ownership, driven by indexing behavior, that explains the lion's share of the rise of common ownership in the time series."), 18 ("Holding all else equal, as firm f's own investors become more concentrated we expect them to put less weight on other firms' profits. But a general rise in IHHI [relative investor concentration] will appear in both the numerator and the denominator, so the effect is ambiguous. So, though IHHI has been rising since 1980, relative investor concentration cannot be rising for all pairs of firms simultaneously, and therefore rising investor concentration cannot fully explain the rise over time in κ [profit weights]."), 35 ("even though the Big Three index funds have dominated the public debate on common ownership, much of the historic rise in common ownership incentives predates them and is driven not by concentration in asset management but rather by a broader increase in diversification of investor portfolios. Indeed, the growth of these firms has an ambiguous relationship

a commonly held firm puts on the profit of another linked rival firm is one (full internalization). Similarly to the scenario of a 50/50 joint venture structure, as ownership interests become equal and symmetric (identical financial interests), control although nominally partial (50/50) materially becomes complete (full joint control) and irrelevant (as it is a secondary consideration to the main driver being the symmetric ownership structure). Put differently, there is a sharp disconnect in the link between corporate control and competition harm as mediated by the level of shareholding (50% equally shared ownership implies complete control and leads to the same effect as a full merger).

Thus, while common ownership does not strictly rely on joint control as in a merger or joint venture scenario, a full internalization of rivals' profits will functionally have the same effect (weight equal to one on the linked rival firms' profits). It is for this reason as I have noted elsewhere that we need to shift focus as regards the ownership "atom" and rather than being distracted by visible and "solid particles" (*control rights*) to also start observing more fluid and "invisible waves" (*parallel interests*):[142] we may be used to attend the former given its conspicuous presence (or absence) and our familiarity with property notions of the firm and its shares but reality is forcing us to redirect attention outside the firm to grasp the effect of less familiar and less directly observable ownership phenomena with significant implications for competition outcomes.[143] Indeed, the *absence* of large dominant shareholders within firms and the *presence* of wide-spread common ownership links across firms in an oligopolistic industry

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to common ownership incentives, as the effects of investor concentration appear both in the numerator and the denominator of the profit weight.").

[142] As the "double slit experiment" in physics shows, waves may be invisible to the observer but their effect (or "presence") – in the form of an "interference pattern" – can be. (The experiment demonstrates the wave–particle duality, which states that all matter exhibits both wave and particle properties: the particle is measured as a single pulse at a single position, while the wave describes the probability of "absorbing" the particle at a specific place on the screen. In addition, the very act of "observing" or "detecting" makes the interference pattern disappear (by causing waves to behave as particles), which creates a "measurement problem" for quantum mechanics. See: https://en.wikipedia.org/wiki/Double-slit_experiment, and https://plus.maths.org/content/physics-minute-double-slit-experiment-0.) With this colorful metaphor in mind, empirical economic research should be directed to the estimation of such indirectly apprehensible "probabilistic" outcomes of common ownership incentives by testing alternative theories on the objective functions of the firm and control assumptions. In this connection, the famed US Supreme Court phrase "I know it when I see it" (found in Justice Potter Stewart's concurring opinion in Jacobellis v. Ohio, 378 U.S. 184, 197 (1964), the fuller version being: "I shall not attempt further to define [what may be undefinable]. But I know it when I see it") should be revised into "I know it when I observe it". That is, we may be far from a full economic let alone legal definition of common ownership, yet the first step is trying to understand the different dimensions of the problem and develop ways to approach and measure them with the aim to arrive at a more comprehensive theory and definition of the issue in the future on the basis of that knowledge.

[143] It is instructive and notable in this regard, for example, that in case of diffuse common ownership, as said, the nominal number of firms present in the market (market concentration) is not either the (sole) source or predictor of the effect (the effect crosses the firms and makes them irrelevant as a unit of analysis). That is, common ownership dilutes the very concept and analytical foundation of the firm as a stand-alone, well-defined entity in economic terms, hence the need to revisit its objective function and inject "realism in motivation" as Williamson has put it. See Williamson, *Markets and Hierarchies, Analysis and Antitrust Implications* (n 131) 252.

should warn us to be on the lookout for such effects as the traditional assumptions of perfect competition and the presence of blockholders that underpin the economic and legal structure of merger control regimes as to the innocuousness of small, purely passive shareholdings (as illustrated in the two previous sections in this article) do not hold.

Figure 5 below provides a visual representation of the different relevant control situations, by reference to a full or partial acquisition along a continuum of ownership levels (that indicates and ranges from full integration to full independence), which are classified as: i) majority control by a dominant shareholder-common owner that has a passive minority stake in another rival firm (concentrated common ownership); ii) minority control by several jointly controlling common shareholders over several rival firms (diffuse common ownership); iii) management control and complete firm independence despite common shareholdings among rival firms (managerial agency costs and full separation of ownership and control).

Figure 5. Spectrum and bounds of (economic) control –
Corporate control by shareholders vs managers for varying levels of integration

Full independence ⟷ Full integration

0% 5% 50% 100%

Parameters	Managerial control	Minority control	Majority control
Ownership and governance structure	No dominant shareholder(s) Silent financial interest	Partial control *De facto* joint control	Total control Sole controller
Driver of particular control situation	Managerial agency costs (discretion)	Shareholder diversification (symmetry)	Shareholder dominance (control)
Theoretical paradigm	Berle & Means model	Azar et al. model	Gilo model
Objective function (own and rival firm)	firm profit maximization + manager's objectives	shareholder profit maximization + % proportionally to their stakes	controller's profit maximization (- minority) + % stake in rival

	profit maximization/ independent	same/ mirror image	proportionally/ no agency cost
Type of control	Factual control	Factual control	Legal control
Level of integration	No merger	*De facto* partial merger	Full merger

Further, it is also important that common ownership works through institutional intermediaries for additional reasons: i) for the dilution effect to manifest it is key that the firm's controller directly invests in the competing firms (rather via the firms) because only then there is the disproportional internalization that can be "manipulated with" (strategic motivation)[144], ii) institutional investors and in particular the "Big Three" are not just any intermediary but they have the (*de facto* structural) power, scale and clout to credibly execute any of their governance

[144] Gilo (n 23) 37–38: "the strategic motivation that drives a firm to commit to becoming a less vigorous competitor *ex ante* (namely, committing to compete less aggressively in order to induce competitors to compete less aggressively themselves) is not discussed in the decision. This strategic motivation, identified in this Article, is important to emphasize when discussing the 'solely for investment' exemption. Without acknowledging this strategic motivation, one might claim that although passive investment may have an incidental anticompetitive effect, it is motivated solely by investment considerations, and not by anticompetitive ones. It is plausible to claim that the acquisition is thereby deemed 'solely for investment' and is eligible for the exemption. However, once we acknowledge the strategic anticompetitive motivation behind passive investment (i.e., inducing competitors to compete less vigorously themselves), it will be easier for a plaintiff to claim that the acquisition is not solely for investment, and is therefore outside the scope of the exemption."

threats and discipline management when necessary[145] (selective omission)[146]; iii) the relative influence of common institutional owners is in fact disproportionate compared to any other

[145] Lucian A Bebchuk and Scott Hirst, 'The Specter of the Giant Three' (2019) 99 Boston University Law Review 721 (showing the dramatic growth of the Big Three index funds; that each of them now manages 5% or more of the shares in a vast number of public companies; and that they collectively cast an average of about 25% of the votes at S&P 500 companies; and that as these trends continue into the future, voting in most significant public companies will come to be dominated by the future "Giant Three", i.e. casting as much as 40% of the votes in S&P 500 companies within two decades); Fichtner, Heemskerk and Garcia-Bernardo (n 69) (showing the massive shift from active towards passive index investment funds who are the largest shareholder in 40% of all listed companies and 88% of S&P 500 firms; and showing that they are "permanent owners" that cannot use "exit" strategies but also not "passive owners" in that they pursue a centralized voting and governance strategy ["voice"]; that they occupy a position of "structural prominence" in the market for corporate control; that they have "disciplinary power" over management; that they possess other avenues of "hidden" power such as private engagements with management and indirectly inducing firms to internalize the [portfolio or systemic] objectives of the Big Three); Daniel Haberly and Dariusz Wojcik, 'Earth Incorporated: Centralization and Variegation in the Global Company Network' <https://papers.ssrn.com/abstract=2699326> (suggesting that a very small group of passive funds have come to comprise a "*de facto* permanent governing board" for a growing share of major global companies); Ian R Appel, Todd A Gormley and Donald B Keim, 'Passive Investors, Not Passive Owners' (2016) 121(1) Journal of Financial Economics 111 (finding that passive investment funds are not really "passive owners" in that they exert influence through their large voting blocs and they are an "influential voice" in decisions regarding firms' governance structures, resulting in more independent directors, removal of takeover defenses, more equal voting rights and less dual-class share structures; and also finding that ownership and engagement by passive funds leads to less activism in portfolio companies); Zohar Goshen and Doron Levit, 'Common Ownership: Shareholders Win And Employees Lose' [2020] Columbia University, Center for Law and Economic Studies - Working Paper 19–24 <https://law-economic-studies.law.columbia.edu/content/fall-2020-blue-sky-talks>19-24 ("Even the most 'passive' of investors—index funds that mimic market portfolios such as the S&P 500—actively agitate for strong governance. [...] index funds cannot express dissent by selling, as they are constrained to maintain a market portfolio. However, they can—and do—vote, disproportionately in favor of measures that empower shareholders, and mostly as part of one-size-fit-all voting policies. [...] Common owners push firms towards increased shareholder rights, in particular advocating for governance mechanisms that allow shareholders to remove and discipline managers [e.g. they oppose dual-class structures that create disparate voting rights and can block a firm's equity majority owners from removing its managers; they convince stock indices to exclude dual-class firms or grant period of transition for existing ones to switch to one share-one vote model; they disfavor 'poison pills' and 'staggered boards' that entrench boards and prevent or delay shareholders from holding corporate managers accountable; they support activist investors when this is beneficial for their governance agenda such as when activists align with common owners by advocating for board efficiency and independence and against takeover defenses]. Consequently, it is no exaggeration to say that common owners have reshaped the corporate hierarchy, putting shareholders at the top."); John C Coffee, 'The Future of Disclosure: ESG, Common Ownership, and Systematic Risk' [2020] European Corporate Governance Institute - Law Working Paper 541/2020 <https://papers.ssrn.com/abstract=3678197> 1-3 ("the 'institutionalization' of the market has now been fully realized. [...] Stock ownership is now dominated by institutional investors, who are increasingly diversified and often indexed. The second transition involves the more recent and extraordinary concentration in stock ownership, with the result that as few as five to ten institutions today may be in a position to exercise *de facto* control over even a large public corporation. The Big Three of institutional investors -- BlackRock, Inc., State Street Global Investors, and the Vanguard Group -- now hold over 20% of the shares in S&P 500 companies [and vote approximately 25%]. [...] institutional investors, recognizing the power of their common ownership, are beginning to make decisions on a portfolio-wide basis [rather than seeking only to maximize each individual firm's value].") 35 ("Institutional investors logically have a greater interest in 'systematic risk' [that cannot be diversified away] than do undiversified investors [in part because only diversified investors with high common ownership can take effective [collective] action [to minimize externalities]], and much of what ESG disclosures would provide relates to 'systematic risk'. Individual investors [at least if undiversified] have a greater interest in firm-specific 'unsystematic risk'") 5 ("with high common ownership across a broad portfolio, it becomes rational and predictable that these institutional investors will make both investment and voting decisions on a portfolio-wide basis [rather than simply trying to maximize the value of individual stocks]. This, in turn, permits the netting of gains and losses across the portfolio, and the implications of this transition are sweeping.") 36 ("Not since Berle and Means announced the separation of ownership and control have shareholders as a group perceived themselves to possess the power to behave as 'true owners.' But, unlike the 'true owners' of the 19th Century [for example,

"passive" individual investor with proportional voting rights ("more equal among equals") due to its systemic, institutionalized and informal nature (*de facto* minority control).[147]

Indeed, index funds with a highly diversified and wide portfolio of companies (number of links), relatively large shareholdings in particular firms compared to small, individual investors (level of links) and relatively symmetric stakes across the leading competing firms in an industry (symmetry of links) are the best fitting candidate for the theory of anticompetitive harm and strategies set out in this and the previous section. In this case, the "network of links" and the "degree of internalization" of rivals' profits is likely to be both wide-spread and significant, indicating sizeable and appreciable "*common ownership incentives*". Indeed, the

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the railroad, oil and bank barons] [what I call in this article 'concentrated common owners'], the focus of institutional investors as owners will logically shift to maximizing portfolio value, not the value of individual stocks [what I call in this article 'diffuse common owners']. The implication of this transition is that it may solve a problem that has frustrated legal scholars for decades [i.e. reducing externalities of corporate behavior]."); José Azar and others, 'The Big Three and Corporate Carbon Emissions Around the World' [2020] Journal of Financial Economics (JFE), forthcoming (finding that higher ownership and engagement efforts by the Big Three with large firms in which they hold a significant stake is related to lower corporate carbon emissions and suggesting their effective role in inducing firms to internalize the ESG preferences of institutional investors).

[146] Hemphill and Kahan (n 118) 1427–1429 ("selective omission is, in effect, a targeted passive mechanism. [...] CCOs that are engaged in selective omission generate an anticompetitive effect because they selectively fail to push certain firm-value-increasing actions that would be procompetitive, rather than because they actively push the firm to implement firm-value-decreasing measures that are anticompetitive [as in a targeted active mechanism]. Only a CCO's failure to push for firm-value-increasing procompetitive actions is a source of conflict between it and an NCO. [...] there is no affirmative promotion of a strategy that reduces firm value. [...] The CCO could advocate such strategies openly, convey them to lower-level executives, and execute them without involving top advisor managers or risking managerial resentment or disclosure. Moreover, selective omission could emerge from the natural interests of individual analysts working for a CCO. [...] All that is needed is that analysts sometimes give business advice to firm executives, that firm executives are sometimes influenced by such advice, and that analysts want to maximize the return on the overall portfolio of certain stocks and therefore omit advice that would benefit the company at issue but prove harmful to portfolio interests. [...] the quantitative anticompetitive effect of selective omission depends on how frequently analysts [or other CCO officials] otherwise would make the business suggestions that are omitted—that is, suggestions that would increase company value but decrease portfolio value—and the extent to which such suggestions affect company policy."). In this light, common owners' only sin is that they do not push any individual company to be a "star" overshadowing other firms in their portfolio.

[147] O'Brien and Salop (n 10) 570: "As a general matter, higher financial interest is accompanied by greater corporate control. This is certainly true in comparing individuals with majority and minority stakes. Where there is no majority shareholder, larger minority shareholders may have disproportionate control as a result of their superior ability to form voting coalitions that can jointly control the outcome. [...] This structure can lead to a situation where a shareholder with a minority financial interest controls the firm."; Easterbrook and Fischel (n 130) 402: "[unlike votes] 'voters are not fungible'. Those who have more shares, such as investment companies, pension trusts, and some insiders, do not face the collective action problem to the same extent."; Case M.7932 *Dow/DuPont*, Commission decision of 27 March 2017, Annex 5, para 21: "it remains that large shareholders have a privileged access to the companies' management and can, therefore, share their views and have the opportunity to shape the companies' management's incentives accordingly." Also, the fact that institutional investors advocate for equal voting rights and removal of takeover defenses creates a paradox that can be fully rationalized: on one hand, they are supporters of strong governance aiming to minimize managerial entrenchment (to the benefit of all shareholders), yet on the other hand, given their large share ownership size and structural power, advocating for equal voting rights is predictably and *de facto* to their benefit, so they are to call the shots in governance decisions (based on a portfolio-wide view).

"long-term" investment horizon of index funds makes strategies to act on and benefit from these anticompetitive incentives credible.[148]

Furthermore, although index funds have a "passive investment" business model and a "low cost, one-size-fits-all approach to governance"[149] compared to other investors, they are not "silent" or completely "passive owners".[150] They do have a duty to vote their shares[151], they engage with their portfolio companies even if to a potentially lesser (or less informed) degree than "active" or "activist" institutional investors,[152] and their voting matters.[153] Indeed, their

[148] Hemphill and Kahan (n 118) 1445 ("index fund advisors such as Vanguard or State Street may have difficulty developing and executing a targeted strategy. On the other hand, because of their longer investment horizon, they may be better equipped to execute across-the-board strategies, such as disfavoring relative performance incentives and supporting management against activists who advocate more aggressive competition."); Patrick Jahnke, 'Ownership Concentration and Institutional Investors' Governance through Voice and Exit' (2019) 21 Business and Politics 327, 347 ("[Global asset managers] have the potential to act as global standard setters working alongside governmental oversight. Serafeim therefore argues for index funds, benchmark-constrained active funds, and large pension funds to act as the 'stewards of the commons.' With their long time horizons and common ownership they are able to provide the 'commitment mechanism' necessary to ensure that companies work together to internalize externalities created within each industry.").

[149] Dorothy Shapiro Lund, 'The Case Against Passive Shareholder Voting' (2018) 43 The Journal of Corporation Law 493.

[150] Note the important distinction pointed out by Bebchuk et al. between "added-cost" and "minimum-cost" engagement activities of institutional investors such as voting. See Bebchuk, Cohen and Hirst (n 119) 95-96 ("Stewardship decisions can be split into two parts: 1) spending decisions regarding how much to expend on stewardship; and 2] qualitative decisions regarding which way to vote or which positions to take in communications with corporate managers and other shareholders. [...] In many cases, stewardship decisions may be merely qualitative, and not involve additional cost. [...] Suppose that voting or otherwise taking a position against the outcome management prefers would change the value of the position by ΔV, where ΔV can be positive or negative.") 102 ("One important source of costs from taking positions that corporate managers disfavor (or benefits from taking positions that managers favor] comes from the incentives of investment managers to obtain or retain business from public corporations. [...] The largest index fund managers and active managers all derive business from 401(k] services, and therefore have strong incentives to attract and retain such business from public corporations."). Thus, although index funds may not be interested in engaging in costly stewardship activities such as initiating proxy fights (both because of the additional cost they entail in general and because of the private indirect cost that index funds may bear by opposing corporate management given their interest in attracting business), they will regularly vote or undertake the minimum stewardship activities required by law.

[151] Coffee (n 145) 32 ("both the Department of Labor [which administers ERISA] and the SEC require fiduciaries [such as investment advisors] to vote the shares held by their fund, on the theory that voting rights are an asset belonging to the fund and cannot be wasted. Both agencies also recognize that voting has low costs [in contrast to investment decisions] and that fiduciaries must constantly make these decisions across their portfolios. As a result, both have favored a rule of reason with regard to voting and shareholder activism.").

[152] Jill E Fisch, Assaf Hamdani and Steven Davidoff Solomon, 'The New Titans of Wall Street: A Theoretical Framework for Passive Investors' (2020) 168 University of Pennsylvania Law Review 17, 71 (suggesting that passive fund sponsors have a variety of incentives to engage and also the ability to engage effectively, in particular: [i] because of the competition faced by mutual fund sponsors, passive fund sponsors need to exercise their governance rights in an informed manner to promote firm value and they must do this by relying on voice, rather than exit; [ii] highlighting the structural advantages of passive with respect to certain types of engagement, particularly market-wide initiatives such as improving corporate governance – due to their size, breadth of portfolio and economies of scale; and [iii] explaining the role that passive investors can play in mediating shareholder activism).

[153] Lund (n 149) 493 ("the institutional investors that dominate the passive fund market will increasingly influence and even control the outcome of shareholder interventions - from shareholder votes to those proposed by hedge fund activists") 495 ("the rise of passive investing has the potential to distort hedge fund activism. Hedge fund activists are increasingly moderated by large institutional investors with the power to block campaigns that are

large size (the overall size of their investment portfolios combined with the size of individual shareholdings in portfolio firms) and other characteristics suggest that they have *relatively* strong incentives to be "engaged" shareholders as they stand to gain considerably from firm value improvements.[154] Also, they are likely to have *greater ability* to effectively engage and affect firm policy as they have *relatively* greater influence than other shareholders within large firms with a dispersed shareholder base (absent large blockholders).[155]

Indeed, these incentives and ability to effect anticompetitive outcomes will be multiplied and reinforced considering the cumulative impact of index funds with parallel common shareholdings across rivals firms that, as a group, may have similar interests and even greater

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not in the interest of their long-term shareholders and catalyze interventions that are deemed beneficial.") 528 ("Voting is the least expensive, yet most visible, way to demonstrate involvement in governance. Moreover, there is a first-mover disadvantage to abstaining from voting - the market could view the decision to not vote as a signal of poor quality, especially when all other funds continue to highlight their governance abilities. In other words, unless all passive funds collectively gave up their voting rights, it is unlikely that any one institution would voluntarily choose to do so."); Jahnke (n 148) 343 ("[there is] a concern that passive investors may have different objectives to active investors and that these differing objectives could hamper the proxy campaigns of other shareholders, especially activists. What is indisputable is that the sheer size of their combined assets means that in an increasing number of proxy battles they will cast the deciding vote. Their objectives and proxy voting policies, therefore, warrant extra attention.") 348 ("If passive assets continue to grow faster than active assets and the Big Three continue to take the lion's share of new inflows, then perhaps little will change as the voting 'degradation' that comes with growing passive investing is counterbalanced by the fact that the majority of new passive assets are won by the comparatively well-resourced large houses [that have incentives to engage and vote].").

[154] Jonathan Lewellen and Katharina Lewellen, 'Institutional Investors and Corporate Governance: The Incentive to Be Engaged' [2018] Dartmouth College, Tuck School of Business Working Paper No. 3265761 (finding that "by 2015, the average institution gains roughly $143,100 in annual cash flow if a firm in its portfolio rises 1%. The estimates range from $22,300 for small institutions [who hold relatively concentrated portfolios] to $335,900 for the largest institutions [with more diffuse holdings]"); Jahnke (n 148) (explaining "why index funds engage in corporate governance, despite their apparent lack of financial incentive to do so" and suggesting that: [i] "for many institutional shareholders today, voice is more feasible than exit"; [ii] "for the largest index investors, the cost of engagement has fallen to a level where it is today negligible" due to economies of scale; [iii] "the immense concentration amongst index funds, with the three largest fund managers controlling over 90 percent of assets, ensures sufficient return on their governance investments").

[155] Elhauge, 'The Causal Mechanisms of Horizontal Shareholding' (n 119) 54–55 ("many factors indicate that, if anything, index funds are likely to exert more effort relative to other shareholders. [a] Unlike other investors, index funds cannot exit firms, which increases their incentives to exert the effort necessary to exercise voice. This can give index funds greater incentives to exert effort than active funds, which might simply sell their shares rather than exert any effort. [b] The index fund families that vote index fund shares have much larger shareholdings than other investors, which means that the marginal gains from effort are likely to be much larger for index fund families because they have more power to influence the corporation. [c] Unlike individual investors, index funds have fiduciary duties to vote their shares knowledgeably. The law thus requires them to expend efforts that other shareholders may simply skip. [d] Unlike other investors, index funds can usually apply any effort to arrive at a position on common governance issues [like executive compensation methods] across many more corporations, which means that index funds will incur less effort cost per stockholding than other investors."); Coates (n 122) 2 ("conventional analyses mistakenly assume that index funds must make significant expenditures to influence companies and neglect economies of scale in exercise of power. They also neglect the power of control threats to discipline, and non-wealth utility derived from power. Index funds increasingly possess the 'median vote' in corporate contests. That gives them an ability, even if contingent, to make crucial decisions across most public companies. Unless law changes, the effect of indexation will be to turn the concept of 'passive' investing on its head and produce the greatest concentration of economic control in our lifetimes.").

aggregate voting power within firm governance.[156] In this light, index fund common ownership may represent a new hybrid combining characteristics (wide dispersed ownership and concentrated voting power) from both "outsider" and "insider" systems of corporate governance.[157] Sensible competition policy should not lose focus from the overall market effect by overly zooming into the governance mechanics, important as they may be.[158] Once one decides to be a "*partial*" common owner in an oligopolistic market, it is also to bear the risk (rather than consumers and society) of potential anticompetitive effects and enforcement action arising from later strong interlocking shareholding links that *collectively* undermine competition in the pursuit of private self-interest (of common owners and other corporate actors).[159] Such a public policy stance not only enables competitive harm to be remedied *ex post* in the specific case (enforcement) but most importantly, it induces private economic agents to internalize the law prohibition effect *ex ante* (deterrence) and it is therefore more likely that their general investment and governance behavior will be shaped accordingly.

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[156] Monopolkommission (n 28) 444: "A shareholder's means of prevailing over other shareholders in a vote is of particular interest when various strategic objectives are being pursued. If several shareholders holding minority interests are pursuing the same objectives, then it may, in certain circumstances, make sense to look at their aggregate shares – even if they have not coordinated their actions. This captures the total voting power (in relation to total votes cast) which is used to achieve the relevant objective."; Alan D Crane, Andrew Koch and Sébastien Michenaud, 'Institutional Investor Cliques and Governance' (2019) 133 Journal of Financial Economics 175 (showing that investors connected through the network of institutional holdings vote together on proxy items).

[157] See the "taxonomy of ownership and voting power" in Box 1 in Maher and Andersson (n 68) 14.

[158] For legal arguments suggesting that the "collective" anticompetitive effect from all common shareholdings by multiple institutional investors in concentrated markets may and should be liable under the US merger control law, see Elhauge, 'Horizontal Shareholding' (n 13) 1308–1309 (arguing that for completely passive investors the timing of antitrust challenge could change from *ex ante* to *ex post* merger control enforcement under a conservative reading of the law, and that for any type of investor whose shareholding acquisition may at that time be legal could still be subject to antitrust liability later taking into account the aggregate anticompetitive effect created by this and other subsequent common shareholding acquisitions - by analogy to exclusive dealing when a series of agreements make the aggregate foreclosure share substantial); Elhauge, 'How Horizontal Shareholding Harms Our Economy - And Why Antitrust Law Can Fix It' (n 140) 256–258 ("U.S. antitrust law [Clayton Act §7] is crystal clear that an initially legal stock acquisition becomes illegal if subsequent events mean that continuing to hold the stock would have anticompetitive effects. [...] bringing antitrust enforcement actions against anticompetitive horizontal stock acquisitions need not imply rapid shifts from legality to illegality based on subsequent stock transactions and the mechanical application of an MHHI test. Illegality would instead require a showing that horizontal shareholdings have adverse price effects for some significant time period, giving horizontal stockholders plenty of time to divest themselves of stockholdings that seem likely to contribute to such adverse effects."); Scott Morton and Hovenkamp (n 13) 2045, 2047 ("the competitive effects of partial stock acquisitions [in contrast to complete acquisitions that create a single firm, and the antitrust laws apply only to the 'acquisition'], including horizontal shareholding, can generally be appraised as of the time of the lawsuit. This entails that the challenge is not merely to the 'acquisition,' but also to post-acquisition performance or behavior. Section 7 enables the antitrust enforcement agencies to reach back in time and aggregate small purchases, which is critical in enforcement against institutional investors that slowly accumulate large positions over time.").

[159] That is, the risk of changed circumstances subsequent to any individual "partial" stock acquisition is born by investors.

VI. Policy implications: the present and future of (merger) control

There are several implications and conclusions to be drawn from the above competition effects and shareholder control analysis. I focus on seven of them here.

First, it becomes obvious that the legal (absence of action) versus the economic notion of *passivity* (absence of effects)[160] – the first focusing on the *behavior of the acquired firm* (target) given the acquirer's active exercise of control while the latter on the *acquirer's incentives* – are distinct and not entirely overlapping. Unilateral effects may entirely flow from anticompetitive incentives linked to purely financial interests without any influence or control. Also, small stakes especially if held by rival firms' controllers are not necessarily innocuous; rather, the smaller such stakes the more potentially significant the competitive concerns. As a result, there is no straightforward relationship between the size or type of shareholding (i.e. financial, controlling, mutual) and competitive harm.[161] It is only due to path dependence and the "merger equivalent" approach used to apply to partial acquisitions that we continue to treat leniently equity interests presumably too small to convey control (in case of no anticompetitive intent).[162] In contrast, the above analysis has shown that small or purely financial shareholdings may have significant anticompetitive effects especially when there are many such parallel links among most of the few companies operating in an oligopolistic market. Hence, sole or overreliance on active influence and control in designing merger control thresholds is not justified.

Second, control is a useful (and theoretically robust) but imperfect proxy for estimating competitive harm, particularly so in cases of common minority shareholding ("diffuse" common ownership). To begin, its presence signifies the lack of *independence* between

[160] What I have earlier called passivity or influence in the corporate versus the antitrust sense. Another way to put it is influencing corporate conduct of a rival firm is not the same as influencing competition and rivals' conduct indirectly by changing one's own incentives.

[161] Gilo (n 23) 40–41: "One could theoretically put forward a technical (but incorrect) legal test that examines the degree of 'linkage' between competing firms after the passive stock acquisition. According to such a test, there would be more linkage and thus, allegedly, more anticompetitive harm, when the controller has a larger stake in the firm it controls while possessing a stake in the competing firm as well. It is clear from the analysis of Section I.D, however, that such a test is invalid. As we have seen, the smaller the controller's stake in the firm it controls, the larger the anticompetitive harm."; Matthias Hunold and Frank Schlütter, 'Vertical Financial Interest and Corporate Influence' [2019] DICE Discussion Paper 309, Düsseldorf University Press 40: "These examples reflect the policy view that influential ownership is more harmful than non-controlling ownership. Our theoretical analysis suggests that such a clear distinction may not be optimal. What matters is the implied degree of profit internalization and not whether this stems from influence or from a profit participation. Non-controlling ownership in one direction can be as harmful as influential ownership in the other direction because both ownership arrangements can induce the same degree of profit internalization."

[162] Reynolds and Snapp (n 23) 142 fn 4 (noting this in the context of the comparatively most encompasing US merger control regime).

organizationally separate corporate entities, which come to operate under common management or within the same business group.[163] Independence effectively means that the constraining behavior of firms as separate competitive forces in the market remains undiminished. Complete independence of firms, however, in terms of their strategic behavior is unlikely in the presence of an extensive web of diffuse common shareholdings in oligopolistic industries. Such tempered firm independence has predictable (albeit not precisely quantifiable, yet) competitive effects (market power). More generally, the control inquiry is instructive in many respects and makes the analysis more tractable, but it is by no means conclusive on the presence or magnitude of the competitive effects. For intermediate or informal control situations, e.g. partial control or indirect or passive influence, control remains an open question as there is no generally established economic theory to rely upon in quantifying competition effects.[164]

Third, the ability to control another firm implies a degree of *certainty* when it comes to sharing in its profits, to which one may be entitled by means of financial investment.[165] Potential uncertainty may lead to only "partial internalization" of passive and diffuse common ownership incentives as measured against the nominal level of shareholding. Implicitly, (partial) control also means less fear of opportunism or expropriation on the part of its management (although not necessarily by *de facto* controlling shareholders from the perspective of retail, undiversified shareholders – private benefits of control). An entitlement without any measure of control is not a real property right. This further suggests that different types of shareholders (common

[163] Federico Cesare Guido Ghezzi and Chiara Picciau, 'The Curious Case of Italian Interlocking Directorates' [2020] Bocconi Legal Studies Research Paper No. 3661733 4 (referring to the case of "a common majority shareholding, whereby two or more horizontal competitors are under the control of the same parent company, [which] would give rise to a corporate group and would thus not pose antitrust concerns, since the subsidiaries are not considered independent competitors in any case.").

[164] O'Brien and Waehrer (n 8) 760.

[165] Besen and others (n 18) 466 ("if the financial interest conveys no control, but instead is passive or 'silent,' the firm's incentive to raise prices will be weaker because it cannot be certain of the rival's response to its price increase"); O'Brien and Salop (n 87) 622–625 ("When the acquiring firm raises its price after acquiring a passive financial interest, it trades its own profits for presumably larger returns earned from its investment in the target. However, this trade also involves reducing the profits that it controls for profits controlled by the senior managers of the target. This raises the risk that the managers of the target may not direct these earnings to their highest value uses, whether that involves paying them out as dividends or investing them in high rate of return businesses. [...] Under these circumstances, the acquiring firm may be willing to sacrifice some nominal earnings in order to maintain greater control over a higher fraction of those earnings. Thus, the acquiring firm would be reluctant to soften its competitive conduct to benefit the target, unless the increased investment income is large enough to overcome the risk from loss of control. This can be a valid business concern in a partial ownership transaction, in particular, when the financial interest is not actively acquired. [...] Stated in terms of the profitability formula above, the acquiring firm would 'discount' the increased profits earned by the target by a 'discount rate' to reflect its inability to control the disposition of these profits."); Alchian (n 123) 339 (interpreting "ownership" as the "bearing of value consequences of resources" and "control" as the "authority to control decisions that will affect [that] value").

diversified versus individual undiversified) may not enjoy the same degree of certainty as regards their (pro rata) participation in the division of corporate profits as (a traditional thought homogenous group of) residual claimants.

Fourth, control over a firm's strategy may entail that the controller(s) may impose (fully or partially) her personal objectives onto the firm, or more generally what *objectives* are maximized by the firm and its management.[166] The controller's discretion due to its decision-making authority may lead to a deviation from the presumably unanimous shareholder group objectives (firm value maximization), and yet such self-interested deviation (portfolio value maximization) may be beneficial for other corporate actors and the firm as a whole so long as they may share in the supracompetitive rents, except for consumers that are worse off given the likely higher product market prices.[167]

Fifth, diffuse common ownership works against traditionally perceived single-firm concentrated control. The apparent division of (partial) ownership within a single firm and its (parallel) *diffusion* across rival firms among the same owners make the dilution of "sole control" and the (partial) "separation of ownership and control" not only inconsequential in terms of undermining anticompetitive effects but rather a lever for amplifying the likelihood and magnitude of their transmission. Further, control based on the shareholding size may be misleading in case of fully symmetric diffuse common shareholdings, in which case shared control may also be complete control – full joint control by means of identical financial interests.

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[166] Karle, Klein and Stahl (n 57) 2; O'Brien and Salop (n 10) 609.

[167] Azar, 'The Common Ownership Trilemma' (n 14) 271–275: "Under perfect competition and complete markets, economic theory provides two arguments in favor of profit maximization as the objective of the firm: one based on shareholder welfare and the second based on broader social welfare. The first is based on the Fisher Separation Theorem literature, which shows that, if firms are price takers and markets are complete, all shareholders unanimously agree on the objective of profit maximization. The second is based on the First Welfare Theorem: if firms are price takers and markets are complete (and other assumptions are present, such as the lack of information asymmetries), then profit maximization by firms leads to a Pareto efficient outcome. [...] The other side of the Fisher Separation Theorem coin is that, when firms are not price takers, there is no reason why shareholders should agree about the objective of profit maximization. [...] with market power, the Fisher Separation Theorem does not apply, and shareholders may not agree on how to use that power. [...] Similarly, the other side of the First Welfare Theorem is that, when firms are not price takers, maximizing profits does not lead to a Pareto efficient outcome. [...] The failure of the Fisher Separation Theorem under imperfect competition creates a problem for the theory of oligopoly: What is the objective of firms when shareholders do not unanimously want profit maximization? Professor Kenneth Arrow's impossibility theorem illustrates the complexity of the question. [...] While the problem of shareholder preference aggregation is quite challenging, it can be dealt with by relaxing the assumptions of Arrow's impossibility theorem. [...] Professor Julio Rotemberg, as well as Daniel O'Brien and Professor Steven Salop, assumed that firms aggregate shareholder objectives through a weighted sum of their utilities."

Sixth, public policy may face a "*dilemma*" rather than a "trilemma" as regards diffuse common ownership[168]: portfolio diversification in oligopolistic markets may lead to both suboptimal competition and suboptimal governance outcomes (supracompetitive profits and managerial agency costs).[169] The dimensions and extent of the relative problem for firm competitiveness and productivity, and their potential interplay, are not well understood yet.[170]

Seventh, competition policy and *merger control* need to adapt to the new common ownership reality if they wish to remain informed and relevant.[171] In specific terms, that means recognizing and taking into account the different varieties of common ownership and their underlying paradigms and assumptions when assessing competition effects and enforcing merger control law. The control analysis needs to become less fixed and rigid, more facts-sensitive and more open to alternative corporate control assumptions. Similarly, modified structural indices and price pressure quantification methodologies should also become more flexible and able to accommodate richer control scenarios going beyond the standard assumption of partial proportional control of diffuse common owners (e.g. disproportionate relative control, some managerial control) in order to more realistically capture the degree of "internalization of rivals' profits". Taking into account common ownership as an "element of context" during merger review of portfolio firms and also expanding reporting requirements for common institutional ownership are steps into the right direction.[172] More aggressive merger control enforcement against market-wide effects of diffuse common ownership should be possible based on rigorous economic evidence but competition authorities need to develop guidelines for that purpose. A broader and more challenging question remains to what extent the design of merger control regimes and their different applicable thresholds should be amended to reflect common ownership concerns. That question however requires not only a better economic understanding of the issue at hand but also accounting for further complex legal and institutional considerations, all of which may well differ considerably from jurisdiction to jurisdiction. Interesting times for antitrust scholars lie ahead.

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[168] Azar, 'The Common Ownership Trilemma' (n 14).
[169] Antón and others (n 108).
[170] For an early attempt to empirically provide some bounds of such dimensions, see Backus, Conlon and Sinkinson, 'Common Ownership and Competition in the Ready-To-Eat Cereal Industry' (n 138).
[171] For a detailed analysis of the implications of common ownership for merger control policy and enforcement, see Azar and Tzanaki (n 79).
[172] This is the direction EU and US antitrust agencies respectively are moving towards. See n 3 and 4 above.