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Common Ownership and Competition: Facts, Misconceptions, and What to Do About It - Note by Martin C. Schmalz

Hearing on Common Ownership by institutional investors and its impact on competition

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More documents related to this discussion can be found at www.oecd.org/daf/competition/common-ownership-and-its-impact-on-competition.htm

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Common Ownership and Competition: Facts, Misconceptions, and What to Do About It

Note by Martin C. Schmalz*

Competition requires that firms have incentives to compete. Common ownership reduces these incentives. There is no known reason or mechanism by which firms are supposed to compete in the absence of incentives to do so. All arguments in the defense of the asset management industry amount to a distraction from this key point, the absence of evidence to the contrary, as well as from the existing empirical evidence that current levels of common ownership are very likely to reduce competition. This note exposes the alternative talking points the industry and its defendants have brought forward, and contrasts them with empirical facts.

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"The investment company has become the instrumentality of financiers and industrialists to facilitate acquisition of concentrated control of the wealth and industries of the country. [...] Congress must prevent the diversion of these trusts from their normal channels of diversified investment to the abnormal avenues of control of industry."

From the 1934 U.S. Senate Securities ("Pecora") Report, as cited by Roe (1990)

1. Competition requires that firms' most influential share-holders don't also own the firms' competitors

1. **Firms don't compete unless they have an incentive to do so**. Incentives to compete are present for example when an entrepreneur and/or sufficiently large blockholders concentrate wealth in one firm -but not the firm's competitors. Doing so gives shareholders incentives to encourage the firm to innovate, invest in increased capacity, reduce costs, and thus increase market share at the expense of the firm's rivals - in short: act competitively. Virgin America may be a fitting example from the US airline industry, as illustrated in Table 1; see Schmalz (2018) for other examples.

Table 1. Largest beneficial owners of Virgin America

Virgin America (2016 Q2)	[%]
- Richard Branson -	30.99
Cyrus Capital Partners	23.69
Vanguard	2.91
BlackRock	2.27
Alpine Associates Advisors	2.12
Hutchin Hill Capital	2.10
Societe Generale	1.85

Source: Capita IQ, Q2 2016

2. Most traditional models of competition consequently assume that firms' share-holders don't also own shares in the same firms' competitors. However, this assumption is no longer satisfied in many sectors of the economy. Due to the growth of institutional investors, consolidation in the asset management sector, and in some cases due to deliberate strategies, many firms' largest shareholders are also the largest shareholders of competitors. Table 2 illustrates this fact by listing the top owners of Virgin's largest competitors in the US airline industry. Warren Buffett's investment vehicle Berkshire Hathaway is the largest shareholder of three of America's largest four airlines, and the third-largest shareholder in the fourth. Each of the fund families PRIMECAP, BlackRock, Vanguard, State Street, is a top shareholder in all major carriers as well. Each one beneficial owner typically (but not always) holds less than 15% in a given carrier. However, cumulatively, the top-10 shareholders hold between 39% and 55% of the stock -and thus jointly control all major competitors, or have substantial influence over them. (If not they, no shareholder does.)

Table 2. Largest beneficial owners of America's largest airlines

Delta Air Lines	[%]	Southwest Airlines Co.	[%]	American Airlines	[%]
Berkshire Hathaway	7.25	Berkshire Hathaway	15.03	T. Rowe Price	12.89
Vanguard	6.13	PRIMECAP	11.87	PRIMECAP	10.46
BlackRock	5.84	Vanguard	6.28	Berkshire Hathaway	9.54
Lansdowne Partners Limited	3.90	Fidelity	5.41	Vanguard	6.15
PRIMECAP	3.75	BlackRock	5.04	BlackRock	5.20
State Street Global Advisers	3.68	State Street Global Advisers	3.69	Fidelity	3.71
J.P. Morgan Asset Mgt.	3.48	Columbia Mgt. Inv. Adv.	1.46	State Street Global Advisers	3.58
Evercore	2.09	J.P. Morgan Asset Mgt.	1.29	Geode Capital Mgt.	1.03
PAR Capital Mgt.	1.78	Egerton Capital (UK) LLP	1.26	Morgan Stanley	1.00
BNY Mellon Asset Mgt.	1.24	T. Rowe Price	1.16	Northern Trust Global Inv	0.97

United Continental Holdings	[%]	Alaska Air	[%]	JetBlue Airways	[%]
Berkshire Hathaway	9.11	Vanguard	9.57	Vanguard	8.14
Vanguard	7.33	T. Rowe Price	9.26	BlackRock	8.04
PRIMECAP	7.19	BlackRock	5.48	PRIMECAP	6.13
BlackRock	6.72	PRIMECAP	4.89	Fidelity	5.71
PAR Capital Mgt.	5.26	State Street Global Advisers	3.55	Dimensional Fund Advisors	3.31
T. Rowe Price	3.37	Franklin Resources	2.71	Goldman Sachs Asset Mgt.	2.95
Altimeter Capital Mgt.	3.33	Egerton Capital(UK) LLP	2.39	State Street Global Advisers	2.49
State Street Global Advisers	3.33	PAR Capital Mgt.	2.02	Wellington	2.45
J.P. Morgan Asset Mgt.	2.98	Wellington	1.98	Donald Smith Co.	1.84
Henderson Global Investors	2.25	BNY Mellon Asset Mgt.	1.77	AQR Capital Management	1.73

Source: Capital IQ, Q2 2017

3. By stark contrast to Richard Branson at Virgin America, Warren Buffett or his agents have little economic incentive to push United Airlines to compete more aggressively against Delta Air Lines, or vice versa: any increase in United's market share would come at the expense of Delta, thus benefiting one part of his portfolio at the expense of the other. On net, the effect on his portfolio's value would be negative, because increased capacity on behalf of United and/or Delta would lead to higher costs and lower equilibrium prices, and therefore lower profits.

4. The largest mutual fund families have no such reason to encourage competition either: in addition to hurting the value of their assets under management, engagement increases governance costs and contradicts the cost-minimization objective that drives the economics especially of the "passive" part of the family.

5. **It is therefore no surprise that there is no systematic evidence that common owners of symmetric competitors successfully encourage their portfolio firms to steal market share from each other**. Any attempt at doing so would be absurd. Market share is zero sum – so all firms in an investors' portfolio cannot each increase market share at the same; hence, encouraging firms to try and steal market share from competitors by increasing capacity or reducing prices would only decrease industry profits, and thus the value of the investor's portfolio. Hence, asking firms to compete less aggressively (let alone "collude") is entirely unnecessary for anti-competitive effects of common ownership to arise. Instead, *anti-competitive effects of common ownership can arise as an error of omission, not an error of commission*. Most theoretical critiques of

the common ownership research to date amount to a distraction from this key point, from the lack of powerful empirical evidence indicating that common ownership does not in fact lead to reduced incentives to compete, and from the various empirical findings that common ownership in fact reduces competition.

6. **Perhaps more important than the presence of common ownership is the absence of powerful undiversified shareholders who would benefit from increased competition**. Among United's largest 100 investors, only five don't also hold significant stakes in another top-4 airline; the largest of these shareholders ranks as #42. Four of them are individuals whose private portfolios cannot be observed, and who might in fact hold significant amounts of competitor stock. They jointly hold 1% of United's stock, and are thus presumably powerless even as a group. Hence, no powerful shareholder has a strong incentive to engage with United management with the goal to initiate aggressive competition on prices, increase available seats, quality, or other attributes that would increase United's market share vis-`a-vis its competitors.

7. Even in firms in which shareholders openly disagree about the firm's strategic direction, dissenting concentrated shareholders that promote more aggressive competition with the explicit goal of increasing market share of the target firm at the expense of its rivals can still be overpowered by common owners of the target and its rivals; see Schmalz (2015) for a case study. Hence, even the presence of shareholder dissent does not challenge the fact that increasing common ownership lessens firms' incentives to compete.

8. **Therefore, when a large enough fraction of an industry's competitors is owned by the same investors, the industry produces lower output and quality, accompanied by high product prices and profitability**. While surprising to some observers at the time, it makes sense from a common-ownership perspective that United Airlines experienced no significant shareholder reaction in response to the widely publicized forceful removal of a passenger in April 2017: at the portfolio level, United's largest shareholders actually gained financially amid the public fallout over this exemplary display of "capacity discipline." The reason is that most of United's shareholders also own American and Delta Air Lines shares, which went up more than United stock went down in the wake of the incident.[1] Instead of being punished for the PR debacle and apparently low quality of service at the time, United's CEO is now at risk of losing his job over shareholder "pressure for slashing fares and for increasing the supply of flights and seats."[2] A fast-growing body of systematic empirical evidence, referred to below, indicates that product prices increase and output decreases when the competitors in a given market become more commonly owned.

[1] At the time, "four of United's top five shareholders [were] also top-five holders of American. Three of them [were] also top-five holders of Delta Air Lines Inc. United's top 10 holders own[ed] about 49.8 percent of United Stock between them – and about 51.6 percent of American and 37.6 percent of Delta." See https://www.bloomberg.com/view/articles/2017-04-12/airline-shares-and-whistleblowers for a discussion.

[2] Source: https://www.ft.com/content/62d690f4-b4e9-11e7-a398-73d59db9e399. CEOs' likelihood of being fired more generally depends on the performance of the industry, and not just the firm they run (Jenter and Kanaan, 2015), which contradicts the theory that shareholders reward and punish managers for individual firm performance and filter out industry performance, as predicted in classical theory.

9. **Lastly, common ownership is not limited to U.S. airlines; similar patterns emerge in other U.S. industries and in other developed economies worldwide**. For example, Berkshire Hathaway is also the largest shareholder of Bank of America and Wells Fargo, and holds large stakes also in US Bancorp, American Express, and Goldman Sachs; BlackRock and Vanguard are the largest shareholder of the rest of the largest U.S. banks. BlackRock is also the largest shareholder of about one-third of the largest publicly traded firms in the United Kingdom and Germany; see Schmalz (2018) for more examples. Hence, the antitrust challenge is not limited to a single geography or industry. Regulators worldwide should embrace the challenge and collaborate in the pursuit of optimal solutions.

2. What research has shown already

10. If it is not in shareholders' and not in the managers' interest to compete aggressively, why would commonly-owned firms compete away their profits? More than three decades of theoretical and empirical research indicate that the answer is: "indeed, they shouldn't" and "they don't," respectively. The theoretical point that common ownership reduces incentives to compete, and thus leads to a lessening of competition *without a need for firms or their managers to communicate or explicitly collude* has first been made by Rubinstein and Yaari (1983) and Rotemberg (1984), and generalized in more than a dozen contributions since then (see Schmalz, 2018, for a review of the literature). Rotemberg (1984) explicitly warned that mutual funds, by lowering the costs of diversification, naturally induce reduced competition, whereas "it may well be that the funds which concentrate on specific industries ... do the most harm."

11. Rotemberg also pointed out that investors with less-than-fully-diversified portfolios, despite their diverging objectives, may in fact agree with fully diversified owners that their firm should compete less aggressively, because a symmetrically soft competitive response from industry rivals can make even concentrated owners better off in the common-ownership equilibrium than under full competition. Informally, it is hard to find a shareholder who doesn't like higher profits, so even non-common shareholders are unlikely to protest against the implementation of a common owner's anti-competitive objectives. The importance of this observation is readily apparent when contrasted with some common owners' claims: it proves that heterogeneity of shareholder portfolios does not itself pose a challenge to the predictions of common ownership theories. It also shows that acting in common owners' interest does not imply a violation of managers' fiduciary responsibility to any one shareholder, even those with imperfectly diversified portfolios.

12. Empirical studies have since shown not only a correlation between common ownership and higher profitability, but also *causal* links, obtained with modern quasi-experimental methods. Perhaps most prominently, Azar, Schmalz, and Tecu (forthcoming) (AST) show that *route-level* airline ticket price changes can be quite precisely predicted by changes in common ownership between the airlines flying a given route. AST's analysis also indicates that the increase in common ownership implied by BlackRock's acquisition of BGI quite precisely predicts route-level differences in price changes after the consolidation event. These results are difficult to explain other than with decreased incentives to compete due to common ownership. AST also show that output –

the number of passengers transported, shrinks when common ownership increases.[3] Azar, Raina, and Schmalz (2016) offer similar results for US banking deposit markets. Gutiérrez and Philippon (2016) show in a broad cross-section of firms in various industries that more-commonly-owned firms invest less relative to their profitability, which helps explain the confluence of record-level profits and slow macroeconomic growth in the US economy.

3. Reactions

13. As the introductory quote shows, competition policy had recognized the dangers of pooling many investors' cash flow and control rights in "investment companies" long before academic research rediscovered the problem. However, despite the historical experience that such structures inhibit competition and the successful "anti-trust" measures taken against them, most competition authorities have stopped tracking the ownership of firms in more recent decades, and instead assumed that firms with different names are owned by a disjoint set of investors.

14. The documentation that this assumption is wrong, and the empirical research showing a causal link between common ownership and lessened competition was thus perceived as a "blockbuster" in antitrust circles (Elhauge, 2016), and led to a lively discussion about the legal implications of the findings (see Baker, 2016, for a first of many response to Professor Elhauge's analysis). Given the evidence indicates that BlackRock's acquisition of BGI itself raised average prices by about half a percent – which Elhauge (2016) argues amounts to a violation of Clayton Act Section 7 – it is not surprising that BlackRock's PR department has itself responded to the findings with Whitepapers, newspaper articles worldwide, and aggressive political engagement. The Investment Company Institute, a lobby organization, has since paid for studies attempting to discredit the existing academic research. Whereas a substantive debate about the costs and benefits of interventions is urgently necessary and welcome, a number of misconceptions and false narratives have entered the public debate, a small number of which I now discuss.

4. Misconceptions

15. In what follows, I contrast several claims by defendants of the industry's position with economic realities.

[3] AST's main findings have since been replicated by at least two different teams of economists. One of the replications of AST's results, by Kennedy, O'Brien, Song, and Waehrer (2017) (KOSW), was sponsored by the Investment Company Institute, a lobby organization of institutional investors. Whereas the authors replicate AST's main results, they disagree on theoretical grounds with the literature's interpretation that they reflect anti-competitive effects of common ownership. KOSW then propose an alternative model, estimate it with non-standard estimation methods and using a 10% subsample of the data, and then find no significant effect of common ownership on prices. However, they also estimate that route distance has a negative effect on marginal cost, which is economically absurd, and calls into question the validity of KOSW's results. See Azar, Schmalz, and Tecu (2017) for a more detailed discussion.

4.1. Claim: Mutual fund families, unlike other investors, don't benefit from lessened competition between firms and monopoly profits. The mutual funds would be better off with more competition, because competition fosters macroeconomic growth.

16. Reality: Mutual fund families charge investors a fraction of the value of assets under management to generate revenues. The value of assets under management increases with the portfolio firms' profitability, which increases with the exercise of market power. Hence mutual fund families do benefit from lessened competition, along with their investors.

17. Indeed, the economy would arguably grow faster if firms competed more aggressively, invested more, and thus increased output. However, mutual funds don't benefit from macroeconomic growth but from higher equity values, which depend on the level and growth of profits – not on the growth of the macro-economy or consumer welfare. Profits are greater when firms restrict output to monopolistic levels, even at the expense of faster growth and consumer surplus.

4.2. Claim: Diversified institutions also own suppliers and clients, not only competitors. Hence, common ownership does not reduce competition.

18. The first part of the claim is true, but the second does not follow. There is no economic model or empirical evidence suggesting that common ownership of suppliers and clients contradicts the finding that horizontal common ownership concentration lessens competition.

4.3. Claim: Reduced competition may be in shareholders' interest, but managers are paid with stock of the firms they run.

19. Indeed, a significant fraction of managerial pay is in stock. Yet, the stock price of any one firm tends to go up when the entire *industry* is doing well. Therefore, paying executives in stock gives them incentives to look out for healthy *industry* profits, and can thus help align common owners' incentives with managements' incentives.[4]

[4] Insulating all executive pay from industry performance would require indexing a firm's performance against that of competitors, as is known since the Nobel-prize winning work of Bengt Holmström. Yet, only a small fraction of firms indexes executive pay against competitors, as a large body of research shows. It is known since at least Gordon (1990) that common ownership can explain the scarcity of relative performance evaluation, a prediction for which Antón, Ederer, Giné, and Schmalz (2016) provided first support. Liang (2016) showed that BlackRock's acquisition of BGI led to a weakening of top management's relative performance incentives in those firms whose common ownership increased most as a result of the acquisition. Kwon (2016) claimed to show the opposite relation between common ownership and relative performance evaluation, contradicting decades of theoretical predictions and two previous empirical papers, but then withdrew the study from SSRN. Antón, Ederer, Giné, and Schmalz (2016) show that common ownership is negatively associated with the sensitivity between firm performance and top managers' wealth, also indicating that common ownership weakens incentives to reduce costs, invest, and compete.

4.4. Claim: Index funds are too small to matter, and their managers don't have incentives to ask firms to collude.

20. First, they key problem is that index *fund managers don't have incentives to ask firms to compete, whereas concentrated active owners do*. As a result, firms predominantly owned primarily by index funds have reduced incentives to compete, compared to firms with powerful undiversified and engaged owners.

21. Second, it is well understood in the literature that *collusion is obsolete when there are no incentives to compete in the first place*. It is true that common ownership can increase incentives to collude at levels of common ownership that still retain some incentives to compete. *Collusion can add* to unilateral anti-competitive effects, but is not necessary for unilateral effects to exist. Hence, discussions of the common ownership research that primarily focus on a hypothetical scenario in which fund managers encourage firms to collude (e.g. Rock and Rubinfeld, 2018), misunderstand or misstate the fundamental economic mechanism at the heart of the common ownership problem. However, averting attention to hypothetical active collusion scenarios helps defend the industry's position, because a collusive mechanism is more difficult to prove than is documenting unilateral incentives and their effects. Regulators need to understand that evidence of explicit collusion is entirely unnecessary to prove that common ownership causes a reduction of incentives to compete, and anti-competitive outcomes.

22. Third, this claim falsely suggests engagement and voting was primarily conducted at the (index) *fund manager* level. However, the largest fund families tend to pool their fund's votes and engage on behalf of all funds jointly.[5] The fund families' incentives are –consistent with their shareholders' interests– to maximize the value of the assets under management. A portfolio of firms is more valuable and hence fund families' revenues maximized if their portfolio firms cooperate rather than compete. A discussion of fund managers' incentives is a distraction from these empirical realities.[6]

23. Fourth, the academic research finds that common ownership reduces competition, not that index funds reduce competition. Much of common ownership concentration is driven by actively managed portfolios, such as Berkshire Hathaway's or PRIMECAP's (see Table 2), activist hedge funds taking active stakes in competitors (see Flaherty and Kerber, 2016b,a), and in some cases every by Private Equity funds. Also, the common ownership links created by institutions popularly referred to as "passive investors" (such as BlackRock) are in fact the product of both passive and active funds' holdings. The world's largest index fund, SPY, has less than $250bn assets under management at the time of this writing – less than 1% of total US market capitalization of more than $25trn.

[5] E.g., State Street employs "a centralized governance and stewardship process covering all discretionary holdings across our global investment centers. This allows us to ensure we speak and act with a single voice and maximize our influence with companies by leveraging the weight of our assets." (https://www.ssga.com/products-capabilities/capabilities/corporate-governance-and-voting-policy.html) There are exceptions to this rule in families of predominantly actively managed funds, such as Fidelity.

[6] To the extent ultimate investors reward relative rather than absolute performance, fund families may have reduced incentives to engage individually (Gilson and Gordon, 2014; Bebchuk, Cohen, and Hirst, 2017), but instead have increased incentives to overcome free-rider problems by collaborating with respect to their corporate governance activities. In fact, they do – albeit in relative secrecy (Foley and McLannahan, 2016; Sorkin, 2016).

At the same time, BlackRock as a family now manages more than $6trn. Hence, index funds may be too small to matter individually. But the three mutual fund families BlackRock, Vanguard, and State Street are now most publicly traded firms' largest shareholders (Fichtner, Heemskerk, and Garcia-Bernardo, 2016), and thus obviously not too small to matter – unless all other shareholders don't matter either.

4.5. Claim: Regulators should not address the common ownership problem, because doing so would hurt investors and destroy index funds, which offer benefits to ordinary households and "democratize investing".

24. First, the focus on the benefits and popularity of index funds is a distraction from the much bigger problem of common ownership, as explained above.

25. Second, index funds are indeed beneficial to investors – but so are monopolies. Yet, monopolies are valuable to shareholders because they restrict output, quality, and increase prices, at the detriment of consumers and the economy at large. Hence, the fact that index funds benefit their investors does not imply that competition authorities should turn a blind eye on their broader economic impact.

26. Third, policy makers should keep in mind that households are both investors and consumers, but to very heterogeneous extents. Investors' wealth may suffer when competition authorities take measures to address the anti-competitive effects of common ownership, due to a reduction in monopolistic rents. BlackRock may therefore be right to point out that "Policy changes suggested in some legal academic papers would fundamentally change the investment landscape to the detriment of asset owners and the global capital markets" (Novick, Edkins, Garvey, Madhavan, Matthews, and Sethi, 2017). However, competition authorities are unlikely to do harm to "ordinary investors" by restricting some financial products or services in order to reign in monopoly power, because a vast majority of households owns only a small fraction of the economy's equity, compared to their share of consumption. Most households therefore stand to lose very little wealth from lower asset prices due to increased competition – instead, they would benefit a lot from reduced product prices. In aggregate, the fall in equity prices would be more than compensated for by increases in consumer surplus, and increase total welfare.[7]

27. Fourth, addressing most aspects of the common ownership problem does not imply a limitation of investor diversification relative to current levels. First, as explained above, much common ownership concentration is driven by active strategies seeking to concentrate assets within an industry rather than diversify across them. Berkshire Hathaway would be more diversified if it held one firm per industry in many industries and geographies, rather than concentrating holdings in the U.S. airlines, banking, and insurance sector. Even ETFs, the pinnacle of "passive investing," do in many cases not offer nearly as much diversification as the narrative of "passive investing for ordinary households" suggests. For example, the ETF "JETS" buys only stocks in the airline industry, and thus doesn't diversify but instead focuses investors' exposure to that industry's risk factors. Such exposure can be useful to sophisticated institutional shareholders' strategies, but is not a suitable vehicle for widely diversified passive

[7] Farrell (1985) provides the formal argument.

investment by ordinary households. Second, even if funds were prohibited from holding competitors, households could still diversify across funds.[8]

28. Lastly, it is the aggregation of votes belonging to various funds within the same fund family that makes some institutions such powerful owners relative to smaller funds with more concentrated positions – not (just) the common ownership created by individual index funds, sector funds, or actively managed portfolios. Aggregation does not only “maximize our influence with companies by leveraging the weight of our assets” (State Street). It can also cause increases in common ownership and a reduction in portfolio firms’ incentives to compete. Consider the case of two funds, 1 and 2, each of which holds shares in one of two distinct competitors, say A and B, respectively. There is no common ownership. Fund 1’s incentives are to make firm A more valuable, whereas fund 2 likes to see firm B gain value, reflecting a “prisoner’s dilemma” that leads to traditional competitive incentives. However, if the two funds (de facto if not de jure) delegate their voting authority and governance activities to one central family-level entity, whose goal is to maximize the sum of fund 1 and 2’s value (and thus the joint value of firms A and B), they thus create common ownership links at the level at which portfolio incentives are set, although there is no common ownership at the fund level. As a result of thus-reduced competition between fund 1 and 2’s portfolio firms, both funds realize greater asset values than they would have been able to realize as independent entities.

29. Aside from reducing competitive incentives between portfolio firms, aggregation of voting and engagement to a centralized office can also create cost synergies. Also, being powerful may be a necessary condition for institutions to have incentives to engage in and improve corporate governance; such engagement can increase economic efficiency. Hence, it is possible that the aggregation of voting power can benefit both shareholders and the economy at large. Regulators should therefore develop capacities to carefully optimize the trade-off between preserving institutions’ ability to offer cheap savings products in the form of highly liquid shares in diversified portfolios, retaining institutions’ ability and incentives to engage with their portfolio firms, but only to the extent that doing so is compatible with preserving or re-establishing vigorous product market competition.

5. What should we do about the common ownership problem?

30. Policy makers should attempt to optimally balance the benefits of cheap diversification and good governance against the costs of reduced competition due to excessive concentration of ownership and control over multiple firms in the same industry. Achieving this objective may require enforcing existing laws in some geographies, and the creation of new laws in others.

31. In the context of the U.S. legal system, Elhauge (2016) proposes to use existing laws (chiefly Clayton Act Section 7) to reverse past asset acquisitions that have led to

[8] It is practically impossible for funds to know households’ consumption baskets and investment portfolios. Perhaps as a result, ultimate investors pay funds to maximize the value of the fund’s assets, and not for the maximization of each investor’s idiosyncratic total-portfolio-consumption basket. This is unlikely to change with the imposition on constraints on funds’ portfolio composition, making it very unlikely that ultimate investors’ diversification annihilates the effect of fund-level regulation.

anti-competitive levels of common ownership. Posner, Scott Morton, and Weyl (2017) propose a new rule according to which no one mutual fund family should be allowed to hold more than 1% in all firms of an industry, or otherwise would have to concentrate its holdings in one firm per industry. In principle, this proposal goes in the right direction, as concentrating holdings in one firm would not only improve competitive incentives, but also incentives to improve corporate governance. Industry representatives have rejected the proposal because its implementation would also lead to major changes in the business model of the world's largest asset managers, and potentially affect asset markets in fundamental ways; see e.g. (Novick, Edkins, Garvey, Madhavan, Matthews, and Sethi, 2017). That said, the only estimate (by Posner et al.) of the net benefits that also takes increases in consumer welfare into account indicates a large net positive for such an intervention.

32. Importantly, an unwillingness or inability to take such comprehensive measures doesn't mean regulators should sit idle. For example, the wish to retain broadly diversified passive funds' business model does not conflict with preventing the monopolization of entire industries by active funds or so-called "passive" sector funds.

33. Achieving the objective to determine optimal solutions may also require additional research, as detailed below. Rather than wait for such research to emerge, competition authorities can and should contribute to it.

5.1. Monitor common ownership

34. Competition authorities should track (common) ownership of firms. Several national competition authorities have already begun to do so, as illustrated in the OECD background paper. Such monitoring will naturally clarify many of the misconceptions pointed out above, including that many common ownership links are created as a result of active portfolio choices rather than broadly diversified, passive indexing on behalf of ordinary households. Such monitoring may thus also open the possibility for enforcement actions against active common owners.

35. Measuring and monitoring common ownership will also naturally focus authorities' attention to increasing consolidation in the asset management industry, and to mergers between firms that have subsidiaries operating in overlapping product markets. Such mergers can harm competition in the product markets of portfolio firms, as shown by AST in the context of the BlackRock-BGI acquisition. The U.S. FTC's recent challenge of the Red Ventures Bankrate acquisition is an example of a recent challenge involving a merger with a private firm.[9]

5.2. Monitor common owners' governance activities

36. I pointed out above that common ownership reduces incentives to compete even when the common owners never make their voice heard (whereas concentrated owners would). However, it stands to reason that firms' anti-competitive incentives are not weakened, but if anything strengthened, when common owners take an active role in governance. Governance activities by common owners are already regulated or restricted

[9] https://sites-shearman.vuturevx.com/25/1614/november-2017/2017-11-06—at—the-ftc-s-challenge-of-red-ventures-bankrate–antitrust-risks-in-deals-backed-by-private-equity-minority-shareholders.asp

by both antitrust and securities law, but differently so across jurisdictions. Policy makers should thus assess to which extent common owners' governance activities are or should be lawful in their jurisdictions, and whether appropriate monitoring capacities are in place. I give some examples of such activities in what follows.

37. Authorities should be aware that large asset management firms such as BlackRock or Vanguard "engage" with portfolio firms (including competitors) in hundreds or thousands of meetings every year, according to their own websites and disclosures. However, little is known about the precise content of these meetings. Such practices appear particularly problematic if the conversations concern product market strategies or product prices, and if they not only involve a set of common owners, but also various portfolio firms at the same time; see Chen (2016) for an example. Yet, not only discussions pertaining to product prices can be problematic, but also discussions about capacity decisions and investment, which eventually determine product market equilibria. See Flaherty and Kerber (2016b) for an example of an activist fund's engagement with competitors without notifying antitrust authorities; see Flaherty and Kerber (2016a) for a discussion of the mutual funds' reaction to the US law suit that followed. Regulators should also deliberate whether regulating conversations about product market competition is effective, while conversations about the sensitivity of executive pay to competitors' performance are permitted.[10]

38. Regulators should also be aware that so-called "passive" institution's voting power can yield influence over product markets even if they do not appoint own employees to company boards, but instead help appoint competitors' shareholders' representatives. For example, in the fall of 2016, JP Morgan's shareholders appointed Berkshire Hathaway's Co-CIO on its board (Buhayar, 2016). Berkshire Hathaway is the largest shareholder or one of the largest shareholders of JP Morgan's competitors Wells Fargo, Bank of America, US Bancorp, American Express, Goldman Sachs, and others. JP Morgan's largest shareholders are Vanguard, BlackRock, State Street, Capital Research, and Fidelity. The same fund families are also, along with Berkshire Hathaway, among the largest shareholders of Bank of America and Wells Fargo.

39. Institutional investors interested in a fact-based debate could contribute to a clarification of their activities for example by recording the content of their engagement meetings with portfolio firms and making them available to researchers and regulators. In the absence of such transparency and cooperation, competition bureaus could demand insight in these activities, which are otherwise hidden from the public and academic researchers (with the exception of occasional press reports such as those cited above).

5.3. Foster research on the effects of common ownership

40. There are many questions to which common ownership research has not provided answers yet. For example, as of yet, there is no robust empirical support for pro-competitive effects of common ownership, although this is a theoretical possibility for a limited set of parameters (López and Vives, 2016).

41. Perhaps most importantly, empirical research has not yet answered to which extent formal firm boundaries (which are changed by full mergers but preserved even under full common ownership) still matter for competitive conduct and innovation amid

[10] The FTC's latest clarification on this issue is available online: https://www.ftc.gov/news-events/blogs/competition-matters/2015/08/investment-only-means-just

high levels of common ownership. Understanding the role of formal firm boundaries is important because it helps answer to which extent the agencies should re-allocate their attention and resources away from scrutinizing potentially pro-competitive and synergistic mergers, and study the effect of partial common ownership links instead. If common ownership of formally separate firms leads to lessened competition, but synergies would require full integration, it is possible for competition policy to over-enforce mergers and under-enforce common ownership at the same time. Whether this premise is true, however, or whether synergies can arise from common ownership just as well without formal integration is an unanswered empirical question.[11]

42. Either way, exclusive scrutiny of full mergers has become obsolete in a world in which a small number of asset managers can jointly achieve the same concentration of assets by buying large stakes in competitors.

43. The literature also lacks credible structural estimates regarding how large the anti-competitive effects are in various industries and geographies in which substantial levels of common ownership are present. However, given the scarcity of product-market-level data on prices and quantities, given that such studies typically take years to be conducted and validated, and given the scale, scope, and growth of the common ownership problem, the cost of waiting for such estimates can be prohibitive. Some reliance on broader firm-level studies showing reduced investment in industries and by firms predominantly owned by "quasi-indexers" such as that of Gutiérrez and Philippon (2016) may be indicated. Also, enforcement action may be necessary to obtain the necessary data for future industry-level studies of the problem.

44. Research to examine these and other questions should be encouraged both within academia and competition agencies worldwide. At the same time, regulators should be aware that substantial monetary incentives are offered by the asset management industry to individuals willing to discredit any research indicating anti-competitive effects of common ownership. Policy makers should thus ascertain the funding sources of authors, and read sponsored research with appropriate caution.

6. Summary

45. Competition authorities should immediately start monitoring common ownership in their respective jurisdictions, research its effects on competition, examine which tools they have at their disposal to mitigate its adverse competitive effects. Doing so does no harm to ordinary households seeking to get exposure to equity markets via index funds. In some cases, new legislation rather than mere enforcement of existing rules may be indicated. When deliberating new rules, policy makers should keep in mind that most of their constituents stand to gain more from increased competition and reduced product prices than from higher equity values induced by market power. More research is always beneficial, but the key bottleneck at this stage is political will. Institutional investors should engage in the debate with the goal of reaching optimal solutions to the problem, rather than pursuing a strategy of denial that there is a problem.

[11] Specifically, to date there exists no sharp empirical evidence for efficiency gains arising from horizontal ownership of formally separate firms. At the same time formal mergers tend to not lead to material synergies either (Blonigen and Pierce, 2015).

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