

Common ownership: theory, mechanisms, empirics & policy

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Textbook model of competition à la Adam Smith

- Self-interested firms undercut each others' prices, entrepreneur-managers exert effort to innovate, compete for market share
 - Leads to maximization of welfare (aka Wealth of Nations)
- Assumption that each firm wants to maximize its own value is naturally satisfied when
 - firm is owner-managed, and
 - owner's wealth is concentrated in one firm

**But by which mechanism can non-managing owners get corporate *managers* to compete aggressively?
Illustration with an example from the U.S. airline industry**

Virgin America (2016 Q2)	
Shareholder	Stake (%)
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
Société Générale	1.85

- Media reports point to explicit direction by Branson to use IPO cash for capacity expansion, new routes, new airplanes, expansion of **market share**.
 - Has the power of the vote, incentive, to back up voice

Illustration of an active, dedicated owner's effort to increase market share



Who plays that role at Delta & United ...?

Delta Air Lines		%	Southwest Airlines		%
Berkshire Hathaway		7.25	Berkshire Hathaway		15.03
Vanguard		6.13	PRIMECAP		11.87
BlackRock		5.84	Vanguard		6.28
Landsdowne		3.90	Fidelity		5.41
PRIMECAP		3.75	BlackRock		5.04
State Street gA		3.68	State Street gA		3.69

United Continental		%	American Airlines		%
Berkshire Hathaway		9.11	T. Rowe Price		12.89
Vanguard		7.33	PRIMECAP		10.46
PRIMECAP		7.19	Berkshire Hathaway		9.54
BlackRock		6.72	Vanguard		6.15
PAR Capital		5.26	BlackRock		5.20
T. Rowe Price		3.37	Fidelity		3.71
State Street gA		3.33	State Street gA		3.58

- Warren Buffett or Charlie Munger? Larry Fink? Bill McNabb? At all four airlines?
 - Absurd. No incentives. Market share is zero sum.
- AFAIK no evidence of such efforts to promote market share at even *one* airline.
 - (Alas.)

There are almost no non-common owners left

- At United, among top-100 owners, which hold >91% of shares, only 5 don't also hold stock of another top-four airline
 - The largest of them is #42
 - *Cumulatively*, the undiversified top-100 investors hold 1% of stock
- Similar for American, Delta, Southwest
 - Rock & Rubinfeld (2017)'s claim that most (17/26) top-10 shareholders in the largest six U.S. airlines hold "0" competitor stock is factually incorrect
- Few investors have incentives to act as 'Adam-Smith' entrepreneurs

What happens when no (or few) powerful shareholders have incentives to promote aggressive competition?

- **Answer: reduced competition**, compared to the textbook model.
 - Selection of theories: Kotz (1979); Rubinstein & Yaari (1983); Rotemberg (1984); Reynolds & Snapp (1986); Farrell & Shapiro (1990); Gordon (1990, 2003); Macho-Stadler & Verdier (1991); Admati, Pfleiderer & Zechner (1994); Hansen & Lott (1996); O'Brien & Salop (2000); Gilo (2000); Rubin (2006); Kraus & Rubin (2011); Azar (2012, 2017); Brito, Ribeiro, Vascandelos (2014); de Haas & Paha (2016); Lopez & Vives (2018); Brito, Osorio, Ribeiro, Vascandelos (2018); Neus & Stadler (2018); Antón, Ederer, Giné & Schmalz (2018).
 - Schmalz (2018) has a more comprehensive list.
- Logic: competition for market share reduces common owners' ***portfolio*** profits.

Details on theories

- Assume firms act, to some extent, in owners' financial interest: portfolio value
 - Makes sense if managers are optimally (dis-)incentivized to compete (literature in AER) by **asset owners or asset managers**. (By **incentive**, or by **fiduciary duty**.)
 - Common shareholders like own-firm profits, but less if profits come at the expense of commonly owned firms
- Shareholders with heterogeneous portfolios **don't agree on own-firm profit maximization** as an objective, except when firms are perfect competitors (Hart 1979; DeAngelo 1983)
- Rotemberg (1984) assumes objective = weighted average of shareholder portfolio profits
 - For sufficiently low costs of diversification, there is **unanimous support for industry-value maximization** rather than firm-value maximization, even with heterogeneous shareholders
- O'Brien & Salop (2000) assume a similar objective, later micro-founded with voting models (Azar 2012; Brito et al. 2016, 2018).
 - Yields MHHI as measure of market concentration.
 - First applied to ownership by outside investors by Maxwell, O'Brien & Parsons (1999); Azar et al. (2018a) in regressions of product price on MHHI + controls.
 - Persistent challenge: measuring control weights. Robustness needed in applications.

**Theories say: common ownership reduces incentives to compete.
Not: common owners do nefarious things, incite collusion, etc.**

- Rubinstein & Yaari (1983), p.1:

Suppose also that cooperation or collusion are impossible,

- Rotemberg (1984):

Note that this collusion need not be "enforced" with penalties against cheaters. In fact managers never need to meet each other. Managers c

- Mechanism for **collusive outcomes** is: **reduced incentives to compete** "simply as a result of [managers] looking out for their shareholders." (Rotemberg 1984)
 - Mutual funds' response "We don't ask firms to collude" has little to do with the economic argument made

Important distinction btw unilateral effects & collusion

1. Collusion is only needed to maintain anticompetitive outcomes when there are incentives to compete. Common ownership reduces incentives to compete.
 2. Marginal effect of common ownership on *collusion* is ambiguous (Gilo, Moshe & Spiegel, 2006; de Haas & Paha, 2018)
- For both reasons, **searching for a connection between common ownership & collusive mechanism can lead to false negatives**
 - That said, investors do engage with managers on strategic competition, including output & pricing

Common owners use standard governance tools

- Standard governance mechanisms are, among others
 - Voting
 - Incentives
 - “Voice” (engagement)
- These tools are
 - available to common owners as well as to dedicated investors
 - employed centrally and therefore irrespective of investment strategy (active/“passive”)
 - **sometimes used in a deliberate attempt to reduce competition**
 - **hidden from regulators** & researchers in case of engagement meetings

Common ownership reduces managers' incentive to cut cost, increase output, maximize firm value

- Antón, Ederer, Giné & Schmalz (2018): CEO wealth-performance sensitivity is lower in more commonly-owned industries. Implies reduced incentive & effort to cut costs, increase profit.
 - **Implies lower output & higher margins in industry equilibrium**

	Log(Wealth-Performance Sensitivity EGL)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Common Ownership (MHHID)	-0.205*** (-2.875)	-0.537*** (-6.731)	-0.275*** (-4.555)	-0.266*** (-3.601)	-0.158** (-2.798)	-0.375*** (-4.134)	-0.230*** (-3.030)

- **Common owners may be “weak principals” (by standard governance measures) and simultaneously enable reduced competition (e.g. by encumbering votes)**

Whether an incentive contract features Relative Performance Evaluation (RPE) is *per se* uninformative about its competitive incentives

- Effect on competitive incentives **depends on how performance is measured**: value (pro-competitive) or margins (anticompetitive)
 - $\text{Margin}_i = p - c' = A - a_1 q_i - a_2 q_j - c'$
 - Maximize $\text{margin}_i \Rightarrow$ minimize q_i
- Rock & Rubinfeld (ALJ 2017) note that at American Airlines...

In April 2015, Mr. Parker requested and the Compensation Committee agreed to provide 100% of his direct compensation in the form of equity incentives, underscoring our commitment to paying for performance and further aligning his interests with that of our stockholders. Mr. Parker will no longer receive any base salary and will no longer participate in the Company's 2015 Short-term Incentive Program. In addition, the majority of Mr. Parker's 2015 target equity compensation is performance-based and will be earned, if at all, not earlier than the third anniversary of the grant date based on our relative three-year pre-tax income margin as compared to that of a pre-defined group of airlines. We believe relative pre-tax income margin

BUSINESS

Wall Street Tells Frackers to Stop Counting Barrels, Start Making Profits

The shale-oil revolution produces lots of oil but not enough upside for investors

By Bradley Olson and Lynn Cook

Updated Dec. 13, 2017 6:09 p.m. ET

Twelve major shareholders in U.S. shale-oil-and-gas producers met this September in a Midtown Manhattan high-rise with a view of Times Square to discuss a common goal, getting those frackers to make money for a change.

The September Manhattan meeting homed in on one factor in particular: the role executive pay plays in driving a growth-at-all-costs mentality.

Common owners vote on board representation by competitors' largest shareholder

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Markets

Buffett's Investing Deputy Combs Named to JPMorgan's Board

By [Noah Buhayar](#)

September 20, 2016, 12:50 PM GMT+2 Updated on September 20, 2016, 3:55 PM GMT+2

- ▶ Combs has been adding duties, got credit for Precision deal
- ▶ JPMorgan CEO Dimon credits Combs for wisdom, judgment

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Berkshire Hathaway Inc.'s Todd Combs has been named to the board of JPMorgan Chase & Co., helping him build expertise beyond investment management and expanding the ties of [Warren Buffett's](#) conglomerate to the banking industry.

Combs's appointment was effective Monday, New York-based JPMorgan said in a [statement](#) Tuesday. Buffett's Berkshire is one of the [top investors](#) in JPMorgan competitors such as American Express Co. and Bank of America Corp., and U.S. regulators are [weighing](#) whether his 10 percent stake in Wells Fargo & Co. violates rules meant to limit the power of insiders.

- Combs not expected to propose or support a price war against Bank of America, Wells Fargo, U.S. Bancorp, Goldman Sachs, American Express, ...

Voting determines activism. Activism is known to affect product market outcomes.

- An investor with the largest voting block in a firm is pivotal in close elections, and therefore powerful — want it or not.
- Also in activist campaigns. BLK, Vanguard, SSgA voted against & caused Trian to lose a pro-competitive campaign at DuPont in 2015 (Schmalz, 2015)
 - Trian wanted increased R&D spending, relative performance evaluation to **increase market share**, less product market cooperation with competitors
- Coffee (2015): “The most plausible hypothesis is that the large asset managers are concerned about the impact of hedge fund activism on their broader portfolio.”

“The ‘index funds’ control America. They’ll be the swing vote in every proxy contest in every election.”



Balance of powers shapes type of campaigns activists rationally attempt to get support for. Predicts Keiretsu malaise due to ‘index funds’.

Empirical evidence on mutual funds' pivotal role in proxy voting is exploding

- Matvos & Ostrovsky (2008): **funds vote** not in the interest of either target or acquirer, but **in the interest of their portfolio & portfolio of other funds in the family**
- Hsieh, Li & Tang (2018): passive investors more likely to vote for renewal of poison pills, insulating firms from activists
- Fichtner, Heemskerk & Garcia-Bernardo (2017): Big-3s' voting is quasi-centralized, making them the most powerful shareholder of ~90% of S&P 500 firms
- Brav, Jiang & Li (2018): how mutual fund voting shapes proxy voting
- See also Bubb & Catan (2018); Bolton, Ravina & Rosenthal (2018); Heath, Macciocchi, Michaely & Ringgenberg (2018); ...
- Mutual funds may strengthen or weaken *activism* — but would act against their interest and that of investors if they support portfolio-value destroying *campaigns*.

Voice: Softbank's Vision Fund (PE)

In the near term, the focus is on encouraging the ride-hailing firms to compete less feverishly and push up fares. Mr Misra has called on Uber to concentrate on its core markets of North and South America, Europe and Australia in order to narrow its losses before an IPO expected in 2019. In March SoftBank pulled off a coup when Uber agreed to sell its business in South-East Asia to Grab in return for a 27.5% stake. Uber will stop operating in Singapore, the Philippines, Malaysia and Vietnam, leaving the field clear, in theory, for Grab to raise prices.

Grabbing back

Uber makes a tactical retreat from South-East Asia

The company's deal with Grab shows the influence of its biggest shareholder, the SoftBank Vision Fund

- Competition authorities in several South-East Asian nations challenged the deals
- But do hedge funds / mutual funds engage on topics relating to competition also in U.S. public corporations?

U.S. lawsuit against activist ValueAct puts mutual funds on alert

Michael Flaherty, Ross Kerber

6 MIN READ



NEW YORK/BOSTON (Reuters) - The U.S. government's lawsuit against ValueAct Capital targets one activist investor but could call into question routine practices across the \$16 trillion mutual fund industry, according to attorneys and industry representatives.

Some communications the government cites as evidence are similar to discussions that are increasingly common between traditional, buy-and-hold funds and companies in their portfolios.

The case comes as active and passive investors work more together to pressure management at underperforming companies. Activists court passive shareholders before launching such a campaign, and passive investors recruit activists to agitate, several activist managers told Reuters.



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“Investment-only” means just that

- Making recordings of all private engagement meetings available should help prove innocence. Yet, no apparent threat of prosecution of HSR violations.
- Were topics touching on product market competition discussed in engagement meetings since?

**Institutional investors even think they can change the
products themselves**

BUSINESS

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Institutional investors even think they can change the *products* themselves...

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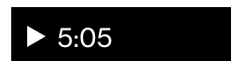
Investors With \$4.8 Trillion Push Gun Industry for Reform

By [Janet Lorin](#), [John Gittelsohn](#), and [Polly Mosendz](#)

November 14, 2018, 1:00 PM GMT+1 *Updated on November 14, 2018, 7:30 PM GMT+1*

- ▶ Coalition of 13 say they seek changes rather than divestment
- ▶ 'You need a chorus of investors singing loud and clear'

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Investors and money managers with more than \$4.8 trillion in assets are banding together for the first time to pressure gun manufacturers and sellers to make firearms “safer, more secure and easier to trace.”

The 13 members -- which include State Street Global Advisors, TIAA’s investment manager Nuveen and pension funds in California, Florida and Connecticut, where mass shootings have occurred -- is asking for changes in business practices rather than threatening divestment, the group said Wednesday in a [statement](#).

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MARKETS

... or how they are produced



L. Fink: “*We can tell a company to fire 5000 employees tomorrow.*” — But not affect product market outcomes?

“Fund giant BlackRock lobbies for mergers of European banks” (but explicitly not: Commerzbank)

FA.Z. EXKLUSIV

Fondsriese Blackrock wirbt für Fusionen
europäischer Großbanken

AKTUALISIERT AM 04.10.2016 - 18:10



Philipp Hildebrand vom Finanzgiganten Blackrock, der auch größter Aktionär der Deutschen Bank ist, rechnet mit der europäischen Bankenbranche ab.

- Mechanism to affect mergers apparently exists.
 - (Also, to oust the CEO.)
- But no plausible mechanism exists that can affect competitive outcomes?
 - Aren't mergers potentially related to competitive outcomes?

More...

- Common owner of United, Delta, American, Alaska, Virgin, and SWA (Levine, 2016):

“I’d like to see [SWA] boost their fares but also cut capacity”

- Mysterious why anyone would think common owners don’t have the ability to engage on topics that affect product market outcomes.
 - Based on statements & behavior outside antitrust hearings, they certainly think they have that ability.

Baseline: decades of evidence that institutional ownership affects capex, payouts, merger activity, ...

- **Common ownership** affects corporate financial choices (Semov 2017)
 - BlackRock's CEO L. Fink directly expresses views on payouts & capex in letters to CEOs, threatens votes against management
- Every dollar paid out can't be spent again on capex
 - Reduced capex means lower capacity
 - Lower capacity means lower output
- If there's an effect on capex, payouts, ..., how can there *not* be an effect on product markets?

Economy-wide increase in common ownership is well-documented

- The literature has documented the existence of common ownership links since Kotz (1979); Hansen & Lott (1996); Gilo (2000); Lindsey (2008); Matvos & Ostrovsky (2008)
- Harford, Jenter & Li (2011) *“conclude that, by 2005, most institutional investors in S&P 500 firms do not want corporate managers to narrowly maximize the value of their own firm. Instead, investors would see their portfolio values maximized if managers internalized a large percentage of any externalities imposed on other index firms.”*
- See also Azar (2012); He & Huang (2017); Banal-Estanol, Vives, Seldeslachts (2017); Gilje, Gormley & Levit (2018); Backus et al. (2018); see Azar et al (2x) for market-level

Empirical evidence of anticompetitive effects

- Common ownership density predicts industry margins (Azar, 2012)
- Gutierrez & Philippon (2016, 2017): quasi-indexer ownership of firms causally related to buybacks and reduced investment relative to margins
- Azar, Schmalz & Tecu (2018a; AST) study airline market-level effects: common ownership causes higher prices and reduced output
 - Independently replicated by Kennedy, O'Brien, Song & Waehrer (2017)
 - Data & code available on JF website

Deep-dive on AST's results

- Panel regressions indicate 3-8% higher prices due to average level of common ownership
 - Not significant in smallest 16% of markets (90% of passengers in 50% of markets)
 - Not significant in markets with HHI <2,500
- BlackRock's acquisition of BGI differentially affected different routes' ownership structure
 - These differences predict changes in ticket prices across routes; estimates up to 12%
- Robust to alternative measures of common ownership, proportional control assumption, mergers, bankruptcies, ... fixing market shares at $1/n$
- Driven by largest & long-term shareholders (most powerful in theory)
 - Effects identified from x-sectional variation, not just long-run changes in the industry
- Evidence does *not* directly inform whether results due to unilateral or coordinated effects

Dennis, Gerardi & Schenone (2017) claim AST's results driven by weighting regressions & largest 5% of markets

- These claims are factually incorrect (AST 2018b, available on SSRN)
 - AST results are robust to not weighting by # passengers
 - Dennis et al.'s non-finding of anticompetitive effects in smaller markets likely due to failure to aggregate 13Fs to institution level

Dep. Var.	(1) Full-sample lfare	(2) Top 5% lfare	(3) Bottom 95% lfare	(4) p50-95 lfare	(5) Full-sample lfare	(6) Top 5% lfare	(7) Bottom 95% lfare	(8) p50-95 lfare
MHHI delta	0.0496** (0.0212)	0.183*** (0.0452)	0.0563*** (0.0206)	0.114*** (0.0228)				
MHHI delta using Non-Aggregated Filings					0.0188 (0.0253)	0.188*** (0.0489)	0.0205 (0.0248)	0.0743*** (0.0274)

What about the Structure-Conduct-Performance (SCP) critique (e.g. Schmalensee, 1989)?

- Market shares are endogenous to product prices, asset prices, ownership
 - No accepted model exists to inform nature of endogeneity
 - Therefore, market shares held constant in several of AST's tests, with robust results also for $s = 1/n$
- The alternative is other models with other assumptions
- Also, SCP critique is primarily concerned with cross-industry regressions, not with within-industry regressions of price on concentration with cost controls

What Schmalensee (1989) actually said

5.1 Price Levels

Studies that compare price levels among geographically separated markets in the same industry are immune to the serious accounting problems that affect profitability studies, and one can expect that omitted market-specific variables are less important (and thus less likely to cause large biases) when attention is focused on a single industry. On the other hand, biased results may be obtained if adequate controls for exogenous determinants of cost are not included. The relation between concentration and price has been studied in numerous markets.³⁴ This work generally provides strong support for:³⁵

Stylized Fact 5.1: In cross-section comparisons involving markets in the same industry, seller concentration is positively related to the level of price.



- That price-HHI relation is negatively-biased because of the omitted variable *common ownership* (Azar, Raina & Schmalz 2016)

“Structural analysis is not a substitute for credible inference” (Nevo & Whinston, JEP 2010)

- “one comes away with the impression that there is only a single way to conduct credible empirical analysis. This seems to us a very narrow and dogmatic approach to empirical work; credible analysis can come in many guises, both structural and nonstructural”
- “empirical analysis must not only deal with credible inference, but also with ‘extrapolation’ ... This is where structural analysis comes in.”

Academic structural studies

- Parker & Röller (1997): common ownership of telecom licenses helps explain higher prices
- Lundin (2016): joint profit maximization fits the data better than individual profit maximization (nuclear power supply dynamics)
 - Terminating joint ownership of power plants would reduce prices by 5%
- Backus, Conlon & Sinkinson (2018b): Bertrand model likely fits cereal prices better than a common ownership model assuming 100% of the incentive effects translated to strategy
 - Few people believe in perfect passthrough and *no* frictions (fund, family, firm, subsidiary supermarket)
 - Paper doesn't reject $>0\%$ effects of common ownership

ICI (!) - sponsored airline study by Kennedy, O'Brien, Song & Waehrer (2017)

1. Finds no + point estimates, but does not reject + effects
 2. Also estimates negative effect of route distance on cost. Logic?
 3. Estimates based on a selected 10% subsample of the data. Why?
- Non-positive effect doesn't replicate using standard methods
 - Academic incentives to check & improve on industry-sponsored studies are low. Natural role of competition authority.

Singular focus of discussion on MHHI misses the forest for the trees

- Many more papers document effects of common ownership on firm behavior, market structure, innovation, ... using alternative measures of common ownership

Selection of other studies

- Lindsay (2008): common ownership fosters **alliances** among VC-backed firms, blurs **firm boundaries**
- Azar, Raina & Schmalz (2016): higher fees, lower deposit interest rates, higher fee thresholds in banking markets with greater ultimate ownership (GHHI). **Effects driven by quasi-indexers.**
- Panayides & Thomas (2017): common ownership causes reduced competition for market share **via reduced capex and advertisement expenses**
- Semov (2017): common ownership causes firms to move **closer together in product space**
- Gerakos & Xie (2018): common ownership btw brand and generic drug manufacturer reduces market **entry**; predicts settlement probability incl. **pay-for-delay**
- Newham, Seldeslachts & Banal-Estanol (2018): independently confirm reduced **entry** of generic due to common ownership
- Brooks, Chen & Zeng (2018): common ownership drives **merger** activity
- Antón, Azar, Giné & Lin (2018): common ownership helps resolve the **merger** paradox

Effects of common ownership (CO) on corporate innovation

- Kostovetsky & Manconi (2016): knowledge diffusion (cross-citations) btw CO firms
- Geng, Hau & Lai (2017): CO reduces holdup btw firms with complementary R&D
- He & Huang (2017): CO fosters product market coordination, innovation prod.
- Borochin, Yang & Zhang (2017): focused long-term ownership fosters exploratory innovation; ownership by ST diversified investors impedes innovation
- Qiu (2017): across-industry common ownership fosters innovation; within-industry common ownership impedes innovation
- Antón, Ederer, Giné & Schmalz (2018): common ownership correlates with more (less) innovation when technological (product market) spillovers are greater

Welfare effects unclear.

Innovation effects overpower anticompetitive effects only under restrictive conditions (Lopez & Vives 2018). No empirical evidence.

Effects of vertical common ownership links

- Ojeda (2016): firms sharing common owners with banks obtain cheaper & riskier loans
 - Not commonly-owned firms pay higher interest rates
 - See also Cici, Gibson & Rosenfeld (2015)
- Freeman (2017): common ownership causes longer-lasting customer-supplier relationships
- [Geng, Hau & Lai (2017): common ownership reduces holdup between firms with complementary R&D]. Mirrors prior *cross-ownership* results.

Existence of vertical effects doesn't negate existence of horizontal effects, or sign the net effect.

The role of policy makers

- The quality of this debate would benefit from better data access to researchers, and independent analyses of product markets
ers rarely have a voice. In America things have slipped so badly that a material conflict of interest is not considered a disqualifying condition, or even a relevant consideration, for someone to pronounce on antitrust policy and be taken seriously. *The Economist* 17 Nov 2018
- Meanwhile, the ICI (2018) urges the FTC to not analyze this issue:

In light of the considerations discussed above, we urge the Commission to focus its resources on other areas.

- Why the desire to hide the ball?
 - If the industry believed common ownership wasn't an antitrust problem, wouldn't they want the FTC to study it in all imaginable detail?

Conclusion theory, mechanism & empirics

Given

- theory
- magnitude of anticompetitive incentives
- fiduciary duty of funds to maximize value of portfolio of assets
- abundance of mechanisms yielding ability to affect product markets

we would need overwhelming empirical evidence that anticompetitive incentives from common ownership never cause anticompetitive outcomes.

“Evidence”: at least 24 papers, many of them published in top journals, document effects on prices, quantities, product market cooperation, innovation.

Waiting (for what, precisely?) is probably extremely costly. So what should we do?

Regulators understood the problem arising from institutional ownership long before formal theories emerged

- 1934 Senate Securities Report: *“Congress must prevent the diversion of these trusts from their normal channels of diversified investment to the abnormal avenues of control of industry”* (Roe 1990)
- SEC’s ICI bill: *“the national public interest...is adversely affected...when investment companies [have] great size [and] excessive influence on the national economy”* (Roe 1990)

However, Bogle (2018) points out:

Street with very few others up in that rarified air. The Investment Company Act essentially says that no mutual fund can own more than 10% of the shares of any company. But when and if our index fund gets to 10%, all we have to do is start a second one and that would be in technical compliance. There should be limits. Should we

Also J. Bogle, WSJ Nov 29, 2018: *“Public policy cannot ignore this growing dominance [of the Big-3]. ... I do not believe that such concentration would serve the national public interest.”*

But: what about the benefits of diversification?

1. Common ownership as presently documented has little to do with households' ability to diversify. Much to do before touching index funds.

- Non-indexed investors (Berkshire, ValueAct, Softbank...) concentrate holdings in particular industries
- Most ETFs primarily used for factor exposure, not for widely diversified investment by median household
- Largest ETF \$250bn AuM — 1% of U.S. market cap (and much less of a globally diversified portfolio). So how do funds hold 5-10% of firms' stock?
 - BlackRock, Vanguard, ... are not **funds**. They are fund **families**.
 - Control (voting, engagement) mostly centralized across funds within family.
- **Households can diversify across funds**
 - That might raise the cost of diversification, but not the principal ability
 - How high is that cost, compared to the benefit of having a competitive economy?

2. Common ownership reduces incentives to compete — and welfare — due to the reduced cost of diversification they enable

- Rotemberg (1984)

This paper presents a model in which firms, acting in the interest of their shareholders, tend to act collusively when their shareholders have diversified portfolios. Therefore, government interventions which reduce diversification, such as taxing trades in stocks and redistributing the proceeds, are potentially beneficial since they promote competition.

- Mutual funds' "efficiency defense" doesn't appear to take into account that **reduced cost of diversification** may be the fundamental cause of the antitrust problem, and **the reason regulatory limits would be welfare-enhancing.**

Mutual funds' emphasis on benefits of cheap diversification supports Rotemberg (1984)'s conclusion



These, by lowering the costs of diversification naturally induce more collusion if managers follow the wishes of the ultimate recipients of dividends. However, in the light of this paper, it may well be that the funds which concentrate on specific industries and those whose portfolio is very broad do the most harm.