Common Threads from Common Ownership

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DICE Competition Policy Conference
December 7, 2024

Delta Air Lines	[%]
Berkshire Hathaway	8.25
BlackRock	6.84
Vanguard	6.31
State Street Global Advisors	4.28
J.P. Morgan Asset Mgt.	3.79
Lansdowne Partners Limited	3.60
PRIMECAP	2.85
AllianceBernstein L.P.	1.67
Fidelity	1.54
PAR Capital Mgt.	1.52

Southwest Airlines Co.	[%]
PRIMECAP	11.78
Berkshire Hathaway	7.02
Vanguard	6.21
BlackRock	5.96
Fidelity	5.53
State Street Global Advisors	3.76
J.P. Morgan Asset Mgt.	1.31
T. Rowe Price	1.26
BNY Mellon Asset Mgt.	1.22
Egerton Capital (UK) LLP	1.10

American Airlines	[%]
T. Rowe Price	13.99
PRIMECAP	8.97
Berkshire Hathaway	7.75
Vanguard	6.02
BlackRock	5.82
State Street Global Advisors	3.71
Fidelity	3.30
Putnam	1.18
Morgan Stanley	1.17
Northern Trust Global Inv	1.02

United Continental Holdings	[%]
Berkshire Hathaway	9.20
BlackRock	7.11
Vanguard	6.88
PRIMECAP	6.27
PAR Capital Mgt.	5.18
State Street Global Advisors	3.45
J.P. Morgan Asset Mgt.	3.35
Altimeter Capital Mgt.	3.26
T. Rowe Price	2.25
AQR Capital Management	2.15

Alaska Air	[%]
T. Rowe Price	10.14
Vanguard	9.73
BlackRock	5.60
PRIMECAP	4.95
PAR Capital Mgt.	3.65
State Street Global Advisors	3.52
Franklin Resources	2.59
BNY Mellon Asset Mgt.	2.34
Citadel	1.98
Renaissance Techn.	1.93

JetBlue Airways	[%]
Vanguard	7.96
Fidelity	7.58
BlackRock	7.33
PRIMECAP	5.91
Goldman Sachs Asset Mgt.	2.94
Dimensional Fund Advisors	2.42
State Street Global Advisors	2.40
Wellington	2.07
Donald Smith Co.	1.80
BarrowHanley	1.52

The Rise of Common Ownership

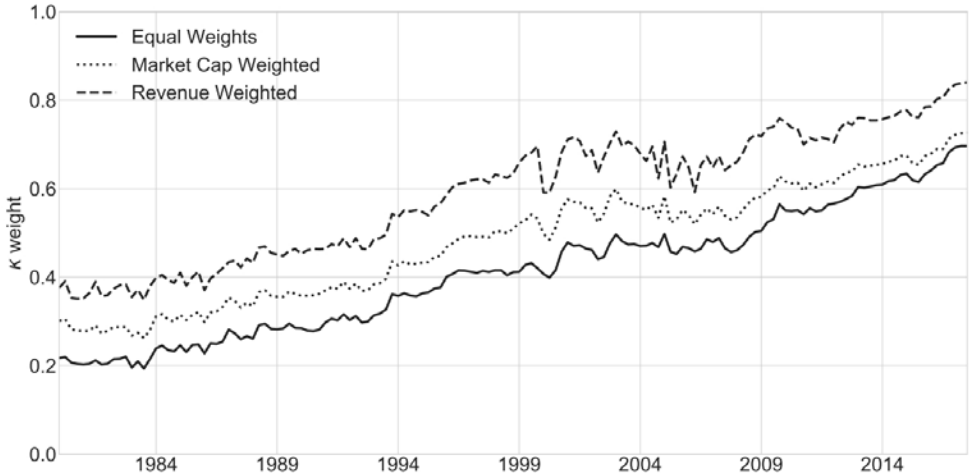


Figure: Common ownership profit weights κ over time (Backus et al., 2021b)

The Common Ownership Hypothesis

- "When large investors own shares in many firms within the same industry, those firms may have reduced incentives to compete."
  - Firms produce fewer units, raise prices, reduce investment, innovate less, limit entry, ...
  - Long intellectual history starting with theoretical contributions by Rubinstein and Yaari (1983) and Rotemberg (1984)
  - But only empirically relevant due to tremendous increase in common ownership over the past 3 decades (Azar, 2012; Backus et al., 2021b)
  - Empirical evidence is growing and varies across industries, firm choices, methodologies, ...

- Important questions include:
  - "Does common ownership affect corporate conduct?" (Azar et al., 2018; Backus et al., 2021a)
  - "How do common owners influence firm strategy?" (Antón et al., 2023; Forsbacka, 2024)
  - "Does common ownership affect innovation?" (López and Vives, 2019; Gibbon and Schain, 2023; Antón et al., 2024; Shelegia and Spiegel, 2024)

- How big of a problem is common ownership for competition, aggregate welfare, and the distribution of surplus?

Some people thought about this problem 30 years ago

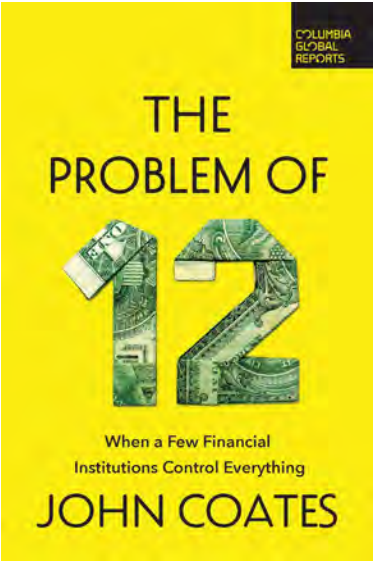
Large Shareholder Activism, Risk Sharing, and Financial Market Equilibrium

Anat R. Admati and Paul Pfleiderer
Stanford University

Josef Zechner
University of Vienna

One fundamental issue concerns what is or should be the objective function of the firm in an economy in which investors hold diversified portfolios and in which some investors might be able to affect managerial decisions in several firms. Suppose, for example, that all investors hold the market portfolio. Then firms that act in the interests of shareholders might well refrain from competing against each other in the product market. Note, however, that the shareholders are also consumers and might therefore be hurt by such behavior. Moreover, stakeholders in the firm include its employees, suppliers, and so forth.

Many people have thought about this problem more recently



Policy Importance

SEC

Common Ownership: The Investor Protection Challenge of the 21st Century

Commissioner Robert J. Jackson Jr.

New York, NY

Dec. 6, 2018

Testimony Before the Federal Trade Commission Hearing on Competition and Consumer Protection

FTC, DOJ, OECD, EC

Institutional investors often hold shares of competing firms. Recent scholarship has considered whether such common ownership has anticompetitive effects. Antitrust theorists have long suggested that the interests of a common concentrated owner (CCO) differ from those of an owner of a single firm and that a CCO might be able to induce firms in which it holds a stake to further these interests.[1] Recent empirical evidence, finding that CCOs are associated with higher prices and lower output, seems to support this theory.[2]

This new evidence, along with the dramatic growth in institutional investors' holdings over the last several decades, has stimulated a major rethinking of antitrust enforcement. The Department of Justice has acknowledged concerns about the anticompetitive effects of common ownership and investigated common ownership of competing airlines.[3] In 2018, the Federal Trade Commission took these concerns a step further, conducting an all-day hearing on the subject.[4] In Europe, antitrust enforcers have taken a more aggressive approach: in addi-

Antitrust Lawsuits

Texas, other states sue BlackRock, Vanguard for 'conspiring' to restrict US coal market

The lawsuit alleged the firms are using the influence gained through their stock holdings to pressure coal companies to reduce output in alignment with the asset managers' net-zero goals.

Published Dec. 3, 2024

Lamar Johnson
Reporter

KEN PAXTON
ATTORNEY GENERAL of TEXAS

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ATTORNEY GENERAL KEN PAXTON SUES BLACKROCK, STATE STREET, AND VANGUARD FOR ILLEGALLY CONSPIRING TO MANIPULATE ENERGY MARKETS, DRIVING UP COSTS FOR CONSUMERS

November 27, 2024 | Press Release

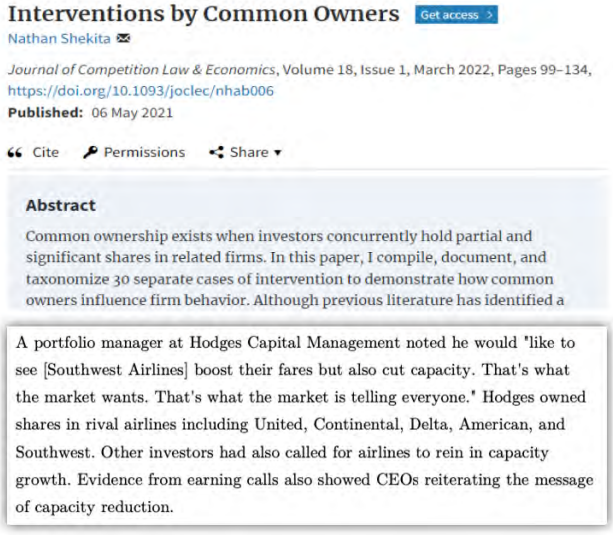
Attorney General Ken Paxton Sues BlackRock, State Street, and Vanguard for Illegally Conspiring to Manipulate Energy Markets, Driving Up Costs for Consumers

Attorney General Ken Paxton sued BlackRock, State Street Corporation, and Vanguard Group, three of the largest institutional investors in the world, for conspiring to artificially constrict the market for coal through anticompetitive trade practices.

Over several years, the three asset managers acquired substantial stockholdings in every significant publicly held coal producer in the United States, thereby gaining the power to control the policies of the coal companies. Using their combined influence over the coal market, the investment cartel collectively announced in 2021 their commitment to weaponize their shares to pressure the coal companies to accommodate "green energy" goals. To achieve this, the investment companies pushed to reduce coal output by more than half by 2030.

Blackrock, Vanguard, and State Street utilized the Climate Action 100 and the Net Zero Asset Managers Initiative to signal their mutual intent to reduce the output of thermal coal, which predictably increased the cost of electricity for Americans across the United States.

Common Owners Influence Strategy (Shekita, 2022)



Interventions by Common Owners Get access >

Nathan Shekita ✉

Journal of Competition Law & Economics, Volume 18, Issue 1, March 2022, Pages 99–134,
https://doi.org/10.1093/joclec/nhab006
Published: 06 May 2021

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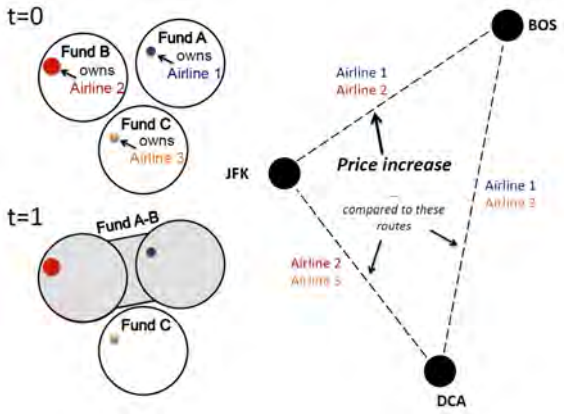
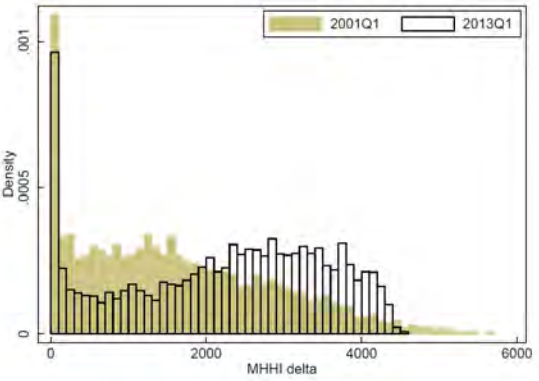
Abstract

Common ownership exists when investors concurrently hold partial and significant shares in related firms. In this paper, I compile, document, and taxonomize 30 separate cases of intervention to demonstrate how common owners influence firm behavior. Although previous literature has identified a

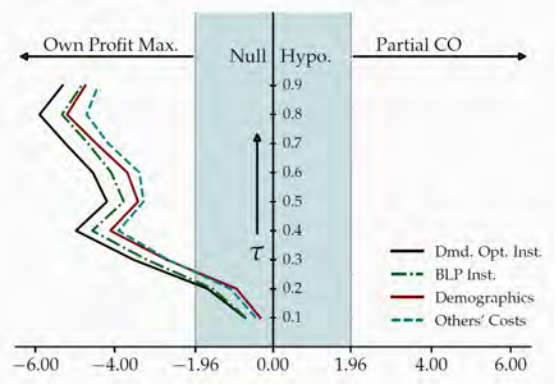
A portfolio manager at Hodges Capital Management noted he would "like to see [Southwest Airlines] boost their fares but also cut capacity. That's what the market wants. That's what the market is telling everyone." Hodges owned shares in rival airlines including United, Continental, Delta, American, and Southwest. Other investors had also called for airlines to rein in capacity growth. Evidence from earning calls also showed CEOs reiterating the message of capacity reduction.

Common ownership raises airline prices (Azar et al., 2018) ...





... but not RTE cereal markups (Backus et al., 2021a)



Direct Mechanisms of Common Ownership $\longrightarrow$ Markup Effects

Investors

Directly set p_i to maximize

$$\phi_i = \pi_i + \sum_j \kappa_{ij} \pi_j$$

~~Productive Inefficiency~~

Product Prices

Markup Effects

Do you need a direct mechanism? No!

Investors

$$\varphi_i = \pi_i + \sum_j \kappa_{ij} \pi_j$$

Product Prices

Indirect Mechanism (Antón et al., 2023) $\longrightarrow$ Productive Inefficiency

Investors

Set w_i to maximize ϕ_i

Top Management

Invest e_i in cost reduction to maximize w_i

Pricing Specialists

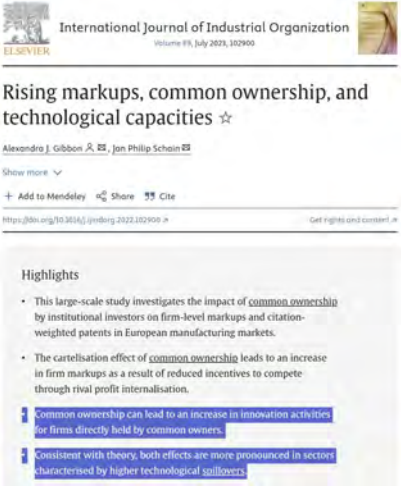
Set p_i to maximize π_i

Productive Inefficiency

Product Prices

~~Markup Effects~~

Are there any procompetitive effects of common ownership?



International Journal of Industrial Organization
Volume 93, July 2023, 102900

Rising markups, common ownership, and technological capacities ☆

Alexandra J. Gibbon, Jan Philip Schain
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https://doi.org/10.1016/j.ijindorg.2022.102900

Highlights

- This large-scale study investigates the impact of common ownership by institutional investors on firm-level markups and citation-weighted patents in European manufacturing markets.
- The cartelisation effect of common ownership leads to an increase in firm markups as a result of reduced incentives to compete through rival profit internalisation.
- Common ownership can lead to an increase in innovation activities for firms directly held by common owners.
- Consistent with theory, both effects are more pronounced in sectors characterised by higher technological spillovers.

Innovation: The Bright Side of Common Ownership?

Miguel Antón, Florian Ederer, Mireia Giné, Martin Schmalz

Published Online: 16 Aug 2024 | https://doi.org/10.1287/mnsc.2024.04363

Abstract

Firms have inefficiently low incentives to innovate when other firms benefit from their inventions and the innovating firm therefore does not capture the full surplus of its innovations. We show that, in theory, common ownership of firms mitigates this impediment to corporate innovation. By contrast, without technological spillovers, innovation has the effect of stealing market share from rivals and in that case more common ownership reduces innovation. Empirically, the association between common ownership and innovation inputs and outputs decreases with product market proximity and increases with technology proximity. The sign and magnitude of the overall relationship between common ownership and corporate innovation thus varies considerably across the universe of firms depending on their relative proximity in technology and product market space. Some of these results persist if we use only variation from BlackRock's acquisition of BGI. Our findings inform the debate about the welfare effects of increasing common ownership among U.S. corporations.

What are the economy-wide effects?(Ederer and Pellegrino, 2024)

- **What are the welfare and distributional implications of common ownership?**
- **How do corporate governance assumptions affect these conclusions?**

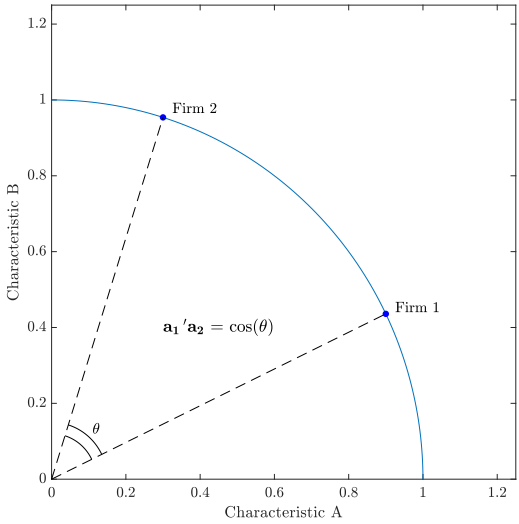
- Theory
  - A novel **structural IO-style** general equilibrium model of oligopoly with common ownership
  - Hedonic demand to model competition among differentiated oligopolists with market power
  - Different firm objective functions based on ownership and corporate governance arrangements

- Empirical Results
  - Deadweight loss of common ownership increased from 1.4% in 1995 to 12.4% in 2021
    - ★ Alternative governance assumptions: deadweight loss ranges between 3.5% and 13.2% in 2021
    - ★ Results hold for private and foreign firms, multi-product firms, physical complements, overlap in consumption baskets, decreasing returns to scale, non-tradables ...
  - Rise of common ownership resulted in a significant reallocation of
    - ★ profits across firms
    - ★ surplus from consumers to producers

Generalized Hedonic Linear (GHL) Demand (Pellegrino, 2019)

- $i = 1, 2, ..., n$ oligopolistic firms
  - No industry boundaries
  - Product differentiation and productivity differences
- Hedonic demand
  - Each firm's product is a bundle of characteristics (Lancaster, 1966; Rosen, 1974; Epple, 1987)
- 1 unit of product i provides
  - 1 unit of an idiosyncratic characteristic i
  - a unit-length vector a_i of k common characteristics

A Basic Example: 2 firms, 2 (common) characteristics



Representative Agent Utility

- Representative agent with quadratic utility

$$U(\boldsymbol{x}, \boldsymbol{q}, H) \quad \stackrel{\text{def}}{=} \quad \alpha \cdot \sum_{j=1}^{m} \left(b_j^x x_j - \frac{1}{2} x_j^2 \right) + (1-\alpha) \sum_{i=1}^{n} \left(b_i^q q_i - \frac{1}{2} q_i^2 \right) - H$$

  - b_j^x and b_i^q are characteristic-specific preference shifters determining *vertical differentiation*
  - $\alpha \in [0, 1]$ is the utility weight of common characteristics determining *horizontal differentiation*

- Representative agent has a budget constraint $H + \sum_{i=1}^{n} \pi_i \geq \sum_{i=1}^{n} p_i q_i$
  - H are hours worked in perfectly competitive labor market
  - Total firm profits $\sum_{i=1}^{n} \pi_i$ accrue to the representative agent

- Because $\boldsymbol{x} = \boldsymbol{A}\boldsymbol{q}$, this can be rewritten in terms of $\boldsymbol{q}$

- Representative agent faces price vector $\boldsymbol{p}$ and chooses $\boldsymbol{q}$

Inverse Demand

$$\boldsymbol{p} = \boldsymbol{b} - (\boldsymbol{I} + \boldsymbol{\Sigma})\boldsymbol{q}$$

where

$$\boldsymbol{\Sigma} \quad \stackrel{\text{def}}{=} \quad \alpha(\boldsymbol{A}'\boldsymbol{A} - \boldsymbol{I})$$

- $\boldsymbol{A}'\boldsymbol{A}$ is the matrix of *cosine similarities* for common characteristics between firms
  - We assume $\boldsymbol{A}'\boldsymbol{A}$ to be exogenous (but time-varying).
  - Market structure and common ownership may (in practice) influence product positioning.

- Hoberg and Phillips (2016) dataset provides an estimate of this object.
  - Presence of the idiosyncratic characteristics adds a degree of freedom to the demand system

▸ Advantages of GHL

Cournot Common Ownership

The *Cournot Common Ownership* allocation $\boldsymbol{q}^{\Phi}$ is defined as

$$\boldsymbol{q}^{\Phi} \overset{\text{def}}{=} \arg\max_{\boldsymbol{q}} \Phi(\boldsymbol{q})$$

and is given by

$$\boldsymbol{q}^{\Phi} = (2\boldsymbol{I} + \underbrace{\boldsymbol{\Delta}}_{\substack{\text{Scale}\\\text{Economies}}} + \underbrace{\boldsymbol{\Sigma}}_{\substack{\text{Network}\\\text{Position}}} + \underbrace{\boldsymbol{K} \circ \boldsymbol{\Sigma}}_{\substack{\text{Common}\\\text{Ownership}}})^{-1} \underbrace{(\boldsymbol{b} - \boldsymbol{c})}_{\substack{\text{Marginal Surplus}\\\text{at } q_i = 0}}$$

Ballester et al. (2006) show that another way to interpret this equation is as the Katz-Bonacich network centrality measure.

Data

- Compustat Firm Financials
- Text-based Product Similarity (Hoberg and Phillips, 2016)
  - Based on text analysis of SEC form 10-K product description
  - **Who competes with whom**
- Profit Weights
  - Obtained from parsing SEC forms 13(f)
  - **Who is owned by whom**

Product Similarity Data

- Hoberg and Phillips (2016) construct similarity scores by text mining the "Business Description" section of 10-K filings
  - Already standard practice in financial economics to use for (binary) industry classification
  - We use **raw scores** rather than binary HP industry classifications.

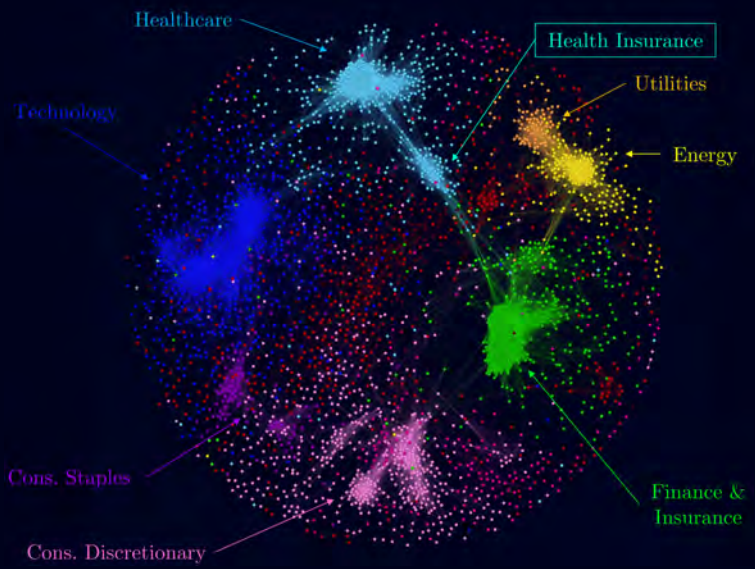
- Approach solves long-standing problems with NAICS/SIC
  - Static, binary, and do not really reflect product market competition

- Construction and normalization to obtain empirical counterpart of $\boldsymbol{a}_i$:

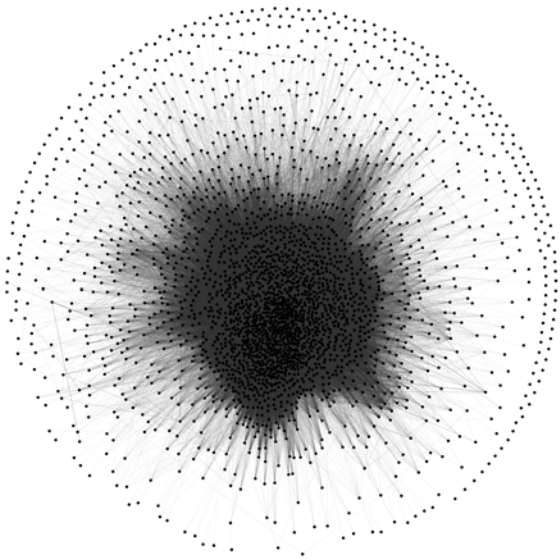
$$\boldsymbol{v}_i = \begin{bmatrix} v_{i,1} \\ v_{i,2} \\ \vdots \\ v_{i,61146} \end{bmatrix}, \quad \boldsymbol{a}_i = \frac{\boldsymbol{v}_i}{\|\boldsymbol{v}_i\|}.$$

- Validation in Hoberg and Phillips (2016) that this predicts competitive interactions

Network Visualization of the HP dataset: $\boldsymbol{A'A}$ (5,000 $\times$ 5,000)



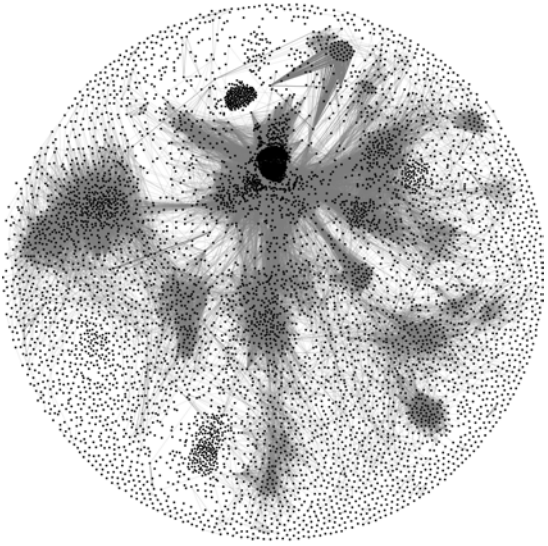
Network Visualization of the Ownership Matrix: $\boldsymbol{K}$ (5,000 $\times$ 5,000)



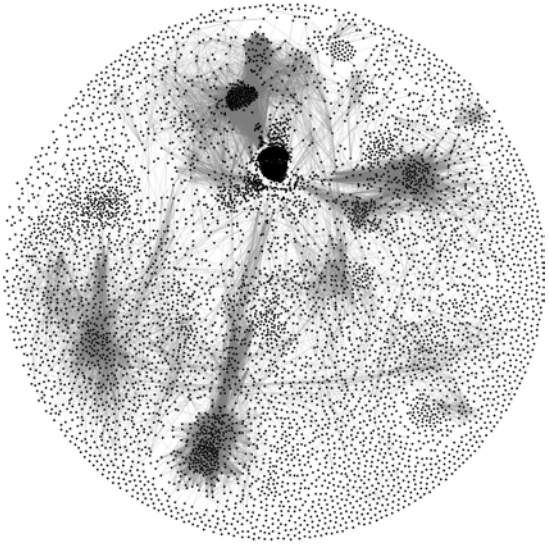
IO vs GHL Elasticities

Market	Firm i	Firm j	IO	GHL
Auto	Ford	Ford	-4.320	-5.197
Auto	Ford	General Motors	0.034	0.056
Auto	Ford	Toyota	0.007	0.017
Auto	General Motors	Ford	0.065	0.052
Auto	General Motors	General Motors	-6.433	-4.685
Auto	General Motors	Toyota	0.008	0.005
Auto	Toyota	Ford	0.018	0.025
Auto	Toyota	General Motors	0.008	0.008
Auto	Toyota	Toyota	-3.085	-4.851
Cereals	Kellogg's	Kellogg's	-3.231	-1.770
Cereals	Kellogg's	Quaker Oats	0.033	0.023
Cereals	Quaker Oats	Kellogg's	0.046	0.031
Cereals	Quaker Oats	Quaker Oats	-3.031	-1.941
Computers	Apple	Apple	-11.979	-8.945
Computers	Apple	Dell	0.018	0.025
Computers	Dell	Apple	0.027	0.047
Computers	Dell	Dell	-5.570	-5.110

Network Evolution - Product Similarity

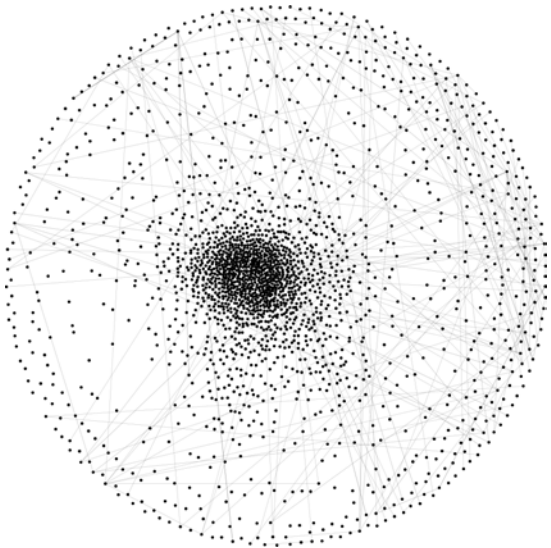


1995



2021

Network Evolution - Ownership



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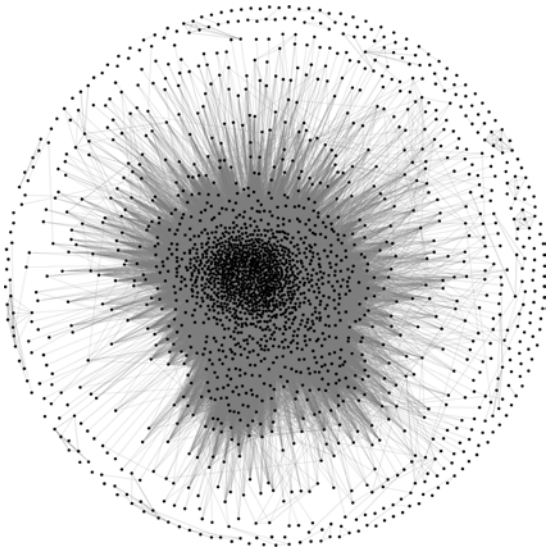
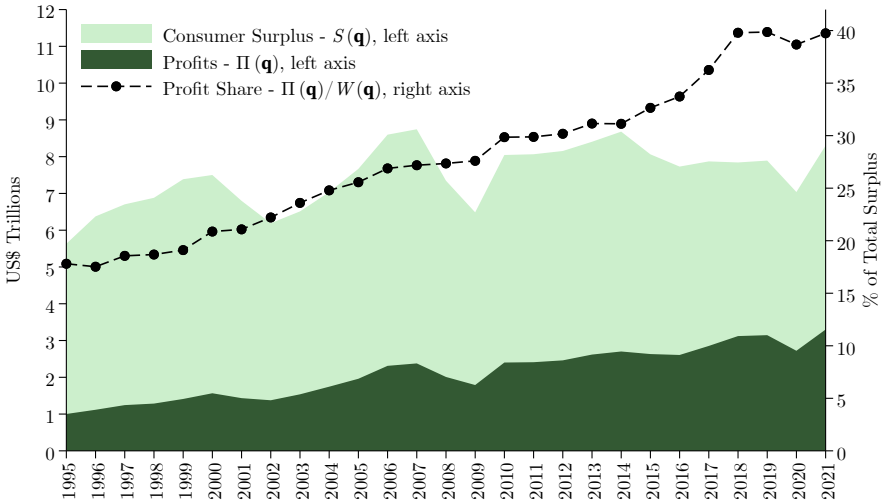


2021

Profits and Consumer Surplus over Time



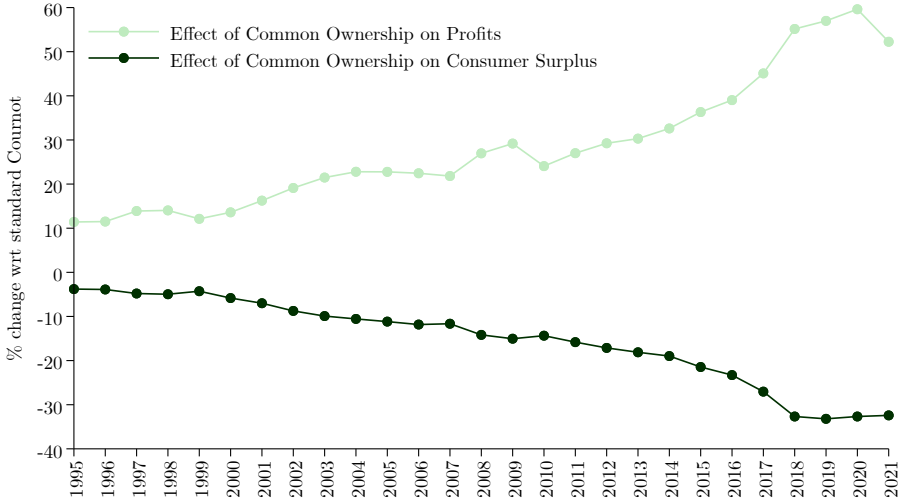
Common ownership differentially affects corporate profits

- Common ownership raises aggregate profits by \$1.133 trillion from \$2.167 trillion to \$3.300 trillion.

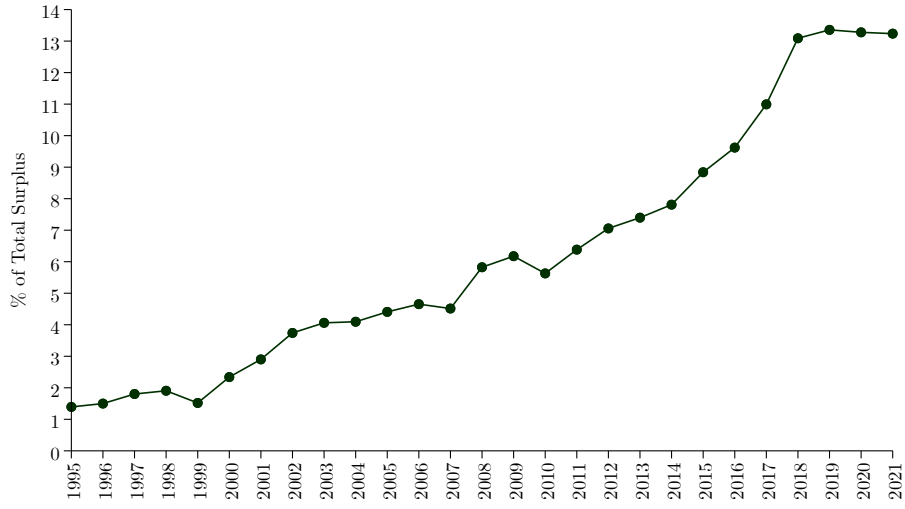
- Aggregate increase obscures that common ownership differentially affects corporate profits
  - Vast majority of companies has higher profits
  - Small minority (around 1%) has *lower* profits under common ownership

1. Different companies have different levels of common ownership
2. Position in network of product market rivalry matters
3. Common ownership reallocates market shares towards more productive firms

Distributional Effects of Common Ownership



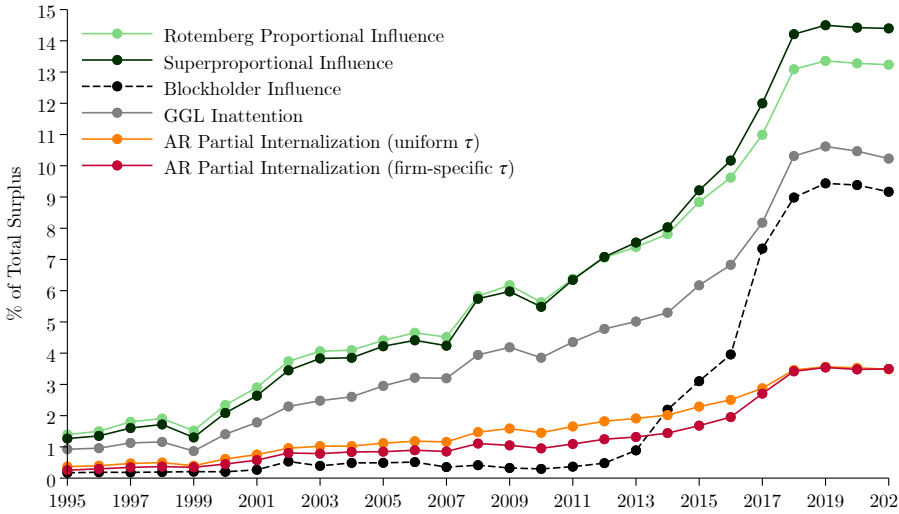
Deadweight Loss of Common Ownership



Alternative Corporate Governance Assumptions

- Baseline model assumes that each firm i fully internalizes the **proportional** profit weights κ_{ij} of its investors when choosing q_i (Rotemberg, 1984)
- Alternative corporate governance assumptions (due to agency conflicts, voting models, or investor inattention) lead to different firm objective functions
- We investigate alternative versions of the model with different objective functions.
  - Super-proportional weights
  - Blockholder weights (Edmans and Holderness, 2017)
  - Investor inattention (Gilje et al., 2020)
  - Firm-specific mitigation parameter due to managerial entrenchment (Azar and Ribeiro, 2022)

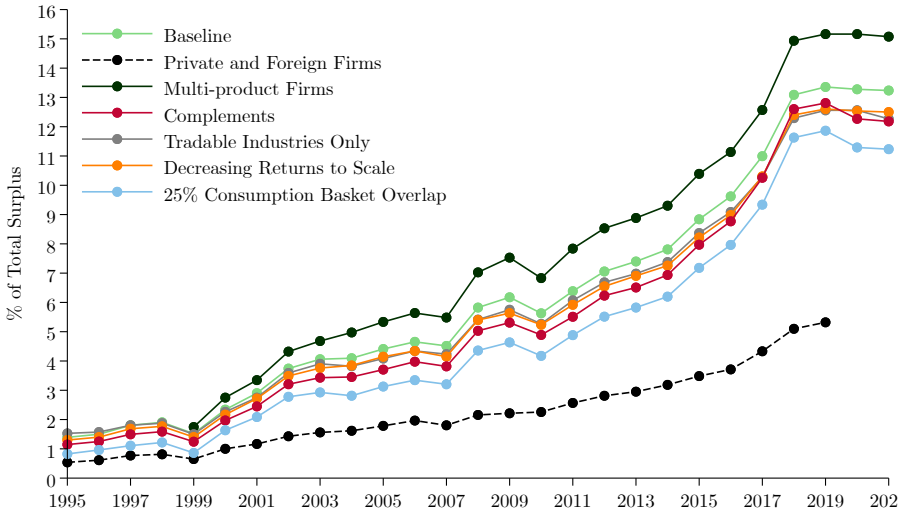
Common Ownership DWL: Alternative Governance



Extensions

- Private and foreign firms ✓
- Multi-product firms ✓
- Physical complements ✓
- Overlap in consumption baskets of corporate managers and worker-consumers ✓
- Decreasing returns to scale ✓
- Excluding non-tradable industries ✓

Common Ownership DWL: Extensions



Conclusion

- Results
  - Common ownership leads to **substantial deadweight loss**
  - **Significant reallocation of surplus** from consumers to firms
  - Sizeable effects even under **conservative assumptions about corporate governance**

- Caveats ... and a Road Map!
  - Analysis does **not** consider common ownership effects on **endogenous shareholdings**, **product differentiation**, **labor market power**, **innovation**, **entry**, **cost efficiencies**, or **incentives to collude**

- Results have implications for
  - Future work at the intersection of corporate finance and industrial organization
  - Antitrust policy and financial regulation


Thank You!
Papers available at https://florianederer.github.io/research

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