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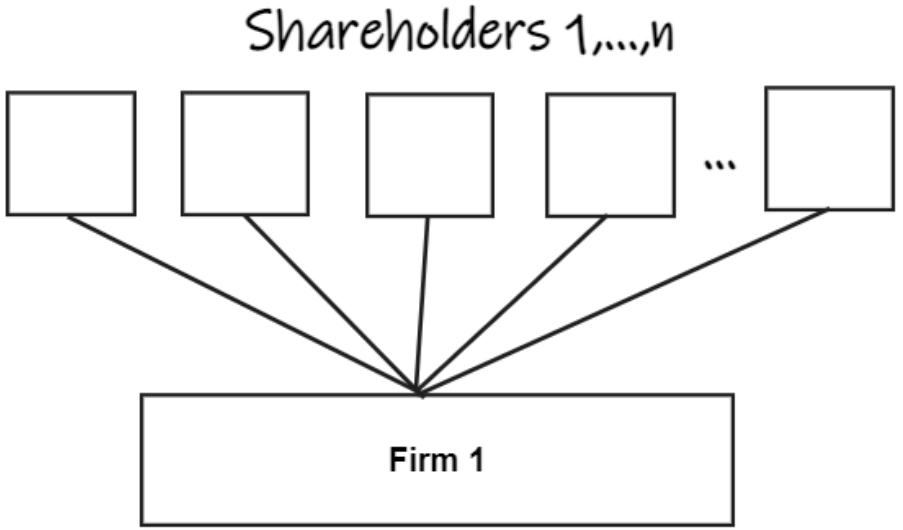
Economists

# Common ownership and competition policy

Keith Waehrer

# Many corporations have multiple shareholders sometimes a very large number with small minority financial interests







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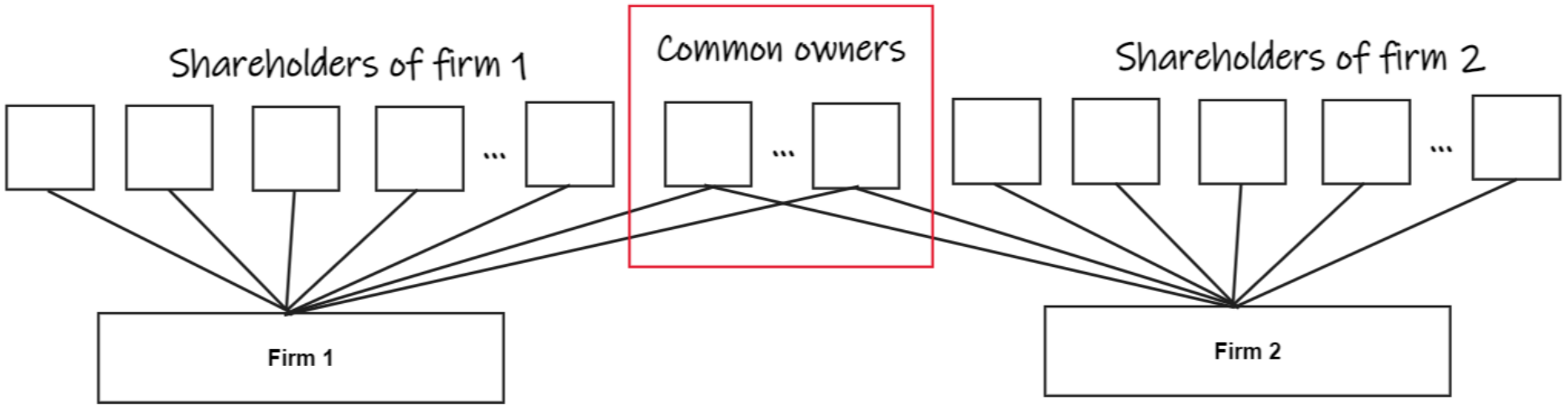
# What happens to the behavior of firms when some of these shareholders are common, and what are the implications for competition policy?







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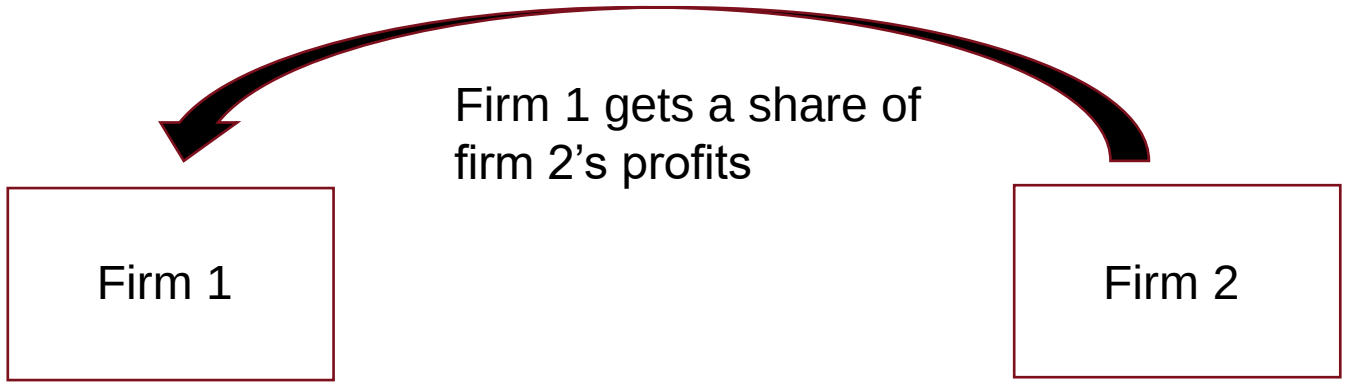
# Theory of partial and cross ownership

- Years ago, economists developed a theory to fit partial and cross firm ownership into the standard economics of IO
  - Bresnahan and Salop (1986) and O'Brien and Salop (2000)
- Examples:
  - A firm buys a share of a competing firm
  - An investor buys shares of two or more competing firms
- An important insight from this literature is that ownership implies two things that can influence firm behavior in different ways:
  - Financial interest: An ownership share usually comes with share of the firm's profits
  - Corporate control: An ownership share usually come with some degree of influence over the decisions of the firm

# Financial interests and control of a competitor impact firm behavior

- Example: Suppose firm 1 owns a share of firm 2, a competitor




*This will tend to affect firm 1's behavior as receiving a share of firm 2's profits will tend to lead it to compete less aggressively*

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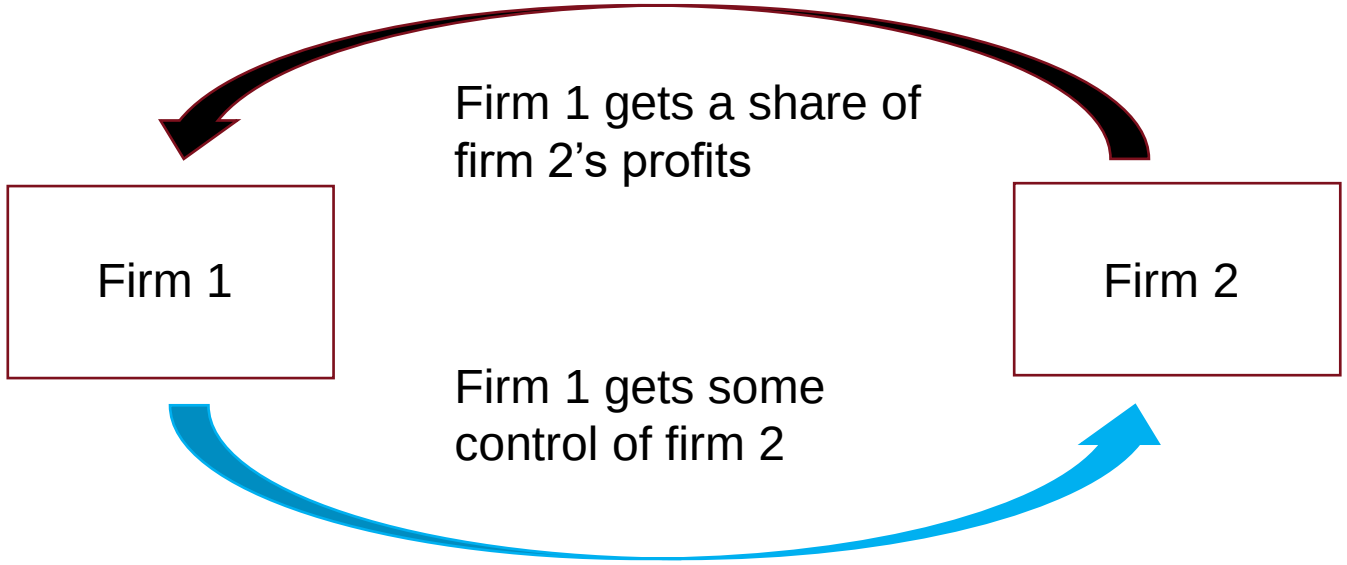
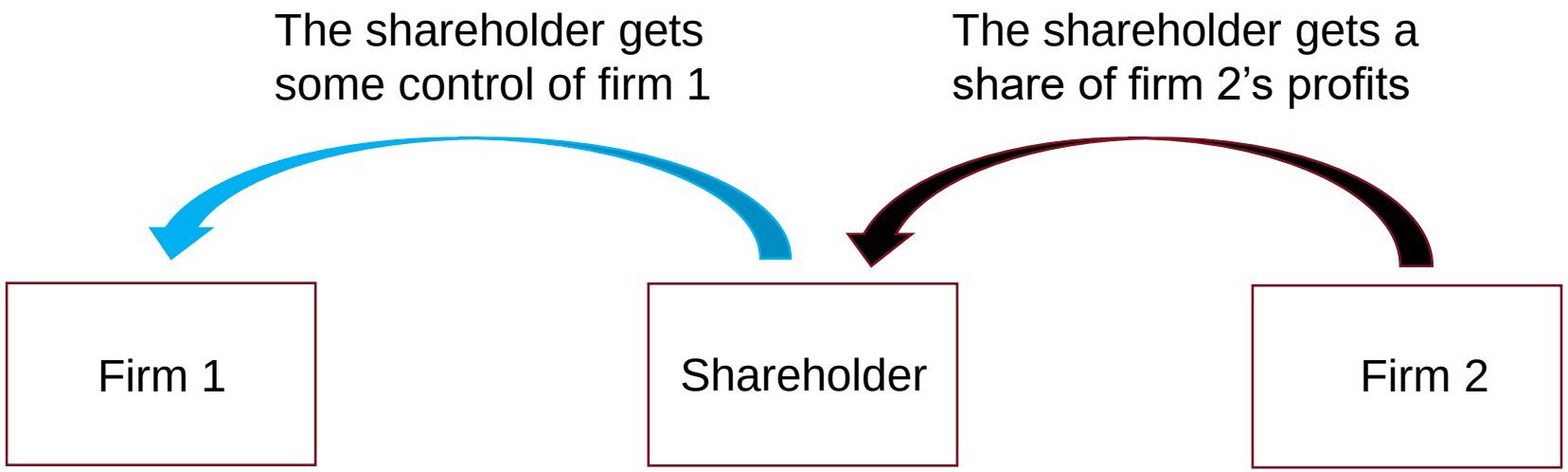



*With some control firm 1 will use its influence to cause firm 2 to compete less aggressively*

# How common-ownership of competitors could impact competitive behavior

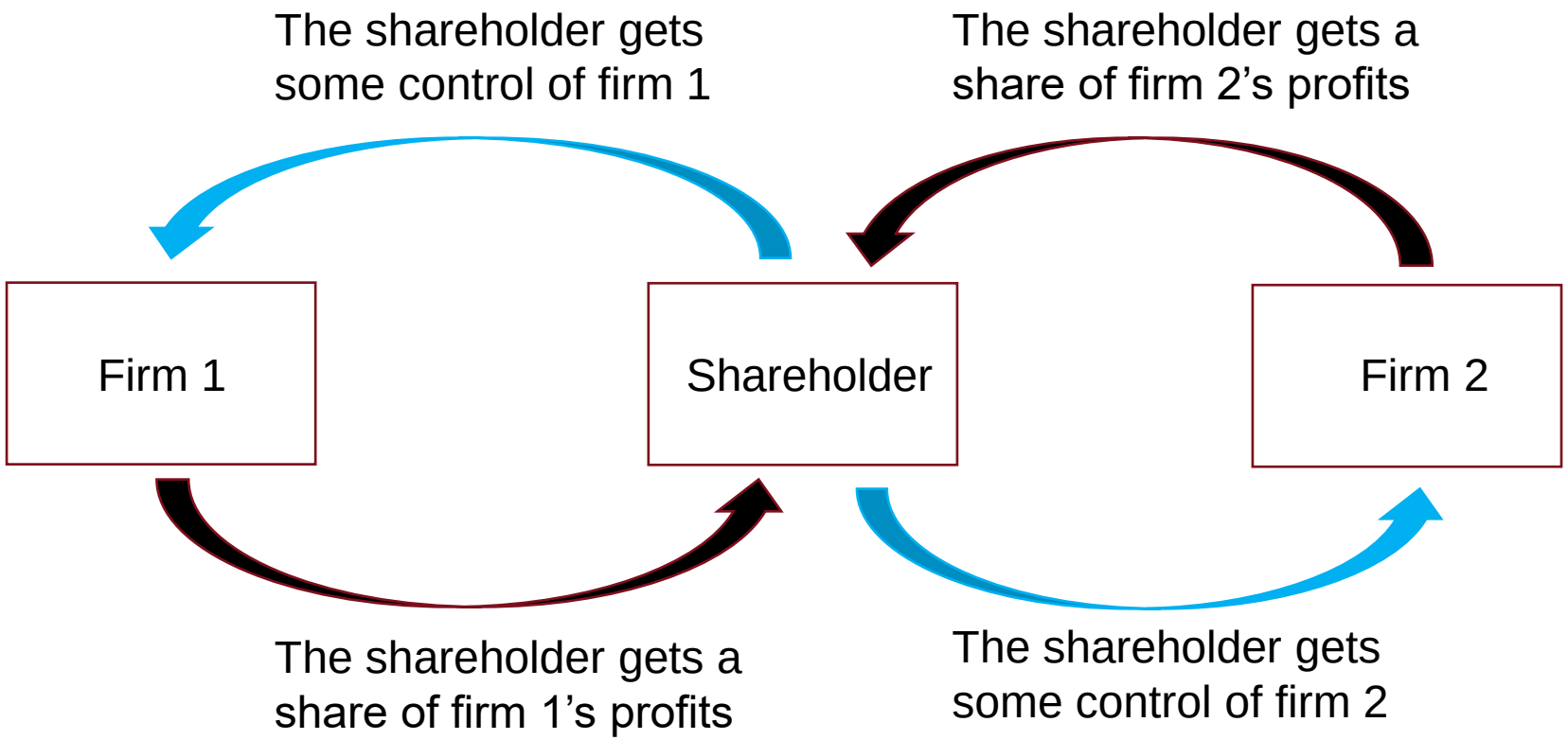
- Example: An investment company owns some share of both firm 1 and firm 2




*This will tend to cause firm 1 to compete less aggressively*

# How common ownership of competitors could impact competitive behavior

- Example: An investment company owns some share of both firm 1 and firm 2




*This will tend to cause firm 2 to compete less aggressively*

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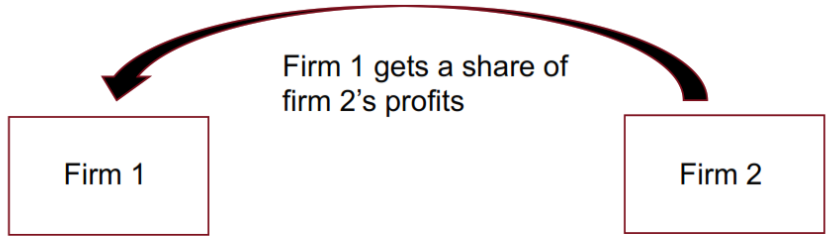
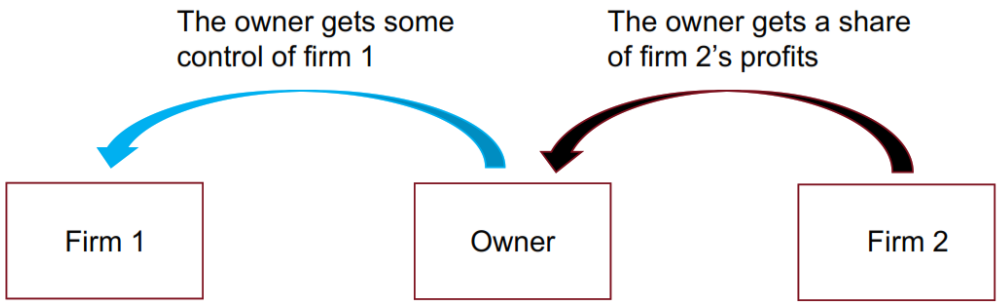
# Observations

- Cross-ownership:  an ownership share of a competitor with no control can lead to a weakening of competition




*This will tend to affect firm 1's behavior as receiving a share of firm 2's profits will tend to lead it to compete less aggresively*

- Common ownership will tend to only impact competition if ownership involves some level of control




*This will tend to cause firm 1 to compete less aggressively*

# What theory says about the size of competitive effects from cross and common-ownership?

- Assume homogeneous good Cournot competition with market elasticity $\eta$
  - Firms $N = \{1, \dots n\}$ with profits $\pi_j$ and output $x_j$ for $j \in N$
  - Owners $M = \{1, \dots m\}$; for owner $i \in M$ and firm $j \in N$, financial interest $\beta_{ij}$ and degree of control $\gamma_{ij}$
- The manager of firm j will set output to maximize the weighted interests of the owners

*Owner i's influence on manger of firm j*

$$\Pi^j = \sum_{i \in M} \gamma_{ij} \left( \sum_{k \in N} \beta_{ik} \, \pi_k \right)$$

*Owner i's profit shares*

  - This reduces to the standard case of managers maximizing own-firm profits when there is no overlapping ownership. I.e., for each $(i, j) \in M \times N$, if $\gamma_{ij} > 0$, then $\beta_{ik} = 0$, for all $k \in N \backslash \{j\}$
- (Shareholder) voting theory: In voting models ability to influence usually depends on the interests of other voters. (E.g., median voter theorem)

# MHHI: Derivation of a modified version of the HHI that accounts for cross and common-ownership issues

- The HHI as a concentration measure is related to competitive effects in a Cournot market
  - From first-order condition in output it is possible to derived a relationship between share weighted percentage margin and HHI

$$\sum_{j \in M} s_j \frac{P - MC_j}{P} = \frac{1}{\eta} \sum_{j \in M} s_j^2 = \frac{1}{\eta} \frac{HHI}{10000},$$

  where $s_j$ is firm $j$'s share

- Following the same steps for the case involving cross or common-ownership

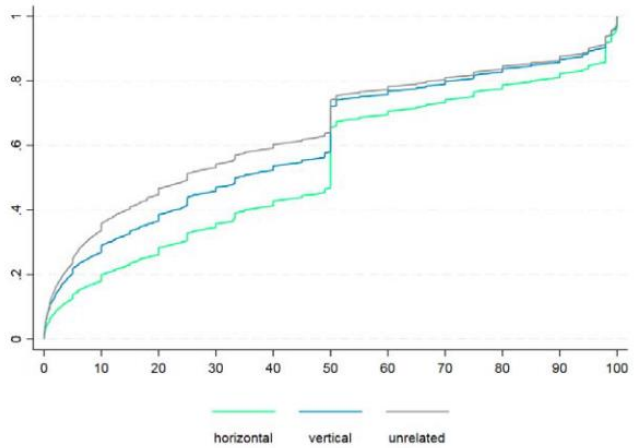
$$\sum_{j \in M} s_j \frac{P - MC_j}{P} = \frac{1}{\eta} \sum_{j \in M} \sum_{k \in M} \frac{\sum_{i \in N} \gamma_{ij} \beta_{ik}}{\sum_{i \in N} \gamma_{ij} \beta_{ij}} s_j s_k = \frac{1}{\eta} \frac{MHHI}{10000}$$

- The *MHHI* is decomposable into two parts:

$$MHHI = HHI + \Delta MHHI$$

# It is not immediately obvious how the control weight relates to ownership share

- Salop and O'Brien (2000) discuss different possible assumptions regarding the control weights $\gamma_{ij}$
  - Silent financial interest: Minority shareholders have no influence on firm decisions
  - Total control: An ownership interested gives the shareholder total control
    - Maybe a good assumption for shareholders with more that 50% ownership
  - Fiduciary obligation: This refers to a situation where the manager follows the legal obligation to account for the interests of small shareholders whose only interest is maximizing own firm profits
  - Proportional control: Control weights equal to financial interest weights. $\gamma_{ij} = \beta_{ij}$
- Partial financial interests that result in full control can generate anticompetitive price effects larger than a full merger
- Empirically there is a mass point in the distribution of partial ownership shares at 50%
  - Perhaps suggesting a discrete change in the level of control at 50%




See Heim, Levy, Spiegel, Tsanko (2022)

# Enter the Azar, Schmalz, and Tecu "Anti-competitive effects of common ownership" (the airline paper)

- Azar, José and Schmalz, Martin C. and Schmalz, Martin C. and Tecu, Isabel, "Anticompetitive Effects of Common Ownership." *Journal of Finance*, **73**(4), 2018
  - Abstract: Many natural competitors are jointly held by a small set of large institutional investors. In the US airline industry, taking common ownership into account implies increases in market concentration that are 10 times larger than what is "presumed likely to enhance market power" by antitrust authorities. **Within-route changes in common ownership robustly correlate with route-level changes in ticket prices, even when we only use variation in ownership due to the combination of two large asset managers. We conclude that a hidden social cost – reduced product market competition – accompanies the private benefits of diversification and good governance.**
- Data: Quarterly and route specific data from 2001 to 2014 on airfares and the airline share holdings of institutional investors with more than $100 mm in assets
- Model: Fixed-effect panel regression with US airline route prices as the dependent variable and among others route, specific HHI and ΔMHHI as explanatory variables assuming *proportional control*
  - With many robustness checks including using BlackRock's 2009 acquisition of Barclays Global Investors as an instrument
- Results: ***Statistically and economically positive and significant coefficient on ΔMHHI!***

# Size of shareholdings generating these results

Panel D: Airlines

| *Delta Air Lines* | *[%]* | *Southwest Airlines Co.* | *[%]* | *American Airlines* | *[%]* |
|---|---|---|---|---|---|
| Berkshire Hathaway | 8.25 | PRIMECAP | 11.78 | T. Rowe Price | 13.99 |
| BlackRock | 6.84 | Berkshire Hathaway | 7.02 | PRIMECAP | 8.97 |
| Vanguard | 6.31 | Vanguard | 6.21 | Berkshire Hathaway | 7.75 |
| State Street Global Advisors | 4.28 | BlackRock | 5.96 | Vanguard | 6.02 |
| J.P. Morgan Asset Mgt. | 3.79 | Fidelity | 5.53 | BlackRock | 5.82 |
| Lansdowne Partners Limited | 3.60 | State Street Global Advisors | 3.76 | State Street Global Advisors | 3.71 |
| PRIMECAP | 2.85 | J.P. Morgan Asset Mgt. | 1.31 | Fidelity | 3.30 |
| AllianceBernstein L.P. | 1.67 | T. Rowe Price | 1.26 | Putnam | 1.18 |
| Fidelity | 1.54 | BNY Mellon Asset Mgt. | 1.22 | Morgan Stanley | 1.17 |
| PAR Capital Mgt. | 1.52 | Egerton Capital (UK) LLP | 1.10 | Northern Trust Global Inv | 1.02 |
| *United Continental Holdings* | *[%]* | *Alaska Air* | *[%]* | *JetBlue Airways* | *[%]* |
| Berkshire Hathaway | 9.20 | T. Rowe Price | 10.14 | Vanguard | 7.96 |
| BlackRock | 7.11 | Vanguard | 9.73 | Fidelity | 7.58 |
| Vanguard | 6.88 | BlackRock | 5.60 | BlackRock | 7.33 |
| PRIMECAP | 6.27 | PRIMECAP | 4.95 | PRIMECAP | 5.91 |
| PAR Capital Mgt. | 5.18 | PAR Capital Mgt. | 3.65 | Goldman Sachs Asset Mgt. | 2.94 |
| State Street Global Advisors | 3.45 | State Street Global Advisors | 3.52 | Dimensional Fund Advisors | 2.42 |
| J.P. Morgan Asset Mgt. | 3.35 | Franklin Resources | 2.59 | State Street Global Advisors | 2.40 |
| Altimeter Capital Mgt. | 3.26 | BNY Mellon Asset Mgt. | 2.34 | Wellington | 2.07 |
| T. Rowe Price | 2.25 | Citadel | 1.98 | Donald Smith Co. | 1.80 |
| AQR Capital Management | 2.15 | Renaissance Techn. | 1.93 | BarrowHanley | 1.52 |

# These empirical papers generated a vigorous policy debate over the validity of the results and policy response

- The paper was described as a “Blockbuster” well before publication
  - On Oct. 10, 2022, SSRN reports 16,148 downloads and 111,494 abstract views
- Of the many articles written about the paper was a New York Times Op-Ed
- Under the assumption of *proportional control*, even small common ownership shares can seemingly have very large effects on competition
- Example from Posner, Scott Morton, Weyl (2017)
  - 4 symmetric firm oligopoly implies an HHI of 2500
  - Assume two types of investors: (1) a continuum of infinitesimal investor; (2) 5 investors each with equal ownership share $\beta$ in the 4 firms. The MHHI is 10000, the same as a full monopoly even if $\beta$ is bounded away from zero but small
  - However, if each of the four firms has a larger owner who is only invested in that firm, the adverse effect of the common owners diminishes greatly
- Such examples led many to believe that this was a huge problem for competition that needed to be addressed via limiting the holdings of institutional investors

# Some were skeptical of the empirical results and policy proposals

- Interpreting coefficients on HHI in price regressions is a known problem
  - For example, see Miller, et al, (2022) "On the misuse of regressions of price on the HHI in merger review," *Journal of Antitrust Enforcement*
- Similar interpretation issues arise for price regressions with HHI and ΔMHHI as independent variables
  - See O'Brien and Waehrer (2017) *Antitrust Law Review*
- Identification of effects in the airline paper require that common owner control influence city-pair specific pricing on a quarterly basis not pricing in general
  - The level of pricing micromanagement by minority shareholders necessary seems implausible
- The proportional control assumption implies some counter-intuitive effects
  - Even if the majority of shares are held by owners preferring own profit maximization, if those shareholdings are diffuse and common owners concentrated, managers will heavily weight the interests of the common owners
- The empirical papers and policy concerns ignore the fact that institutional investors also own shares in companies that prefer more competitive outcomes
  - Institutional investors are often managing for others. What are those owners' interests?

# Current state of the empirical literature and policy debate

- Given the drawbacks of the price-concentration regressions, empirical work has started using structural models
- Some of the empirical work incorporates inter-industry holdings, which theoretically create an interest in lower prices
- For example, Azar and Ribeiro (2022) "Estimating Oligopoly with Shareholder Voting Models" take a new approach to the US airline data
  - Find common ownership leads to higher prices on net
  - But given the inter-industry holdings of the big three US institutional investors, the net effect of their ownership is to lower prices
- In the US, calls for action against institutional investors holding share of competitors has waned
  - The Biden administration executive order on competition policy while raising a wide range of concerns was silent on common ownership issues
- *There remains a great deal of academic interest in the topic*