The Rise of Common Ownership

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Motivation

- Growing sense that common ownership has increased and is potentially important
  - **Old idea** = Common investors have incentive to internalize externalities of each firm’s actions
  - **New evidence** = Potential impacts on governance, acquisitions, executive pay, and anti-competitive behaviors

Evidence has led some to advocate for limiting indexing

[e.g., Posner et al 2016; Elhauge, 2016]
Our research questions

- But, much remains to be understood about common ownership...
  - What are its determinants?
  - How should we measure it?

Indexing?
Necessary to know if you want to study implications of common ownership!

This is not trivial if want to capture economic incentives!
Measurement is non-trivial

- Institution #1 owns 1% of firm A and 20% of firm B
- Institution #2 owns 5% of each firm

- What is common ownership of each investor?
- How do you aggregate across investors?
- What is the impact on incentives?
Outline

- Measuring common ownership
  - Naïve measures of ownership overlap
  - Model-driven measure of impact on incentives
- Taking measures to the data
Some quick notation…

- First, let’s define a few variables…
  - $\alpha_{i,n} =$ fraction of firm $n$ held by common investor $i$
  - $\beta_{i,n} =$ weight of firm $n$ in investor $i$’s portfolio
  - $\bar{v}_n =$ value of firm $n$
  - $I^{A,B} =$ set of common investors in firms $A$ and $B$
Naïve “overlap” measures

- Naïve measures of ownership overlap between firms $A$ and $B$:

  - $Overlap\_Count = \sum_{i \in I_{A,B}} 1$

  - $Overlap\_MIN = \sum_{i \in I_{A,B}} \min\{\alpha_{i,A}, \alpha_{i,B}\}$

  - $Overlap\_AP = \sum_{i \in I_{A,B}} [\alpha_{i,A} \left( \frac{\bar{v}_A}{\bar{v}_A + \bar{v}_B} \right) + \alpha_{i,B} \left( \frac{\bar{v}_B}{\bar{v}_A + \bar{v}_B} \right)]$

  # of common investors
  Captures extent of overlap for common investors
  Weighted avg. used by Anton and Polk (2014)
Naïve “overlap” measures

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Unclear if these measures capture common owners’ incentives to internalize externalities…
Model-driven measure of “incentives”

- See paper for details

- But, key assumptions are:
  - Managers value shareholder support;
  - Managers’ actions can affect value of other firms;
  - Actions that improve overall value of an informed investor’s portfolio increase likelihood the investor votes in favor of management;
  - And, likelihood investor is informed increases in how important firm is in investor’s portfolio
Definition of impact on “incentives”

- For stocks $A$ and $B$, the impact of common ownership on incentives of $A$ is:
  - Change in manager A’s incentive to take an action if all common investors in $A$ and $B$ were to divest their shares in $B$ and instead put money in something like T-bills
Our proposed measure & intuition

\[ GGL(A,B) = \sum_{i=1}^{I} \alpha_{i,A} g(\beta_{i,A}) \alpha_{i,B} \]

- Increasing in \( \alpha_{i,A} \) b/c manager A cares more about investor i when its ownership stake is larger.
- Increasing in \( \beta_{i,A} \) because investor i more likely to be informed about manager A’s actions when firm A is larger fraction of portfolio.
- Increasing in \( \alpha_{i,B} \) because investor i cares more about the externality imposed on firm B when it owns more of firm B.
Our proposed measure & intuition

\[
\text{GGL}(A,B) = \sum_{i=1}^{I} \alpha_{i,A} g(\beta_{i,A}) \alpha_{i,B}
\]

- Increasing in \(\alpha_{i,A}\) b/c manager \(A\) cares more about investor \(i\) when its ownership stake is larger

- Increasing in \(\beta_{i,A}\) because investor \(i\) more likely to be informed about manager \(A\)'s actions when firm \(A\) is larger fraction of portfolio

- Increasing in \(\alpha_{i,B}\) because investor \(i\) cares more about the externality imposed on firm \(B\) when it owns more of firm \(B\)

Our measure is:
- Bi-directional
- Invariant to sign/nature of externality
- Flexible!
GGL measure is flexible

- Can use \( g() \) to modify how investor attention is allocated
  - We start with identity function

- Can allow managers to weight investors
  - E.g., if managers only care about votes of investors with more than 5%, model says you only aggregate over those investors
GGL versus MHHI – Differences

1) **MHHI captures specific externality** – those arising in oligopolistic product market
   - Thus, makes stronger assumptions about externality and nature of competition
   - And, requires more info; e.g., market shares

2) **MHHI assumes investors are fully informed** about externalities and actions
Next, we take measures to the data

- **Sample and data**
  - Calculate *ownership at institution level*, as reported in Thomson Reuters’ s34 Master File
  - Compustat-CRSP public firms, 1980 – 2012
    - 385 million pairs from 1980 to 2012, 226 GB
    - Double # of obs. with “incentive” measure

Size of dataset makes analysis very time-consuming!
Overlap is up more than incentives

% increase since 1980

Overlap measures up 1,800-2,300% since 1980

Incentive measure only up 330%, which is about same as institutional ownership

Gilje, Gormley, and Levit

The rise of common ownership
Empirical specification

To assess what is correlated with our measures, we estimate the pair-level regressions

\[ y_{it} = \beta X_{it} + \alpha_i + \delta_t + \epsilon_{it} \]

- \( y_{it} \) = overlap/GGL for pair \( i \) in year \( t \)
- \( X_{it} \) = potential determinants
- \( \alpha_i \) = pair-level fixed effects
- \( \delta_t \) = year fixed effects
- Pair-level clustering of standard errors, \( \epsilon_{it} \)

To be clear, no identification strategy; just documenting within-pair correlations
Index-based determinants?

- Indexing is often viewed as a key source [e.g., Posner, et al 2016; Elhauge 2016]

- To analyze indexing, we look at:
  - Indicator = 1 if both stocks in S&P 500,
  - Indicator = 1 if both stocks in Russell 2000,
  - And so on…
**Overlap higher with index inclusion**

<table>
<thead>
<tr>
<th>Overlap_MIN</th>
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<tbody>
<tr>
<td>Both S&amp;P 500 Dummy</td>
<td>0.06569***&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>[397.29]</td>
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<td>Both Russell 2000 Dummy</td>
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<td></td>
<td>[1089.37]</td>
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- Inst. ownership controls: Yes
- Style controls: Yes
- Industry & HHI controls: Yes
- Pair FE<sub>i</sub>: Yes
- Time FE<sub>t</sub>: Yes
- R<sup>2</sup>: 0.9
- N: 167,771,574

Similar results with other two overlap measures

Similar for other indices, including Russell 1000, S&P 400, S&P 600, and NASDAQ

If both in Russell 2000, overlap is 36-83% higher

We include other controls (see paper)
But, incentives need not increase

Same type of panel specification, but now look at GGL with pair-direction FE

With “incentives”, some indices load positively while others load negatively!

Magnitudes are large; E.g., this corresponds to 59% decrease

<table>
<thead>
<tr>
<th></th>
<th>GGL</th>
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<tbody>
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<td>Both S&amp;P 500 Dummy</td>
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<td>Inst. Ownership controls</td>
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<td>Industry &amp; HHI controls</td>
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<tr>
<td>Pair Direction FE</td>
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<tr>
<td>Time FE</td>
<td>Yes</td>
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<tr>
<td>$R^2$</td>
<td>0.329</td>
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<tr>
<td>N</td>
<td>335,543,148</td>
</tr>
</tbody>
</table>
Why indexing can lower incentives

- There is a key, intuitive tradeoff...
  - Ownership overlap is higher because index investors now hold both stocks
  - But, incentives can decrease if index investors hold more firms and are less informed than non-index common investors
Future steps

- Look at different versions of GGL; e.g., only use investors with 5% ownership
- Compare “Passive” vs. “Activist” GGL
  - Passive GGL = Blackrock, Vanguard, SSgA
  - Activist GGL = Brav et al. hedge funds
- Validate our measure of incentives
  - E.g., does it predict mergers in the same industry or the creation of customer-supplier links?
Concluding remarks & takeaways

- If want to understand implications of common ownership, one needs to:
  - Construct an economically meaningful measure
  - And, understand its determinants

- Overlap in the shareholder base is a necessary but insufficient condition for common ownership to effect economic incentives

We will make our measures available online