The Rise of Common Ownership

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Motivation

- Growing sense that common ownership has increased and is potentially important

  - <u>Old idea</u> = Common investors have incentive to internalize externalities of each firm's actions
  - <u>New evidence</u> = Potential impacts on governance, acquisitions, executive pay, and anti-competitive behaviors
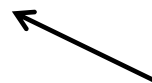
Evidence has led some to advocate for limiting indexing
[e.g., Posner et al 2016; Elhuage, 2016]

Our research questions

- **But, much remains to be understood about common ownership…**

    - What are its <u>determinants</u>?
    - How should we <u>measure</u> it?

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

This is <u>not</u> trivial if want to capture economic incentives!

Measurement is non-trivial

- <u>Institution #1</u> owns 1% of firm *A* and 20% of firm *B*

- <u>Institution #2</u> 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 <u>overlap</u>
  - Model-driven measure of impact on <u>incentives</u>

- Taking measures to the data

Some quick notation…

- <u>First, let's define a few variables…</u>

  - $\alpha_{i,n}$ = 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:

  - $\boldsymbol{Overlap\_Count} = \sum_{i \in I^{A,B}} 1$ ← # of common investors

  - $\boldsymbol{Overlap\_MIN} = \sum_{i \in I^{A,B}} \min\{\alpha_{i,A}, \alpha_{i,B}\}$ ← Captures extent of overlap for common investors

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

    Weighted avg. used by Anton and Polk (2014)

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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 <u>informed</u> investor's portfolio increase likelihood the investor votes in favor of management;

  - And, <u>likelihood investor is informed</u> 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 <u>all</u> 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 $\alpha_{i,B}$ because investor i cares more about the externality imposed on firm B when it owns more of firm 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

Our proposed measure & intuition

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

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

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 <u>investors are fully informed</u> about externalities and actions**

Next, we take measures to the data
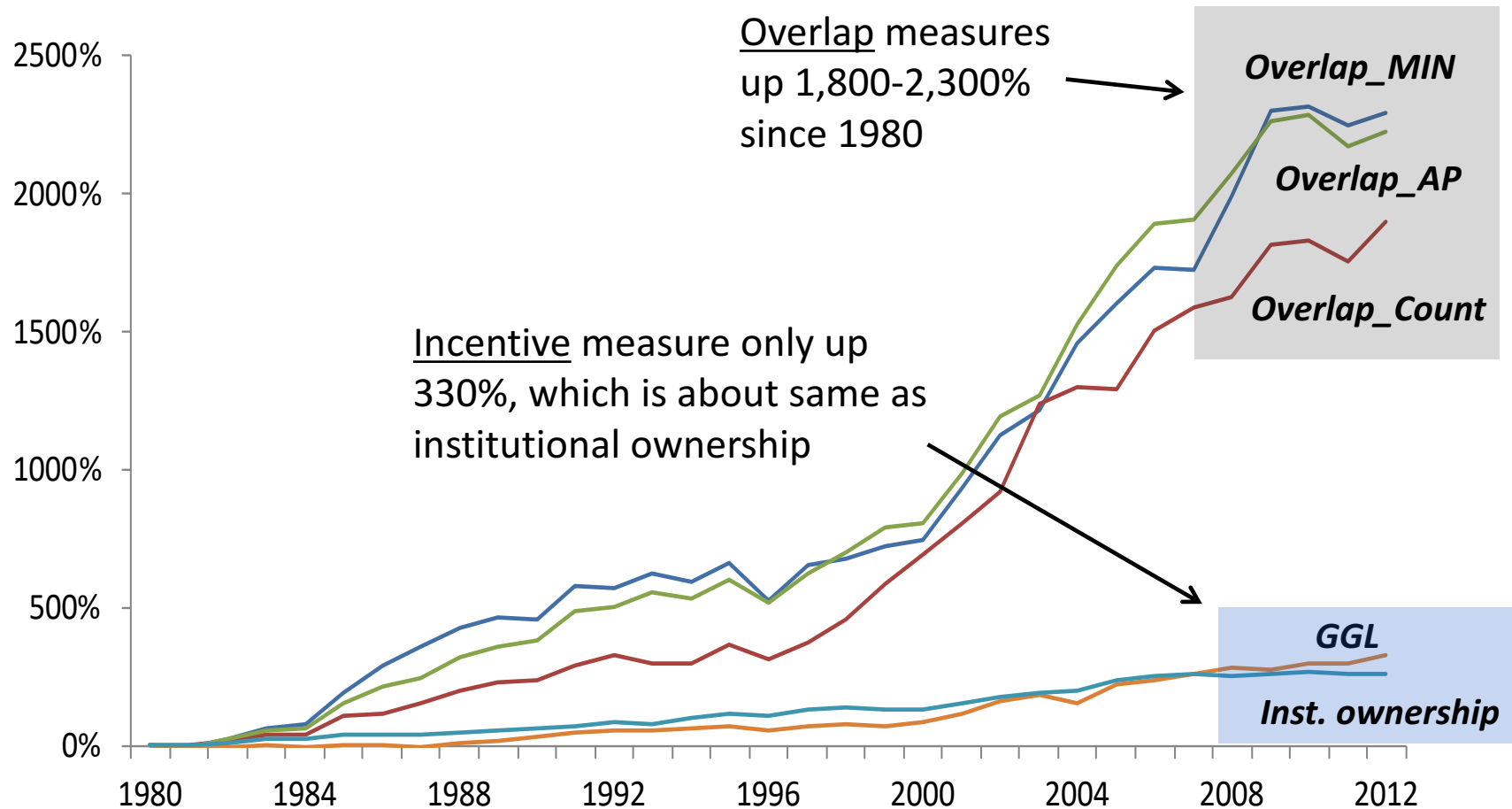
- **Sample and data**

  - Calculate <u>ownership at institution level</u>, 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

Overlap_MIN

Overlap_AP

Overlap_Count

GGL

Inst. ownership

Empirical specification

- **To assess what is correlated with our measures, we estimate the <u>pair-level</u> regressions**

$$y_{it} = \beta X_{it} + \alpha_i + \delta_t + \varepsilon_{it}$$

- y_{it} = overlap/GGL for pair i in year t
- X_{it} = potential determinants ← To be clear, no identification strategy; just documenting within-pair correlations
- α_i = pair-level fixed effects
- δ_t = year fixed effects
- Pair-level clustering of standard errors, ε_{it}

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

Similar results with other two overlap measures

	Overlap_MIN
Both S&P 500 Dummy	0.06569***
	[397.29]
Both Russell 2000 Dummy	0.02731***
	[1089.37]
Inst. ownership controls	Yes
Style controls	Yes
Industry & HHI controls	Yes
Pair FE$_i$	Yes
Time FE$_t$	Yes
R^2	0.9
N	167,771,574

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**

	GGL
Both S&P 500 Dummy	0.00000710***
	[15.96]
Both Russell 2000 Dummy	-0.00000100***
	[-20.26]
Inst. Ownership controls	Yes
Indusry & HHI controls	Yes
Pair Direction FE	Yes
Time FE	Yes
R^2	0.329
N	335,543,148

Why indexing can lower incentives

- **There is a key, intuitive tradeoff…**

  - Ownership <u>overlap</u> is higher because index investors now hold both stocks

  - But, <u>incentives</u> 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:

We will make our measures available online

  - 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