Common Ownership Directors

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The Debate on Common Ownership

- Common ownership by institutional investors of public firms is the norm in many industries
- Debate about the impact of common ownership:
  - Negative: Commonly owned firms do not compete with one another and charge higher markups (Azar et al., 2018; Cf. Dennis et al., 2021)
  - Positive: Common ownership is associated with innovation spillovers (Eldar et al., 2020; Anton et al., 2021)

The Mechanisms of Common Ownership

- How are common owners' incentives transmitted to firm behavior?
- Institutional shareholders rarely attempt to actively change firm strategy (Mancini and Nyeso, 2017; Rock and Rubinfeld, 2020; Kahan and Hemphill, 2021)
- There is some evidence of a passive channel: common ownership is associated with lower wealth-performance sensitivity (WPS) (Anton et al., 2021)

The challenge with existing literature:

- It is not clear if the association with lower WPS is driven by passive or active investors
- Boards typically make decisions on compensation packages, not shareholders

Our Approach: Focus on Common Directors

- Directors are responsible for setting firms' strategic goals and top management incentives
- Electing directors is the primary way shareholders influence firm behavior (Kahan and Hemphill, 2020)
- There is ample evidence of director interlocks (Bouwman, 2011; Barzuza and Curtis, 2017), including interlocks relating to firms in the same industry (Nili, 2020; Eldar et al., 2020)
- Director interlocks provide a natural mechanism for firm coordination and informational spillovers (Barzuza and Curtis, 2017)

Main Findings

- Using a sample of all public firms from 2000-2019, about 40 percent of firms share a director with another firm in the same industry ("common director")
- An increase in the GGL measure of common ownership is associated with a higher likelihood of an appointment of a common director
- The likelihood of a common director appointment is stronger when the investors are (1) larger, (2) more concentrated, (3) have lower turnover, and (4) activist hedge funds
- There is no association between common ownership by the Big-3 and the appointment of common directors
- The results remain statistically and economically significant for common ownership by non-hedge funds. Non-hedge funds that are larger, more concentrated, and have longer investment horizons are associated with a greater likelihood of appointing a common director

Motivating Example: Change in Ownership

Synageva BioPharma
Dedicated to Rare Diseases®

2012		2013	
Baker Brothers	35%	Baker Brothers	34%
Fidelity	7%	Fidelity	14%
Healthcare Management	5%	Capital Group	11%
RA Capital Mgmt.	2%	Columbia Wanger	7%
Capital Group	2%	Janus Capital	4%

ACADIA

2012		2013	
Fidelity	10%	Baker Brothers	21%
RA Capital Mgmt.	10%	Fidelity	13%
Baker Brothers	10%	RA Capital Mgmt.	10%
NEA Mgmt. Co.	10%	Visium Asset Mgmt.	6%
VHCP Mgmt.	6%	BlackRock	5%

- Largest common owner: Baker Brothers Advisors

Motivating Example: Change in Ownership

Synageva BioPharma
Dedicated to Rare Diseases®

2013	2014
Dr. Felix Baker	Dr. Felix Baker
Dr. Stephen Biggar	Dr. Stephen Biggar
Steve Davis	Steve Davis
Tom Malley	Tom Malley
Dr. Barry Quart	Dr. Barry Quart
Sanj Patel	Sanj Patel
Tom Tisch	Tom Tisch
Peter Wirth	Peter Wirth

ACADIA

2013	2014
Michael Borer	Michael Borer
Laura Brege	Laura Brege
	Dr. Stephen Biggar
Dr. Leslie Iversen	Dr. Leslie Iversen
Dr. Mary Gray	Dr. Mary Gray
Dr. Les Kaplan	Dr. Les Kaplan
Bill Wells	Bill Wells

- Dr. Stephen Biggar is a partner of Baker Brothers

Data Construction

- Panel data of firm pair-year observations from 2000-2019 of firms in the same industry based on SIC3 code or Hoberg-Phillips industry classifications
- Data on director appointments is sourced from BoardEx
- Data on institutional shareholding is sourced from 13F filings
- Common director is an indicator variable if firms i and j in the same industry share a common director in year t
- We measure common ownership at the firm pair level using the average of the bi-directional GGL measure of each of the two firms in the pair:

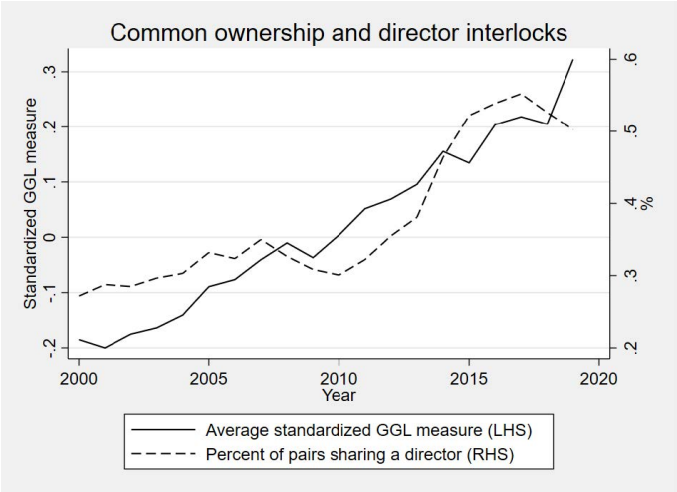
$$GGL_{ijt} = 0.5 \sum_{m}^{M_{ijt}} \left(a_{it}^{m} \beta_{it}^{m} a_{jt}^{m} \right) + 0.5 \sum_{m}^{M_{ijt}} \left(a_{it}^{m} \beta_{jt}^{m} a_{jt}^{m} \right),$$

where $a_i t^m$ is the % ownership of firm i by investor m, β_{it}^{m} is investor m % portfolio share of investment in firm i out of the total portfolio of investor m, and the same for j

Summary Statistics

	SIC-3	Hoberg-Phillips
Number of pair-year observations	4,588,228	6,389,879
Number of unique pairs	713,363	896,681
Number of unique firms	7,024	7,038
Number (%) of pair-years with CD	16,970 (0.37%)	25,879 (0.40%)
Number (%) of pairs ever with CD	5,451 (0.76%)	7,442 (0.83%)
Number (%) of firms ever with CD	2,733 (38.90%)	3,307 (46.98%)

Trends in Common Ownership and Common Directors



Common Directors by Industry

SIC-3	Description	Observations	CDs	Additions
283	Drugs	885525 (22.92%)	7782 (50.37%)	921 (46.52%)
737	Computer & data processing services	879016 (22.76%)	2787 (18.04%)	408 (20.61%)
367	Electronic components & accessories	184010 (4.76%)	1099 (7.11%)	158 (7.98%)
384	Medical instruments & supplies	130339 (3.37%)	839 (5.43%)	132 (6.67%)
357	Computer & office equipment	52685 (1.36%)	250 (1.62%)	46 (2.32%)
131	Crude petroleum & natural gas	74357 (1.92%)	401 (2.60%)	44 (2.22%)
602	Commercial banks	1060944 (27.47%)	223 (1.44%)	36 (1.82%)
581	Eating & drinking places	26574 (0.69%)	199 (1.29%)	25 (1.26%)
382	Measuring & controlling devices	62645 (1.62%)	175 (1.13%)	23 (1.16%)
366	Communications equipment	43533 (1.13%)	187 (1.21%)	22 (1.11%)

Empirical Strategy

$$Common\ Director_{ijt} = \beta_0 + \beta_1 GGL_{ijt} + \beta_2 X_{it} + a_t + a_{ij} + \epsilon_{ijt}$$

- The regression includes pair and year fixed effects
- *GGL* is standardized and winsorized at the 5% level

The Probability of Common Directors

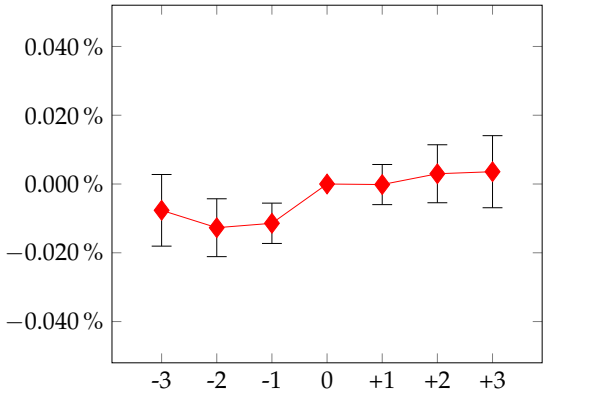
Dependent variable: common director $\in \{0, 100\}$						
	SIC-3 Industry			Hoberg-Phillips		
	(1)	(2)	(3)	(4)	(5)	(6)
GGL	0.243***	0.048***	0.043***	0.275***	0.052***	0.048***
	[25.52]	[7.42]	[6.71]	[30.61]	[8.72]	[8.05]
Year fixed effects	Yes	No	Yes	Yes	No	Yes
Pair fixed effects	No	Yes	Yes	No	Yes	Yes
Observations	4,628,451	4,515,951	4,515,951	6,441,292	6,328,529	6,328,529
Adj. R-squared	0.002	0.611	0.611	0.002	0.590	0.590

The Probability of Common Directors

Dependent variable: common director $\in \{0, 100\}$						
	SIC-3 Industry			Hoberg-Phillips		
	(1)	(2)	(3)	(4)	(5)	(6)
GGL	0.243***	0.047***	0.043***	0.275***	0.052***	0.048***
	[25.307]	[7.297]	[6.602]	[30.452]	[8.674]	[8.048]
Year fixed effects	Yes	No	Yes	Yes	No	Yes
Pair fixed effects	No	Yes	Yes	No	Yes	Yes
Observations	4,588,228	4,481,313	4,481,313	6,389,879	6,280,839	6,280,839
Adj. R-squared	0.002	0.611	0.611	0.002	0.591	0.591

Year-by-Year Dynamics in Common Director Probability

β_e: Estimates with 95% Confidence Intervals



Investor Heterogeneity

Construct separate GGL measures by types of investors:

- The Big Three: Blackrock, State Street and Vanguard
- Large vs. small: dollar value of equity portfolio ($ AUM)
- High vs. low turnover: “churn” ratio from Gaspar et al. (2005)
- High v. low concentration: Herfindahl index of portfolio shares
- Activist hedge funds v. other institutions based on Brav et. al

Investor heterogeneity: Big Three vs. non-Big Three

Dependent variable: common director $\in \{0, 100\}$						
	SIC-3 Industry			Hoberg-Phillips		
	(1)	(2)	(3)	(4)	(5)	(6)
GGL: Big Three	-0.030***	0.022***	0.013	-0.004	0.021***	0.013
	[-3.86]	[2.76]	[1.60]	[-0.63]	[2.69]	[1.64]
GGL: excluding Big Three	0.266***	0.040***	0.039***	0.287***	0.042***	0.042***
	[27.89]	[6.62]	[6.44]	[32.71]	[7.59]	[7.49]
GGLExcl.B3 GGLB3	0.296***	0.018**	0.026***	0.292***	0.021**	0.029***
p value	0.000	0.050	0.009	0.000	0.023	0.003
Year fixed effects	Yes	No	Yes	Yes	No	Yes
Pair fixed effects	No	Yes	Yes	No	Yes	Yes
Observations	4,588,228	4,481,313	4,481,313	6,389,879	6,280,839	6,280,839
Adj. R-squared	0.002	0.611	0.611	0.002	0.591	0.591

Investor heterogeneity: size.

Dependent variable: common director $\in \{0, 100\}$						
	SIC-3 Industry			Hoberg-Phillips		
	(1)	(2)	(3)	(4)	(5)	(6)
GGL: Big Three	0.014	0.011	0.015	0.014*	0.012	0.015*
	[1.592]	[1.326]	[1.771]	[1.718]	[1.48]	[1.871]
GGL: large	0.031***			0.033***		
	[5.072]			[5.926]		
GGL: small	0.012***			0.014***		
	[3.309]			[4.336]		
GGLLarge GGLSmall	0.019***			0.019***		
p value	0.003			0.001		
GGL: high-Churn		0.021***			0.021***	
		[4.864]			[5.503]	
GGL: low-Churn		0.028***			0.030***	
		[4.675]			[5.340]	
GGLLowChurn GGLHighChurn		0.007			0.009*	
p value		0.133			0.076	
GGL: concentrated			0.029***			0.028***
			[5.996]			[6.556]
GGL: Low Conc			0.015***			0.017***
			[2.628]			[3.313]
GGLHighConc GGLLowConc			0.014**			0.010*
p value			0.019			0.052
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Pair fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,481,313	4,481,313	4,481,313	6,280,839	6,280,839	6,280,839
Adj. R-squared	0.611	0.611	0.611	0.591	0.591	0.591

Investor Heterogeneity: Including Hedge Funds

Dependent variable: common director $\in \{0, 100\}$								
	SIC-3 Industry				Hoberg-Phillips			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GGL: Big Three	0.012	0.013	0.011	0.014	0.012	0.013	0.012	0.014
	[1.408]	[1.482]	[1.293]	[1.627]	[1.497]	[1.591]	[1.398]	[1.689]
GGLHedge Funds	0.012**	0.011**	0.012**	0.012**	0.017***	0.017***	0.017***	0.017***
	(2.665)	(2.589)	(2.618)	(2.667)	(4.428)	(4.334)	(4.386)	(4.382)
GGL Excluding Hedge Funds	0.030***				0.030***			
	(4.964)				(5.351)			
GGLHedge Funds GGL Excl.Hedge Funds	0.018***				0.013**			
p value	0.007				0.032			
GGL Large		0.026***				0.025***		
		(4.296)				(4.514)		
GGL Small		0.011**				0.011***		
		(3.012)				(3.402)		
GGL Large GGL Small		0.015**				0.014**		
p value		0.013				0.013		
GGL LowChurn			0.023***				0.023***	
			(3.868)				(4.227)	
GGL HighChurn			0.014***				0.012***	
			(3.419)				(3.294)	
GGLLowChurn GGLHighChurn			0.009*				0.011**	
p value			0.089				0.035	
GGL High Concentration				0.019***			0.020***	
				(4.150)			(4.946)	
GGL Low Concentration				0.014*			0.015**	
				(2.427)			(2.851)	
GGLHighConc GGLLowConc				0.005			0.005	
p value				0.244			0.225	
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pair fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,481,313	4,481,313	4,481,313	4,481,313	6,280,839	6,280,839	6,280,839	6,280,839
Adj. R-squared	0.611	0.611	0.611	0.611	0.590	0.590	0.590	0.590

Conclusion

- Robust association between common ownership and common director appointment
- The results are driven by hedge funds and large, long-term and concentrated investors, but not the Big-3 that occupy the current debates
- Next steps:
  Evaluate the welfare effects of common directors
  Add anecdotal ”color”