Curtin University

The Bright Side of Common Ownership: Evidence from Bank Transparency

Haerang Park [Korea University],
Shams Pathan [Curtin University], and
Alex Marwick [Deloitte Australia]

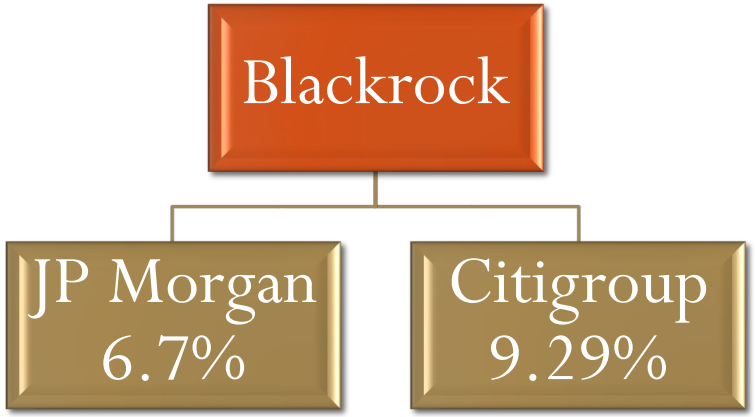
Presentation @ The International Consortium for Values-Based Governance (ICVG)
Monash University, Melbourne, Australia
15-16 December 2022

Road Map

1. Background and motivation
2. Theoretical Setup
3. Empirical Setup
4. Preview of Results
5. Some tables
6. Final Remarks/Take Away

1. Background: Common ownership

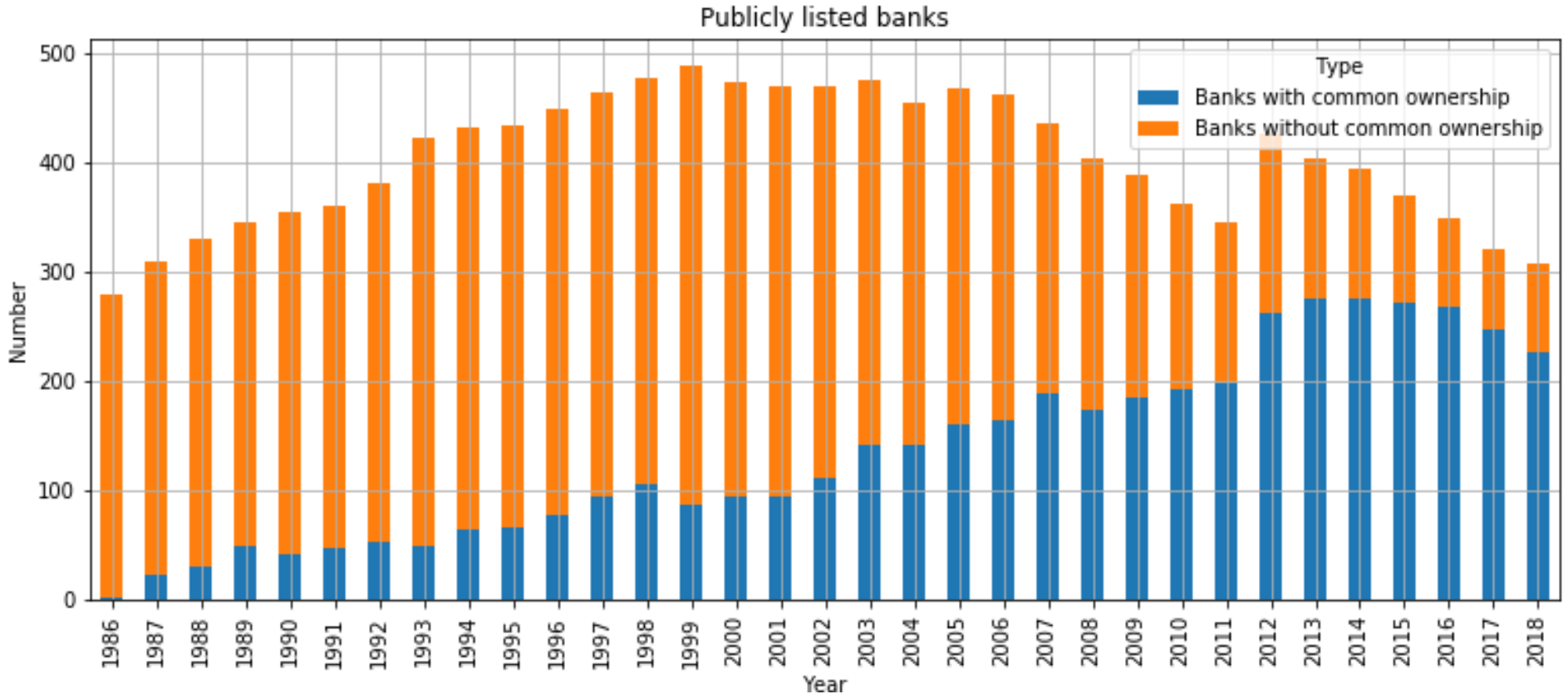
When competing firms (i.e. firms within the same industry) have shareholders in common. Also known as "horizontal ownerships", "cross-holdings" or "overlapping ownership/owners"



JP Morgan Chase	*[%]*	*Bank of America*	*[%]*	*Citigroup*	*[%]*
BlackRock	6.7	BlackRock	5.38	BlackRock	9.29
Vanguard Group	4.78	Vanguard Group	4.51	Capital Group	6.64
State Street	4.56	State Street	4.45	GIC Private Limited	5
Fidelity	3.16	Fidelity	2.56	State Street	4.4
Capital Group	2.7	JP Morgan Chase	1.48	Vanguard	4.4
Wellington	1.93	Citigroup	1.46	Fidelity	3.83

* *SP1500 firms exhibit an increase in CO from 16% in 1994 to 90% in 2019 [Anton, Ederer, Gine, and Schmaltz 2021]*
* *SP500 firms increase their average weight on the profit of competing firms from 0.20 in 1980 to 0.75 in 2019 [Backus, Conlon, and Sinkinson 2019]*
* *Blackrock and Vanguard are among the largest five shareholders of more than 53% of firms in the universe of Compustat firms (Park, Sani, Shroff and White JAE 2019).*

Trends of common ownership of banks



1. Background: Bank transparency

Robert M. Bushman [FRBNY August 2016, p.129] defines:

- *"bank transparency" as the availability of relevant and reliable information about the periodic performance, financial position, business model, governance, and risks of banks to outside stakeholders (depositors, investors, borrowers, regulators, counterparties, policymakers, and competitors).*

1. Why study bank transparency?

Enhancing bank transparency is critical to bank stability because bank opacity facilitates exorbitant risk-taking and hinder early detection of problems with banks that led to 2007–2009 financial crisis.

Enhancing bank transparency also -

- instill effective market disciplines and bank supervision.
- increases bank value,
- strengthens corporate governance of borrowers,
- lessens bank panic and rollover risk;
- reduces costs of debt financing and loan supply, and
- contributes to efficient allocation of capital and economic growth.

1. Why study transparency at Banks?

Ex-ante reasons to suggest that the relation between common ownership and transparency will be "special" at banks because of their unique features such as -

1. Opacity in bank assets provides opportunities for distorting financial statements, facilitates exorbitant risk-taking, and hinders early detection of problems with banks.
2. Regulations reduces the power of test and hence any statistical evidence using bank setting would be more convincing.
3. Whether transparency is a necessary conditions for bank stability is debated.

What does this paper do?

Objective? The impact of common ownership on bank transparency.

Why do we study common ownership in banks?

1. Distorted incentives of bank owners due to moral hazard problem.
2. Highly concentrated ownerships in banks compare to non-financial firms.
3. Unique setting: moral hazard and opacity encourages more risk while regulators restrict excessive risk-taking.

Sample: 1,197 BHCs over 1986-2018, i.e., 45,477 bank-qtr observations.

Main Results:

- ✓ Bank transparency increasess with common ownership.
- ✓ 3 channels: private information gathering [-], stock liquidity [+], mgr incentives [-]
- ✓ Economic implication: Crash risk [-]

2. Theoretical Setup (1)

Theory: Firms owned by common owners have

1. reduced incentives to compete (Azar, Schmalz, and Tecu JF 2018) and
2. increased incentives to consider benefits of their actions for the commonly owned peer firms (Azar 2017; Hansen and Lott 1996; Rubin 2006)

*The anti-competitive incentives of Common Owners (**CO**) involve two issues:*

1. *With greater competition, firms incur 'proprietary' expenses such as patent races, price under-cutting, advertising wars, resulting in low 'total portfolio value' for **CO**.*
2. *If a firm's actions have positive (liquidity, cost of financing), negative (inefficient investment) externalities on rival firms, CO creates incentives for the firm to internalize these externalities in a manner that increases the total portfolio value of the **CO**.*

2. Theoretical Setup (2)

With increased concentration, commonly owned banks have incentives to disclose more information owing to –

1. Reduced *proprietary costs* of disclosure (Park, Sani, Shroff, and White 2019; He and Huang 2017)
2. Benefits from *internalizing the externalities* (Admati and Pfleiderer 2000; Bushee and Leuz 2005)
3. Increased *relationship lending* from economics of scale (Allen and Gale 2000, 2004)

Hypothesis: Bank transparency increases with common ownership.

3. Empirical Setup (1)

A. Data and sample selection procedure

B. Three bank transparency proxies:
   1. Discretionary loan loss provisions (dllp)
   2. Readability of financial reports (Bog index)
   3. Comparability of financial reports

C. Seven common ownership proxies

D. Identification strategies

3. Empirical Setup: Sample (1)

A. Data and sample selection process:

Final sample: 1,197 banks over 1986–2018 or 45,477 bank-qtr observations.

We use the following filters:

1. Bank list from PERMCO-RSSD links from Fed NY.
2. Ownership: 13f from Thomson Reuters.
3. Financial: FR Y-9C from Fed Chicago and Compustat.
4. Market data: CRSP.
5. Russell 2000/100 index on June 30 each year: FT Russell.

3. Empirical Setup: Transparency (2)

Three measures of bank transparency:

1. Discretionary loan loss provision [Beatty and Liao 2014]

$$
\begin{aligned}
&LLP_{i,j,t} \\
&= \eta + \Phi_1 \Delta NPL_{i,j,t+1} + \Phi_2 \Delta NPL_{i,j,t} + \Phi_3 \Delta NPL_{i,j,t-1} + \Phi_4 \Delta NPL_{i,j,t-2} \\
&+ \Phi_5 lnAssets_{i,j,t-1} + \Phi_6 \Delta LOAN_{i,j,t} + \Phi_7 LLA_{i,j,t-1} + \Phi_8 NCO_{i,j,t} \\
&+ \varphi_1 CSRET_{j,t} + \varphi_2 \Delta UNEMP_{j,t} + +\varphi_3 \Delta GDP_{j,t} + \gamma_j + \delta_t + u_{i,j,t}
\end{aligned}
$$

2. Bog index of readability [Bonsall, Leone, and Miller JAE 2017]
3. Comparability of financial statements [Franco, Kothari, and Verdi JAR 2011]

3. Empirical Setup: Common Owner (3)

Common ownership:	**[Sources: 13F Database (formerly CDA/Spectrum)]**
co_bank	The number of banks commonly owned by institutional blockholders (shareholders who hold at least 5% of issued shares).
co_inv	The number of common institutional blockholders.
co_invbank	The average number of banks held by each of the common institutional blockholders.
co_share	The sum of percentage shareholdings by the common institutional blockholders.
co_weight	The average value of the structural weights that a bank puts on the profits of other commonly owned banks relative to its own profits.
co_ggl	The average value of managerial incentives to internalize externalities developed by Gilje, Gormley, and Levit (2020).
co_dummy	A dummy variable that equals one if the bank has at least one common institutional blockholder with other banks, zero otherwise.

3. Empirical Setup: Controls (4)

Four (4) covariates:

size, charter value, non-interest income, and revenue growth

Benchmark Specification:

$$y_{i,t} = \alpha + \beta_1 common\_ownership_{i,t-1} + \zeta' \boldsymbol{X_{i,t-1}} + \lambda_i + \delta_t + \varepsilon_{i,t}$$

3. Empirical Setup: identifications (5)

1. Bank fixed effect + Year-Qtr fixed-effects [Table 3]

2. DiD using Blackrock-BGI merger in 2009 [Table 4]

3. 2sls-IV using *Russell 2000* index inclusion as IV [+] [Table 5]

4. Measurement errors: [See Table 3 on page 32]

- Seven different common ownership gap proxies [reduced + structural]
- Three proxies of transparency,
- Multiple proxies of each of three different channels [private information gathering, stock liquidity, and mgr incentives].

4. Preview of Results & Contributions (1)

Main results:

- ✓Bank transparency increases with common ownerships [see Table 3]
  - ✓Economic magnitude: 5%-10% decreases in *dllp*.

Three channels *[T6-8]*:

- ✓-tive on *private information gathering*=> idiosyncratic volatility, lmsw-c2, pin
  - ✓Economic magnitude: 3%-5% decrease in idiosyncratic volatility.
- ✓+tive on *stock liquidity* => turnover, dollar volume, and bid-ask spread
  - ✓Economic magnitude: 3%-6% increase in turnover.
- ✓-tive on *managerial incentives* => delta, vega
  - ✓Economic magnitude: 11%-26% decrease in delta.

Important economic implication:

Bank *crash risk* declines with *CO*. [see Table 9]

- Economic magnitude: 5%-13% decrease in ncskew.

5. SOME TABLES

Table 2 Summary Statistics

	Obs.	Mean	Std dev	25th Percent	Median	75th Percent
Common ownership proxies						
co_bank	46,755	22.477	49.891	0.000	0.000	11.000
ln(1+co_bank)	46,755	1.167	1.829	0	0.000	2.485
co_inv	46,755	0.624	1.033	0.000	0.000	1.000
ln(1+co_inv)	46,755	0.337	0.502	0.000	0.000	0.693
co_invbank	46,755	14.870	31.953	0.000	0.000	8.750
ln(1+co_invbank)	46,755	1.086	1.679	0.000	0.000	2.2778
co_share	46,755	0.046	0.079	0.000	0.000	0.069
co_weight	46,755	0.033	0.081	0.000	0.000	0.014
co_ggl	46,755	0.0004	0.001	0.000	0.000	0.00013
co_dummy	46,755	0.344	0.475	0.000	0.000	1.000
dllp determinants						
Δnpl	46,755	0.0002	0.007	-0.001	0.000	0.001
Δloan	46,755	0.026	0.062	-0.003	0.018	0.041
nco	46,755	0.003	0.005	0.0004	0.001	0.003
Tranparency proxies						
dllp	46,755	0.002	0.004	0.001	0.001	0.002
bog_index	33,604	79.120	6.720	75.000	79.000	83.000
comp_score	22,564	-0.213	0.567	-0.120	-0.50	-0.030
Private information proxies						
idio_vol	46,532	1.779	1.373	0.716	1.908	2.775
lmsw-c2	46,438	0.0146	0.292	-0.152	0.0174	0.184
pin	28,176	0.325	0.193	0.175	0.297	0.441
Liquidity proxies						
turnover	46,755	0.003	0.007	0.0003	0.001	0.003
dollar_vol	46,755	12.812	2.565	10.810	12.498	14.516
bid-ask spread	45,096	0.024	0.036	0.004	0.014	0.031
Managerial incentives						
delta	7,276	82.676	195.592	4.5	18.985	63.396
vega	7,276	9.888	39.0875	0	0	0.305
Crash risk proxies						
ncskew	26,400	-0.448	1.182	-3.093	-1.313	-0.493
duvol	26,347	-0.154	0.564	-1.654	-0.515	-0.141
Controls						
ln(assets)	46,755	14.555	1.628	13.357	14.227	15.457
charter value	46,755	0.999	0.005	0.972	1.000	1.000
non-interest income	46,755	0.626	0.287	0.386	0.661	0.898
revenue growth	46,755	0.263	0.967	-0.588	0.403	0.767

Table 3: Effect of on *transparency (A)*

Panel A: disclosure quality = dllp

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*dllp*	*dllp*	*dllp*	*dllp*	*dllp*	*dllp*	*dllp*
ln(1+co_bank)	-0.00010***						
	(0.00001)						
ln(1+co_inv)		-0.00024***					
		(0.00005)					
ln(1+co_invbank)			-0.00009***				
			(0.00002)				
co_share				-0.00127***			
				(0.00032)			
co_weight					-0.00194***		
					(0.00031)		
co_ggl						-0.14110***	
						(0.02800)	
co_dummy							-0.00012**
							(0.00005)
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.257	0.257	0.257	0.257	0.257	0.257	0.257
# banks	1,197	1,197	1,197	1,197	1,197	1,197	1,197
observations	45,477	45,477	45,477	45,477	45,477	45,477	45,477
economic magnitude	*9.62%*	*6.34%*	*7.95%*	*5.20%*	*8.28%*	*7.64%*	*6.31%*

Table 3: Effect of on *transparency (B)*

Panel B: disclosure quality = bog_index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*bog_index*	*bog_index*	*bog_index*	*bog_index*	*bog_index*	*bog_index*	*bog_index*
ln(1+co_bank)	-0.05018***						
	(0.01697)						
ln(1+co_inv)		-0.20894***					
		(0.06034)					
ln(1+co_invbank)			-0.03507**				
			(0.01774)				
co_share				-1.37148***			
				(0.38068)			
co_weight					-1.18605***		
					(0.35044)		
co_ggl						-63.91834**	
						(31.19713)	
co_dummy							-0.08705
							(0.05913)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.751	0.751	0.751	0.751	0.751	0.751	0.751
# banks	1,025	1,025	1,025	1,025	1,025	1,025	1,025
observations	33,457	33,457	33,457	33,457	33,457	33,457	33,457
economic magnitude	*0.12%*	*0.13%*	*0.07%*	*0.013%*	*0.19%*	*0.08%*	*0.11%*

Table 3: Effect of on *transparency (C)*

Panel C: disclosure quality = comp_score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*comp_score*	*comp_score*	*comp_score*	*comp_score*	*comp_score*	*comp_score*	*comp_score*
ln(1+co_bank)	0.04427***						
	(0.00252)						
ln(1+co_inv)		0.10816***					
		(0.00899)					
ln(1+co_invbank)			0.04429***				
			(0.00264)				
co_share				0.43953***			
				(0.05678)			
co_weight					0.87095***		
					(0.05007)		
co_ggl						48.86570***	
						(4.53991)	
co_dummy							0.08156***
							(0.00883)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.468	0.464	0.467	0.461	0.467	0.463	0.462
# banks	552	552	552	552	552	552	552
observations	22,406	22,406	22,406	22,406	22,406	22,406	22,406
economic magnitude	*37.98%*	*25.49%*	*34.88%*	*16.04%*	*33.14%*	*23.61%*	*38.26%*

Table 4: *DiD* [Main results] (A)

Panel A: DiD estimates for bank transparency

Dependent variables:	*(1)* *dllp*	*(2)* *dllp*	*(3)* *bog_index*	*(4)* *bog_index*	*(5)* *comp_score*	*(6)* *comp_score*
treatment×post	-0.001***	-0.001***	-0.480***	-0.559***	0.440***	0.382***
	(0.000)	(0.000)	(0.161)	(0.164)	(0.037)	(0.038)
post	0.002***	0.002***	5.739***	5.374***	-0.500***	-0.847***
	(0.000)	(0.000)	(0.264)	(0.290)	(0.063)	(0.068)
covariates?	No	Yes	No	Yes	No	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.111	0.118	0.508	0.510	0.221	0.259
# banks	367	367	365	365	312	312
observations	3,850	3,850	3,749	3,749	3,038	3,038

Table 4: *DiD* [diagnostic tests] (B, C)

Panel B: Diagnostic test#1: post-merger period common ownership

variables:	*co_bank*	*co_bank*
treated×post	56.600***	54.620***
	(2.106)	(2.133)
post	73.865***	65.900***
	(3.440)	(3.750)
covariates?	No	Yes
bank FE?	Yes	Yes
year-qtr FE?	Yes	Yes
adj-R^2	0.593	0.597
# banks	367	367
observations	3,850	3,850

Panel C: Diagnostic test#2: parallel trend in dllp between treatment and control firms

dllp	Treatment	Control	*t-test*
year – 1	0.0022	0.0025	0.69
year – 2 to year – 1	0.0016	0.0018	1.06
year – 3 to year – 1	0.0014	0.0016	1.25
year – 4 to year – 1	0.0014	0.0015	1.03

Table 5: 2SLS-IV

Panel B: second-stage results for bank transparency proxies

	(1)	(2)	(3)
Dependent variable:	*dllp*	*bog_index*	*comp_score*
$ln(1 + \widehat{co\_bank_t}) \times 10^{-3}$	-15.041***	-13.230***	6.237***
	(1.881)	(7.006)	(0.958)
Hansen *J-stats* for endog.	63.952***	308.53***	32.552***
$ln(1 + \widehat{co\_inv_t})$	-1.345***	-1.009*	0.511***
	(0.225)	(0.539)	(0.103)
Hansen *J-stats* for endog.	70.303***	83.452***	42.485***
$ln(1 + \widehat{co\_invbank_t})$	-0.308***	-0.0292*	0.0141***
	(0.004)	(0.0156)	(0.002)
Hansen *J-stats* for endog.	67.132***	138.831***	2.904
$\widehat{co\_share_t}$	-24.238***	-18.932*	10.100***
	(4.794)	(10.232)	(2.546)
Hansen *J-stats* for endog.	70.898***	44.425***	46.292***
$\widehat{co\_weight_t}$	-10.097***	-8.218***	3.538***
	(1.331)	(4.365)	(0.558)
Hansen *J-stats* for endog.	66.764***	206.924***	33.061***
$\widehat{co\_ggl_t}$	-655.526***	-583.209*	270.627***
	(81.696)	(309.024)	(41.414)
Hansen *J-stats* for endog.	62.421***	351.957***	37.913***
$\widehat{co\_dummy_t}$	6.212***	6.664	-1.1919***
	(1.978)	(4.274)	(0.592)
Hansen *J-stats* for endog.	71.684***	7.774***	53.423***
covariates?	Included	Included	Included
bank FE?	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes
# banks	1,214	1,051	556
observations	45,670	33,933	22,581

Channel#1: Private information

1. Idiosyncratic volatility:

$\log[(1 - R^2)/R^2]$ ⇒ $r_{i,t} = \alpha + \beta_1 r_{m,t} + \beta_2 r_{m,t-1} + \beta_3 ind_{i,t} + \beta_4 ind_{i,t-1} + \varepsilon_{i,t}$

2. Volume-return coefficient (*lmsw-c2*): Llorente, Michaely, Saar, and Wang (2002)

(LMSW-C2) is based on the stock return autocorrelation conditional on trading volume

$$r_{i,t} = \alpha_i + c1 \times r_{i,t-1} + c2 \times (r_{i,t-1} \times vol_{i,t-1}) + e_{i,t}$$

where $r_{i,t}$ is the weekly stock return of bank *i* in week *t*, $vol_{i,t}$ is the logarithm of stock turnover (= weekly trading volume/total shares outstanding) of bank *i* in week *t*, de-trended by subtracting the 26-week moving average of logarithmic turnover. Higher values of *c2* indicate more information-based trading than liquidity-based trading.

3. Probability of informed trading (*pin*): The likelihood that a trade originates from a privately informed trader.

Table 6: Effect of on *private information (A)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*idio_vol*	*idio_vol*	*idio_vol*	*idio_vol*	*idio_vol*	*idio_vol*	*idio_vol*
ln(1+co_bank)	-0.048***						
	(0.004)						
ln(1+co_inv)		-0.132***					
		(0.014)					
ln(1+co_invbank)			-0.048***				
			(0.004)				
co_share				-0.715***			
				(0.088)			
co_weight					-0.981***		
					(0.085)		
co_ggl						-74.507***	
						(7.577)	
co_dummy							-0.094***
							(0.013)
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.621	0.620	0.621	0.620	0.621	0.620	0.620
# banks	1,196	1,196	1,196	1,196	1,196	1,196	1,196
observations	45,431	45,431	45,431	45,431	45,431	45,431	45,431
economic magnitude	4.93%	3.73%	4.53%	3.13%	4.47%	4.31%	5.28%

The results are similar for using *lmsw-c2* and *pin*

=> *Private information* decreases with *CO*.

Table 6: Effect of on *private information (B)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*lmsw-c2*	*lmsw-c2*	*lmsw-c2*	*lmsw-c2*	*lmsw-c2*	*lmsw-c2*	*lmsw-c2*
ln(1+co_bank)	-0.003**						
	(0.001)						
ln(1+co_inv)		0.008*					
		(0.004)					
ln(1+co_invbank)			-0.003**				
			(0.001)				
co_share				0.058**			
				(0.028)			
co_weight					-0.181***		
					(0.024)		
co_ggl						-17.810***	
						(1.977)	
co_dummy							-0.001
							(0.004)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.115	0.115	0.115	0.115	0.115	0.115	0.115
#banks	1,196	1,196	1,196	1,196	1,196	1,196	1,196
observations	45,431	45,431	45,431	45,431	45,431	45,431	45,431

Table 6: Effect of on *private information (C)*

Panel C: private information gathering= pin

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*pin*	*pin*	*pin*	*pin*	*pin*	*pin*	*pin*
ln(1+co_bank)	-0.005***						
	(0.001)						
ln(1+co_inv)		-0.002					
		(0.003)					
ln(1+co_invbank)			-0.005***				
			(0.001)				
co_share				0.015			
				(0.022)			
co_weight					-0.277***		
					(0.035)		
co_ggl						-36.574***	
						(4.639)	
co_dummy							-0.011***
							(0.003)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.518	0.518	0.518	0.518	0.518	0.518	0.518
#banks	986	986	986	986	986	986	986
observations	28,176	28,176	28,176	28,176	28,176	28,176	28,176

Channel#2: Stock Liquidity

Stock liquidity	Source: CRSP
turnover	The daily trading volume divided by the outstanding shares averaged over the quarter.
dollar_vol (mil. $)	The daily trading volume multiplied by the closing price averaged over the quarter.
bid-ask spread	The daily closing ask price less the closing bid price, divided by the midpoint of the closing ask and bid prices averaged over the quarter.

Table 7: Effect of on *stock liquidity (A)*

Panel A: liquidity = ln(1+turnover)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*ln(1+turnover)*	*ln(1+turnover)*	*ln(1+turnover)*	*ln(1+turnover)*	*ln(1+turnover)*	*ln(1+turnover)*	*ln(1+turnover)*
ln(1+co_bank)	0.00008***						
	(0.00003)						
ln(1+co_inv)		0.00026***					
		(0.00010)					
ln(1+co_invbank)			0.00005*				
			(0.00003)				
co_share				0.00189***			
				(0.00062)			
co_weight					0.00112*		
					(0.00060)		
co_ggl						0.13294**	
						(0.05348)	
co_dummy							0.00004
							(0.00009)
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.194	0.194	0.194	0.194	0.194	0.194	0.194
# banks	1,197	1,197	1,197	1,197	1,197	1,197	1,197
observations	45,463	45,463	45,463	45,463	45,463	45,463	45,463
economic magnitude	*5.49%*	*4.90%*	*3.15%*	*5.51%*	*3.41%*	*5.13%*	*1.50%*

The results are similar for using *dollar volume* and *bid-ask spread*

=> *Stock liquidity* increases with *CO*.

Table 7: Effect of on *stock liquidity(B)*

Panel B: liquidity = ln(dollar_vol)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*ln(dollar_vol)*	*ln(dollar_vol)*	*ln(dollar_vol)*	*ln(dollar_vol)*	*ln(dollar_vol)*	*ln(dollar_vol)*	*ln(dollar_vol)*
ln(1+co_bank)	0.04936***						
	(0.00319)						
ln(1+co_inv)		0.12234***					
		(0.01094)					
ln(1+co_invbank)			0.04843***				
			(0.00334)				
co_share				0.47197***			
				(0.07065)			
co_weight					0.93504***		
					(0.06816)		
co_ggl						31.357***	
						(6.10878)	
co_dummy							0.10751***
							(0.01042)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.929	0.928	0.928	0.928	0.928	0.928	0.928
# banks	1,197	1,197	1,197	1,197	1,197	1,197	1,197
observations	45,477	45,477	45,477	45,477	45,477	45,477	45,477
economic magnitude	*0.71%*	*0.48%*	*0.64%*	*0.29%*	*0.59%*	*0.25%*	*0.84%*

Table 7: Effect of on *stock liquidity (C)*

Panel C: liquidity = bid-ask spread

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*bid-ask spread*	*bid-ask spread*	*bid-ask spread*	*bid-ask spread*	*bid-ask spread*	*bid-ask spread*	*bid-ask spread*
ln(1+co_bank)	-0.00062***						
	(0.00010)						
ln(1+co_inv)		-0.00187***					
		(0.00036)					
ln(1+co_invbank)			-0.00062***				
			(0.00011)				
co_share				-0.00640***			
				(0.00230)			
co_weight					-0.00036		
					(0.00220)		
co_ggl						0.936***	
						(0.19695)	
co_dummy							-0.0021***
							(0.00034)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.634	0.634	0.634	0.634	0.634	0.634	0.634
# banks	1,180	1,180	1,180	1,180	1,180	1,180	1,180
observations	43,995	43,995	43,995	43,995	43,995	43,995	43,995
economic magnitude	*4.67%*	*3.87%*	*4.28%*	*2.05%*	*0.12%*	*3.96%*	*8.64%*

Channel#3: Managerial incentives

Mgr incentives	Source: ExecuComp
delta	A change in a CEO's total pay for a percentage change in the stock price following Coles, Daniel, and Naveen (2006)
vega	A change in a CEO's total pay for a percentage change in the annualized standard deviation of stock returns following Coles, Daniel, and Naveen (2006)

Table 8: Effect of on *mgr incentives (A)*

Panel A: managerial incentives = delta

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*delta*	*delta*	*delta*	*delta*	*delta*	*delta*	*delta*
ln(1+co_bank)	-11.799***						
	(1.996)						
ln(1+co_inv)		-20.079***					
		(6.438)					
ln(1+co_invbank)			-11.603***				
			(2.082)				
co_share				-114.425***			
				(39.431)			
co_weight					-123.752***		
					(39.168)		
co_ggl $\times 10^3$						-4.416	
						(3.711)	
co_dummy							-17.845***
							(6.399)
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.270	0.267	0.270	0.267	0.267	0.267	0.267
# banks	177	177	177	177	177	177	177
observations	7,275	7,275	7,275	7,275	7,275	7,275	7,275
economic magnitude	*16.11%*	*12.20%*	*23.57%*	*10.77%*	*12.14%*	*5.50%*	*21.58%*

The results are similar for using *vega*

=> *Managerial incentive* decreases with *CO*.

Table 8: Effect of on *mgr incentives (B)*

Panel B: managerial incentives= vega

Dependent variable:	*(1)* *vega*	*(2)* *vega*	*(3)* *vega*	*(4)* *vega*	*(5)* *vega*	*(6)* *vega*	*(7)* *vega*
ln(1+co_bank)	-2.644***						
	(0.358)						
ln(1+co_inv)		-5.614***					
		(1.156)					
ln(1+co_invbank)			-2.369***				
			(0.374)				
co_share				-43.416***			
				(7.071)			
co_weight					-13.462*		
					(7.042)		
co_ggl× 10³						-2.362***	
						(6.664)	
co_dummy							-0.739
							(1.150)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year-qtr FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.411	0.409	0.410	0.410	0.407	0.408	0.407
# banks	177	177	177	177	177	177	177
observations	7,275	7,275	7,275	7,275	7,275	7,275	7,275
economic magnitude	*48.91%*	*28.53%*	*40.23%*	*34.16%*	*11.05%*	*24.61%*	*7.47%*

Economic implication: Crash risk

Crash risk	Source: CRSP
ncskew	The ratio of the negative of the third moment for bank *i*'s weekly stock returns to the standard deviation of bank *i*'s weekly returns raised to the power of three.
duvol	The natural logarithmic of the ratio of the standard deviations of the "down" and "up" weeks. A down (up) week for a bank *i* is the week with bank *i's* weekly stock returns lower (greater) than quarterly mean.

Table 9: Effect of on *crash risk (A)*

Panel A: crash risk = ncskew

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	*ncskew*	*ncskew*	*ncskew*	*ncskew*	*ncskew*	*ncskew*	*ncskew*
ln(1+co_bank)	-0.013**						
	(0.006)						
ln(1+co_inv)		-0.051**					
		(0.022)					
ln(1+co_invbank)			-0.015**				
			(0.007)				
co_share				-0.325**			
				(0.142)			
co_weight					0.106		
					(0.124)		
co_ggl						-3.237	
						(11.055)	
co_dummy							-0.059***
							(0.022)
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.086	0.086	0.086	0.086	0.086	0.086	0.086
# banks	451	451	451	451	451	451	451
observations	26,390	26,390	26,390	26,390	26,390	26,390	26,390
economic magnitude	*5.31%*	*5.72%*	*5.64%*	*5.46%*	*1.92%*	*0.74%*	*13.16%*

The results are similar for using *duvol*

=> *Crash risk de*creases with *CO*.

Table 9: Effect of on *crash risk (B)*

Panel B: crash risk = duvol

Dependent variable:	*(1)* *duvol*	*(2)* *duvol*	*(3)* *duvol*	*(4)* *duvol*	*(5)* *duvol*	*(6)* *duvol*	*(7)* *duvol*
ln(1+co_bank)	-0.005						
	(0.003)						
ln(1+co_inv)		-0.023**					
		(0.011)					
ln(1+co_invbank)			-0.005*				
			(0.003)				
co_share				-0.163**			
				(0.07)			
co_weight					0.014		
					(0.061)		
co_ggl						-10.212*	
						(5.412)	
co_dummy							-0.027**
							(0.011)
covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
bank FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
year FE?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj-R^2	0.039	0.039	0.039	0.039	0.039	0.039	0.039
# banks	451	451	451	451	451	451	451
observations	26,338	26,338	26,338	26,338	26,338	26,338	26,338
economic magnitude	*0.12%*	*0.13%*	*0.07%*	*0.013%*	*0.19%*	*0.08%*	*0.11%*

6. Take-aways

1. Common owners reduce competition resulting in increased bank TRANSPARENCY owing to reduced proprietary costs, internalizing the externalities, and enhanced relationship lending.
2. Although our results are in line with anti-competitive view of common ownership but presenting some "bright-side" of this product market concentration.
3. Our findings have far-reaching policy implication for bank regulators - bank regulators should emphasize that banks' estimates of loan loss provision be forward looking and reflect a broader range of available credit information.
4. Accounting standard setters such as the *Financial Accounting Standards Board (FASB)* and the *International Accounting Standards Board (IASB)* could consider standards that enhance the readability and comparability of banks' financial reports.
5. Emphasize the importance of testing industrial economic theory using data from financial firms.

Curtin University

Questions/Comments

M.Pathan@curtin.edu.au


Thank you
Make tomorrow better.