Local Bank Supervision

Di Gong, Thomas Lambert, and Wolf Wagner



Optimal supervisory architecture

- Allocation of supervisory responsibilities and powers and implementation of prudential policies (Ampudia et al. 2019)
- "Old" debate about supervision at the central bank
 - Is an integrated structure of central banking and supervision conducive to greater price and financial stability? What are, if any, the risks of having both monetary policy and supervision within the central bank?
- "Recent" debate about geographical allocation of supervisory powers
 - Is centralized supervision preferable to decentralized one? What are the relevant trade-offs to consider?
- Following the global financial crisis, supervision largely moved toward centralization
 - SSM directly supervises only significant institutions

Costs-benefits of (des)centralized supervision

- Local supervisor may pursue local interests, being either political or economic (Shleifer, 1996), or not take the externalities of their actions into account
- Local supervisor is in better position to acquire information about banks and specialize in local conditions
 - Distance between supervisor and the supervised bank (Repullo 2018; Colliard 2020)
 - Distance within supervisory authority (Carletti et al., 2021)

	Central supervisor	Local supervisor		
Incentives		fact2 X		
Information collection	×			

This paper

Questions

• (How) does (de)centralization affect supervisory decisions and, as a result, impact lending?

Setting

- Policy reform in China that shifted supervision of bank branches from national to city level
- Novel enforcement action data from 300 local supervisory offices

Findings

- Higher stringency under local supervision (i.e. more enforcement actions)
- Higher stringency results in more conservative lending by banks, reducing in turn aggregate loan supply in cities with more local supervision
- Informational (vs incentives) channel enjoys, on the net, more support in the data

Literature

Supervisory architectures involving multiple supervisors

- Theory: Dell'Ariccia and Marquez (JFE 2006); Kara (JIE 2016); Foarta (AER 2018); Repullo (2018); Calzolari et al. (RFS 2019); Colliard (RF 2020); Carletti et al. (MS 2021); Lóránth et al. (WP 2022)
- Empirics: Agarwal et al. (QJE 2014); Gopalan et al. (RF 2021); Haselmann et al. (WP 2022); Beck et al. (JFQA 2023); Lim et al. (JMCB 2023)

Supervisory standards and bank behavior

 Delis et al. (MS 2017); Hirtle et al. (JF 2020); Kandrac and Schlusche (RFS 2021); Granja and Leuz (WP 2022); among many others

Structure of information and decentralization within organizations

 Large theoretical literature: e.g. Melumad and Reichelstein (JAR 1987); Bolton and Dewatripont (QJE 1994); Aghion and Tirole (JPE 1997); Dessein (REStud 2002); Alonso et al. (AER 2008)

Institutional Background

China's banking sector

Largest banking sector in the world

• In 2020, total assets of \$38.98 trillion in China (US = \$27.71 trillion)

Commercial banks

- National banks (~70% of total assets): 6 state-owned banks and 12 joint-stock banks
- Local banks: 130+ city commercial banks, 1600+ rural commercial banks, and numerous rural credit cooperatives and village banks

Branching network

- A headquarter, city-level branch (分行), and lower-level offices (支行)
- A bank has (at most) one branch in a city

Structure and function of CBRC



The decentralization reform of 2015

- First major structural reform since the establishment of CBRC in 2003
- Aim: decentralize administrative powers, bring supervisors closer to banks and reinforce oversight over local banks
- Strengthening territorial supervision (属地监管)
 - Head office supervises legal entities of large banks
 - Local offices supervise banks and branches within their jurisdictions: legal entities and branches of local banks, branches of local banks from other jurisdictions, and branches of national banks
 - The reform transfers the supervisory responsibilities and powers for local banks to local supervisors, without changing the organization of supervision for national banks

Responsibilities and powers for enforcement



Data and Research Design

Sample and key data

- 5,366 branches of 1,011 banks in 342 cities for 10 years surrounding the 2015 reform
- That is, 90% of the assets of the Chinese banking sector
- Enforcement actions and resulting penalties are disclosed on CBRC websites



Penalty sample

• Our sample includes 12,044 penalties issued between 2010 and 2020

	Panel A: Type of penalties	N	Local banks	National banks
	Warning	8,573	3,858	4,715
	Fine	4,325	2,320	2,005
10	Disqualification	360	176	184
	Prohibition	371	174	197
	License revocation	3	0	3
	Panel B: Reason of penalties	Ν	Local banks	National banks
	Loan-related reasons	6,768	3,534	3,234
	Deposit-related reasons	815	265	550
	Interbank-related reasons	462	282	180
	Acceptance-related reasons	1,533	661	872
	Credit Card-related reasons	182	27	155
	Guarantee-related reasons	347	138	209
	Prudential regulation-related reasons	1,562	736	826
	Internal control-related reasons	971	287	684
	Governance-related reasons	277	248	29
	Panel C: Recipient of penalties	Ν	Local banks	National banks
	Individuals	4,649	2,593	2,056
	Banks	7,848	3,359	4,489
	Both individuals and banks	453	236	217

Local vs national banks

Bank type	Local banks	National banks
Branch-level statistics		
Average number of offices per branch	21.23	26.77
Average market share (% offices)	4.99%	6.56%
Average HHI of branches' city (% offices)	0.09	0.1
Average distance of branches' city to Beijing (km)	1098.5	1183.7
Average credit/GDP of branches' city	108.26%	112.79%
Average number of penalties per branch	2.75	1.93
Bank-level statistics		
Average number of branches per bank	2.10	182.56
Average number of penalties per bank	5.76	351.56
Aggregate-level statistics		
Number of banks in the full sample	993	18
Number of penalties in the full sample	5,716	6,328
Total fine amount (million)	1,676.87	3,782.72

Specification

• Difference-in-differences specification at the bank-city-year level:

$$Penalty_{ijt} = \alpha_i + \alpha_j + \alpha_t + \beta Local \ bank_i \times Post_t + \varepsilon_{ijt}$$

- Penalty_{ijt}: dummy equal to 1 (0) if a branch receives (or not) a penalty in year t or log 1+ number of penalties received by a branch in year t
- Local bank_i: dummy equal to 1 for branches of local banks *i* (treated group), and 0 for branches of national banks *i* (control group)
- *Post_t*: dummy equal to 1 from 2015 onwards, 0 otherwise
- Bank (α_i) , city (α_j) , and year (α_t) fixed effects
- ε_{ijt} : error term
- Standard errors clustered at the city where the branch is located

Decentralization and Penalties

Basic result

	•				•					
		Penalty	dummy			Number of penalties				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
Local bank	-0.014***				-0.011***					
	(0.003)				(0.002)					
Post	0.109***				0.115***					
	(0.007)				(0.008)					
Local bank $ imes$ Post	0.060***	0.068***	0.055***	0.082***	0.070***	0.079***	0.062***	0.095***		
	(0.007)	(0.008)	(0.008)	(0.008)	(0.009)	(0.010)	(0.010)	(0.011)		
Year FE	No	Yes	No	Yes	No	Yes	No	Yes		
Bank FE	No	Yes	Yes	No	No	Yes	Yes	No		
					No	Yes	No	No		
Local banks	are 5.5-8	3.2 pp n	nore like	ly than	No	No	Yes	No		
national ban	ks to get	No	No	No	Yes					
\rightarrow 50-74% increased probability					52,089	52,089	52,072	52,085		
K-	0.040	0.145	0.247	0.210	0.045	0.142	0.241	0.212		

Parallel trend



Robustness

- Placebo tests
- Poisson regressions \checkmark
- Including bank covariates
- Subsample analyses
 - Excluding state-owned banks
 - Excluding local offices of the CBRC in Beijing

Decentralization and Lending

Loan-level analysis

Data

- Loan announcement from listed firms
- Matched lenders with branches
- Loan spreads (i.e., interest rates) and loan quantities (log of loan amounts) to proxy for aggressiveness in lending by branches

Interpretation

 Branches of local banks are more conservative in their lending post reform

	Loan	spreads	Loan a	mounts
	(1)	. (2)	(3)	(4)
Local bank × Post	31.477**	31.257**	-0.385***	-0.329**
	(13.314)	(12.447)	(0.139)	(0.139)
Firm size	4.595	6.563	-0.022	-0.051
	(6.432)	(5.933)	(0.074)	(0.059)
Firm leverage	0.278	0.102	0.002	0.002
	(0.304)	(0.366)	(0.002)	(0.002)
Firm tangibility	-0.388**	-0.523***	0.001	0.000
	(0.193)	(0.183)	(0.003)	(0.002)
Firm cash holdings	0.042	0.095	0.002	-0.001
	(0.344)	(0.406)	(0.003)	(0.003)
Firm ROA	0.040	-0.373	0.001	0.001
	(0.356)	(0.371)	(0.004)	(0.003)
Year FE	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
City FE	No	Yes	No	Yes
Observations	7,227	7,200	13,010	12,984
\mathbb{R}^2	0.601	0.656	0.396	0.458

City-level analysis

			Cred	it/GDP		
Data and sample		O	LS	Г	IV	
 City-level information on 		(1)	(2)	(3)	(4)	
loan supply, GDP, and	Local bank share	-70.729***	-41.114**	-73.159***	-35.427*	
fiscal balance		(17.093)	(18.554)	(17.874)	(20.028)	
· Voorly papel of 297 cities	Local bank share \times Post	-31.245**	-35.624***	-43.634***	-32.137**	
• rearry panel of 287 cities		(15.558)	(12.240)	(16.437)	(14.063)	
	GDP growth	-0.427	-0.561	-0.387	-0.572	
Interpretation		(0.706)	(0.349)	(0.706)	(0.350)	
 Stringent supervision 	Fiscal balance	-0.122	-0.792**	-0.100	-0.824**	
		(0.303)	(0.381)	(0.302)	(0.397)	
resulting from the reform	Year FE	Yes	Yes	Yes	Yes	
has real aggregate effects	Province FE	No	Yes	No	Yes	
	Observations	3,136	3,136	3,136	3,136	
	\mathbb{R}^2	0.153	0.440			
	Kleibergen-Paap test for			201.95	105 47	
	weak instruments	ak instruments		201.85	195.47	

Channels

Information collection

				·				
		Distance (log)			Distance	dummies	Fine amount	
	Penalty	Number of	Penalty	Number of	Penalty	Number of	Average	Average
	dummy	penalties	dummy	penalties	dummy	penalties	fine	fine (log)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Local bank × Post	-0.127*	-0.225***					-455.929*	-0.260**
	(0.067)	(0.069)					(275.350)	(0.118)
Post × Distance	-0.019	-0.022						
	(0.012)	(0.015)						
Local bank × Post × Distance	0.030***	0.047***	0.023***	0.035***				
	(0.010)	(0.010)	(0.005)	(0.007)				
Local bank \times Post \times Long distance					0.091***	0.122***		
					(0.014)	(0.021)		
Local bank \times Post \times Intermediate distance					0.085***	0.097***		
					(0.010)	(0.013)		
Local bank \times Post \times Short distance					0.070***	0.068***		
					(0.011)	(0.014)		
Bank FE	No	No	No	No	No	No	No	No
Year FE	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Bank imes Year FE	No	No	Yes	Yes	No	No	No	No
City × Year FE	No	No	Yes	Yes	No	No	No	No
$Bank \times City FE$	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	52,085	52,085	43,064	43,064	52,085	52,085	3,892	3,892
R ²	0.217	0.213	0.384	0.377	0.216	0.213	0.333	0.540

Incentives

Local *political* interests

 Local government ownership at banks = Total share of local governments among the top three shareholders of the bank

Local economic interests

- Weakness of local financial sector = stock of NPLs among banks in the province
- Externalities posed by the local supervision = share of the banks' offices that are located outside the city

F					1		
	Local political interests			Local econor	nic interests		
	Penany	Number of	Penalty	Number of	Penany	Number of	
	dummy	penalties	dummy	penalties	dummy	penalties	
	(1)	(2)	(3)	(4)	(5)	(6)	
Local bank × Post	0.027***	0.037***	-0.007	0.003	-4.684***	-5.012***	
	(0.009)	(0.010)	(0.016)	(0.018)	(0.766)	(0.764)	
Local ownership	-0.007	-0.008**					
	(0.005)	(0.004)					
Local bank \times Local ownership	0.006	0.006					
	(0.005)	(0.004)					
Post \times Local ownership	0.000	-0.001					
	(0.001)	(0.001)					
Local bank imes Post imes Local ownership	-0.003**	-0.003**					
	(0.001)	(0.001)					
Regional NPL			0.011**	0.007			
			(0.005)	(0.005)			
Local bank × Regional NPL			-0.014***	-0.016***			
			(0.003)	(0.004)			
Post × Regional NPL			-0.038***	-0.039***			
			(0.010)	(0.012)			
Local bank \times Post \times Regional NPL			0.053***	0.055***			
-			(0.008)	(0.010)			
Share of offices outside the city					0.165**	0.330***	
-					(0.069)	(0.095)	
Post \times Share of offices outside the city					-0.152***	-0.175***	
-					(0.011)	(0.014)	
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	
City \times Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	37,748	37,748	52,085	52,085	19,508	19,508	
R ²	0.231	0.232	0.218	0.214	0.238	0.233	

Net effect

- Consider a local bank with "average" sample characteristics and the likelihood of a penalty as outcome
- Informational vs incentive channels
 - Since the reform moves distance to zero \rightarrow the implied change is **0.205**
 - No distortion arising from local government ownership pre-reform \rightarrow the implied change is -0.005
 - Provincial financial conditions equal national financial conditions pre-reform \rightarrow no implied change
 - Since local supervisory decisions will be unbiased if externalities are inexistent → implied change is -0.121
- The implied net effect of the reform on a representative local bank is 0.079 (= 0.205 0.005 0.121)
 - Decentralization reform tightens enforcement at local banks
- This implied net effect falls in a similar range of magnitude than our basis results (i.e. estimated coefficients of 0.055-0.082)

Conclusion



Findings

- Local supervisors are 50-74% more likely to initiate enforcement actions against branches of local banks following the decentralization reform
- Tighter local supervision is effective: more conservative lending by banks, reducing in turn aggregate loan supply in cities with more local supervision
- The informational channel enjoys, on the net, more support in the data

Implications

- Value of local information in supervision
- Importance of considering size in the assessment of benefits and costs of centralized and decentralized supervision



thomaslambert.org



Accredited by



