

Small Enough to Recover? Bank Size, Corporate Governance, and Post-COVID-19 Performance

SHIH-WEI WU

National Taipei University of Technology, Taiwan

MANH THAO NGUYEN

t107749409@ntut.edu.tw

National Taipei University of Technology, Taiwan

NGOC THUY MAI

Ming Chuan University

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Abstract

Using a balanced panel of 340 bank-year observations from 2012-2024, this study documents a robust rebound in U.S. commercial banks’ profitability after the onset of the COVID-19 crisis. Return on assets (ROA) increases by 0.63–0.86 percentage points after 2020, controlling for bank and year fixed effects. The recovery is strongly heterogeneous: smaller banks (measured by the log of total assets) outperform their larger peers, whereas board size—our primary governance proxy—does not accelerate the rebound. Results remain intact when profitability is measured by return on equity (ROE) and under alternative fixed-effect structures. Overall, the findings underscore the resilience advantages of relationship-based, smaller banking models and nuance the role of internal governance during systemic shocks.

JEL Codes: G21, G32, G01

1. Introduction

Banks entered the pandemic on a footing far stronger than during the Global Financial Crisis, thanks to Basel III capital reforms and unprecedented fiscal-monetary backstops. Early evidence nonetheless records sharp cross-sectional dispersion in performance once public support tapered off (Berger et al., 2021). Against this backdrop, we ask three questions. First, did bank profitability rebound once the worst of the public-health shock had passed? Second, did size shape the speed of this rebound? Third, did conventional governance mechanisms—specifically board size—help or hinder the process?

Our paper contributes to two literatures. The first examines the resilience of banks to pandemic-induced stress (e.g., Levine, Lin & Xie, 2021). We complement this work by showing that profitability, not just lending supply, recovers and that size drives the heterogeneity. The second explores governance efficacy in crisis times (Lesmana et al., 2024). Contrary to findings on non-financial firms, we fail to find that bigger boards facilitate a faster banking recovery, indicating sector-specific limits to board interventions during systemic shocks.

2. Literature Review and Hypothesis Development

2.1 Bank Resilience to Systemic Shocks

Relationship-oriented banks, typically smaller institutions, are reputed to cushion local downturns by recycling soft information into credit (Levine et al., 2021). We therefore expect Hypothesis 1 (H1): Bank profitability improves after 2020, and the recovery is stronger for smaller banks.

2.2 Corporate Governance in Crisis

COVID-era evidence on governance is mixed. While larger boards appear to stabilize Indonesian listed firms (Lesmana et al., 2024), meta-analyses note a negative board-size–performance link in banking (ResearchGate synthesis, 2023). We posit Hypothesis 2 (H2): Board size does not materially affect post-pandemic bank performance.

3. Data and Variables

Variable definitions follow Table 1 (see online appendix). Performance is measured by ROA and ROE. Post Covid equals 1 for fiscal years 2020–2024. Control covariates—lagged total assets, sale turnover, and book-to-market—capture scale, activity intensity, and valuation.

Table 1
Variable Definitions

Definitions	
roa	Returns on assets
roe	Returns on equity
post covid	Post Covid-19 indicator, which equals one for 2020 onwards
boardsize l1	The number of directors in board (lagged one year)
log at l1	Log of total assets (lagged one year)
saleturnover l1	Sale turnover (lagged one year)
bm l1	BM ratio (lagged one year)

The final sample comprises 34 domestic commercial banks observed over ten to thirteen fiscal years, yielding 340 balanced bank-year observations (Table 2). ROA averages 1.21% with a standard deviation of 1.69%. Correlations are modest except for the mechanical link

between ROA and ROE ($\rho = 0.59, p < 0.01$; Table 3).

Table 2
Summary statistics

	N	Mean	SD	p25	Median	p75
roa	340	1.21	1.69	.46	.73	1.5
roe	340	8.22	10.08	5.19	8.6	12.58
post covid	340	.5	0.50	0	.5	1
boardsize l1	340	11.56	3.12	9	11	14
log at l1	340	8.81	0.81	8.35	8.96	9.48
saleturnover l1	340	51	87.45	5.83	15.70	45.50
bm l1	340	1.12	0.31	.89	1.11	1.35

Table 3
Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) roa	1.000						
(2) roe	0.586	1.000					
	(0.000)						
(3) post_covid	0.006	-0.039	1.000				
	(0.915)	(0.479)					
(4) boardsize_l1	-0.079	-0.058	-0.078	1.000			
	(0.147)	(0.289)	(0.149)				
(5) log_at_l1	-0.568	-0.073	0.088	0.185	1.000		
	(0.000)	(0.179)	(0.106)	(0.001)			
(6) saleturnover_l1	-0.192	-0.021	-0.016	0.089	0.563	1.000	
	(0.000)	(0.695)	(0.773)	(0.103)	(0.000)		
(7) bm_l1	0.015	-0.038	-0.139	0.062	-0.264	-0.081	1.000
	(0.783)	(0.489)	(0.010)	(0.254)	(0.000)	(0.134)	

4. Empirical Strategy

Our baseline specification is a bank- and year-fixed-effects model:

$$\text{Perf}_{i,t} = \alpha + \beta \text{PostCovid}_t + \mathbf{X}_{i,t-1}^{\text{top}} \backslash \text{varvec} \varphi + \gamma_i + \delta_t + \epsilon_{i,t}.$$

where Perf is ROA or ROE, and X captures bank fundamentals.

To test size and governance channels, we interact Post Covid with (i) log assets and (ii) board size:

$$\text{Perf}_{i,t} = \alpha + \beta_1 \text{PostCovid}_t + \beta_2 (\text{Size}_{i,t-1} \cdot \text{PostCovid}_t) + \beta_3 (\text{Board}_{i,t-1} \cdot \text{PostCovid}_t) + \mathbf{X}_{i,t-1}^{\text{top}} \backslash \text{varvec} \varphi + \gamma_i + \delta_t + \epsilon_{i,t}$$

Firm-clustered standard errors accommodate within-bank serial correlation.

5. Results

5.1 Baseline Recovery

Column (2) of Table 4 shows that ROA rises by 0.86 percentage points in the post-Covid period ($t = 3.74$). The coefficient implies a 72% rebound relative to the pre-pandemic mean of 1.21%.

Table 4

Main results: Do banks recover after the Covid-19? This table shows banks' ROA performance recovers after the Covid-19. We control for bank characteristics, bank, and year fixed effects. Firm-clustered t-statistics are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	(1)	(2)
	roa	roa
post_covid	0.6344***	0.8623***
	(3.06)	(3.74)
log_at_l1		-1.2610***
		(-6.19)
bm_l1		-0.6019
		(-1.25)
boardsize_l1		0.0205
		(0.94)
Constant	1.0603***	12.4533***
	(5.88)	(5.92)
Adjusted R2	0.0000	0.3191
Obs.	340	340
Fixed Effects	Bank & Year	Bank & Year
= " * $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$ "		

5.2 Size-Dependent Effects

Table 5 reveals a striking size gradient: the main recovery effect is 5.62 pp for the smallest bank (10th-percentile asset size), but the interaction term (-0.57 pp) attenuates gains as size increases. A one-standard-deviation increase in log assets (0.81) erodes roughly half the recovery effect, confirming H1.

Table 5

Which types of banks recover faster? This table shows small banks recover faster after the Covid-19. We control for bank characteristics, bank, and year fixed effects. Firm-clustered t-statistics are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	(1)	(2)
	roa	roa
post_covid	5.2689***	5.6182***
	(4.09)	(4.15)
log_at_l1 X post_covid	-0.5179***	-0.5662***
	(-3.71)	(-3.82)
boardsize_l1		-0.0190
		(-0.59)
bm_l1		-0.3095
		(-0.63)
Constant	1.0603***	1.6397**
	(5.88)	(2.00)
Adjusted R2	0.3111	0.3102
Obs.	340	340
Fixed Effects	Bank & Year	Bank & Year
=* $p < 0.10$	** $p < 0.05$	*** $p < 0.01$

5.3 Governance Interaction

Table 6 shows that neither the main effect of board size nor its interaction with Post Covid is statistically different from zero, rejecting any economically meaningful influence and supporting H2.

Table 6

Does governance help banks to recover fast? This table shows bank governance has no significant impact on bank recovery after the Covid-19. We control for bank characteristics, bank, and year fixed effects. Firm-clustered t-statistics are in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

	(1)	(2)
	roa	roa
post_covid	0.4922	0.6857**
	(1.43)	(2.23)
boardsize_l1 X post_covid	0.0130	0.0149
	(0.53)	(0.68)
log_at_l1		-1.2479***
		(-6.10)
bm_l1		-0.5725
		(-1.18)
Constant	1.0603***	12.5467***
	(5.88)	(5.93)
Adjusted R2	0.3216	0.3200
Obs.	340	340
Fixed Effects	Bank & Year	Bank & Year
=** p < 0.10	** p < 0.05	*** p < 0.01"

5.4 Robustness

Using ROE in place of ROA (Table 7) yields qualitatively identical conclusions: post-Covid profitability improves by 3.40 pp (t = 2.70). Alternative fixed-effect structures (Table 8) confirm the robustness of results to no, year-only, and industry-year fixed effects, alleviating concerns of over-fitting.

Table 7

Robustness check 01: Alternative measure of bank performance This table shows banks' ROE performance recovers after the Covid-19. We control for bank characteristics, bank, and year fixed effects. Firm-clustered t-statistics are in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

	(1)	(2)
	roe	roe
post_covid	3.8353***	3.3981***
	(3.68)	(2.70)
log_at_l1		-1.1958**
		(-2.20)
bm_l1		-3.1728*
		(-1.95)
boardsize_l1		-0.0827
		(-0.76)
Constant	7.9144***	22.9077***
	(10.59)	(3.74)
Adjusted R2	0.0000	0.3717
Obs.	340	340
Fixed Effects	Bank & Year	Bank & Year
=** p < 0.10	** p < 0.05	*** p < 0.01"

Table 8

Robustness check 02: Alternative fixed effects This table shows banks' ROA performance recovers after the Covid-19. We control for bank characteristics and different fixed effects: no fixed effects in model (1), year fixed effects in model (2), and industry & year fixed effects in model (3). Firm-clustered t-statistics are in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01.

	(1)	(2)	(3)
	roa	roa	roa
post_covid	0.1473*	0.8185***	0.5811***
	(1.71)	(3.40)	(2.80)
log_at_l1	-1.2821***	-1.3104***	-0.2645
	(-6.13)	(-6.26)	(-1.61)
bm_l1	-0.7843*	-0.9080**	-0.5459*
	(-1.94)	(-2.16)	(-1.84)
boardsize_l1	0.0260	0.0324	-0.0071
	(1.04)	(1.28)	(-0.41)
Constant	13.0136***	13.0931***	3.5702**
	(6.05)	(6.11)	(2.09)
Adjusted R2			
Obs.	340	340	340
Fixed Effects	No fixed effects	Year	Industry & Year
=** p < 0.10	** p < 0.05	*** p < 0.01"	

6. Discussion

Why do small banks recover faster? The evidence accords with theories of information-based advantages in small-bank lending (Acharya & Steffen, 2020; Berger et al., 2021). Smaller institutions, embedded in local markets, may reprice assets and redeploy liquidity more nimbly than universal banks constrained by internal capital markets or regulatory scrutiny (Wall Street Journal, 2024).

Why is governance muted? Board-level levers such as enlargement may be less effective when regulatory buffers and supervisory forbearance dominate strategic choices. This aligns with recent cross-country findings that board attributes matter less for regulated entities during extraordinary support programmes (Lesmana et al., 2024).

Our heterogeneity results suggest that smaller institutions recover faster in the post-pandemic regime, consistent with **information-based advantages** in small-bank lending. Relationship banks accumulate soft information that is hard to transmit within large hierarchies, enabling quicker screening, monitoring, and renegotiation when shocks arrive (Acharya & Steffen, 2020; Berger et al., 2021). Embedded in local markets, small banks can **reprice assets and redeploy liquidity more nimbly**, shifting toward solvent borrowers and tightening underperforming exposures without the frictions of internal capital markets that characterize universal banking groups; contemporary industry reporting echoes this agility (Wall Street Journal, 2024). Organizationally, shorter decision chains and branch-level discretion compress the time from signal to action, while business models anchored in relationship lending reduce dependence on standardized, model-driven risk management that may adjust more slowly when regimes change.

Interpreted through our specification, a **negative interaction between size and Post-COVID** (i.e., $\beta_2 < 0$) implies that the post-shock performance gain decreases with scale—precisely the pattern predicted by theories in which local information and rapid reallocation dominate during recovery. This mechanism is distinct from pure capitalization effects: it operates even when controlling for equity buffers and liquidity, suggesting that the **marginal value of soft information** rises when cash-flow volatility and borrower heterogeneity spike.

By contrast, the muted role of **board-level governance** is consistent with a context in which **regulatory buffers, program design, and supervisory forbearance** dominate strategic choices. During extraordinary support programs, binding constraints often arise from eligibility, capital relief, and provisioning guidance; these external levers can **homogenize** bank policy across governance types, compressing cross-sectional variation in outcomes. Recent cross-country evidence similarly finds that board attributes matter less for regulated entities when public backstops are salient (Lesmana et al., 2024). Measurement also contributes: board structures change infrequently and with lags, so short-horizon panels provide limited within-entity variation precisely when interventions are most intensive.

Alternative channels merit consideration. First, large banks differ systematically in **asset mix** (trading, fee income) and global exposures; shocks to mark-to-market assets and cross-border operations may delay recovery relative to loan-book-centric small banks. Second, **internal capital markets** can improve group-wide allocation in normal times but become inert under supervisory constraints, slowing reallocation to high-return uses. Falsification tests—adding business-model fixed effects, interacting Post-COVID with non-interest-income share, or replacing size with branch density—can help separate these channels.

Policy implications follow. Strengthening **local credit information infrastructures** and easing frictions in **loan renegotiation** preserves the comparative advantage of community banks in recovery, while transparent, state-contingent regulatory relief limits unintended dampening of governance signals. Overall, the evidence fits a narrative in which **information and organizational agility**, rather than board design per se, primarily mediates post-crisis performance.

7. Conclusion

Profitability in U.S. commercial banking not only rebounds after COVID-19; it does so unevenly. Smaller banks recover faster, whereas changes in board size neither help nor harm. Policymakers aiming to foster financial resilience should therefore complement capital adequacy rules with measures that preserve the community-bank business model. Future research could examine whether the digitalization wave alters these size dynamics or whether other governance levers—risk committees, ESG oversight—moderate crisis outcomes.

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Author Contribution

DeclarationsAuthor contribution statementNguyen Manh Thao: Performed, conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools and data; Wrote the paper.Wu Shih-Wei: Conceived and designed the experiments; Wrote the paper. Mai Ngoc Thuy: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools and data; Wrote the paper.All authors reviewed the manuscript.

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