Too-many-to-ignore? Regional Banks and CRE Risks

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Motivation

Over the past decade, commercial real estate-secured credit increased to more than $6tn.

- This growth has been driven by regional banks.
- Regional banks now hold about one-third of U.S. commercial mortgage dollars.

Recent, commercial real estate (CRE) property revaluations raise questions on stability of these regional banks.

- Lower capital requirements and more lenient supervision may limit regional banks' ability to absorb losses.
- Limited disclosure requirements have stymied the assessment of potential risks

This Paper: Findings

To assess regional bank CRE risks, we build a novel loan-level data set from county records.

- Today, regional banks report less distress in their CRE loan books.
- Result of resilient valuations in regional bank core markets — not just underreporting.
- Still, risks may loom for some banks with large portfolios relative to capital.
- We identify at-risk banks in a sharp commercial property price drop scenario.

We document that regional banks are already lowering lending standards to roll over distressed loans, which may amplify downside risks.

Data Sources

Commercial Property Data: ICE (formerly Black Knight Financial Services)

- Mortgage, deeds, and assessor records from the near-universe of U.S. counties.
- Includes detailed loan information: loan amounts, lender identities, and borrower identities.
- Property-level information from assessor records include: lot size, # floors, building year, . . .
- We connect these records to bank regulatory filings and measure banks' CRE loan portfolios

Commercial Real Estate Valuations: MSCI (formerly Real Capital Analytics)

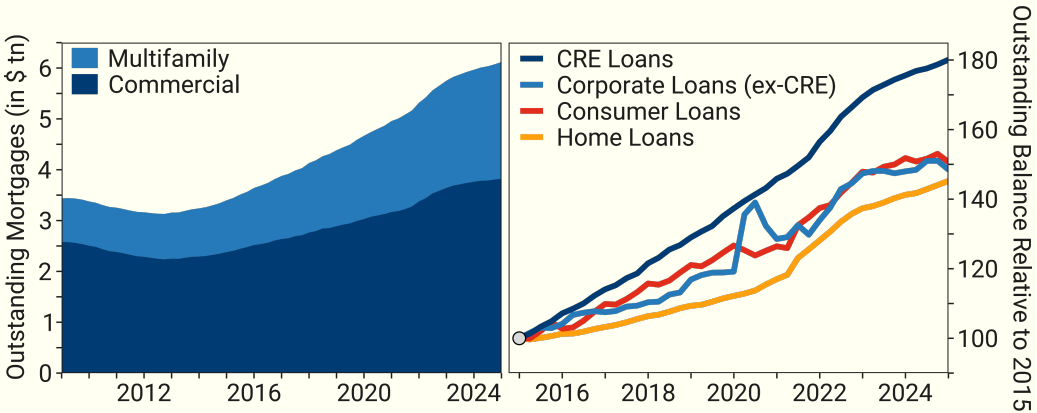
- Sector (office, retail, industrial, multifamily)-location commercial property price indices estate price movements.

Bank Balance Sheets: Call Reports, FR Y-9C

Related Literature

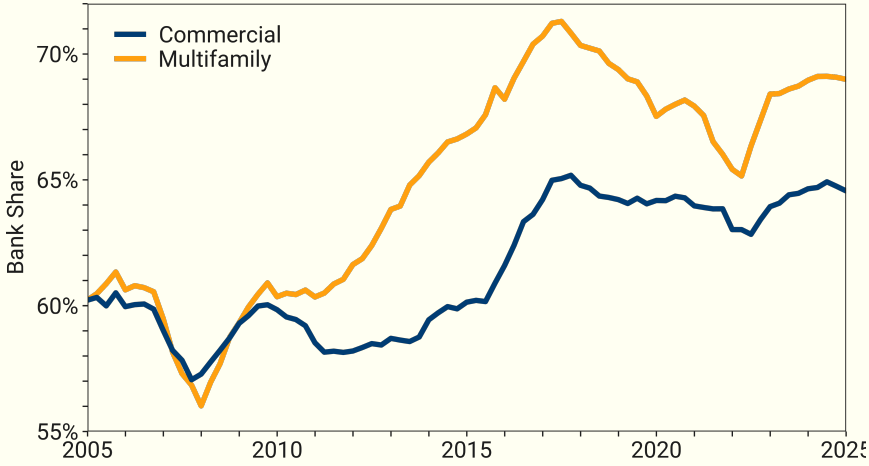
- Crosignani and Prazad (2024) argue that among large banks, the weakly capitalized ones exert zombie-lending-like behavior towards distressed CRE borrowers
- Gupta, Mittal, and Van Nieuwerburgh (2024) show that work-from-home shifts led to declines in office property valuations.
- Anenberg, Kim, and Moszkowski (2024) and Glancy and Kurtzman (2024) study how bank distress relates to changes in the workplace towards increased remote work
- Acharya, Gopal, Jager, and Steffen (2024) explore the connection between banks and commercial real estate markets via credit line exposure to REITs

Commercial Real Estate (CRE) Secures More Than $6tn of Loans



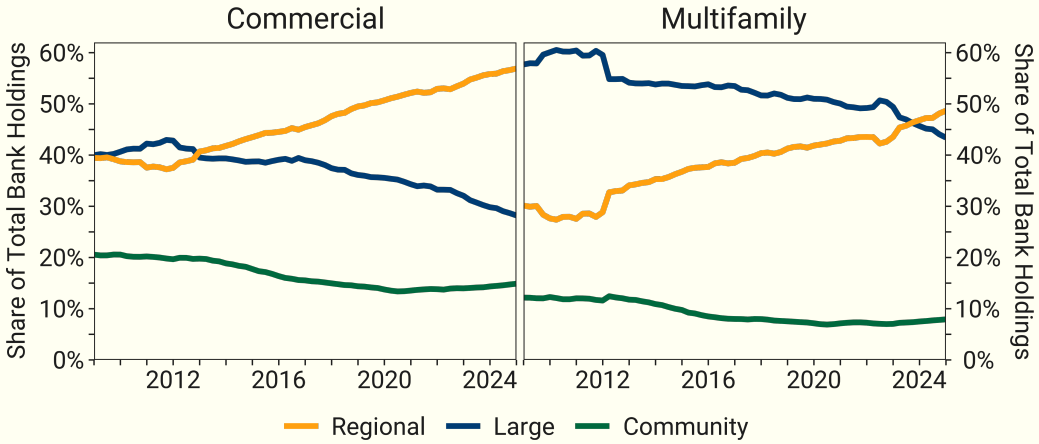
Source: Federal Reserve Financial Accounts of the United States (Z.1)

In CRE Credit Markets, Banks Defied the Rise of Nonbanks



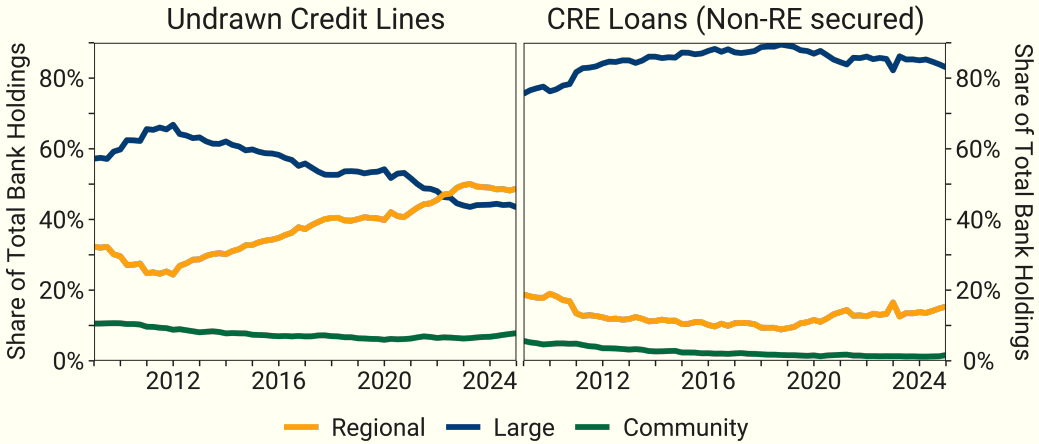
Source: Federal Reserve Financial Accounts of the United States (Z.1)

Regional Banks Account for Most of Bank CRE Credit Growth



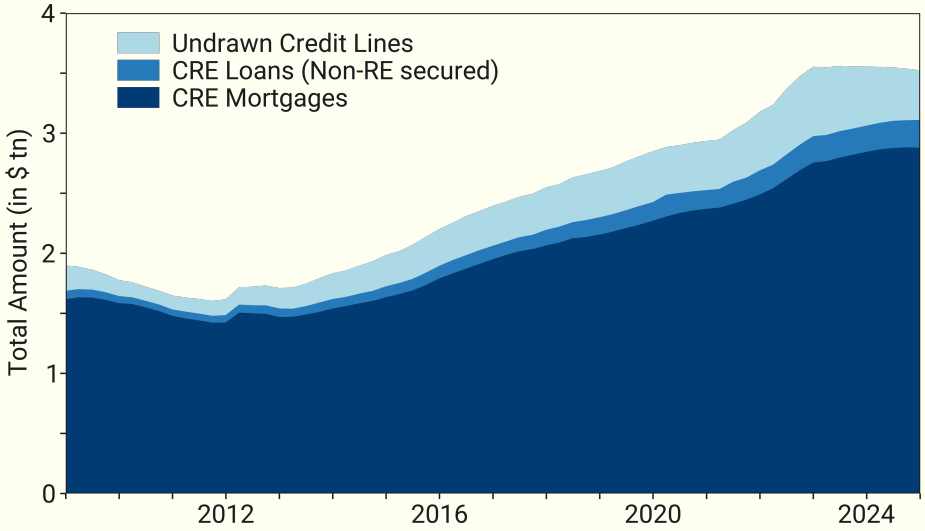
Source: Call Reports

Even for Credit Lines Regional Banks Have Outpaced Large Banks



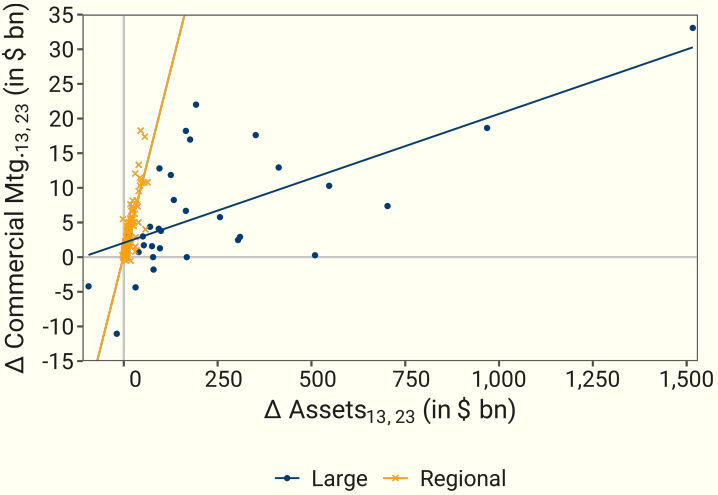
Source: Call Reports

Most of Bank CRE Lending is Secured with the CRE Property



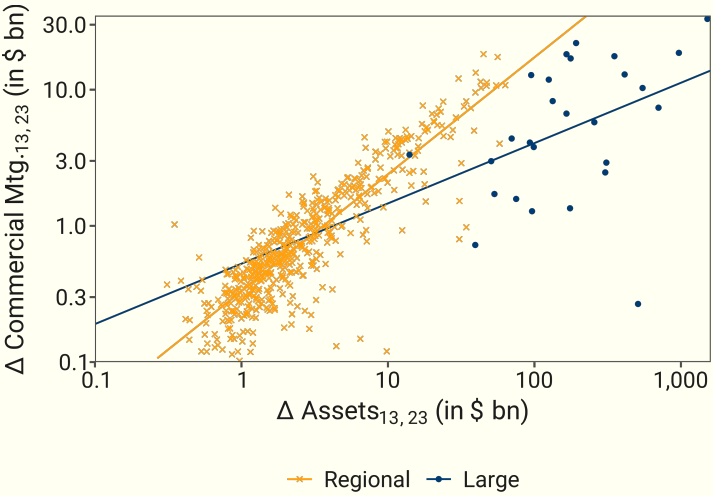
Source: Call Reports

Regional Banks Deployed New Assets Towards CRE at a 10-times Higher Rate Than Large Banks



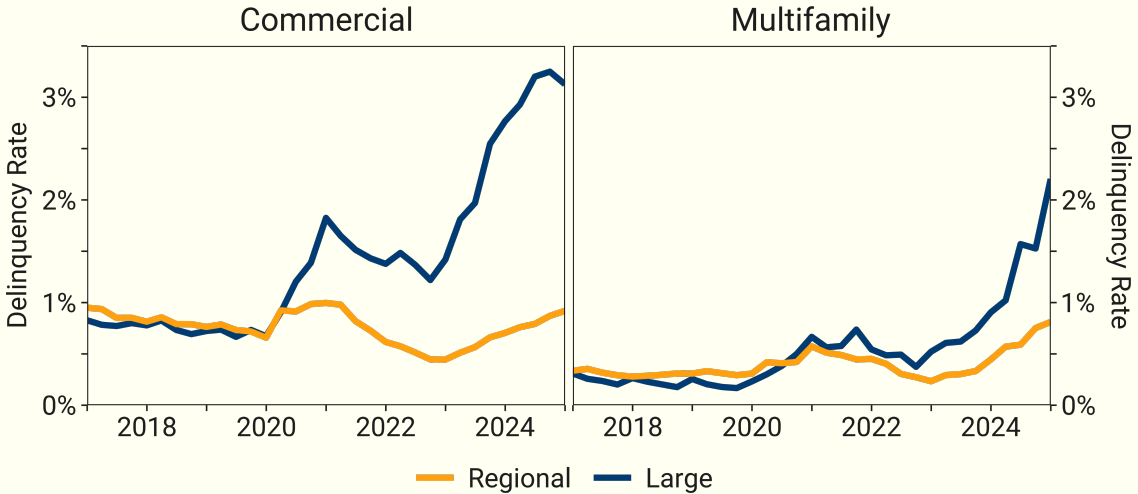
Source: Call Reports

Regional Banks Deployed New Assets Towards CRE at a 10-times Higher Rate Than Large Banks - Log Scale



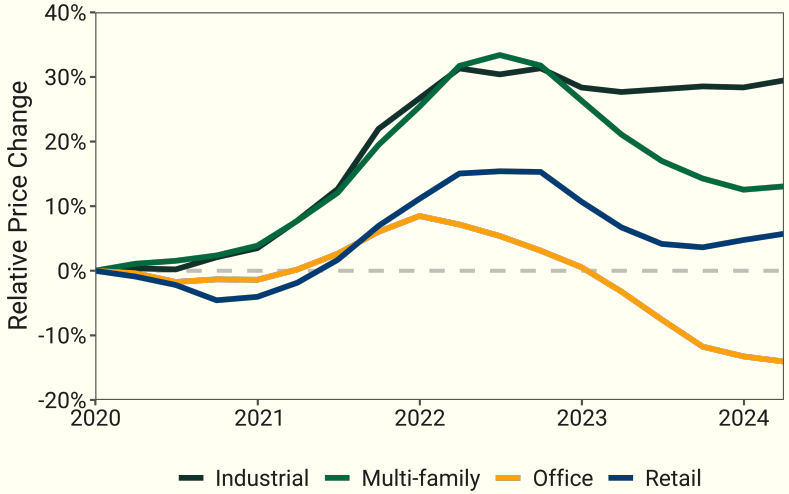
Source: Call Reports

Large Banks Report Significantly Higher Realized Distress



Source: Call Reports

Commercial Property Revaluations Differ Drastically by Sector

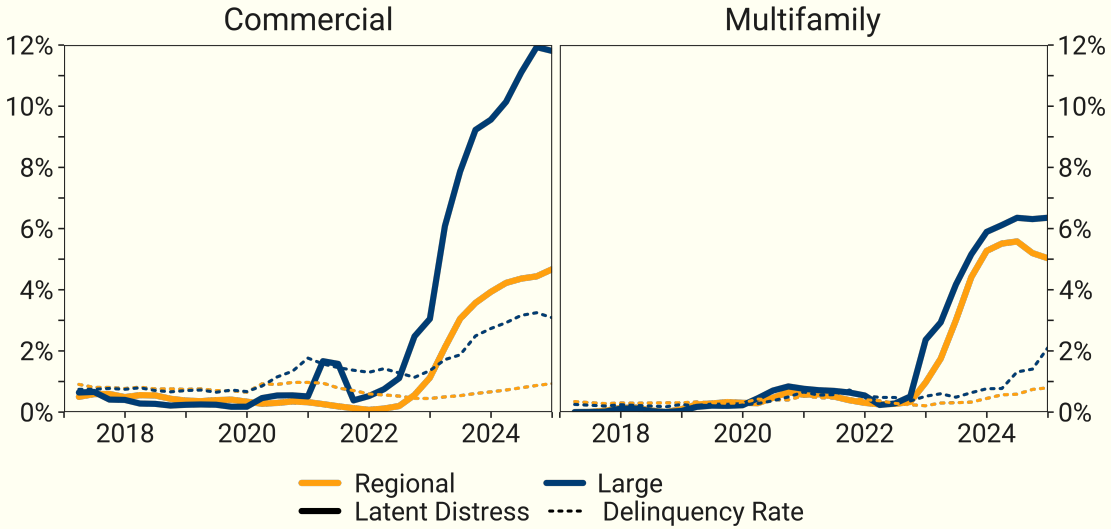


Source: RCA

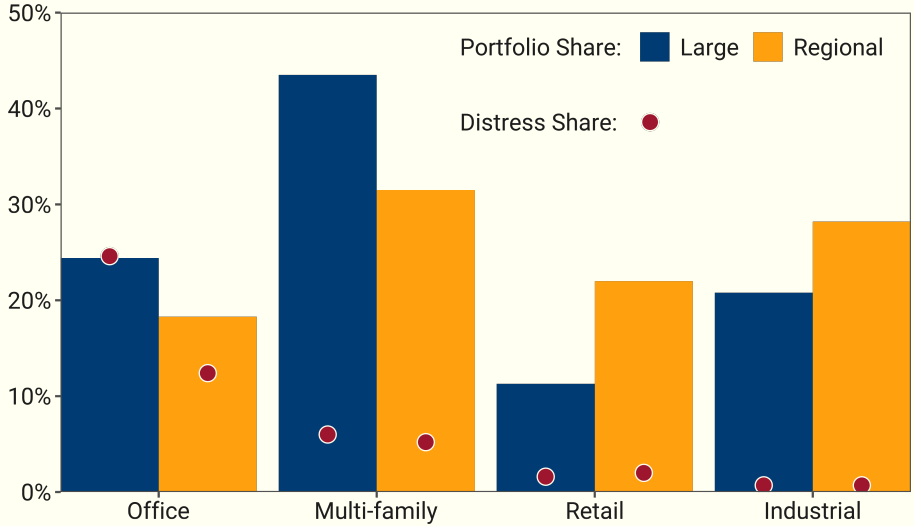
Measuring Latent Distress

- We measure loan-to-value ratios at origination from property transaction prices and from mortgage records.
- Then, we estimate current valuations based on a set of granular sector-location property price indices.
- Define undercollateralized loans, i.e., LTV > 95%, as distressed.
- We find a positive link between latent distress and subsequent loan delinquencies.

Latent Distress Significantly Exceeds Reported Realized Distress



Regional Banks Are Less Exposed to Worst Performing Markets



Empirical Specification Distress Loan by Bank Type

- To decompose distress in banks' CRE mortgage portfolios by origination time, property sector, and location, we estimate

$$\text{Distress}_{l,24Q3} = \beta \text{Regional}_{b(l)} + \mu_{t_0(l)m(l)} + \varepsilon_l, \tag{1}$$

  where
  - $\text{Distress}_{l,24Q3}$ is an indicator equal to 1 if loan l has a current LTV above 95%,
  - Regional_b is an indicator equal to 1 if bank b is a regional bank, and
  - $\mu_{t_0 m}$ is an origination quarter times market (location-sector) fixed effect.

- Standard errors are two-way clustered at the bank- and the market-level.

CRE Loan Distress in Regional and Large Banks

	$\mathbb{1}\{\text{Distressed}_{24Q3}\}$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	0.073***	0.098***					
	(10.279)	(8.496)					
Regional		-0.052***	-0.054***	-0.035***	-0.021*	-0.005	-0.003
		(-4.328)	(-4.809)	(-3.598)	(-1.844)	(-0.759)	(-0.712)
Orig. Quarter FE	–	–	Yes	–	–	–	–
Sector FE	–	–	–	Yes	–	–	–
Location FE	–	–	–	–	Yes	–	–
Market FE	–	–	–	–	–	Yes	–
Orig. Quarter-Market FE	–	–	–	–	–	–	Yes
Weighting	Dollar	Dollar	Dollar	Dollar	Dollar	Dollar	Dollar
Observations	140,244	140,244	140,244	140,244	140,244	140,244	138,239
R^2		0.010	0.040	0.090	0.165	0.300	0.571

Regional bank CRE mortgage portfolios less exposed to distressed loans (50% less)
Location explains approximately 2/3 of difference to large banks. Sector captures remaining 1/3.

Capitalization and CRE Loan Distress in Regional Banks

	$\mathbb{1}\{\text{Distressed}_{24Q3}\}$								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	0.046***	0.063***		0.033***	0.047***		0.032***	0.038***	
	(15.440)	(4.746)		(17.403)	(5.666)		(16.971)	(8.043)	
Tier 1 Ratio_{21Q4}		-0.129	-0.190**		-0.106*	-0.137***		-0.039	-0.144***
		(-1.272)	(-2.111)		(-1.756)	(-3.079)		(-1.231)	(-2.736)
Orig. Quarter-Market FE	–	–	Yes	–	–	Yes	–	–	Yes
Weighting	Dollar	Dollar	Dollar	Unweighted	Unweighted	Unweighted	Bank	Bank	Bank
Bank Sample	Regional	Regional	Regional	Regional	Regional	Regional	Regional	Regional	Regional
Observations	74,765	74,765	72,875	74,765	74,765	72,875	74,765	74,765	72,875
R^2		0.000	0.423		0.000	0.324		0.000	0.361

Regional banks with higher tier 1 capital ratios hold fewer distressed loans

Latent Distress Potentially Understates Regional Bank Risk

- Estimated distress may **understate** true risk for regional banks
- If regional banks hold relatively more lower-quality properties, price drops may be more pronounced for these banks
- Highlights importance of understanding heterogeneity in property exposures

Property Characteristics by Bank Type: Age

	(1)	(2)	(3)	(4)	Very Old (5)	(6)	(7)	(8)	(9)
Constant	0.055***	0.045***		0.094***	0.087***		0.097***	0.080***	
	(21.445)	(16.413)		(33.059)	(22.619)		(37.757)	(17.765)	
Regional		0.021***	0.017***		0.013***	0.015***		0.020***	0.015***
		(5.831)	(5.061)		(2.925)	(3.578)		(3.694)	(3.025)
Orig. Quarter-Market FE	–	–	Yes	–	–	Yes	–	–	Yes
Weighting	Dollar	Dollar	Dollar	Unweighted	Unweighted	Unweighted	Bank	Bank	Bank
Observations	126,257	126,257	124,226	126,257	126,257	124,226	126,257	126,257	124,226
R^2		0.002	0.148		0.001	0.068		0.000	0.132

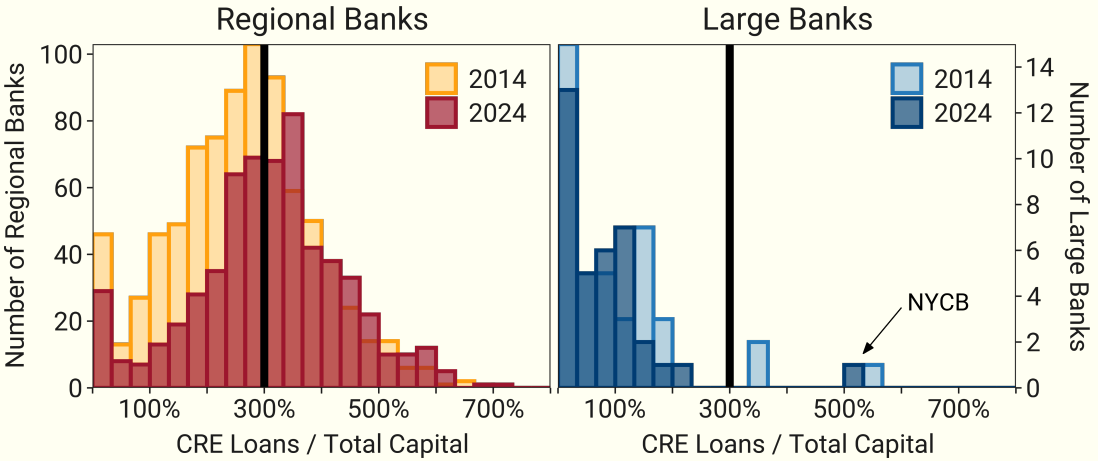
Regional banks are significantly more likely to fund older properties (top-decile by age) within a market

Property Characteristics by Bank Type: Net Effective Rent

	ln NER_{21Q4}								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	5.554***	5.621***		6.192***	6.482***		5.816***	6.230***	
	(11.098)	(7.530)		(12.059)	(9.112)		(22.869)	(14.271)	
Regional		-0.186	-0.034*		-0.791	-0.017		-0.576	0.012
		(-0.222)	(-1.804)		(-1.000)	(-0.971)		(-1.080)	(0.710)
Orig. Quarter-Market FE	–	–	Yes	–	–	Yes	–	–	Yes
Weighting	Dollar	Dollar	Dollar	Unweighted	Unweighted	Unweighted	Bank	Bank	Bank
Observations	31,646	31,646	29,845	31,646	31,646	29,845	31,646	31,646	29,845
R^2		0.001	0.984		0.014	0.983		0.006	0.985

Regional banks exposed to slightly lower NER properties within a market

Regional Bank CRE Risk Exposure Increased Over the Last Decade



Source: Call Reports

Stress Test: CRE Revaluation Scenarios

To identify potentially vulnerable banks, we perform CRE-based stress tests.

- Revalue commercial property *i* under scenario with uniform relative price drop, ℓ:

$$\text{Stressed Value}_i = \text{Value}_i\,(1 - \ell)$$

- Implied loss given default from distressed loan secured by *i* incl. 5% bankruptcy cost:

$$\text{Implied Loss}_i = \max\{\text{Loan Amount}_i - 0.95 \times \text{Stressed Value}_i, 0\}$$

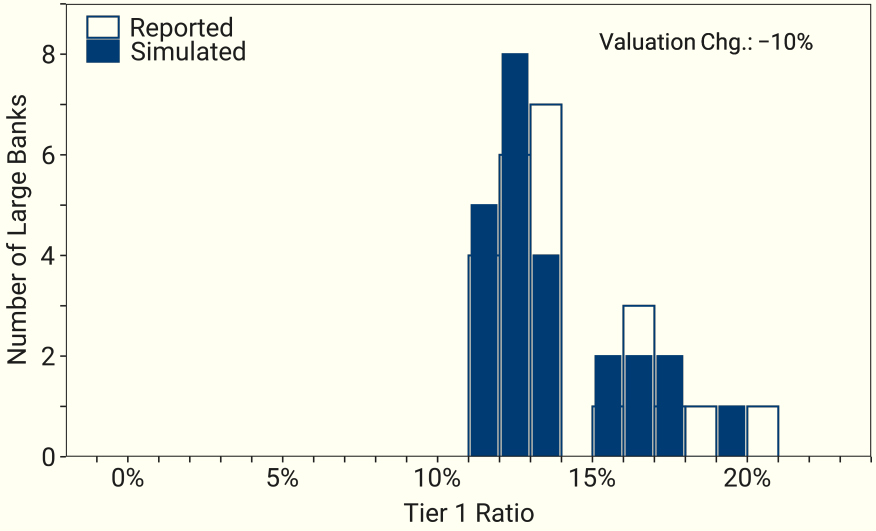
- For each bank b, estimate average loss per dollar in CRE loan portfolio I_b:

$$\text{Loss Rate}_b = \sum_{i \in I_b} \text{Implied Loss}_i / \sum_{i \in I_b} \text{Loan Amount}_i$$

- Estimate stressed tier 1 capital ratio:

$$\text{Stressed Tier 1 Ratio}_b = \frac{\text{Tier 1 Capital}_b - \text{Total CRE Loans}_b \times \text{Loss Rate}_b}{\text{RWA}_b - \text{Total CRE Loans}_b \times \text{Loss Rate}_b}$$

Large Bank “Simulated” Tier 1 Capital Ratios



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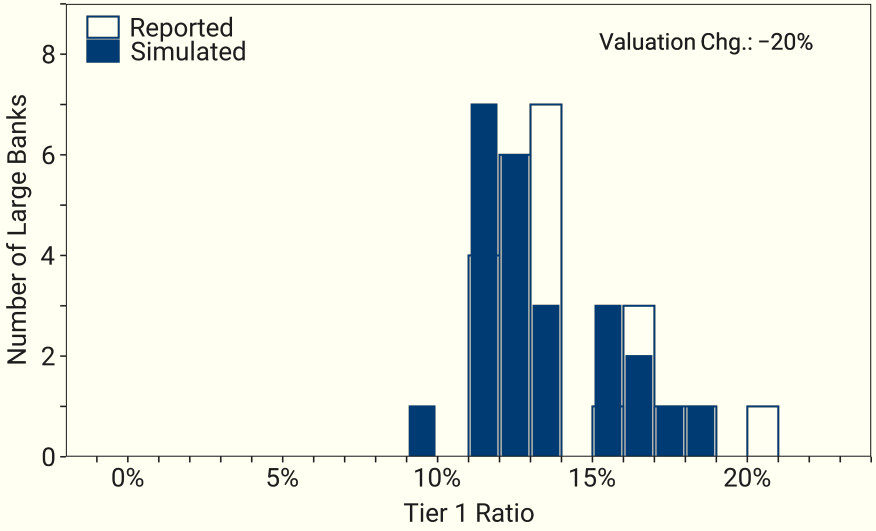

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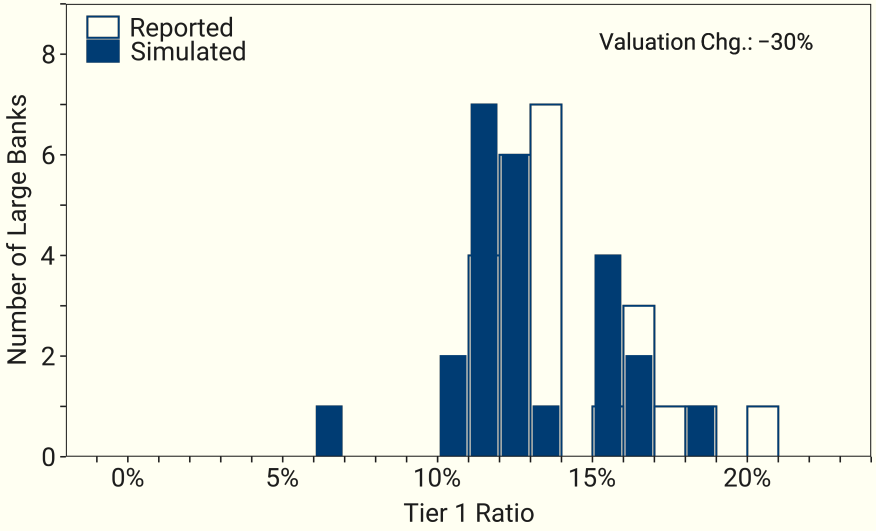

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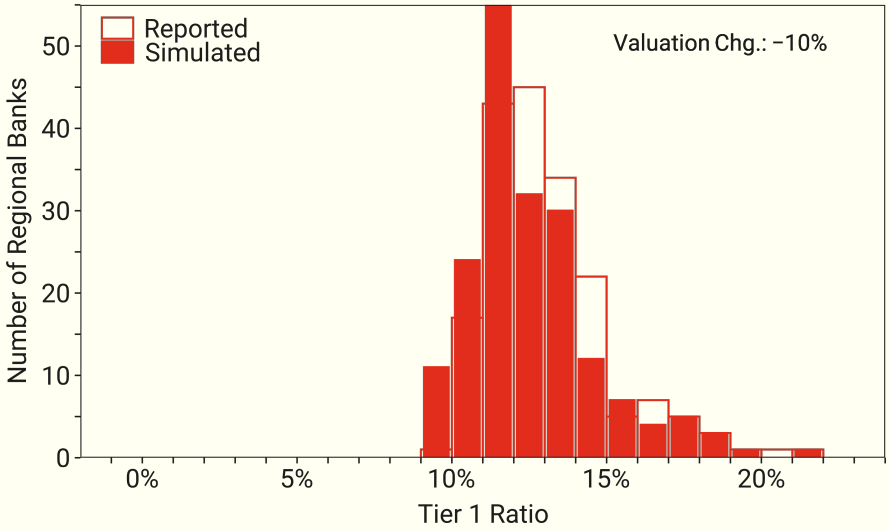

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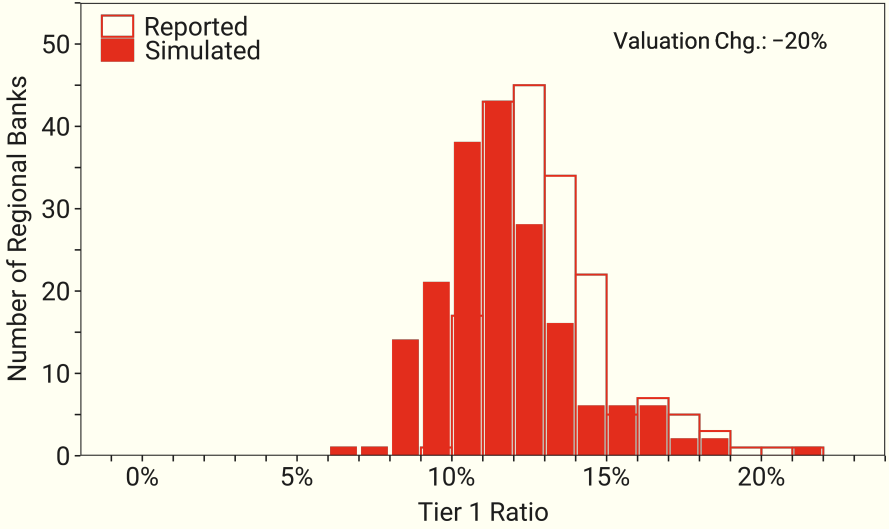

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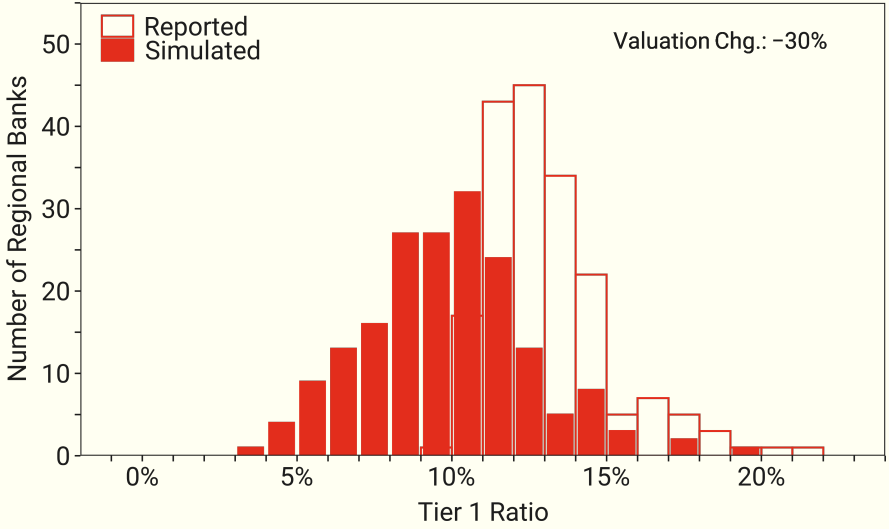

Characteristics of Banks at Risk of Becoming Undercapitalized

Bank	Type	Assets	CRE Loans	Tier 1 Ratio (in %)		Top RCA Geography	Top RCA Sector
		(in $ bn)	(in $ bn)	Current	Stressed		
A Bank	Regional	2.4	1.4	11.5	3.5	Los Angeles/OC (65.7%)	Multifamily
B Bank	Regional	2.3	1.1	13.0	4.1	NYC/Long Island (77.6%)	Multifamily
C Bank	Regional	5.5	2.6	10.8	4.1	Tertiary Mid-Atlantic (63.3%)	Office
D Bank	Regional	5.9	2.7	10.6	4.4	DC (46.1%)	Retail
E Bank	Regional	3.9	1.7	10.0	4.5	Tertiary Southeast (56.1%)	Retail
F Bank	Regional	4.7	2.3	11.8	4.7	Boston (75.1%)	Industrial
G Bank	Regional	5.4	2.1	10.7	5.0	Tertiary Mid-Atlantic (52.2%)	Multifamily
H Bank	Regional	3.2	1.4	10.8	5.2	Tertiary Southeast (33.4%)	Office
I Bank	Large	114.3	46.6	11.9	5.6	NYC/Long Island (38.4%)	Multifamily
J Bank	Regional	2.5	1.5	10.4	5.7	Los Angeles/OC (57.3%)	Multifamily
K Bank	Regional	4.2	1.6	11.3	5.7	Tertiary Southeast (63.8%)	Retail
L Bank	Regional	5.5	2.3	11.0	5.7	Tertiary Mid-Atlantic (58.3%)	Office
M Bank	Regional	7.7	3.9	13.2	5.8	Los Angeles/OC (40.4%)	Retail
N Bank	Regional	4.9	2.1	10.9	5.8	Tertiary Southeast (75.2%)	Retail
O Bank	Regional	4.1	1.9	11.7	5.9	Tertiary Midwest (36.8%)	Retail
P Bank	Regional	13.7	8.7	13.6	6.0	NYC/Long Island (67.4%)	Multifamily
Q Bank	Regional	2.2	1.4	16.0	6.0	DC (54.3%)	Office
R Bank	Regional	3.4	1.6	10.5	6.1	Tertiary Northeast (54.5%)	Retail
S Bank	Regional	9.3	3.9	11.3	6.1	Chicago (48.1%)	Multifamily
T Bank	Regional	2.2	1.3	10.7	6.2	Atlanta (69.0%)	Retail
U Bank	Regional	2.8	1.7	12.4	6.4	Atlanta (68.3%)	Industrial
V Bank	Regional	4.7	2.6	13.1	6.5	Minneapolis (89.7%)	Multifamily
W Bank	Regional	14.9	5.6	12.5	6.5	Los Angeles/OC (23.6%)	Industrial
X Bank	Regional	9.2	5.0	12.7	6.5	Los Angeles/OC (62.6%)	Multifamily
Y Bank	Regional	11.2	6.2	14.4	6.5	DC (77.5%)	Office
Z Bank	Regional	3.0	1.0	10.8	6.5	Philadelphia (54.9%)	Multifamily
AA Bank	Regional	2.3	1.1	9.8	7.1	Columbus (45.9%)	Multifamily

Note: Undercapitalized banks and tier 1 ratio in 30% CRE price-drop scenario.

Characteristics of Banks at Risk of Becoming Undercapitalized

Bank type: *Flagstar Bank*, the New York Community Bancorp successor institution, is the only “large” bank among among banks most at risk.

Sector exposure: disproportionately tilted towards multifamily and retail.

Geographic concentration: at-risk banks banks have geographically concentrated loan portfolios, with 40–90% tied to a single region.

$\Rightarrow$ Concentrated exposure in regional banks could amplify localized shocks and contribute to systemic fragility.

Loan Distress and Lending Behavior

- To assess the impact of loan distress on loan outcomes, we estimate

$$\text{Loan Outcome}_{ibmt} = \beta \text{Loan Distress}_{it} + \gamma_{bmt} + \varepsilon_{ibmt},$$

  where:
  - $\text{Loan Outcome}_{ibmt}$ denotes loan outcomes at time t for mortgage i in location-sector (market) m and bank b
  - Distress_{it} is an indicator that equals one for mortgages with LTV > 95%
  - γ_{bmt} is market m, bank b and quarter t fixed effect.

- Two-way clustered standard errors clustered at bank- and location-sector-level.

We Find No Significant Effects on Extensive Margin of Refinancing

	Refinanced		
	(1)	(2)	(3)
Distressed	0.024	0.076	0.046
	(0.273)	(1.012)	(0.322)
Distressed × Regional			0.054
			(0.324)
Date FE	Yes	–	–
Bank-Location-Sector-Date FE	–	Yes	Yes
Observations	5,971,073	5,833,308	5,833,308
R^2	0.002	0.050	0.050

Refinanced is a dummy equal to one for loans that are refinanced in a given quarter

In Refinancing, Regional Banks Require Fewer Equity Contributions

	Equity Contribution		
	(1)	(2)	(3)
Distressed	0.260***	0.238***	0.311***
	(7.776)	(6.897)	(11.202)
Distressed × Regional			-0.162***
			(-4.055)
Date FE	Yes	–	–
Bank-Location-Sector-Date FE	–	Yes	Yes
Observations	117,429	80,166	80,166
R^2	0.004	0.285	0.285

Equity Contribution is a dummy equal to one if the new loan is smaller than the one outstanding

Conclusion

- Regional banks have significantly expanded their presence in the CRE lending market.
- Their concentrated exposure poses potential financial stability risks, particularly commercial property values continue to decline.
- More stringent regulatory oversight and capital requirements may be necessary to mitigate systemic risks.
- Work-in-progress:
  - Property-level price variation based on valuation model in the spirit of Koijen, Shah and Van Nieuwerburgh (2025)
  - Why did regional banks end up in markets that performed better?