Too-many-to-ignore: Regional Bank CRE Risk and Externalities

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Abstract

Over the past decade, the share of commercial real estate loans held by regional banks increased significantly. Today, these banks are the largest holders of commercial mortgages and account for more than 40% of U.S. holdings on aggregate. Recent declines in commercial property valuations have raised concerns that regional banks' loan exposure to this asset class may cause fractures in the banking system and spill over to the wider economy. Despite the risk of such externalities the role of regional banks in this market has received little attention so far. This project aims to provide a comprehensive account of regional bank loan portfolio composition. We measure the externalities to local economies stemming from disruptions in the CRE market as a result of a wider shift to remote work.

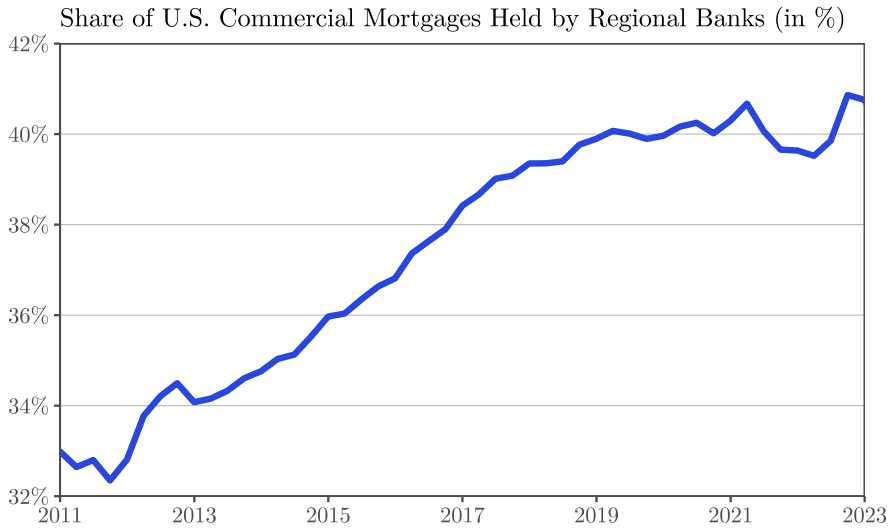
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1 Research Objective

Across most loan markets, banks have conceded market shares to nonbank financial institutions following the financial crisis (Buchak, Matvos, Piskorski, and Seru, 2024). Yet, in the commercial mortgage market,[1] banks have defied the rise of nonbank lenders. The share of commercial real estate loans on bank balance sheets increased from 56% in 2012 to 61% in 2022. Nonetheless, this broad trend masks considerable heterogeneity across banks. Strikingly, the share of commercial real estate loans held by the 40 largest banks, who account for 73% of bank assets, fell over the same period. Rather, this growth stems from small-to-medium sized banks ("regional banks"). These banks now hold 41% of U.S. commercial mortgages.

Despite their size, regional bank lending in the commercial mortgage market has received only limited attention. Instead, the literature has so far focused on the largest banks for which regulators mandate detailed disclosures of their commercial mortgage holdings. With this proposed research project, we aim to fill this gap. We are the first to systematically study the loan portfolios of these market players and to characterize the importance of regional banks for the commercial real estate market.



This figure plots the dollar share of U.S. commercial mortgages held by regional banks. The total balance of commercial mortgages comes from Flow of Funds Table L.220. We calculate bank commercial mortgage balance as the sum of holdings by U.S.-chartered depository institutions, foreign banking offices in the U.S., and banks in U.S. affiliated areas. We calculate regional banks holdings by their share in nonresidential nonfarm loans reported in Call Reports.

To start, we begin by analyzing regional banks' commercial mortgage portfolios. Here, we ask whether banks possess a potential information advantage over competitor lenders in their local economies. Specifically, we investigate the extent to which regional banks specialize their commercial mortgage lending along geography (Herpfer, Mjøs, and Schmidt, 2023; Petersen and Rajan, 2002) or tenant industry (Blickle, 2022; Paravisini, Rappoport, and Schnabl, 2023). Subsequently, we study whether concentration in their commercial mortgage portfolios leaves regional banks exposed to loan losses. Such losses may inhibit these banks from providing further credit. Credit supply cuts may then induce further reductions in demand for commercial properties. Lastly, we scrutinize whether contractions in regional bank credit provisions affects other bank borrowers and ultimately spills over to the wider

[1] For this proposal, we refer only to the nonfarm nonresidential part of the commercial real estate market.

economy.

Further, this research is relevant to regulators. In recent policy discourse over fears of post-pandemic valuation adjustments, concerns over bank commercial mortgage exposure have surfaced. The Federal Reserve Board (2023) notes in their October financial stability report that "*the largest banks are well positioned to withstand a severe recession and contraction in CRE markets.*" In contrast, "*a correction in office property valuations [...] could result in significant losses for a range of financial institutions with sizable exposures, including some regional and community banks [...] which may reduce their willingness to supply credit.*"

2 Methodology

Regional bank exposure to commercial real estate may have aggregate implications for the financial stability of the banking sector and the economy in general. However, measuring this effect is complicated for at least two reasons: First, while many financial market participants have been subjected to increased transparency and data disclosure requirements, regional banks have largely resisted this trend. Consequently, there exists no readily available disaggregated information on regional bank lending activity that may allow researchers and policymakers to understand the scope and depth of the geographical exposure of regional banks to the CRE market. Second, identifying any effect from this exposure is hard as local economic factors that could affect the CRE loan market may simultaneously affect bank lending directly. Such factors would bias resulting estimates absent an empirical design that can isolate this effect.

Bank Geographical Exposure

To address the so far limited data availability and to granularly study regional banks' commercial real estate lending, we employ novel data from county records documenting liens on commercial real estate. We match regulatory data from bank call reports to these records. For each bank b and geography (or tenant industry) g at time t, we estimate the share of the bank's loan portfolio from that geography, $loanshare_{bgt}$, as the share of balances matched in public county records.

We start by documenting the extent to which regional banks' loan portfolios are geographically diversified. To this end, we calculate the share of CRE loans from a given regional bank in a given local market (county, metropolitan area, etc.). After computing these aggregate shares, we further decompose the share of CRE loans into loans from locations close and far from the bank's main operating area. This allows us to provide the first systematic description of the regional bank exposure at a disaggregated level.

The Work-from-home Shift and Regional Bank's Balance Sheet

To overcome the second challenge, we utilize geographical heterogeneity in the extent to which workplaces shifted to work-from-home (WFH) as a result of the recent pandemic. Specifically, we follow Mondragon and Wieland (2022) and calculate the share of remote work pre-pandemic using the 2020 American Community Survey (ACS). This metric aims to capture the ex-ante likelihood that a given local market suffers a increase in employees working from home which may translate into lower demand for office real estate. Using this metric we will use the pandemic as a shock to office utilization on the lending behavior of regional banks in the main area of operation. Specifically, we estimate

$$\Delta\text{Lending}_{bt} = \beta DistantCRE_{bgt} \times \text{WFH exposure}_{g} + \phi_{gt} + \varepsilon_{bt},$$

where the $\Delta Lending_{bt}$ denotes the change in lending of bank b between time $t-1$ and t. $DistantCRE_{bgt}$ is a dummy equal to 1 if the bank b has a loan in geography g at time t and this geography is far from bank b's main operating area. WFH exposure$_g$ is the exposure of geography g to the WFH shift. ϕ_{gt} are geography-time fixed effects.

Our coefficient of interest is β. This coefficient captures the effect of regional banks' exposure to distant commercial real estate deals that were affected by WFH changes, and therefore will measure the elasticity of bank lending to CRE demand shocks. Our identifying assumption is that local economic factors that cause the drop in demand from CRE loans are uncorrelated with factors affecting the demand for credit in the bank home operating market. For example, if a regional bank is located in region A, which mainly relies on the manufacturing industry, and this bank has loans which finance offices in far-away region B, we assume that the drop in demand for office space in region B is uncorrelated with the local manufacturing economy and lending demand in region A.

Furthermore, using the advantage of our granular measure of geographical exposure, we can refine the previous empirical specification and estimate

$$\Delta\text{Lending}_{bt} = \beta loanshare_{bgt} \times \text{WFH exposure}_g + \phi_{gt} + \varepsilon_{bt},$$

where $loanshare_{bgt}$ is the exposure to loans coming from geography g, and effectively estimates the previous specification using an intensity of treatment effect.

Second, we would like to understand the role of this geographical exposure and the impact on the banking sector's bank balance sheet and financial stability by looking at the effect on defaults. For this we will estimate

$$\text{CRE Defaults}_{bt} = \beta loanshare_{bgt} \times \text{WFH exposure}_g + \phi_{gt} + \varepsilon_{bt},$$

where CRE Defaults$_{bt}$ is the amount of bank b's CRE loans in default at time t.

The aim is to understand the magnitude of the effect of this shock to be able to quantify aggregate implications for the banking system stemming from its exposure to the commercial real estate market.

Externalities of CRE exposure

Regional banks are an important engine of the local economies that they are part of. Thus a natural extension will be to investigate the aggregate effects from the previous specification. In order to quantify this aggregate effect, we look at different indicator of local economic activity at the regional level, while aggregating the distant effect at the market level.

3 Data

Commercial Property Data. Commercial property data comes from Black Knight Financial Services ("Black Knight") which is a part of Intercontinental Exchange. Black Knight collects these data from public records at county-level offices. In total, their data cover almost 50 million records from more than 99% of U.S. counties.

In the U.S., a lender must make their interest public to be considered a secured party. For loans secured by real estate, this filing occurs at the county level. Important to our study, this record provides detailed loan-level information including the lender identity, the borrower identity, and the

loan amount. In addition to this information, Black Knight collects data on the transfer or release of these liens, and on properties' pre-foreclosure notices. Jointly, this allows us to assign new commercial real estate loans to lenders and track lenders' commercial real estate loans over time.

Furthermore, Black Knight collects property-level data from county assessor's offices and ownership data from county deeds registries. The former assessment data includes for example a property's address, lot size, number of floors, assessed value and market value estimated by the assessor. The latter deeds data covers for each sale the buyer and the seller identity, the date at which the sale took place, and the sales price. All loan records can be matched to these data. Moreover, the assessment and deeds data cover the universe of commercial properties, including those properties that do not have a lien on them.

Black Knight further supplements their public records data with privately collected information. Since 2011, Black Knight identifies tenants and their industry. This information allows Black Knight to flag owner-occupied buildings. Lastly, Black Knight provides several cleaned variables. One particularly useful variable, identifies unique lenders, which may differ from the raw lender information for reasons such differences as spelling.

The use of public records data in this project provides a significant innovation to the literature. The majority of research on commercial real estate lending is based on data from (a) reports by securitization conduits such as CMBS (e.g., Glancy, Kurtzman, and Loewenstein, 2022, who use Trepp data), (b) insurers' regulatory filings with the National Association of Insurance Commissioners (e.g., Glancy, Krainer, Kurtzman, and Nichols, 2022), or (c) capital assessment and stress testing reports made by the very largest banks via Form FR Y-14Q (e.g., Black, Krainer, and Nichols, 2020).[2] Research on other nonbank financial institutions and regional banks has been scarce due to limited data availability. This constitutes an important gap in this literature as these lenders jointly account for the majority of CRE loan holdings.

Bank Financial Data. Bank financial data comes from the Consolidated Reports of Condition and Income ("Call Reports") and from the Consolidated Financial Statements for Holding Companies ("Form Y-9C"). All commercial banks with offices in the U.S. are required to submit bank-level balance sheet, income statement, and supplemental information through Call Report Forms FFIEC 031, FFIEC 041, and FFIEC 051 at each quarter end. Similarly, all U.S. bank holding companies with consolidated assets above $3 billion must submit consolidated bank holding-level balance sheet, income statement, and supplemental information through Form FR Y-9C. As both Call Reports and Form FR Y-9C are standard data sources for financial research, we refrain from a more detailed discussion.

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[2]One notable exception to this is Ghent and Valkanov (2016) who use real estate transaction data on debt-financed transaction in Boston, Las Vegas, Los Angeles, and New York City.

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Conflict of Interest Statement

Franz Hinzen does not have any conflicts of interest with respect to the proposed work. In particular, Franz Hinzen has no financial, or other, interests that might bear on the proposed work. Franz Hinzen does not have any ties to financial institutions or other firms that may be affected by the proposed research.

Felipe Severino does not have any conflicts of interest with respect to the proposed work. In particular, Felipe Severino has no financial, or other, interests that might bear on the proposed work. Felipe Severino does not have any ties to financial institutions or other firms that may be affected by the proposed research.

Policy Implication Paragraph

Over the past decade, regional banks' share of commercial real estate (CRE) loans has increased significantly. Currently, these banks are the largest holders of commercial mortgages, collectively accounting for more than 40% of U.S. CRE holdings. Despite their substantial role, the impact of regional banks on the CRE market has received limited attention, particularly concerning the potential externalities their geographical exposure could have on financial system stability. This project aims to provide a comprehensive analysis of the loan portfolio composition of regional banks and evaluate the externalities on local economies resulting from potential disruptions in the CRE market, especially those linked to the shift in demand driven by the remote work trend. By understanding these dynamics, policymakers can better anticipate and mitigate risks to financial stability and local economic health.

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Research Interests

Financial Intermediation, Banking, Corporate Finance, FinTech, Blockchain Economics

Working Papers/ In-progress

Nonbank Market Power in Leveraged Lending

Loan Sales and Zombie Lending

Corporate Loan Pricing over the Credit Cycle
(with Anthony Saunders and Sascha Steffen)

Relationship (Non-)banking
(with Max Jager)

Local Bank Exposure to National Commercial Real Estate and the Local Economy
(with Felipe Severino)

Does Quantitative Tightening Have Real Effects?
(with David Elliott and Julia Selgrad)

Publications

Bitcoin's Limited Adoption Problem
(with Kose John and Fahad Saleh)
Journal of Financial Economics, May 2022, Vol. 144(2), pp. 101–126

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2024 (incl. scheduled)
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2023
Dartmouth College (Tuck); University of Kentucky (Gatton); Frankfurt School of Finance & Management; Fordham University (Gabelli); IESE Business School; International Risk Management Conference; Gerzensee Summer Workshop on Money, Banking, Payments, and Finance; CEPR/Bundesbank/Goethe University/Frankfurt School Conference on Regulating Financial Markets; CEPR New (and Old) Challenges to Financial Intermediaries Conference; Dolomites Summer Finance Conference

2022
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American Economic Association; Midwest Finance Association; University of Connecticut Finance Conference

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Invitation: NBER Blockchain Conference
Invitation: Finance Theory Group Summer School
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Publications

"Credit Supply and House Prices: Evidence from Mortgage Market Segmentation" with Manuel Adelino and Antoinette Schoar, 2023. ***Journal of Financial Economics,*** *Conditionally Accepted*

"How do Consumers Fare when Dealing with Debt Collectors? Evidence from Out-of-court Settlements" with Ing-Haw Cheng and Richard Townsend. ***Review of Financial Studies***, Volume 34, Issue 4, April 2021, pages 1617-1660. Editor's Choice

"The Role of Housing and Mortgage Markets in the Financial Crisis" with Manuel Adelino and Antoinette Schoar. ***Annual Review of Financial Economics*****,** 2018, Volume 10

"Dynamics of Housing Debt in the Recent Boom and Bust" with Manuel Adelino and Antoinette Schoar. ***NBER Macroeconomics Annual*** 2017*,* Volume 32

"Loan Origination and Default in the Mortgage Crisis: The Role of the Middle Class" with Manuel Adelino and Antoinette Schoar. ***Review of Financial Studies*****,** Volume 29, Issue 7, pages 1635-1670, July 2016. Editor's Choice

"House Prices, Collateral and Self-Employment" with Manuel Adelino and Antoinette Schoar. ***Journal of Financial Economics****,* Volume 70, Issue 5, pages 1583-1638, August 2015

Working Papers

"Personal Bankruptcy Protection and Household Debt" with Meta Brown and Rajashri Chakrabarti, 2023 R&R ***Review of Financial Studies***
"Perception of House Price Risk and Homeownership" with Manuel Adelino and Antoinette Schoar, 2023

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Review of Financial Studies Michael J. Brennan Best Paper Award Runner Up	2021
"Loan Originations and Defaults in the Mortgage Crisis: The Role of the Middle Class", July, 2016 Editor Choice	2017
NBER Entrepreneurship Grant	2016
NBER Household Finance Grant	2011, 2016
MIT Sloan Finance Group Award	2012
MIT Sloan Arnoldo Hax Fellow	2010
Chilean Board of Engineering. Best Chilean Industrial Engineering Student	2008
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