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# Commercial Real Estate: How Vulnerable Are U.S. Banks?

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ACCESS TO  
CAPITAL

# INTRODUCTION AND BACKGROUND

## Key Messages

- Banks engaged in commercial real estate (CRE) lending on average are less risky now than they were before the 2008 Great Financial Crisis. Since the crisis, bank CRE lending has shifted away from the riskier category of construction lending and toward relatively safer loans for nonresidential commercial property and multifamily housing. Since the crisis, many of the banks that did not modify their past CRE lending strategies and practices have failed.
- Nevertheless, many banks with large CRE loan portfolios remain vulnerable, especially small and medium-sized banks where lending is likely to be geographically concentrated. CRE lending as a share of total assets among medium-sized banks has grown beyond pre-crisis levels. Consequently, as deregulation reduces scrutiny of these banks, they may become increasingly susceptible to risks stemming from the highly cyclical and relatively volatile CRE sector.
- It is likely that harmful spillover effects from banks' CRE lending exposures also are geographically concentrated. Localized risks may be greatest in places with relatively high dependence on local banks for funding—generally smaller towns—and among those banks where capital has not kept pace with the rapid growth in CRE lending.

## INTRODUCTION

During the 2008 Great Financial Crisis and ensuing recession, bank concentration in commercial real estate lending proved to be the single best predictor of bank failures.<sup>1</sup> Ten years after the crisis, a closer examination of banks' exposures to CRE is in order. Banks are increasing their CRE exposure as signs of another robust boom in CRE activity become evident in many markets nationwide. At the same time, regulatory scrutiny over all but the largest banks is about to ease following Congress' passage of new legislation amending the restrictive Dodd-Frank regulations.

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<sup>1</sup> Cole and White (2012); Federal Deposit Insurance Corporation (FDIC) (2012); U.S. Government Accountability Office (GAO) (2013).

## INTRODUCTION AND BACKGROUND

The CRE market is inevitably cyclical and more volatile than other sectors, so this paper focuses on three sources of vulnerability stemming from CRE lending: (1) increased concentration of CRE loans at small and medium-sized banks, (2) the changing composition of bank CRE lending, and (3) the shifting geographic concentration of bank CRE lending. While there are other sources of funds fueling CRE activity, banks are of special interest because they are systemic (i.e., banks' economy-wide connectedness allows sectoral shocks to be transmitted more broadly) and are an important source of capital for financing economic activity.<sup>2</sup>

Recognizing CRE lending practices as an inherent source of bank risk and vulnerability, bank supervisors and regulators have examined and highlighted them since the 1980s. Back then, a bust in the CRE market after a prolonged lending spree contributed to the failure of thousands of banks and thrifts.<sup>3</sup> Later, regulatory scrutiny intensified as banks' CRE concentrations grew in the early-to-mid-2000s.<sup>4</sup> This culminated in formal guidance issued jointly by the Office of the Comptroller of the Currency (OCC), the Federal Reserve Board (FRB) and the Federal Deposit Insurance Corporation (FDIC) in 2006, which warned about the dangers of concentrated bank CRE lending, especially when accompanied by poor risk management.<sup>5</sup>

The warning was prescient: When the crisis hit, both the concentration in CRE lending and the quality of bank risk management proved to be key determinants of bank failure.<sup>6</sup> Now, a decade later, rising bank CRE lending concentration levels and historically high CRE prices warrant reintensified regulatory scrutiny. For example, in March 2018, newly

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<sup>2</sup> The main transmission channels between the financial system and real economic activity identified in the literature are generally referred to as the borrower balance sheet channel, the bank balance sheet channel (sometimes subdivided into the bank lending channel and the bank capital channel), and the (bank) liquidity channel. The Basel Committee on Banking Supervision (BCBS) (2011) surveys this literature, and BCBS (2012) overviews policy implications of the various channels. Davis and Zhu (2004) develop a theoretical model and provide empirical evidence of dynamic linkages specifically between the CRE sector, bank credit, macroeconomic conditions, and financial stability.

<sup>3</sup> An overview of the role of CRE exposures in the banking crises of the 1980s and early 1990s is provided by the FDIC (1997).

<sup>4</sup> An overview of the conditions that led to increased concern on the part of regulators in the 2000s is provided by the Congressional Oversight Panel (2010). One example of such concern is when Donald E. Powell, then chairman of the FDIC, singled out CRE exposure as a source of risk in remarks that seem freshly relevant today: "The performance of commercial real estate loans has remained historically strong during the past three years.... When the tide of low interest rates and heavy fiscal stimulus recedes, we'll see some vulnerabilities exposed that are currently hidden from view." (FDIC 2004).

<sup>5</sup> OCC, FRB, and FDIC (2006).

<sup>6</sup> Cole and White (2012) find that capital ratios, asset quality, earnings, and liquidity were all associated with a lower probability of bank failure but that the strongest early predictors were concentrations in the three main types of CRE loans (given below); in contrast, concentrations in single-family mortgages were either neutral or associated with a lower probability of failure. The FDIC (2012) grouped community banks by lending specialty and found that CRE specialists had a greater propensity to fail between 1985 and 2011 than any other group (with commercial and industrial [C&I] specialists coming in a close second).

## INTRODUCTION AND BACKGROUND

appointed Federal Reserve Chairman Jerome Powell identified elevated asset prices as an “area of focus” for the Fed and singled out “commercial real estate prices in certain markets” as an area of vulnerability.<sup>7</sup>

Our analysis shows that changes in bank CRE lending practices have limited—but not eliminated—the risks to the banking system. Moreover, CRE concentrations at the bank level have risen significantly in the last five years. CRE lending as a share of total bank assets is approaching the crisis peak, but the composition of banks’ CRE loans has shifted away from the riskiest category (construction loans) toward less risky categories (loans secured by nonresidential commercial and multifamily residential property).

Contrary to conventional wisdom, many of the communities most vulnerable to CRE shocks are those dependent on small and medium-sized banks, not just big cities with “hot” commercial real estate markets. A closer look at banks’ exposures to CRE shows vast differences among large and small banks and across regions. Balance sheets of medium-sized banks and smaller community banks are disproportionately exposed to CRE. Furthermore, with relatively small geographic footprints, such banks are especially vulnerable to conditions in local real estate markets where there are few alternative sources for CRE lending. This implies that bank supervisors and regulators must be more vigilant in overseeing CRE lending and refocus attention on medium-sized and smaller banks with concentrated lending in key local markets. Emerging threats to financial stability from CRE bubbles and excessive lending may be gathering at the local level.

The remainder of this paper covers background on the different categories of CRE loans and their issuance by big vs. smaller U.S. commercial banks. It then explores changes in CRE concentrations at the bank level and addresses geographic concentration of banks with high CRE exposures at the city level. The final section offers conclusions drawn from the analysis.

### BACKGROUND

CRE loans reflect the characteristics of three very different and highly volatile and cyclical activities they fund: nonresidential commercial developments, multifamily housing, and construction.<sup>8</sup> Outstanding CRE loans in the U.S. totaled at least \$4.5 trillion as of the end

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<sup>7</sup> Powell (2018). Also in March 2018, the GAO issued a report requested by Congress to assess trends in banks’ exposure to CRE and regulators’ actions regarding risk management practices of high-exposure banks (a follow-up to GAO [2011]).

<sup>8</sup> In addition to the three main types of CRE loans that are defined by the type of property that secures the loan, there are loans to finance CRE or construction projects that are not secured by real estate (“unsecured CRE loans”). This category is

## INTRODUCTION AND BACKGROUND

of 2017, or 22.3 percent of GDP, which is comparable in size to the historically high level of outstanding nonfinancial corporate bonds (\$5.3 trillion) but much smaller than the \$10.6 trillion of single-family mortgages.<sup>9</sup>

**Nonresidential commercial (“commercial”) loans** are the largest category of CRE lending and account for the majority of outstanding CRE loans. Commercial loans as a share of GDP declined sharply in the aftermath of the financial crisis and recently have stabilized at 2005 levels (just below 14 percent). Since 2012, the volume of commercial loans has grown rapidly and at the end of 2017 totaled \$2.74 trillion, which is above its previous peak in 2008 (Figure 1a). Banks hold most of the outstanding nonresidential commercial loans, but life insurance companies, asset-backed securities (ABS) issuers, and real estate investment trusts (REITs) hold substantial amounts as well. Some commercial loans are secured by owner-occupied property and are serviced using income earned by the owner’s business conducted on the property, whereas the bulk of commercial loans are secured by nonowner-occupied property and are serviced using rental income. In both cases, a decline in the value of the property is an important source of risk for the lender.<sup>10</sup>

**Multifamily residential loans** have grown the most rapidly and now exceed their crisis peak both in absolute volume and relative to GDP (Figure 1b). Since 2008, government-sponsored enterprises’ (GSEs) holdings of multifamily mortgages have grown the most. GSEs hold more of these loans on their balance sheets than the banking system itself. Both banks and private ABS issuers scaled back their activities during the crisis. Since 2013, banks have returned aggressively into multifamily lending. Robust millennial and retiree demand for urban multifamily housing are among the key influences driving this category of loan growth over the last decade.<sup>11</sup> The owner of a multifamily property

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generally omitted when CRE loans are disaggregated by loan type because they are a relatively small part (as of March 2018 about \$123 billion, comprising 5.7 percent of total bank CRE loans). Exact definitions of CRE lending vary; for example, some exclude construction loans or loans backed by owner-occupied property. This paper adopts an inclusive definition in order to build a relatively comprehensive assessment of concentrations in these related types of lending. However, the quantitative thresholds used to categorize banks by their level of exposure exclude loans secured by owner-occupied property to conform to regulatory guidance. Fessenden and Muething (2017) provide an overview of the risk factors of the three main types of CRE lending and some recent trends, summarizing an internal study at the Federal Reserve Bank of Richmond.

<sup>9</sup> The \$4.5 trillion lower bound estimate is based on Federal Reserve Z.1 data for nonresidential commercial and multifamily loans held by all sectors of the U.S. economy and FDIC data on construction and unsecured CRE loans held by commercial banks and thrifts; it does not include any construction or unsecured CRE loans held by entities other than commercial banks or thrifts, due to lack of data. “Single-family” mortgages are defined as those secured by one- to four-family properties; the term “multifamily” applies to properties with five or more units.

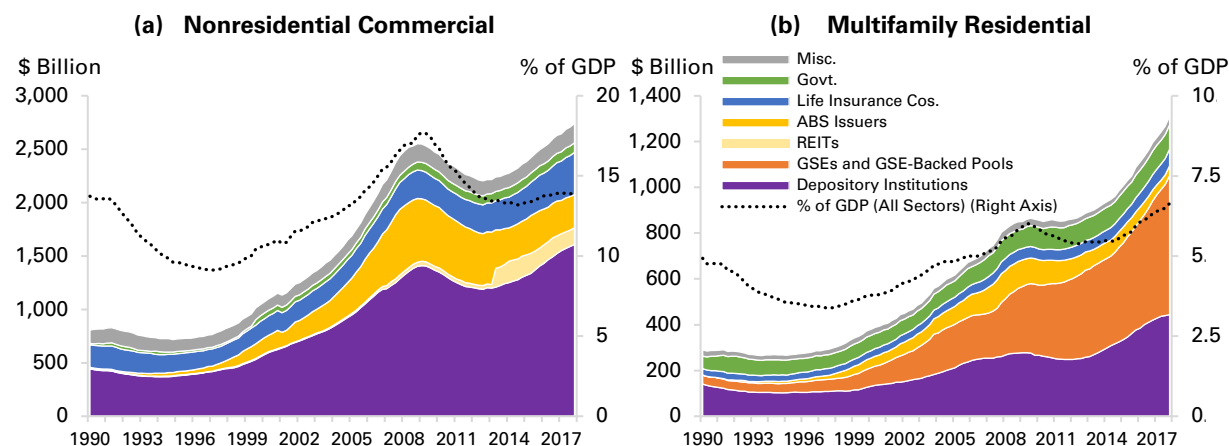
<sup>10</sup> Loans secured by nonowner-occupied properties accounted for 61 percent of total nonresidential commercial loans held by commercial banks as of March 2018. Delinquency rates for owner- and nonowner-occupied commercial loans differ only moderately, peaking during the crisis at 5.1 percent and 6.1 percent, respectively (based on FDIC call report data).

<sup>11</sup> Since 2016, however, there have been signs of softening. For example, as of March 2018 the homeownership rate for the U.S. was 64.2 percent, up from a mid-2016 trough of 62.9 percent, which was the lowest rate since 1965 (having declined

## INTRODUCTION AND BACKGROUND

services the loan using income from renting out the units. Therefore, some of the main risks faced by the lender are declines in rental prices and property prices. Such risks may materialize if the incipient millennial movement to the suburbs materializes and is not offset by the reverse flow by retirees.

**Figure 1. CRE Loan Volumes by Sector of Holder and Loan Type (Excluding Unsecured and Construction\*), 1990-2017**



Source: Federal Reserve Z.1 Flow of Funds (quarterly; March 1990–Dec. 2017).

Notes: “Depository institutions” includes U.S.-chartered commercial banks, thrifts, and U.S.-chartered commercial banks’ international banking facilities (IBFs). Foreign banks’ branches are instead included in “Misc.” \*Construction and unsecured CRE loans are excluded because they are not broken down by sector of holder in the flow of funds data.

**Construction loans** are the most volatile and risky category of CRE loans. Their duration is typically only a year or two and they are usually repaid by a new, longer-maturity loan secured by the finished property.<sup>12</sup> Risks to the initial and rollover stages of the loan stem from frequent delays and sometimes the cancellation of construction projects. Loan delinquencies and defaults are common due to the cycle of booms and busts inherent to the construction industry. Since 2015, construction loans have been generally classified by regulators as “high-volatility commercial real estate” (HVCRE) and carry a 150 percent risk weight with regard to capital requirements, up from 100 percent before the change.<sup>13</sup> Total volumes of banks’ construction loans have not recovered significantly since the

from a 2004 peak of 69.2 percent) (data from the U.S. Census Bureau). Moreover, a 2016-2017 revival of suburbanization and movement away from major coastal metro areas is shown by Frey (2018).

<sup>12</sup> The new loan used to pay off the construction loan is generally a nonresidential commercial, multifamily, or single-family mortgage, depending on the type of property, and is frequently from a different lender. In some cases, the construction loan and mortgage are packaged as a single, two-phase deal called a “rollover loan” or “all-in-one loan.”

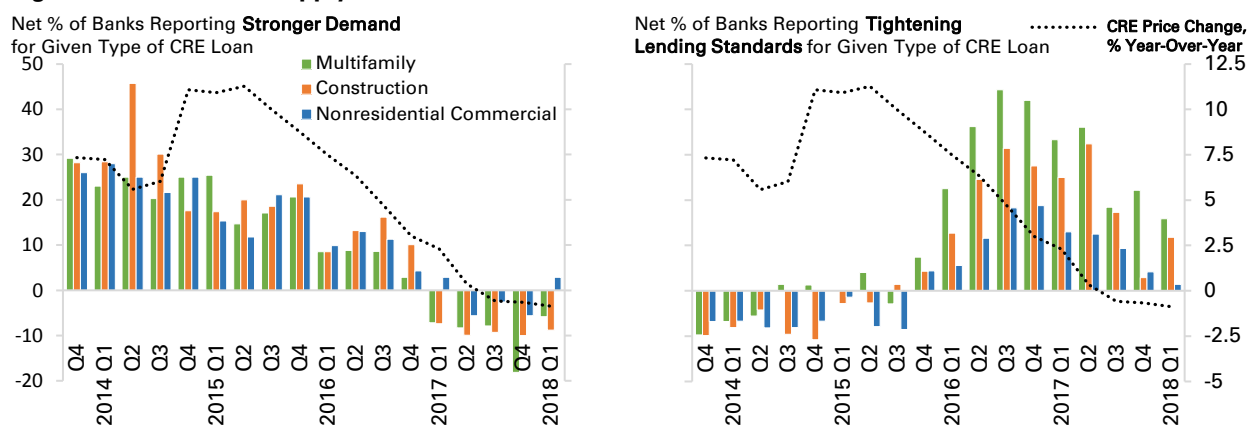
<sup>13</sup> The current HVCRE regulations at the time of writing are part of the capital rules codified by the OCC and FRB (2013). An amendment (“Capital requirements for certain acquisition, development, or construction loans”) intended to clarify the definition of HVCRE loans was signed into law as part of the Bipartisan Banking Act in May 2018; meanwhile, an overhaul of the rules has been proposed by the OCC, FRB, and FDIC (2017) that would simplify and expand the definition of loans subject to the elevated risk weight and reduce the weight from 150 percent to 130 percent.

## INTRODUCTION AND BACKGROUND

crisis (Figure 3a). There have been numerous reports of nonbanks—such as private equity funds—moving into construction lending to fill the void left by banks.<sup>14</sup>

Recently, the demand for CRE bank loans has moderated, and banks have been tightening their lending standards across all types of CRE lending (Figure 2). The slowing and plateauing of CRE prices during the last two years has raised concerns that another bust may be imminent following the pronounced boom in commercial development since 2012. Some commercial loans associated with retail shopping seem to be under particular pressure due to competition from e-commerce.<sup>15</sup> As traditional retailers scramble to redirect resources to their new online platforms, many find that they may be poaching sales from their own brick-and-mortar stores and that cost savings are elusive.<sup>16</sup> Still, substantial segments of brick-and-mortar retail businesses remain robust. The companies most likely to successfully navigate the ongoing transition may be those that pursue a customer-centric “omni-channel” strategy with stores as a key component.<sup>17</sup> It remains to be seen how the performance of loans to this sector plays out for lenders. At the same time, apartment rental prices rose markedly in several metro areas over the last decade, and there are signs of widespread overheating in valuations. In any case, cyclical downturns in CRE markets are inevitable. Such continuing boom-bust cycles are the main reason for maintaining strict regulatory and supervisory vigilance over bank CRE exposure.

**Figure 2. Demand and Supply Conditions for Bank CRE Loans**



Sources: Federal Reserve Senior Loan Officer Survey, Green Street Advisors Commercial Property Price Index.

Note: The Senior Loan Officer Survey results are for a sample of domestic banks. The beginning quarter, 2013Q4, was selected because this is when the relevant questions about CRE lending were first regularly included in the surveys.

<sup>14</sup> For example, see Hagerty (2010) and Mulholland and Perlberg (2016).

<sup>15</sup> For an example of a news article on ongoing problems for shopping malls in particular, see Lash and Wiltermuth (2016).

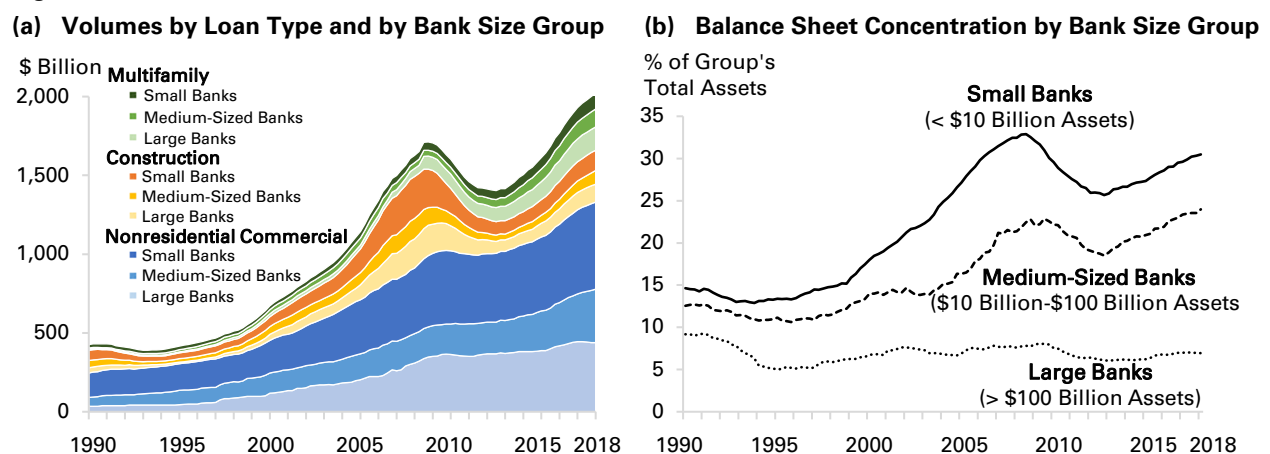
<sup>16</sup> Cheris, Rigby, and Tager (2016).

<sup>17</sup> Ibid.

# CRE EXPOSURE RISES AMONG SMALL AND MEDIUM-SIZED BANKS

Since the crisis, small and medium-sized banks collectively have maintained their dominance in CRE lending, especially in the smaller-sized loan market.<sup>18</sup> Small and medium-sized banks (those with assets of \$10 billion or less, and \$10 billion–\$100 billion, respectively) account for 62 percent of all CRE loans held by banks (Figure 3a). Small banks alone account for 60 percent of nonresidential commercial loans of less than \$1 million.<sup>19</sup> Moreover, CRE lending makes up a large part of small banks’ balance sheets as a group, currently more than 30 percent, which is close to their crisis peak; and 24 percent of the balance sheets of medium-sized banks, exceeding their crisis peak (Figure 3b).

**Figure 3. CRE Loans on Commercial Banks’ Balance Sheets, 1990-2018**



Source: Author’s calculations from FDIC call reports for U.S.-chartered commercial banks (March 1990–March 2018).

Note: Size classification is based on a given bank’s maximum total assets from 1976 through March 2018 (see Footnote 18).

In contrast, the largest banks (those with assets of more than \$100 billion) hold just 38 percent of all bank CRE loans despite the fact that they account for 70 percent of assets overall. For these large banks, CRE loans make up only 7 percent of their total assets. This implies that additional supervisory and regulatory focus on CRE-lending-related risks and vulnerabilities should be targeted toward the small and medium-sized banks.<sup>20</sup>

<sup>18</sup> Throughout the paper, small banks are defined as U.S. commercial banks that have never had more than \$10 billion of total assets throughout their history since 1976; medium-sized banks are those that have had more than \$10 billion but never more than \$100 billion; and large banks are those that have had more than \$100 billion. Size groups are constructed this way so that a bank never switches from one size group to another, making comparisons over time relatively stable. Because banks generally grow over time, size groupings generally match banks’ most recent levels of total assets.

<sup>19</sup> Small banks’ collective share of small nonresidential commercial loans for \$1 million or less rose from 55 percent in 2008. Call reports do not break down other types of CRE loans by loan size, but they do for C&I loans. For comparison, small banks accounted for 36 percent of C&I loans of less than \$1 million at the end of 2017, down from 44 percent in 2008. Brainard (2015) provides a brief overview of the evolving role of community banks’ provision of small-business credit.

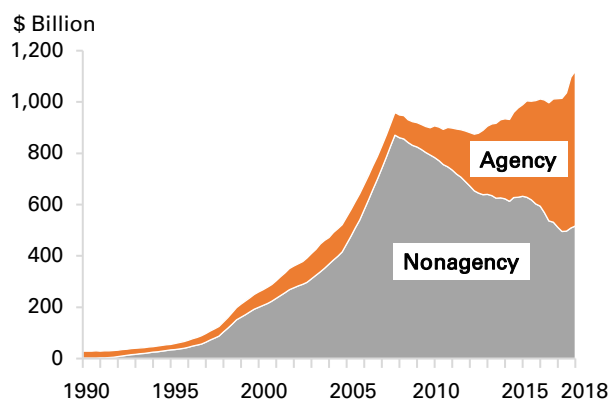
<sup>20</sup> A discussion of how Dodd-Frank regulations and related supervisory initiatives may have distorted trends in C&I lending against smaller and in favor of larger loans and possibly favoring larger banks is given by Lee and Adams-Kane (2017).



## CRE EXPOSURE RISES AMONG SMALL AND MEDIUM-SIZED BANKS

Some CRE loans are securitized into commercial mortgage-backed securities (CMBS), particularly larger loans originated by nonbanks and investment banks.<sup>21</sup> To the extent that commercial banks participate in securitizing CRE loans, these loans are likely to be disproportionately originated by larger banks.<sup>22</sup> Inasmuch as most of the CRE-related securitization involves loans for multifamily housing, the renewed increase in post-crisis CRE securitization activity (Figure 4) underscores the fact that growth in the holdings of multifamily loans on bank balance sheets (Figure 3a) understates the actual funding available to finance this activity, as clearly shown in Figure 1b.

**Figure 4. Commercial Mortgage-Backed Securities Outstanding, Agency vs. Nonagency, 1990-2018**



Source: SIFMA (March 1990–March 2018).

Notes: Data are quarterly except for nonagency CMBS through 2007, which are annual. "Agency" consists of CMBS issued by Fannie Mae (\$280.3 billion as of March 31, 2018), Freddie Mac (\$213.1 billion), and Ginnie Mae (\$110.9 billion).

From a policy perspective, the greater participation by GSEs in catalyzing funding for multifamily housing mirrors the increased risk being shifted to GSEs. Until GSE reform progresses, and the implicit guarantee investors perceive in some agency securities is eliminated, the U.S. government (and ultimately the taxpayer) is tacitly underwriting the risk associated with these loans. Perhaps one reason for the very slow progress in forging GSE reform legislation is the concern that the loss of the implicit government guarantee may roil markets and cut back on the funding for multifamily housing.<sup>23</sup>

Nevertheless, bank supervisors and regulators should be even more vigilant about bank lending practices and standards for this growing category of multifamily lending. As we

<sup>21</sup> Ghent and Valkanov (2016) show that larger CRE loans are much more likely to be securitized. They find that, controlling for other loan characteristics, loans in the top size decile have a 43 percent chance of being securitized, compared with 2 percent for loans in the bottom decile, and that this relationship is close to linear. Lists of the top originators of loans securitized into CMBS and their volumes of origination in 2017, which collectively account for the bulk of the total, are provided by Commercial Real Estate Direct (2018), Fannie Mae (2018), and Freddie Mac (2018).

<sup>22</sup> Ibid. Also, as noted earlier, call report data show that there is a strong relationship between loan size and bank size.

<sup>23</sup> For an example of regulators' concerns about potential spillover effects of GSE reform on CRE markets, see Rosengren (2017).

## CRE EXPOSURE RISES AMONG SMALL AND MEDIUM-SIZED BANKS

enact more Dodd-Frank and related regulatory reforms easing burdens on small and medium-sized banks, heightened supervisory scrutiny for them especially is warranted. Instead of securitizing these loans, these banks receiving less regulatory scrutiny are also most likely to retain a growing share of CRE loans on their balance sheets.

### THE OVERALL COMPOSITION OF BANK CRE LOANS IS SAFER THAN BEFORE THE CRISIS

Overall, CRE loans on bank balance sheets shifted away from the riskiest category of construction lending toward the relatively less volatile categories of commercial and multifamily loans. Measured as a share of risk-weighted bank capital, the distributions of construction and multifamily loans have shifted sharply since the crisis, while the distribution of nonresidential commercial loans has remained relatively stable (Figure 5).

Banks' total CRE exposures declined sharply following the crisis, with the 75th percentile of total CRE loans falling from 366 percent of capital in March 2008 to 297 percent in March 2013, after which it rose slightly to 315 percent of capital as of March 2018. The decrease was caused mainly by the large contraction in holdings of construction loans.<sup>24</sup>

### MORE CRE EXPOSURE WITH LESS CAPITAL: MEDIUM-SIZED BANKS TAKE ON RISKY CRE LOANS EVEN AS BANK CAPITAL RATIOS FALL

Even as most large banks severely reduced their holdings of CRE loans, especially construction loans, many small and medium-sized banks have been actively raising their exposure faster than they have been accumulating bank capital (Figures 5 and 6). This reverses the trend that followed the crisis. Across bank sizes, the median CRE share of assets fell from 22.1 percent in 2008 to 18.9 percent in 2013—this decrease was driven by shedding construction loans, as shown earlier—and concurrently, the median total capital ratio rose from 14.1 percent to 16.4 percent.

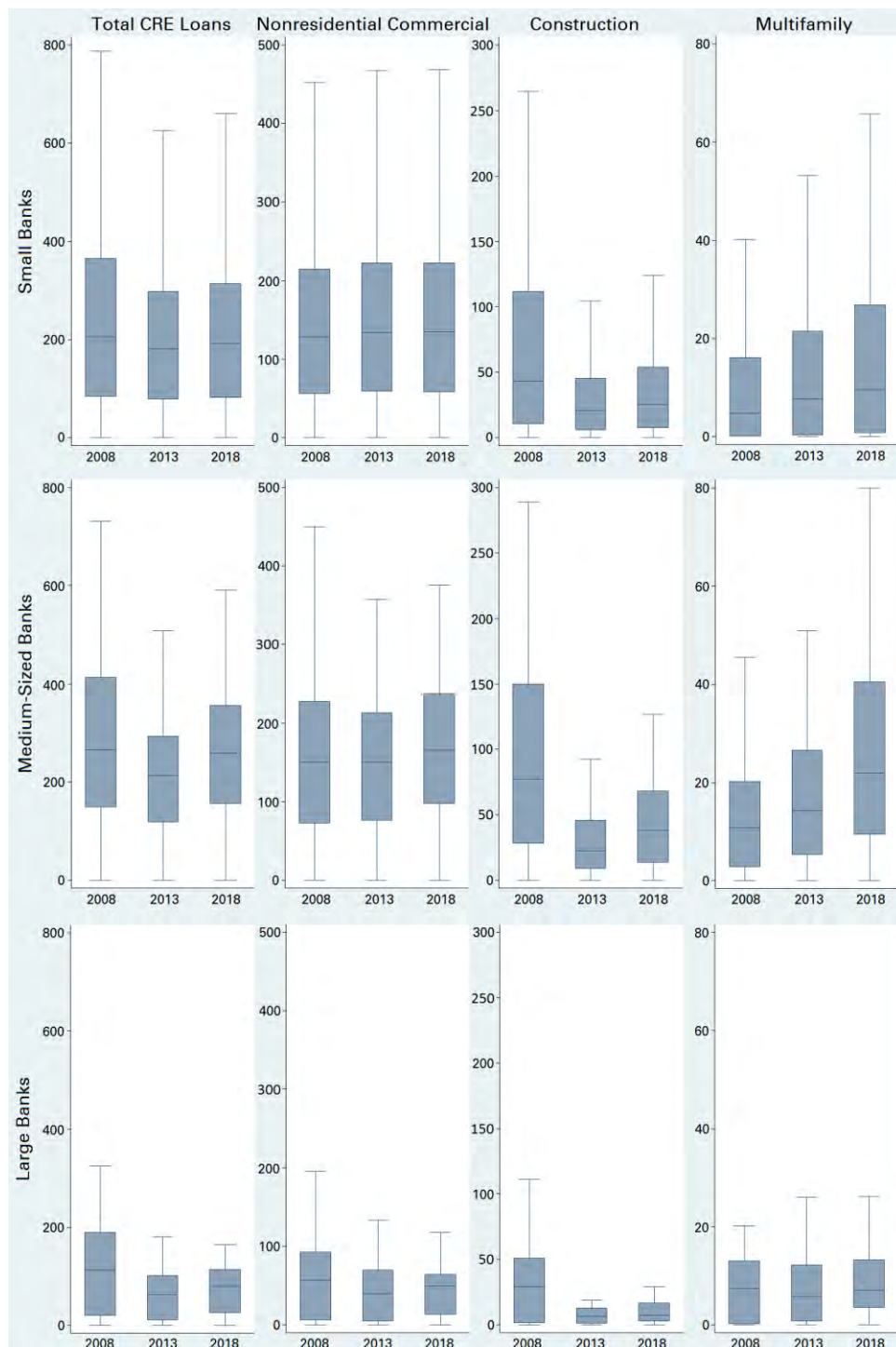
The deep economic collapse and Dodd-Frank-related tightening of regulatory restrictions and supervisory practices were the main contributors to the immediate post-crisis decline in bank CRE exposures among banks of all sizes. The subsequent reemergence of CRE exposures relative to bank capital was driven mostly by the growth (and shifting composition and riskiness) in CRE loans, which reached a median of 21.5 percent of assets as of March 2018 while the median capital ratio fell only slightly to 15.9 percent.

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<sup>24</sup> The 75th percentile of banks' construction loan exposures fell from 112 percent of capital in March 2008 to 45 percent in March 2013 and has since risen to 54 percent as of March 2018. By contrast, the 75th percentile of multifamily loans rose from 16 percent to 22 percent to 27 percent of capital over that period.

# CRE EXPOSURE RISES AMONG SMALL AND MEDIUM-SIZED BANKS

**Figure 5. Distribution Across Banks of CRE Exposure (Percent of Total Capital), 2008-2018**



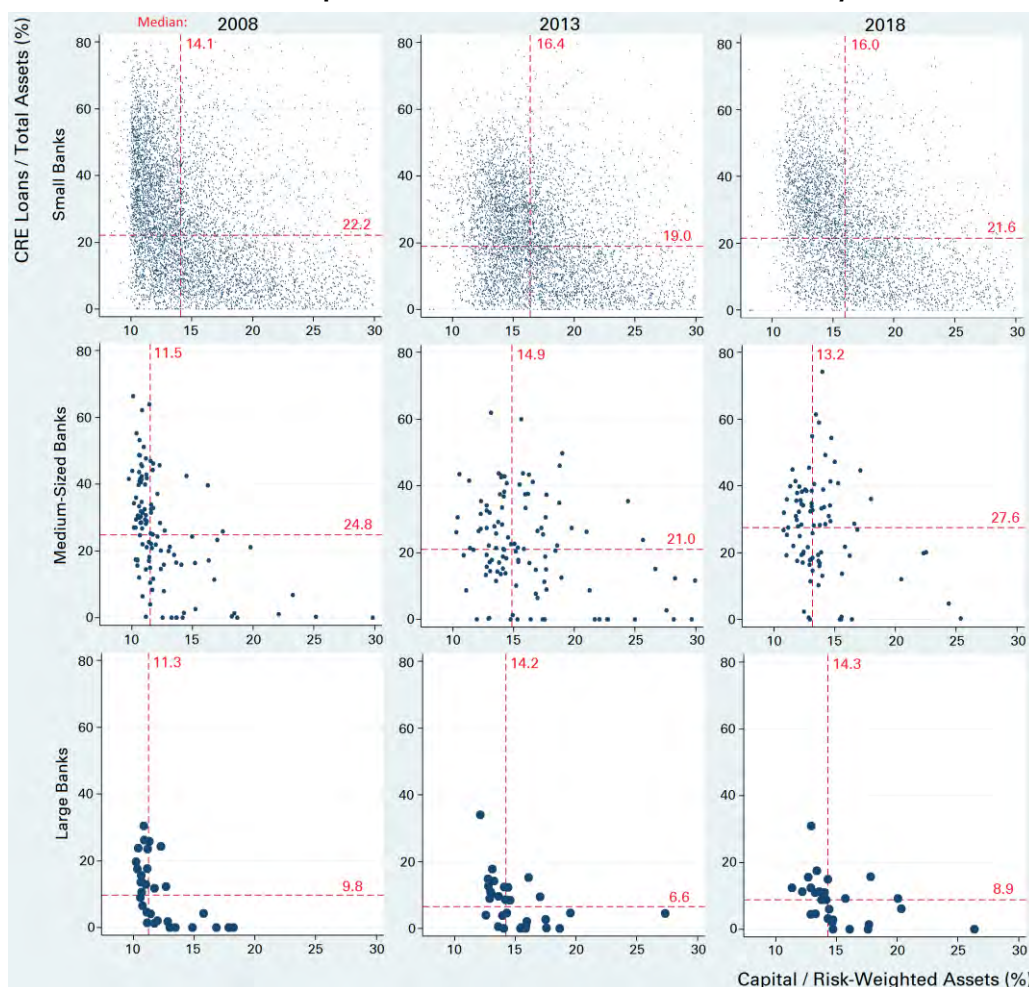
Source: Author's calculations from FDIC call reports for U.S.-chartered commercial banks (March 31 of each year).  
 Notes: Each box illustrates the distribution of banks' volumes of CRE loans of a given type, at a given point in time, as a percent of each bank's total risk-weighted capital. The bottom and top of each box are the 25th and 75th percentiles of the distribution, respectively, and the band in the interior of each box is the median. The whiskers show the existence of outliers: The end of each upper or lower whisker is the bank with the maximum observed loan/capital ratio less than or equal to the 75th percentile plus 1.5 times the interquartile range, or the minimum observed loan/capital ratio greater than or equal to the 25th percentile minus 1.5 times the interquartile range, respectively (following Tukey [1977]). Bank size groups are defined in Footnote 18.

## CRE EXPOSURE RISES AMONG SMALL AND MEDIUM-SIZED BANKS

The data show a strong relationship between bank size and both the changes in the CRE-share of assets and the capital ratio (Figure 6). Notably, medium-sized banks, with the highest median CRE concentration both pre- and post-crisis, recently have been increasing their median CRE concentration further even as their capital ratios worsened.

In addition, we see an emerging tendency for a limited but increasing number of outlier small and medium-sized banks to expand rapidly their CRE exposures, especially to multifamily.<sup>25</sup> Whether such increased lending is justified by a general revival in smaller-sized CRE projects in which such banks specialize is worthy of heightened supervisory scrutiny, especially as Dodd-Frank reforms ease restrictions on this group of banks.

**Figure 6. Bank-Level (and Median) Capital Ratio and CRE Share of Balance Sheet by Bank Size, 2008-2018**



Source: Author's calculations from FDIC call reports for U.S.-chartered commercial banks (March 31 of each year).

Notes: Outliers are omitted from the figure for ease of comparison, but are included in calculations of medians. Bank size groups are defined in Footnote 18.

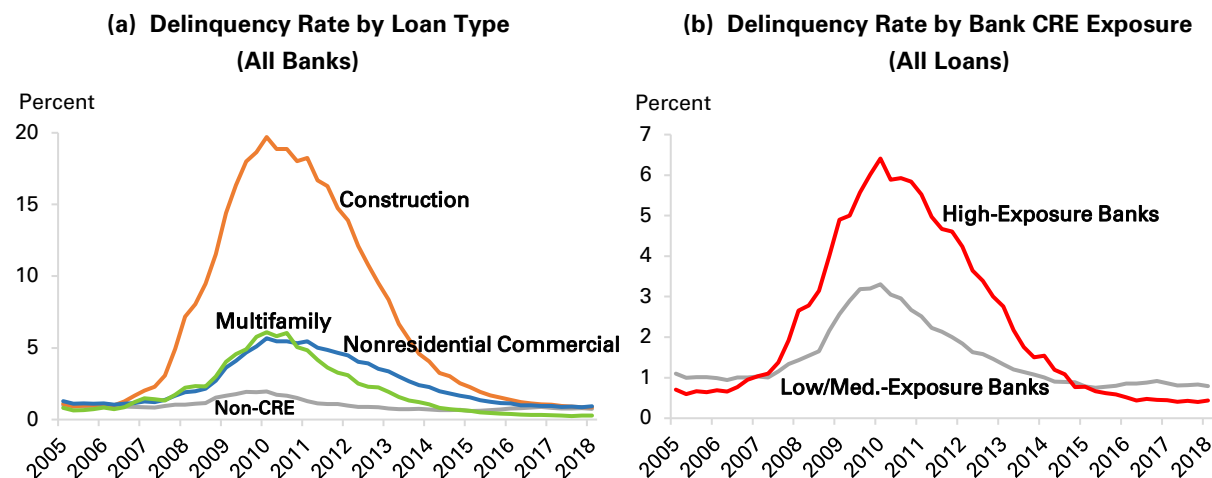
<sup>25</sup> 14.5 percent of banks increased the CRE share of their total assets by ten percentage points or more between March 2013 and March 2018.

## CRE EXPOSURE RISES AMONG SMALL AND MEDIUM-SIZED BANKS

### BANKS WITH HIGH CRE EXPOSURES FAIL UNLESS THEY ADAPT BALANCE SHEETS TO MARKET CONDITIONS

Since the crisis, delinquency rates have declined among all banks but especially among banks with high CRE exposure. When the CRE markets were in turmoil, delinquency rates of the high-exposure banks soared from 1 percent to more than 6 percent. However, high-exposure bank default rates have steadily declined to below 1 percent and are now below those of banks with low exposure to CRE loans, just as they were prior to the onset of the crisis (Figure 7b). This historical pattern illustrates how CRE loans may perform remarkably well in good times (especially multifamily loans) but also are subject to violent upheavals (Figure 7a). Consequently, banks that specialize in these types of loans are vulnerable to varying and often large cyclical risks.<sup>26</sup>

Figure 7. Delinquency Rates and High-Exposure Banks' Market Share, 2005-2018



Source: Author's calculations from FDIC call reports for U.S.-chartered commercial banks (March 2005–March 2018).

Notes: Banks with high CRE exposure are classified according to guidance issued jointly by the OCC, FRB, and FDIC (2006) as those with total nonowner-occupied CRE loans exceeding 300 percent, or construction loans exceeding 100 percent, of total risk-weighted capital. All other banks are classified as low/medium-exposure. In the official guidance, total nonowner-occupied CRE loans exceeding 300 percent of capital is applied as a threshold only if a bank's total nonowner-occupied CRE loans also grew by at least 50 percent over the preceding three years; according to an assessment by the GAO (2018) of bank examination reports, however, in practice this additional criterion is often not applied by bank examiners (and it is not applied here).

Successfully managing high CRE exposures requires the ability to adapt rapidly to changing market and regulatory conditions. During the last decade, the large changes in the CRE sector have induced dramatic changes among surviving banks' lending and risk management behavior.

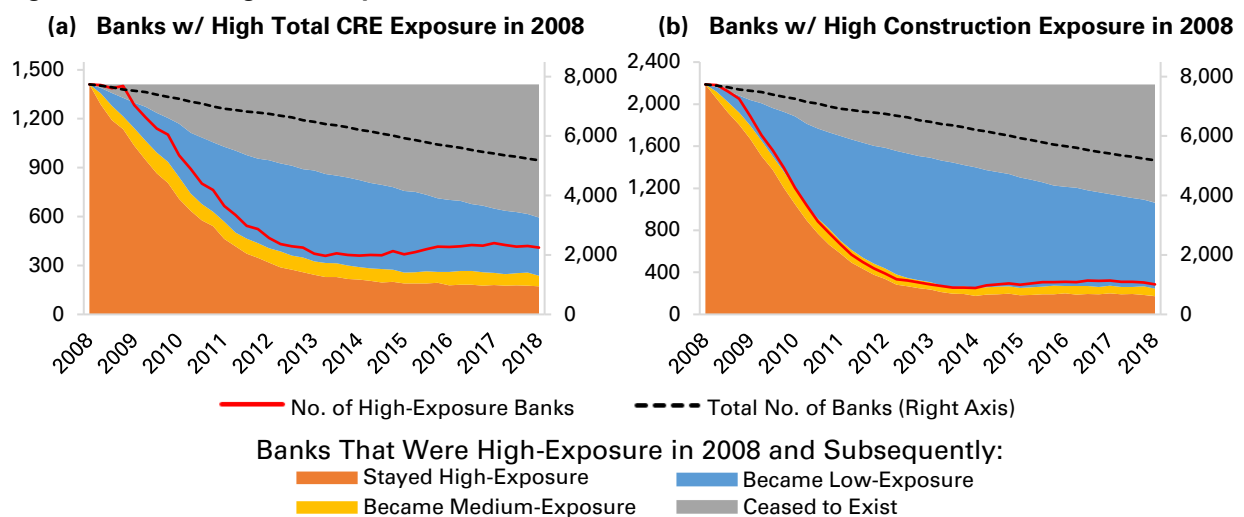
<sup>26</sup> The delinquency rates by loan type shown in Figure 7a were similar for high-exposure and low/medium-exposure banks, meaning that the higher portfolio-wide delinquency rates of high-exposure banks were driven by the higher weights of CRE in their portfolios.

## CRE EXPOSURE RISES AMONG SMALL AND MEDIUM-SIZED BANKS

- Banks with high CRE exposures going into the crisis were much more likely to subsequently fail or be acquired by another bank (Figure 8).<sup>27</sup> Roughly half the banks that were high-exposure at the time of the crisis no longer exist;
- Most surviving banks with high CRE exposure sharply reduced their exposures, especially to the riskiest category of CRE lending (construction). Having reduced their CRE lending, these banks usually remain classified as low-exposure banks. Indeed, the majority of banks that are now classified as high-exposure are not the same banks that were high-exposure in 2008 (Figure 8a).

Adapting to changing conditions by flexibly changing the mix of CRE lending was key to survival for high-exposure CRE banks. For example, the great majority of surviving banks with concentrated construction loan portfolios before the crisis moved quickly out of construction loans (Figure 8b). Remarkably, very few of these banks subsequently raised their exposures back above the “high exposure” threshold.

**Figure 8. How Did High-CRE-Exposure Banks Weather the Crisis?**



Source: Author's calculations from FDIC call reports for U.S.-chartered commercial banks (March 2008–March 2018).

Notes: Banks with high total CRE exposure are classified according to guidance issued jointly by the OCC, FRB, and FDIC (2006) as those with total nonowner-occupied CRE loans exceeding 300 percent of total risk-weighted capital. Banks with high exposure to construction loans are classified according to the guidance as those with construction loans exceeding 100 percent of total risk-weighted capital. Banks are classified as medium-exposure to total nonowner-occupied CRE or construction loans as those below those thresholds but with loan levels exceeding 270 percent or 90 percent, respectively.

<sup>27</sup> The high correlation between CRE exposure and failure is consistent with findings in some empirical research on determinants of bank failures (e.g., Cole and White [2012], FDIC [2012] and GAO [2013]), although identification of causal channels can be problematic due to the difficulty of measuring some bank characteristics (e.g., lack of management quality) that, together with aspects of a bank's market or regulatory environment, may induce self-selection into risky behavior (Cole, McKenzie and White [1995] and Ellul and Yerramilli [2013] are two papers that take steps to address this issue). Such a self-selection effect would be consistent with a finding by the FDIC (2012) that banks that specialize in CRE lending had the lowest pre-tax return on assets of all specialist groups, not only during times of crisis but over the entire 1985-2011 period as a whole.

# GEOGRAPHIC CONCENTRATION OF CRE EXPOSURE

## POTENTIAL RISK FOR SMALLER COMMUNITIES

CRE-related bank failure could sever access to capital and other banking services for some communities, depending on the availability of alternative sources of funding. Smaller communities dominated by small and medium-sized local banks with high CRE exposure may be at considerable risk of bank failures in the event of a downturn in local real estate prices. Failed banks exiting these markets would deprive these communities of funding and could likely spread the downturn throughout the local economy.<sup>28</sup> It is likely that larger cities and towns would be less affected by smaller-bank failures because they have more diversified bank populations and a greater presence of large banks with lower exposures to CRE.

Thus, in gauging the systemic importance of banks' vulnerability to CRE risks, it is important to assess how the individual bank's CRE lending and geographic concentrations interact. CRE market fluctuations can amplify the likelihood of defaults and bank failure that lead to a recession in the local economy. The data show that this issue is pervasive—indeed, banks that are highly exposed to CRE tend to also be highly concentrated geographically.<sup>29</sup> Banks that are geographically concentrated in a single city account for a significant, albeit minority, share of CRE loan volumes (Figure 9).<sup>30</sup>

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<sup>28</sup> Although cycles in individual real estate markets tend to be correlated, they are quite heterogeneous in both amplitude and timing. The weakness of correlation across CRE markets is evident when, for example, comparing 2012-2017 cumulative changes in multifamily rental prices in 496 census-based statistical areas: The 25th percentile change was 0.1 percent and the 75th percentile change was 16.1 percent (based on data from Zillow). It remains an open question whether geographic diversification reduces or raises a bank's risk. Theories give different answers depending on whether effects from portfolio diversification or agency problems dominate. The empirical evidence is mixed, partly due to difficulties in establishing causality; Goetz, Laeven, and Levine (2016) employ an identification strategy based on variation in states' timing of branching deregulation and find that geographic diversification reduces risk.

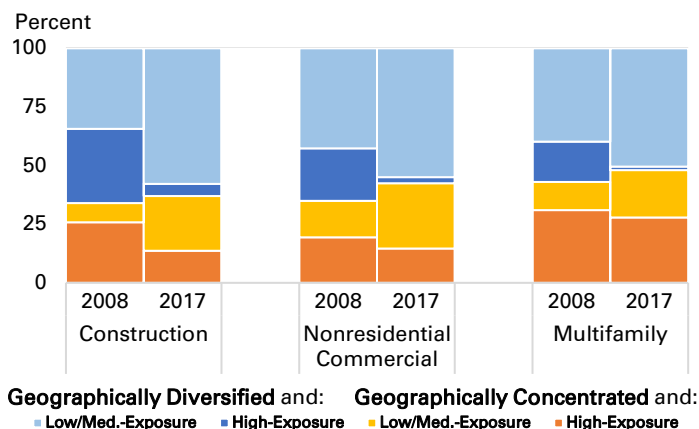
<sup>29</sup> Among banks of varying sizes, 88 percent of high-exposure small banks are geographically concentrated in a single city, compared with 62 percent of low/medium-exposure small banks; 77 percent of high-exposure medium-sized banks are geographically concentrated in a single city, compared with 40 percent of low/medium-exposure medium-sized banks. Here, "city" refers to a micro- or metropolitan area, also known as a core-based statistical area. A bank is classified as locally concentrated in a city if its branches in that city account for 50 percent or more of the bank's total deposits. The analysis that follows assumes that a bank with the majority of its branch deposits in one city is likely to have a substantial share of its CRE loans and other assets in that city, although this may not hold for every bank. Geographic diversification is based on deposits alone because no other financial information is available at the branch level; this approach is common in the literature—see, for example, Deng and Elyasiani (2008); Goetz, Laeven, and Levine (2013, 2016); and Meslier-Crouzille et al. (2016). The numbers given in this section are for mid-2017, the latest available at the time of writing (Summary of Deposits data are only available for June 30 of each year).

<sup>30</sup> Banks that are concentrated in a single city hold 37 percent of bank construction loans, 42 percent of bank nonresidential commercial loans, and 48 percent of bank multifamily loans (as of June 2017). In 2008, these shares were 34, 35 and 43 percent, respectively.

## GEOGRAPHIC CONCENTRATION OF CRE EXPOSURE

The post-crisis increase of the total share of geographically concentrated banks is largely explained by a dramatic reduction in CRE lending by geographically diversified banks. Such banks had typically specialized in construction lending while also making loans secured by finished properties. When they reduced their CRE lending disproportionately following the crisis, some market share was captured by local banks.

**Figure 9. Shares of CRE Loan Volumes—Banks Grouped by Geographic Concentration and CRE Exposure, 2008 vs. 2017**



Source: Author's calculations from FDIC call reports for U.S.-chartered commercial banks and FDIC Summary of Deposits surveys (as of June 30 of each year, the only date for which Summary of Deposits data are available).

Note: See Footnote 29 for an explanation of how banks are classified as locally concentrated.

**Location of CRE-concentrated banks:** Maps of cities where locally concentrated banks have high balance sheet concentrations of CRE loans reveal substantial differences among cities.<sup>31</sup> Also, there are notable regional patterns in the evolution of levels of CRE exposure since the crisis (Figure 10).

- In mid-2017, the share of U.S. cities with local banks having concentrated **construction loans** was 26 percent, compared with 50 percent in mid-2008.
  - The decrease occurred in every region but was sharpest in the Far West (81 percent to 20 percent) and Great Lakes (38 percent to 7 percent).<sup>32</sup>

<sup>31</sup> A city's local banks are classified as having low, medium, or high exposure to construction or multifamily residential loans, as a group, if the aggregate of the given type of loan on locally concentrated banks' balance sheets is less than 25 percent of their aggregate risk-weighted capital, 25 percent to 50 percent, or greater than 50 percent, respectively. A city's exposure to nonresidential commercial loans (including both owner- and nonowner-occupied) is defined analogously but with thresholds of 100 percent and 200 percent. The reason that fixed numerical cutoffs, as opposed to quantiles, are used is so that exposure-level classifications are directly comparable across time and also between loan types in the case of construction and multifamily.

<sup>32</sup> Here states are grouped into the eight regions defined by the U.S. Bureau of Economic Analysis (groupings can be found here: <https://www.bea.gov/newsreleases/regional/spi/2014/images/spi1214.png>). CBSAs that span more than one region (e.g., the Cincinnati area) are assigned to the region with the greatest proportion of the CBSA's population.



## GEOGRAPHIC CONCENTRATION OF CRE EXPOSURE

- The highest shares are now in the Southeast (49 percent), Rocky Mountains (47 percent), and Southwest (46 percent).
- For **nonresidential commercial loans**, 26 percent of U.S. cities had high-exposure local banks in 2017, about the same share as in 2008.
  - The local banks in 35 percent of New England's cities had high exposures to commercial loans in 2017, up from just 4 percent in 2008.
  - The proportion is still highest in the Far West, where the local banks in 65 percent of the region's cities had high exposures to commercial loans in 2017, up slightly from 61 percent in 2008.
- For **multifamily loans**, in 2017 there were substantially more high-exposure local banks (in 5.6 percent of U.S. cities) compared with the situation in 2008, when only 1.7 percent of cities had high-exposure banks.
  - This share rose in every region, most notably in the Far West, where it increased from 7 percent to 20 percent (the highest of any region), the Mideast (2 percent to 14 percent), and New England (zero to 9 percent).

**Multifamily loans:** Many economically fragile and slow-growing communities are at risk from banks with concentrated multifamily loan exposure. In many cases, these more fragile communities are the same ones that were exposed to the sharp CRE contraction during the crisis and the subsequent wave of bank failures. Although recovery has been slow in most of these communities, they remain vulnerable to another boom-bust cycle (e.g., driven by demand shocks stemming from idiosyncratic local changes such as demographic shifts or migration flows or broader external forces such as GSE reform).

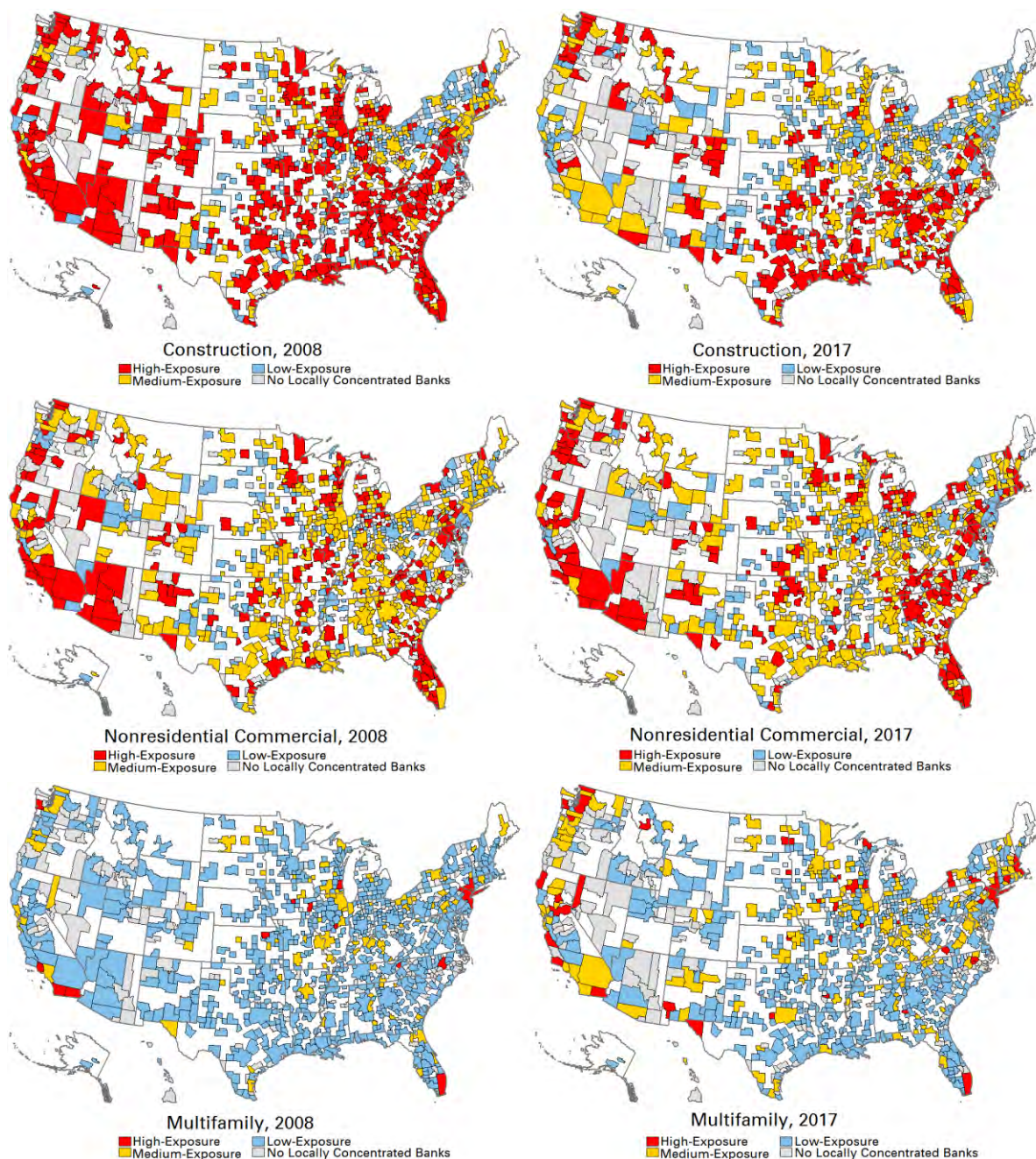
Local banks with high levels of exposure to multifamily property are largely concentrated in a few major cities such as Boston, Miami, New York, and Seattle. Indeed, locally concentrated banks in the New York City-Newark-Jersey City metro area alone account for 44 percent of this group's total volume of multifamily loans. Nevertheless, bank exposures to multifamily loans are spreading and such banks are now found in a broader cross-section of communities compared with a decade ago.

Many local banks with balance sheets concentrated in multifamily lending also are found in smaller cities and communities that are economically fragile and slow-growing. For example, Binghamton, NY, and El Centro, CA, experienced rates of economic growth in recent years of 0.8 percent and -0.4 percent, respectively; personal income levels 57

## GEOGRAPHIC CONCENTRATION OF CRE EXPOSURE

percent and 49 percent that of Boston; and declining apartment rental prices. Of the 44 cities with locally concentrated banks highly exposed to multifamily loans, 31 have population densities less than one-tenth that of New York City-Newark-Jersey City, and the same number have personal income per capita below the national level.

**Figure 10. Locally Concentrated Banks' Exposure to CRE Loans by Geographic Area, 2008 vs. 2017**



Source: Author's calculations from FDIC call reports for U.S.-chartered commercial banks and FDIC Summary of Deposits surveys (as of June 30 of each year, the only date for which Summary of Deposits data are available).

Note: See Footnotes 29 and 31 for explanations of how a bank is classified as locally concentrated in a city and how a city's local banks as a group are classified as high-exposure or medium-exposure with respect to a given type of loan.

## GEOGRAPHIC CONCENTRATION OF CRE EXPOSURE

**Nonresidential commercial loans:** Local banks with concentrated commercial loan portfolios are found throughout the country and are located in communities with diverse socioeconomic characteristics. Fortunately, communities with local banks having concentrated commercial loan exposure also have a number of other (generally larger) banks operating in these communities.

Cities with riskier CRE-concentrated local banks tend to be less dependent on those local banks for access to funding other local economic activity.<sup>33</sup> At least part of the explanation is likely that larger cities tend to have more competitive markets, with medium-sized and large banks competing more vigorously with smaller local banks. It is plausible that local banks may adapt to such an environment by seeking out niches in which they have an advantage, in which case CRE would be an obvious candidate given asymmetric information regarding local economic geography and real estate markets.<sup>34</sup>

Smaller towns and rural areas serviced by a few CRE-focused banks that are not very diverse in size and balance sheet composition are potentially at risk the most (Figure 11).<sup>35</sup> They are generally located in the middle of the country—in the Great Lakes, Plains, Southeast, and Southwest regions. In the great majority of these places, local banks are exposed to the nonresidential commercial and construction sectors, as opposed to multifamily housing, which is disproportionately concentrated in large cities, where demand for apartments is greatest. These vulnerable places have become less numerous since the crisis, partly due to local banks reducing their exposures to CRE and partly due to competition from regional and large banks eroding high levels of dependence on local banks.

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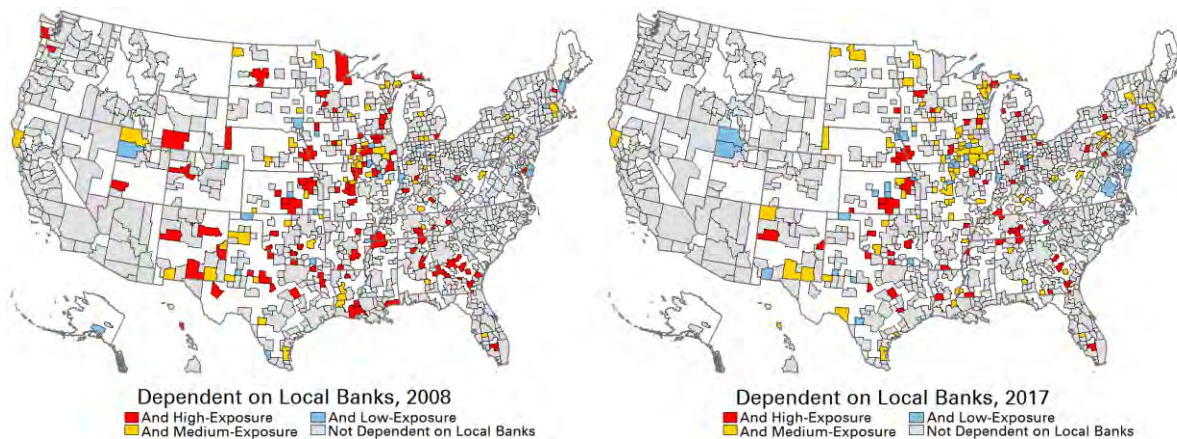
<sup>33</sup> In cities where local banks are highly concentrated in nonresidential commercial loans, 24 percent of branch deposits are in the local banks, on average, compared with 36 percent for low-exposure cities (as of June 2017).

<sup>34</sup> This would be consistent with the theoretical model of Stein (2002) in which organizations shift from projects with soft information to those with hard information as they decentralize, and the model's extension by Goetz (2012) in which a bank's geographic expansion pushes its less geographically diversified competitors to specialize in lending activities based on soft information.

<sup>35</sup> The analysis here does not cover rural areas, only core-based statistical areas (which by definition must be anchored by an urban center of at least 10,000 people). Thus, Figure 11 shows only this relatively populous subset of communities dependent on CRE-exposed, locally concentrated banks.

# GEOGRAPHIC CONCENTRATION OF CRE EXPOSURE

Figure 11. Communities Highly Dependent on Locally Concentrated Banks Exposed to CRE, 2008 vs. 2017



Source: Author's calculations from FDIC call reports for U.S.-chartered commercial banks and FDIC Summary of Deposits surveys (as of June 30 of each year, the only date for which Summary of Deposits data are available).

Note: A city is classified as highly dependent on its locally concentrated banks if 50 percent or more of the total branch deposits in the city are in the branches of the locally concentrated banks as a group. See Footnotes 29 and 31 for explanations of how a bank is classified as locally concentrated in a city and how a city's local banks as a group are classified as high-exposure or medium-exposure with respect to a given type of loan. Here, a city's local banks are classified as medium-exposure if they are medium-exposure with respect to any of the three loan types according to the criteria in Footnote 31, and are not classified as high-exposure with respect to any of them; and they are classified as high-exposure if they are high-exposure with respect to any of the three loan types according to the criteria in Footnote 31.

# CONCLUSIONS

The continuing rise in the concentration of bank exposure to CRE loans is likely to be less risky than a similar rise before the crisis. Back then, the locally concentrated banks in more than half of U.S. cities were highly exposed to highly volatile and very cyclical construction lending. Many of these banks do not exist anymore—they failed or were absorbed by other banks in the wake of the crisis. Surviving banks adapted by shifting their balance sheets from construction to less-risky types of CRE loans. However, concentrations in CRE lending remain an important contributor to banks' vulnerability and a key predictor of future bank failure. Fortunately, concentrated CRE balance sheets are generally found among smaller banks that are not systemically important. Nevertheless, their failure may cause substantial shocks to the local economies in which they operate.

For assessing financial stability, there are countervailing forces at work. Bank failures caused by the absence of geographic diversification may be balanced by the availability of other banks to fund community activities should a CRE-concentrated bank fail. Here, city size matters: Larger cities are likely to be more resilient to CRE-related shocks to their local banks. In part, that is because such communities have more nonlocal banks doing business there that are ready to pick up any slack. Thus, in identifying systemic vulnerability at the local level, it is important to pay attention to smaller communities that are more dependent on their local banks across a range of services.

Looking forward, exogenous sources of bank risk and vulnerability highlighted by regulators and supervisors are GSE reform, shocks to CRE prices (especially if accompanied by a recession), and higher-than-expected inflation that induces rapidly rising interest rates.<sup>36</sup> Change in the regulatory regime itself is another area of uncertainty that may spill into bank CRE lending practices. With supervisors and regulators rapidly adopting a more relaxed stance toward small and medium-sized banks, there is justifiable concern that concentrated CRE lending may cause smaller businesses and communities to lose access to future bank lending if these smaller community banks fail.

Localized risks may be greatest in places with relatively high dependence on local banks

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<sup>36</sup> These are the main sources of risk highlighted by Rosengren (2017); he also notes that shocks to CRE prices are part of the 2017 stress tests undergone by the largest banks, although it should be borne in mind that CRE loans tend to make up a much larger part of the balance sheets of small and medium-sized banks (Figures 3b and 6).

## CONCLUSIONS

for funding—generally smaller towns—and among those banks where capital has not kept pace with the rapid growth in CRE lending. Although there are many good reasons to reduce the excessive post-crisis regulatory burden placed on smaller banks, heightened vigilance on small and medium-sized banks' CRE lending remains warranted and necessary.

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