

Section III: Key Risk to Banks

CREDIT RISK

Agriculture

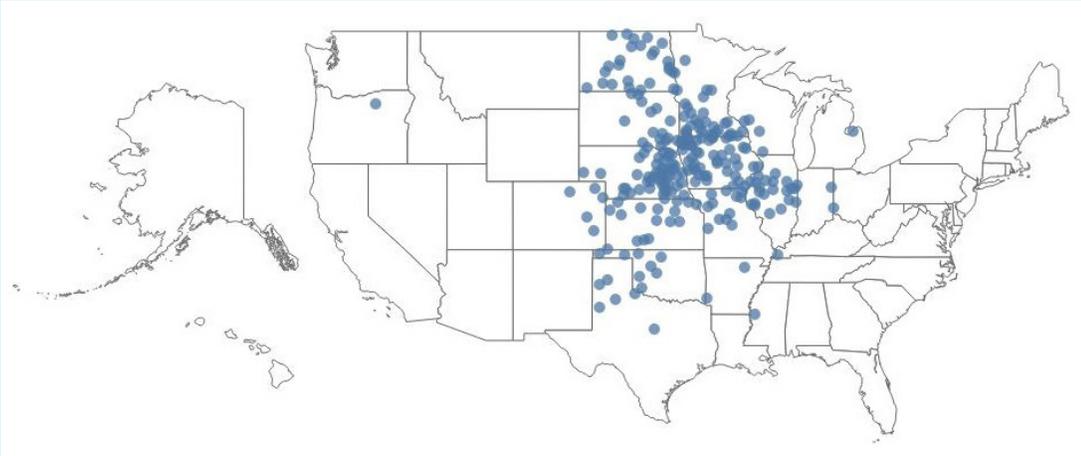
- *The agricultural sector had a strong year, marked by increases in commodity prices, farm incomes, and farmland values.*
- *Profitability of farm banks remained favorable despite weak agricultural loan demand and margin compression.⁴*
- *Asset quality among farm banks improved in 2021 as loan repayments increased and extensions declined.*
- *Rising production costs and supply chain problems that affect the agricultural sector may pose challenges in 2022.*

There were 1,121 farm banks comprising nearly one-quarter of all banks as of fourth quarter 2021. All but 13 of these banks are also considered community banks by the FDIC’s definition (see Glossary of Terms). In fourth quarter 2021, agricultural loans held by all banks totaled \$180.2 billion.

- Community banks hold 69.8 percent (\$125.7 billion) of total agricultural loans.
- Nearly 23 percent of farm banks (5.3 percent of all banks) hold a concentration of agricultural loans above 300 percent of capital (tier 1 capital and credit loss reserves for loans and leases).
- Exposure to agricultural lending is concentrated in the Midwest.

Regional Exposure to Agricultural Lending

Dots on the map represent the 256 banks with total agricultural loans above 300 percent of capital.



Source: FDIC.

⁴ Unless otherwise noted, banking data are for farm banks only.

The agricultural sector had a strong year as commodity prices and farm incomes rose, pushing farmland values higher. Net farm income increased by \$23.9 billion (25.1 percent) from 2020 to \$119.1 billion in 2021, the highest level since 2013 and well above the prior 20-year average in nominal and inflation-adjusted terms (Chart 14). Higher cash receipts for both crops and livestock were partially offset by higher expenses and a decline in government payments.⁵

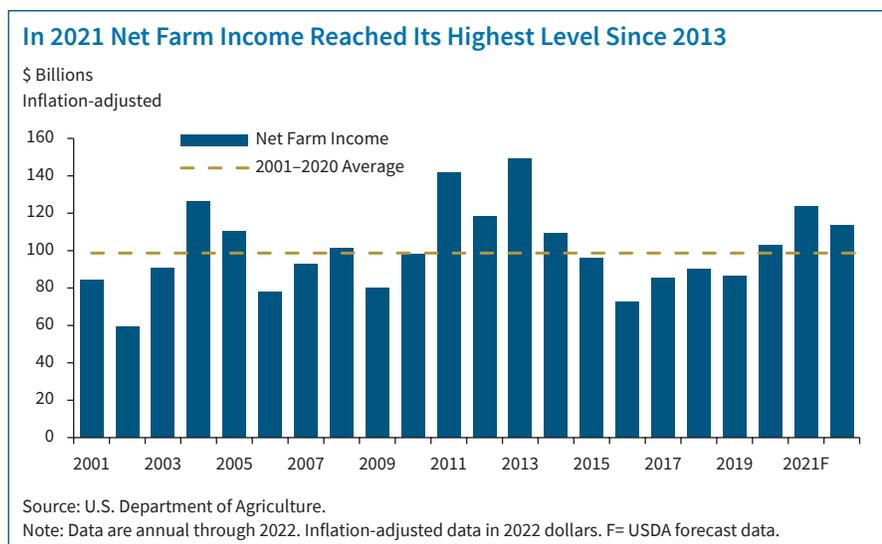
Increased demand helped push many commodity prices higher in 2021, surpassing pre-pandemic levels. The reopening of the economy spurred increased domestic demand for agricultural products as consumers resumed dining out, schools returned to in-person classes, and entertainment venues hosted events. Exports of agricultural products also increased, further bolstering commodity prices. In inflation-adjusted dollars, total agricultural exports in 2021 reached the highest level since reporting began in 1967.⁶ By volume, exports of

cattle, corn, and dairy set new record highs in 2021; pork reached its second-highest level, only slightly behind 2020. China remained the leading destination for U.S. agricultural exports. In 2021, export volumes to China increased by 10.6 percent to a record high.⁷

Concerns about drought also contributed to higher crop prices. During 2021, a large portion of the western United States and pockets of the Midwest experienced severe or worse drought conditions for most or all of the year.⁸ Widespread drought led to concerns surrounding crop yields and production totals, which lifted corn, soybeans, and wheat prices to their highest levels since at least 2013. Although the drought contributed to higher crop prices, it hampered the recovery for cattle and dairy producers who had to contend with deteriorating grazing conditions and higher feed costs.

Higher farm incomes and commodity prices, combined with continued low interest rates, contributed to

Chart 14



⁵ In 2021, the USDA forecast that crop and livestock receipts both increased by more than 18 percent, while expenses rose 9.4 percent. Government payments are forecast to have declined by 40.6 percent. The decline in government payments was primarily driven by a decline in pandemic-related support, which fell by \$15.7 billion, or 66.9 percent. See USDA, 2022 Farm Sector Income Forecast, February 04, 2022, <https://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics/>.

⁶ The USDA Foreign Agricultural Service reported that total 2021 exports in nominal terms had reached \$177 billion, 18 percent above 2020. In volume, exports increased by 2.6 percent over 2020.

⁷ Export volumes to China in 2021 reached nearly 61 million metric tons and were approximately \$33 billion in dollar terms.

⁸ Some of the most pronounced drought conditions were in California, Montana, North Dakota, and Wyoming; an average of 55 percent or greater of the land area in each of these states was in severe or worse drought throughout 2021. See National Drought Mitigation Center, University of Nebraska-Lincoln, U.S. Drought Monitor, <https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>.

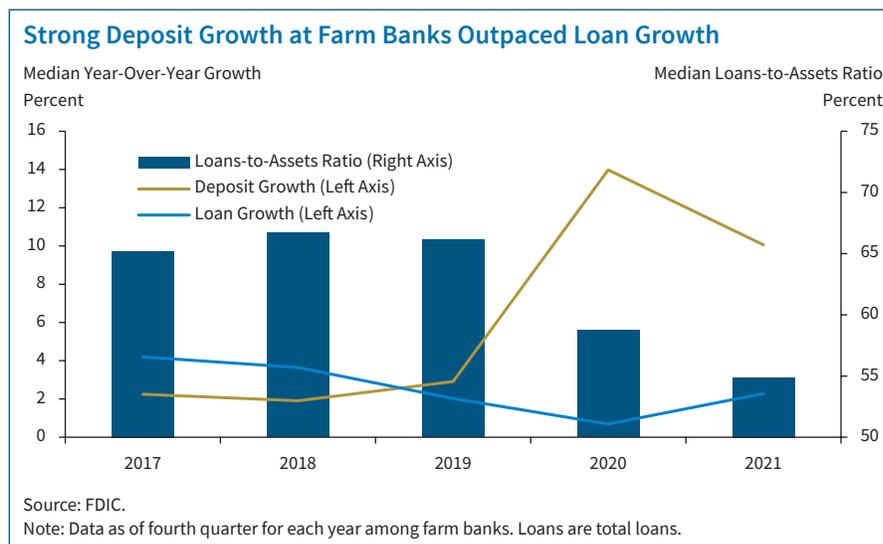
strong demand for farmland, which helped push farmland values higher in 2021.⁹ In August 2021, the U.S. Department of Agriculture (USDA) reported that the national average per-acre value of farm real estate had increased 7 percent from one year earlier, the largest year-over-year increase since 2014. Midwestern farmland values generally rose more than the rest of the nation. Federal Reserve surveys of agricultural banks during fourth quarter 2021 showed farmland values of Midwestern states increased as much as 31 percent over the prior year.¹⁰

Favorable agriculture conditions helped support profitability of farm banks in 2021. Despite margin compression and weak agricultural loan demand, the median pretax return on assets ratio at farm banks improved to 1.30 percent in 2021 compared with 1.23 percent in 2020. A majority of farm banks reported lower loan loss provisions as the credit outlook improved and net interest income and noninterest income increased faster than overhead expenses.

Strong deposit growth and modest total loan demand contributed to a sharp decline in the median loans-to-assets ratio among farm banks (Chart 15). In fourth quarter 2021, agricultural production loans contracted 0.03 percent following a 7.6 percent contraction one year earlier. The contraction in loans was consistent with results from several Federal Reserve Bank surveys that indicated widespread declines in the demand for non-real estate agricultural loans because of higher farm incomes.¹¹ Contraction in non-real estate agricultural loans contributed to a decline in the median agricultural loan to capital concentration ratio to 213 percent in fourth quarter 2021, its lowest level in 20 years. Looking ahead, loan demand could get a boost from rising agricultural input costs as farmers may need additional funding to help with higher operating expenses.

Asset quality among farm banks strengthened in 2021. Agricultural loan past-due rates declined markedly at farm banks in 2021 (Chart 16). The median agricultural loan past-due and nonaccrual loan (PDNA) ratio decreased to 0.08 percent in fourth quarter 2021 from 0.29 percent a year earlier. Meanwhile, the share of

Chart 15

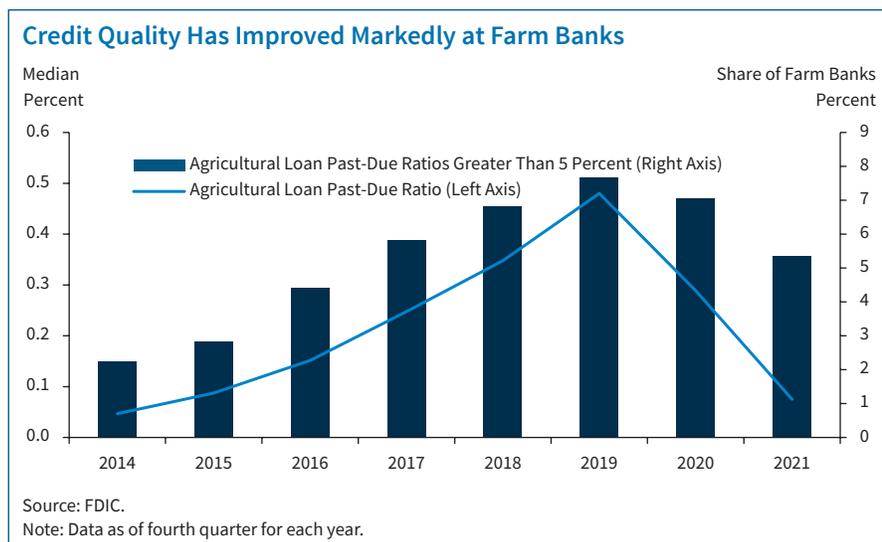


⁹ Survey data from Federal Reserve Bank districts, including Chicago, Dallas, Kansas City, Minneapolis, and St. Louis, indicate that farmland interest rates were, on average, 100 basis points lower than the average from 2015 to 2019. See Nathan Kauffman and Ty Kreitman, “Farm Real Estate Values Rise Sharply,” Ag Finance Update, Federal Reserve Bank of Kansas City, November 23, 2021, <https://www.kansascityfed.org/agriculture/agfinance-updates/farm-real-estate-values-rise-sharply/>.

¹⁰ Cited values are for non-irrigated cropland.

¹¹ Federal Reserve District Agricultural Credit Surveys for Chicago, Kansas City, and Minneapolis Districts, fourth quarter 2021, <https://www.kansascityfed.org/search/?query=Federal%20Reserve%20Ag%20Credit%20Surveys&filter-section=document&sorting=relevant&page-number=1&perpage=10>.

Chart 16



farm banks reporting agricultural PDNA ratios above 5 percent declined to 5.4 percent in fourth quarter 2021 from 7.1 percent one year earlier, the lowest level since 2016. Charge-off rates remained low. Only 15 percent of farm banks reported net agricultural loan charge-offs in 2021, a decrease from 23 percent a year earlier. In addition, increasing farmland values provided strength to farm bank collateral positions.

Other industry reports also suggest strength among agricultural borrowers. According to USDA forecasts, farm sector working capital increased in 2021 by 9 percent to its highest level in the past seven years. In a recent industry survey of agricultural lenders, 80 percent of respondents expected their agricultural borrowers to be profitable in 2021 compared with only 49 percent in 2020.¹² In addition, Federal Reserve Bank surveys indicate agricultural loan repayment rates increased to historically high levels in 2021, while agricultural loan renewals or extensions declined (Chart 17).

Lower government payments and rising production costs are expected to reduce 2022 net farm income despite strong commodity prices. Strong commodity prices are forecast to increase total farm sector receipts by \$29.3 billion in 2022, an increase of 6.8 percent

from 2021. However, lower government payments and higher production costs are forecast to more than offset these gains. The USDA's first forecast of the year shows net farm income is expected to decline \$5.4 billion (4.5 percent) to \$113.7 billion in 2022.¹³ Government payments are expected to fall \$15.5 billion (57 percent) from 2021 because of lower supplemental and ad hoc COVID-19 disaster relief assistance. Farmers will likely experience higher operating costs for fertilizer, feed, fuel, and interest. In aggregate, the USDA projects that farm sector production expenses for 2022 will increase 5.1 percent from the previous year, led by increases in fertilizer and interest expenses (Chart 18). This follows a 9.4 percent increase in 2021 and represents the highest level of production expenses in more than a decade.

Global supply chain problems and transportation issues may continue to challenge farm operations in 2022. Supply chain disruptions contributed to rising costs across the agricultural sector and could continue to make it difficult for producers to obtain necessary inputs and market their goods in 2022. Export restrictions and damage from Hurricane Ida have contributed to potential fertilizer shortages for the 2022 season. Machinery and parts shortages have made it difficult to get new equipment and to repair used equipment.

¹² American Bankers Association and Farmer Mac, Agricultural Lender Survey Results, Fall 2021, <https://www.aba.com/news-research/research-analysis/agricultural-lender-survey>.

¹³ USDA's 2022 Farm Sector Income Forecast, <https://ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-sector-income-forecast/>.

Chart 17

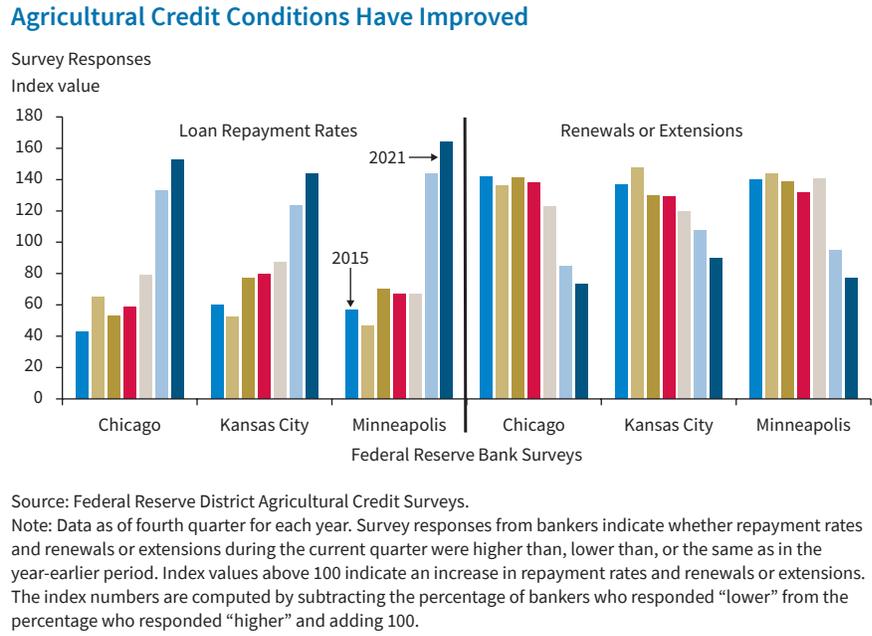
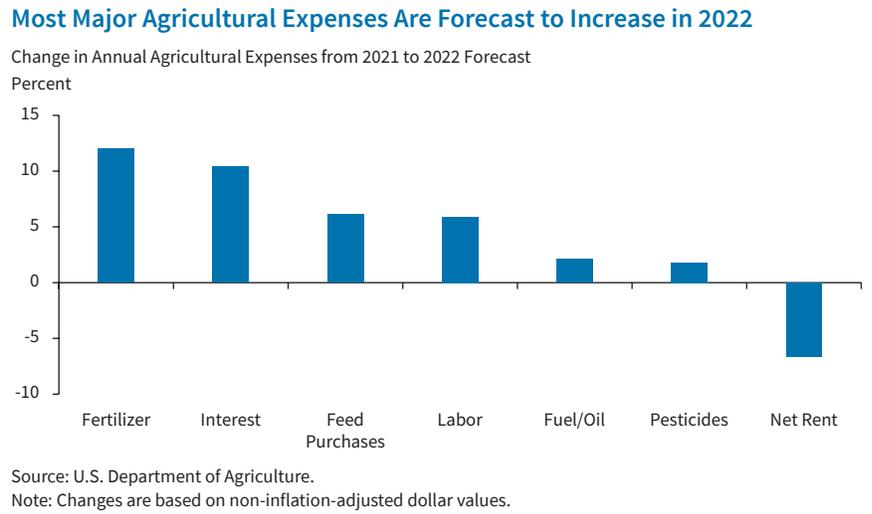


Chart 18



Also, ongoing shipping and domestic transportation challenges that intensified in 2021 could make it challenging for producers to transport or export their products in 2022.

The conflict between Russia and Ukraine has created uncertainty about the prospects for wheat and corn exports from these two countries in 2022. Ukraine and Russia accounted for more than 28 percent of global wheat exports and more than 18 percent of global corn

exports in 2021. Prices for these commodities rose sharply in the days immediately following the start of the conflict, reaching record highs for wheat and near-record highs for corn. Prices are likely to remain elevated throughout the planting season. In addition, Russia is one of the world’s top producers of fertilizer, and the conflict could limit worldwide supply and lead to increased costs or limited availability of fertilizer around the world.

Commercial Real Estate

- Demand for most CRE property types rebounded in 2021 from the initial setback in 2020.
- Office markets, particularly large office markets, may experience lasting changes reflecting the COVID-19 pandemic.
- CRE loans held by banks reached a record high in fourth quarter 2021, and community banks remain heavily involved in lending to this industry.
- While performance metrics for bank CRE loan portfolios remain favorable, expiration of pandemic-related financial assistance and shifts in CRE usage may affect future performance.

CRE loans held by banks totaled nearly \$2.8 trillion as of fourth quarter 2021.

- Community banks hold 29 percent (\$796 billion) of total CRE loans.
- Concentration in CRE lending remains high; 27 percent of all banks have a concentration of CRE loans exceeding 300 percent of capital (tier 1 capital and credit loss reserves for loans and leases) or acquisition, development, and construction (ADC) loans exceeding 100 percent of capital.
- Exposure to CRE lending is the heaviest in banks headquartered in the West and the Northeast, based on median concentration levels.

Regional Exposure to CRE Lending

Dots on the map represent the 1,302 banks with a concentration of CRE loans, as defined above.



Source: FDIC.

Note: U.S. territories are not included in the map; one bank in Guam with a concentration of CRE loans is not shown.

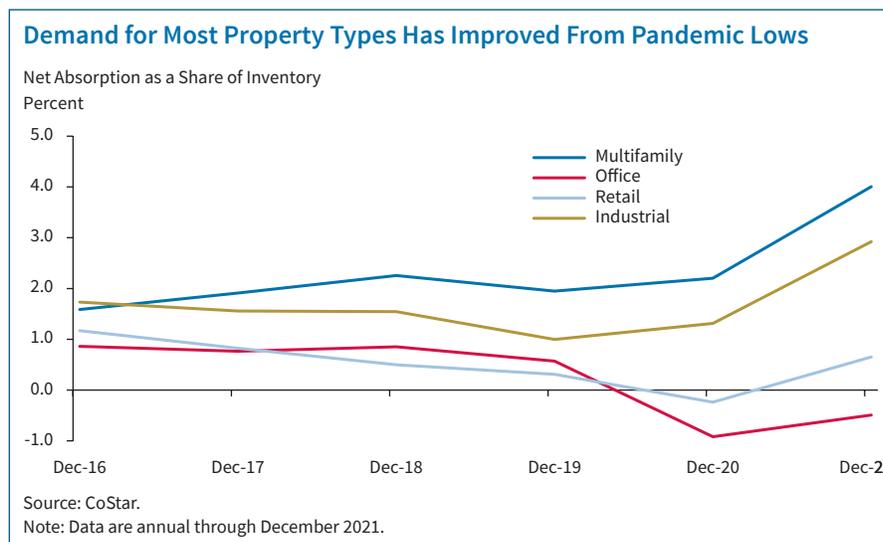
Most CRE markets were resilient during the COVID-19 recession, and market conditions improved with economic recovery in 2021. Demand for most property types, as measured by space absorbed, rebounded from the decline in 2020. Industrial and multifamily performed particularly well in 2021 (Chart 19). Strong demand during the pandemic has helped absorb the sharp increase in supply of industrial space in recent years. Demand for industrial space increased substantially early in the pandemic, in part to support the growth of e-commerce. From first quarter 2020 through fourth quarter 2021, 728 million square feet of industrial space was rented (absorbed), well above the 421 million square feet rented in the two years before the pandemic.

Demand for multifamily rental units improved substantially in 2021. The ratio of absorption of multifamily units to total stock grew by more than 80 percent in 2021 from the 2020 level, helping to push the multifamily vacancy rate to the lowest level in more than 20 years. Likewise, multifamily rent growth

surpassed its average pre-pandemic level and renter payment performance largely held up. The multifamily sector’s resilience likely reflected various factors. For example, prices of single-family homes rose sharply in 2021, which may have led some potential homebuyers to rent instead. In addition, pandemic-related payments and aid for renters may have mitigated weakening in rental payment performance.¹⁴

The retail and lodging sectors were more severely affected by the pandemic, and some subtypes continue to struggle. Demand for retail space recovered in 2021 after declining in 2020. But malls, one of several retail subtypes, are still experiencing weak demand.¹⁵ Mall space saw the quickest rise in vacancy after the onset of the pandemic and now has the highest vacancy rate among retail property subtypes. The closure of malls for several months during the pandemic dealt a blow to already-weakened inline stores.¹⁶ Mall vacancy finished 2021 at 8.3 percent, near a multicycle high. In contrast, general retail, which accounts for the largest amount of retail space in the United States, experienced steady

Chart 19



¹⁴ Whitney Airgood-Obyrcki, Ben Demers, Solomon Greene, Chris Herbert, Alexander Hermann, David Luberoff, and Sophia Wedeen, “Renters’ Responses to Financial Stress During the Pandemic,” Joint Center for Housing Studies of Harvard University, April 2021, https://www.jchs.harvard.edu/sites/default/files/research/files/harvard_jchs_renter_responses_covid_airgood-obrycki_etal_2021.pdf.

¹⁵ According to CoStar, there are five major subtypes of retail properties: general, strip center, power center, mall, and neighborhood center.

¹⁶ Commercial real estate consulting company VTS describes inline stores as those that most people would consider smaller stores that fill in the space between the larger stores in malls and open-air centers. These stores compensate for the discounted rents provided to anchors and typically pay more per square foot. Inline stores range between 1,500 and 5,000 square feet.

demand.¹⁷ Through 2021, three times as much general retail space was absorbed than was delivered. The steady demand for general retail space accounts for the overall retail sector’s declining vacancy rate, from 5.1 percent at the end of 2020 to 4.6 percent at the end of 2021.

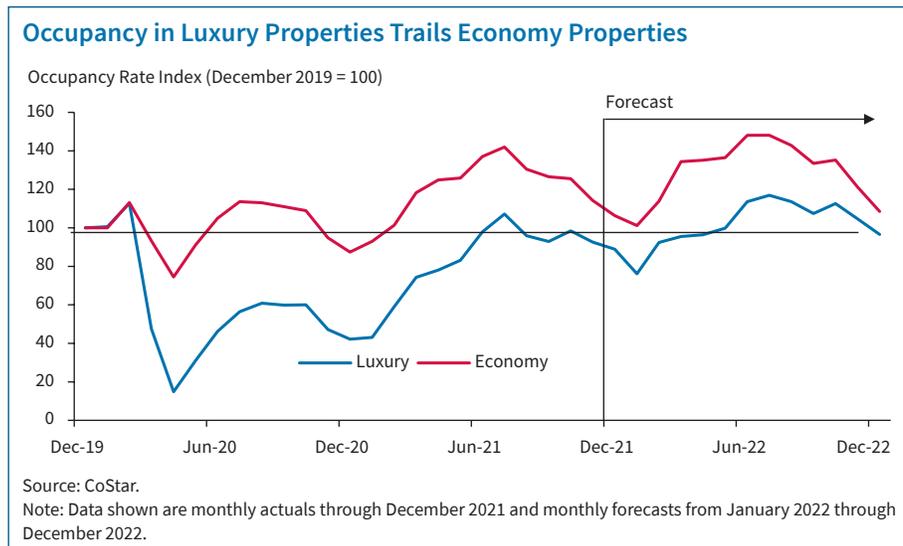
The U.S. hotel occupancy rate dropped sharply during the pandemic, and the decline in hotel occupancy reduced hotel revenues. Differentiation in the lodging sector continues to drive performance. Vaccine availability and pent-up demand contributed to a surge in demand for leisure travel, which has carried much of the recovery. Economy hotel occupancy, which serves as a proxy for leisure demand, increased in 2021 and exceeded the pre-pandemic level by year-end. In contrast, corporate travel has yet to recover fully, which is reflected in weaker demand for luxury hotel properties (Chart 20).¹⁸ While leisure travel accounts for the largest share of the hotel industry’s room nights, group and corporate travel account for roughly two-thirds of hotel revenues.¹⁹

The pandemic has reduced demand for office space, possibly for the long run. At the onset of the pandemic, office absorption turned negative for the first time in a

decade as commercial office space that was vacated or supplied by new construction exceeded that which was leased, or absorbed, by commercial tenants. At its worst during the pandemic, negative net absorption reached 0.5 percent of total inventory, twice the low recorded during the Great Recession.²⁰ The drop in demand for office space contributed to a meaningful increase in office vacancy. The office vacancy rate has increased in almost two-thirds of U.S. office markets, and in each of the nation’s ten largest markets, since the start of the pandemic. The overall U.S. office vacancy rate increased from 9.7 percent in fourth quarter 2019 to 12.2 percent in fourth quarter 2021, an eight-year high.

The nation’s large office markets have suffered more than smaller markets since the pandemic began, with larger increases in vacancy rates and slower rent growth (Chart 21). The average vacancy rate in the nation’s gateway markets (large, typically coastal, markets that attract substantial foreign investment) increased from 9.4 percent in fourth quarter 2019 to 13.0 percent in fourth quarter 2021. In contrast, the average vacancy rate in the rest of the U.S. markets increased only modestly, from 5.6 percent to 6.2 percent, over the same

Chart 20



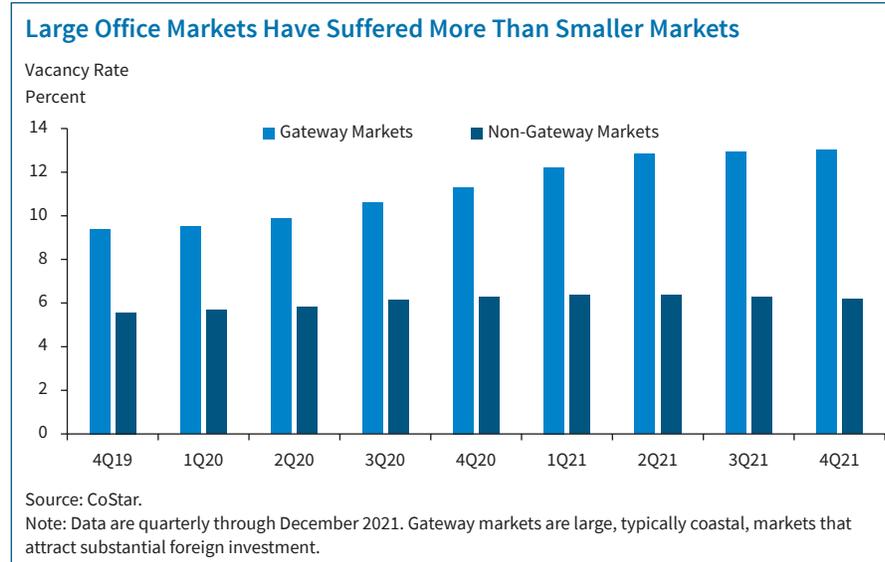
¹⁷ The general retail subtype includes freestanding and independent, nonchain retailers.

¹⁸ CoStar, data as of December 2021.

¹⁹ Bank of America, Lodging Primer, September 11, 2018.

²⁰ CoStar, fourth quarter 2021 data.

Chart 21



period. Gateway office markets also suffered an outsized decline in rental rates as demand for office space fell.²¹

Many companies re-evaluated their office space needs and expanded remote work during the pandemic. Office usage dropped substantially, and the number of employees that regularly occupied office buildings declined. Several surveys and reports show that a large share of companies have or plan to transition to a hybrid return-to-office model—a mix of office and remote work—rather than a full return to the office, which would permanently lower demand for office space.

Banks reported a record-high level of CRE loans in fourth quarter 2021. Banks have experienced year-over-year CRE loan growth for 37 consecutive quarters as they continued to grow their CRE loan portfolios amid the pandemic. As of fourth quarter 2021, the nation’s banks held nearly \$2.8 trillion of CRE loans, higher than the prior CRE cycle’s peak of \$1.9 trillion in fourth quarter 2008. Just over 98 percent of banks hold CRE loans, and CRE is the largest loan category for almost 49 percent of banks.

Among CRE loans held by banks, those secured by existing nonfarm nonresidential real estate properties,

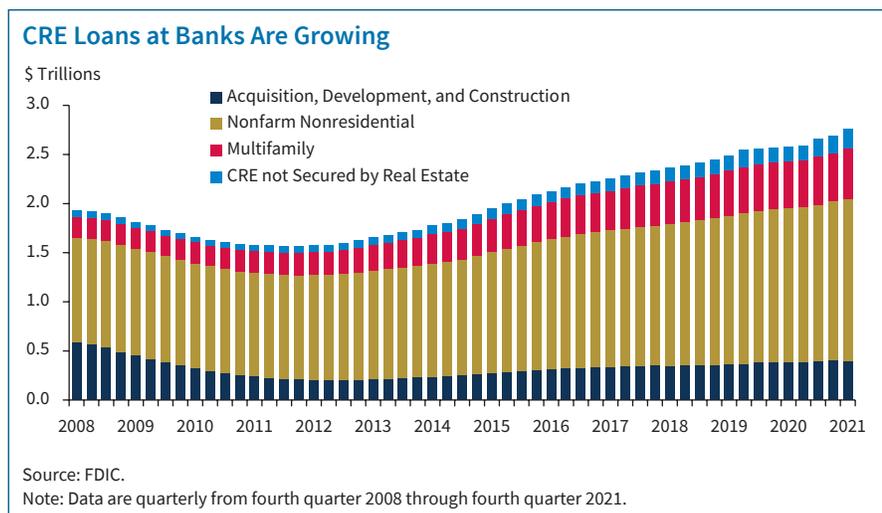
including business and industrial properties, hotels, churches, and other similar properties, continued to comprise the largest segment at \$1.6 trillion or 60 percent of total CRE loans outstanding (Chart 22). Multifamily, the next largest segment at \$512.6 billion, has grown each quarter since early 2011 and in 2021 was more than double its 2008 peak. Similar to the nonfarm nonresidential portfolio, multifamily growth slowed during the first year of the pandemic but recovered in the last three quarters of 2021. Bank acquisition, development, and construction (ADC) loans were \$401.1 billion at year-end 2021 but were still less than two-thirds the level of bank ADC loans held in 2008.²²

As of fourth quarter 2021, the national median CRE loan concentration at banks was 184 percent, up from a year earlier (181 percent) but below the 2008 peak (214 percent). Banks in the Midwest and South drove the year-over-year rise at the national level; their median levels reached 107 percent and 208 percent, respectively, at year-end 2021. Banks headquartered in the West had the highest median level of CRE loans to capital, 278 percent, albeit down from 283 percent a year earlier. Banks in the Northeast followed at 231 percent, which also was down from a year earlier.

²¹ CoStar, fourth quarter 2021 data.

²² While banks do not provide data on CRE sector-specific risk exposures in their quarterly Consolidated Reports of Condition and Income, regulatory examinations and CRE data providers reaffirm that banks remain active lenders across CRE sectors.

Chart 22



CRE loans remained an essential part of community bank lending programs. While community banks held 15 percent of the banking industry’s total loans as of fourth quarter 2021, they held 29 percent of its CRE loans. Community bank CRE loans rose to \$796 billion by year-end 2021, 10 percent higher than a year earlier and 31 percent higher than their peak volume in the prior cycle. Community banks headquartered in rural or smaller metropolitan areas held 65 percent of the CRE loan volume reported by all banks headquartered in those areas. Meanwhile, community banks in larger metropolitan areas held only about a quarter of the CRE loan volume reported by all banks headquartered in those areas.

The number of community banks with an elevated concentration in CRE loans to capital began decreasing in 2018 and declined until mid-2021.²³ In fourth quarter 2021, almost 27 percent of community banks held an elevated concentration of CRE loans to capital. This was the highest share since first quarter 2020 but was almost 1 percent below the year-end 2017 level and less than the prior cycle peak of 37 percent in fourth quarter 2008.

CRE asset quality remained favorable, supported by pandemic-related assistance measures. The median CRE loan delinquency rate among banks was

0.18 percent in fourth quarter 2021, well below the 3.85 percent peak in first quarter 2010 and below the 0.45 percent pre-pandemic level at year-end 2019. CRE loan noncurrent and charge-off rates in 2021 were nominal. Throughout the pandemic, regulators have encouraged banks to work prudently with stressed borrowers. Accommodated loan volume decreased between 2020 and 2021.²⁴ However, traditional metrics used for assessing loan performance may be obscured by loan accommodations and by the lingering effects of pandemic-related federal support programs and other assistance measures.

While the CRE sector has been resilient, the outlook for the sector remains uncertain. Some properties may experience weakened cash flows, perhaps as a result of CRE market and sector changes, and some borrowers may face potentially higher interest rates and debt servicing costs. Trends that emerged during the pandemic, such as remote work, shifts in housing preferences, and lifestyle changes, continue to complicate lenders’ and regulators’ ability to assess asset quality. In the CRE space, banks will continue to face intense competition from other banks and nonbank lenders, potentially prompting weaker underwriting. These factors could adversely affect CRE loan performance.

²³ “Elevated concentration” is defined here as CRE loans exceeding 300 percent of capital or ADC loans exceeding 100 percent of capital.

²⁴ A loan accommodation includes, in general, any agreement to defer one or more payments, make a partial payment, forbear any delinquent amounts, modify a loan or contract, or provide other assistance or relief to a borrower who is experiencing a financial challenge.

Consumer Debt

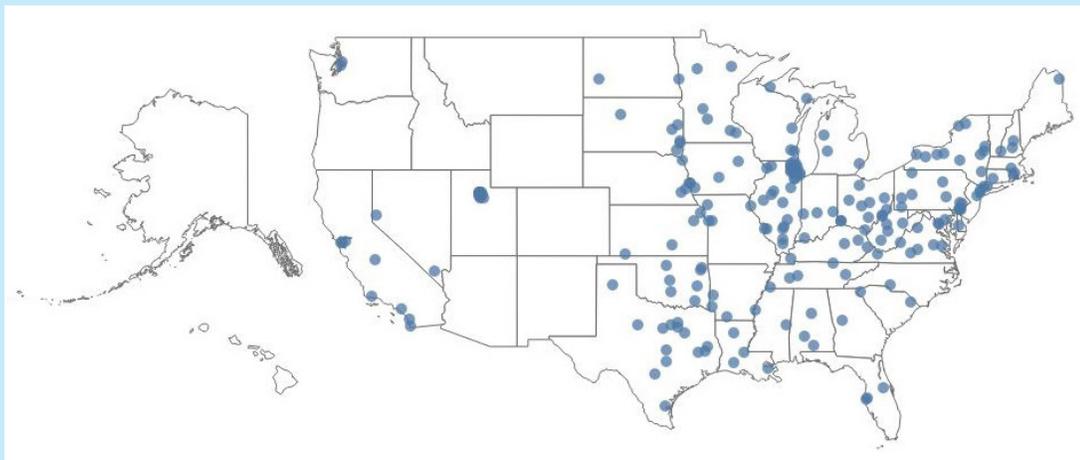
- *Pandemic-related fiscal support programs boosted personal income in 2021, lowered household debt burdens, and supported consumer loan performance.*
- *Consumer loan balances at banks grew in 2021, led by auto loans and other non-credit card consumer loans.*
- *Asset quality improved, as noncurrent and net charge-off rates declined across all consumer loan types.*
- *While performance improved in 2021, consumer loans remain a source of credit risk at banks.*

Consumer loans held by banks totaled \$1.9 trillion as of fourth quarter 2021.

- Community banks hold 3.5 percent (\$66 billion) of total banking industry consumer loans.
- Concentration in the industry remains low. Only 4.5 percent of all banks hold a concentration of consumer loans above 100 percent of capital (tier 1 capital and credit loss reserves for loans and leases).
- Sixty-five percent of banks with a concentration of consumer loans are community banks.

Regional Exposure to Consumer Lending

Dots on the map represent the 220 banks with total consumer loans above 100 percent of capital.



Source: FDIC.

Note: U.S. territories are not included in the map; two banks in Puerto Rico and one bank in Guam that have a concentration of consumer loans are not shown.

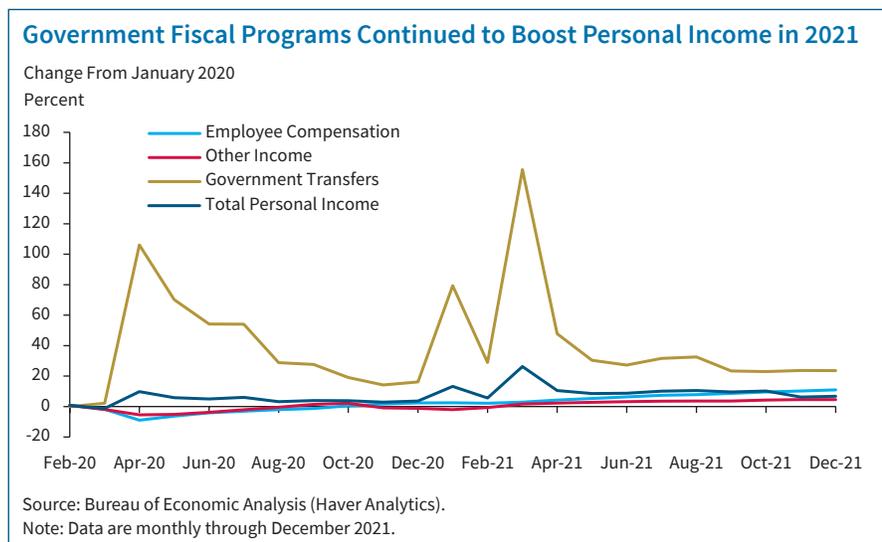
Government fiscal support continued through much of 2021, bolstering household balance sheets and lowering consumer debt burdens. The government issued two rounds of economic impact payments to households in January and March 2021, raising household income by 11.9 percent between fourth quarter 2020 and first quarter 2021 (Chart 23). Enhanced unemployment insurance benefits also continued to support household incomes through September 2021, while the expanded Child Tax Credit augmented incomes from July through December 2021.²⁵ As of January 2022, these programs had expired, and government transfers payments are expected to be less of a boost to household income in 2022.

Strong personal income and low interest rates contributed to lower household debt burdens in 2021 (Chart 24). Before the pandemic, the household debt service ratio—the ratio of estimated required payments on mortgage and consumer debt to disposable personal income—was near record lows. The household debt service ratio and the consumer debt service ratio, which excludes estimated required payments on mortgages, were below 2019 levels as debt growth slowed and interest rates remained low.

The ratios dipped even lower in the quarters that the government issued most of the economic impact payments, which temporarily bolstered disposable personal income.

Consumer lending balances at banks increased from a year earlier and surpassed the pre-pandemic level in fourth quarter 2021. Credit card loans are about half of all consumer loans held by banks; auto loans and other consumer loans make up the other half. Overall consumer loan growth in 2021 was driven by auto loans and other non-credit card consumer loans. Credit card loans at banks decreased year over year in each quarter from second quarter 2020 through second quarter 2021 (Chart 25). Despite modest growth in third quarter and strong growth in fourth quarter, credit card loans remained 7.5 percent below their pre-pandemic fourth quarter 2019 level. In contrast, auto loan balances increased in 2021 on strong demand for cars, even as production shortages at automakers decreased supply and drove up prices. Auto loan growth was stronger at noncommunity banks than at community banks. In fourth quarter 2021, auto loan balances at community banks rose just above the pre-pandemic level.

Chart 23



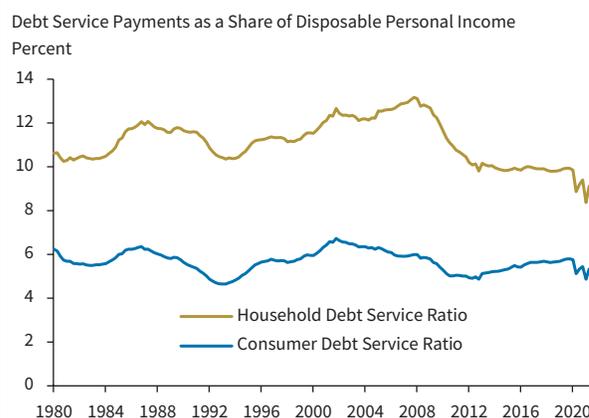
²⁵ See Congressional Research Service, “Unemployment Insurance Provisions in the CARES Act,” April 9, 2020, <https://crsreports.congress.gov/product/pdf/IF/IF11475>, for additional information on pandemic-related unemployment insurance programs. See The White House, “The Child Tax Credit,” <https://www.whitehouse.gov/child-tax-credit>, for additional information on the Child Tax Credit.

Generally tight underwriting standards for consumer lending contributed to relatively slow loan growth in 2021. While a net share of banks loosened lending standards in 2021, banks reported in July that lending requirements for most loan types were close to the tighter end of the historical range.²⁶ Tighter underwriting standards limit the supply of consumer loans, dampening loan growth, but could benefit banks by reducing the chance that borrowers will be unable to repay loans.

Asset quality at banks improved in 2021 across all consumer loan types. Personal income growth, the improving labor market, and low debt burdens all contributed to improving consumer asset quality. Despite increasing modestly in fourth quarter due to typical seasonal variations, the share of all types of consumer loans that were noncurrent—more than 90 days delinquent or in nonaccrual status—fell between fourth quarter 2020 and fourth quarter 2021 (Chart 26). The noncurrent rate on consumer loans fell at both

Chart 24

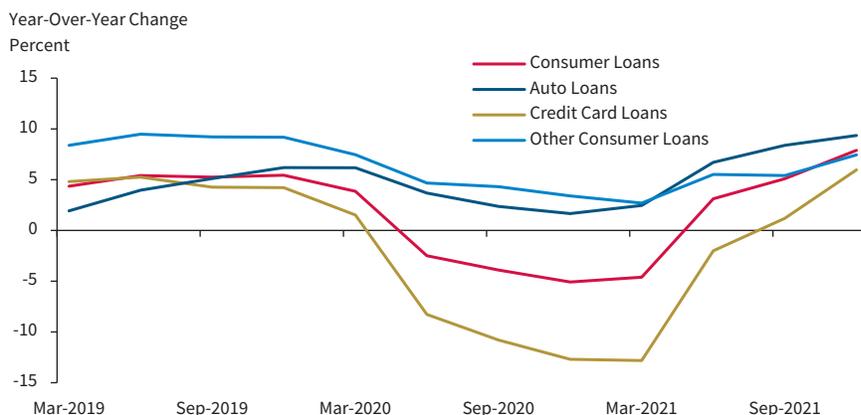
Consumer Debt Burdens Declined in 2021 From the Improved Labor Market and Economic Impact Payments



Source: Federal Reserve Board (Haver Analytics).
Note: The household debt service ratio is the ratio of estimated required payments on mortgages and consumer debt to disposable personal income. The consumer debt service ratio is the ratio of estimated required payments on consumer debt to disposable income. Data are quarterly as of fourth quarter 2021.

Chart 25

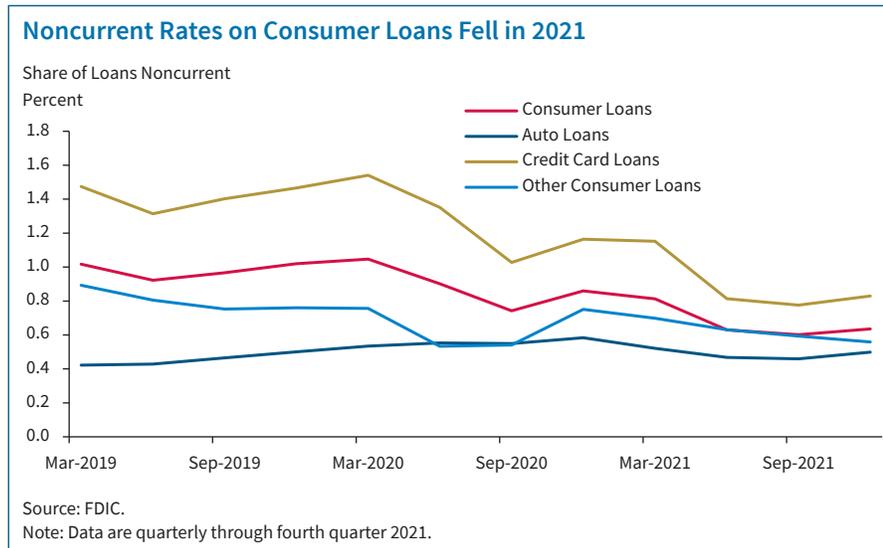
Credit Cards Remained a Drag on Consumer Loan Growth in First Half 2021



Source: FDIC.
Note: Data are quarterly through fourth quarter 2021.

²⁶ In July 2021, the Federal Reserve’s Senior Loan Officer Opinion Survey on Bank Lending Practices asked about underwriting standards relative to the range over which lending standards have varied from 2005 to the present. Despite loosening in 2021, lending standards for prime credit card and auto loans were closer to the midpoint of the historical range.

Chart 26



community and noncommunity banks, but performance differed across loan types. Community banks reported lower noncurrent rates than noncommunity banks for auto loans and credit card loans and higher noncurrent rates for other non-credit card consumer loans.²⁷ Net charge-off rates for consumer loans also fell in 2021.

While asset quality improved in 2021, consumer loans remain a source of credit risk at banks. The outlook for consumer loans depends on the path and duration of the pandemic and its effects on economic activity and consumer spending. Adverse effects on the labor market and personal income could challenge consumer loan repayments.

²⁷ Community banks hold only 0.25 percent of outstanding credit card loans, so the noncurrent rate should be interpreted with caution. Other consumer loans are loans to individuals for household or personal expenses that are not credit card loans or auto loans.

Energy

- *Renewed global oil consumption and limited production contributed to higher oil prices in 2021.*
- *The recovery of mining employment in energy-concentrated states has been slow.²⁸*
- *Direct bank lending to oil and gas (O&G) firms declined in 2021, but bond issuance increased.*
- *Community bank asset quality in energy-concentrated states improved in 2021, in line with other community banks.*

Economic exposure to the energy sector is concentrated in eight states: Alaska, Colorado, Louisiana, New Mexico, North Dakota, Oklahoma, Texas, and Wyoming.

- Direct loans to the energy sector are primarily held at a small number of large and regional banks.
- Exposure to the energy sector is focused in the South.

Oil prices increased in 2021 as the strong rise in global demand for oil exceeded the modest rise in production. Global oil consumption, which fell 8.4 percent in 2020 to 91.9 million barrels per day, increased to 97.1 million barrels per day in 2021, a gain of 5.7 percent.²⁹ U.S. oil consumption rose sharply in 2021 to pre-pandemic levels as economic activity strengthened with increased mobility, COVID-19 vaccines became widely available, and pandemic-related restrictions eased. Increased demand for oil domestically followed global consumption trends.

In response to rising demand for oil, the Organization of the Petroleum Exporting Countries (OPEC) and its allies (OPEC+) incrementally boosted production in 2021 following record cuts in 2020 when demand collapsed because of the pandemic. The increase in oil production and rising oil consumption contributed to a more balanced global oil market toward the end of the year (Chart 27). However, the increase in supply was insufficient to prevent prices from rising. One factor that limited U.S. oil production was the focus by U.S. oil and gas producers to pay down debt instead of spending on oil production. West Texas Intermediate (WTI) crude oil prices climbed from slightly below \$50 per barrel at the

beginning of 2021 to a high of about \$85 per barrel in late October, the highest level since 2014. By the end of December 2021, prices had receded to around \$75 per barrel on fears that demand would decline because of the Omicron variant. Still, oil prices averaged nearly \$68 a barrel in 2021, the highest level in seven years.

Despite the advances in oil prices earlier in the year, U.S. crude production increased incrementally as the market initially drew from excess inventories before ramping up production (Chart 28). By year-end 2021, the count of active rigs in the United States was substantially higher than the year before but 26 percent below the pre-pandemic level. Many O&G firms also finished out drilled but uncompleted wells (DUCs) rather than drilling new wells to contain costs and increase production. DUCs have declined by nearly one-half the peak level reached in June 2020.³⁰

Despite higher oil prices and drilling activity, mining employment in energy-concentrated states has been slow to rebound. While energy-concentrated states had regained nearly all jobs lost during the pandemic by year-end 2021, the mining and logging sector remained well below its pre-pandemic employment

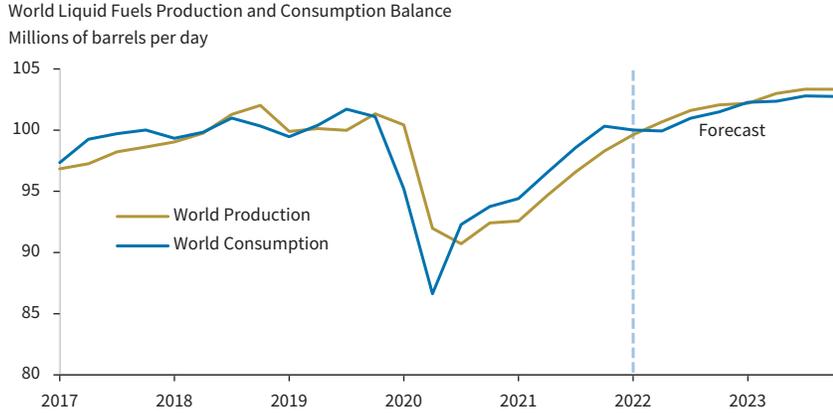
²⁸ For this analysis, energy-concentrated states are Alaska, Colorado, Louisiana, New Mexico, North Dakota, Oklahoma, Texas, and Wyoming. Together, these states accounted for 78 percent of U.S. oil production and 64 percent of natural gas in December 2021.

²⁹ Short-Term Energy Outlook, U.S. Energy Information Administration, March 2022.

³⁰ DUCs are oil and natural gas wells that have been drilled but have not yet undergone well completion activities to start producing hydrocarbons. DUCs peaked in June 2020 and have since fallen 47.6 percent to 4,657 as of December 2021. See U.S. Energy Information Administration, Drilled Productivity Report (DPR), March 14, 2022.

Chart 27

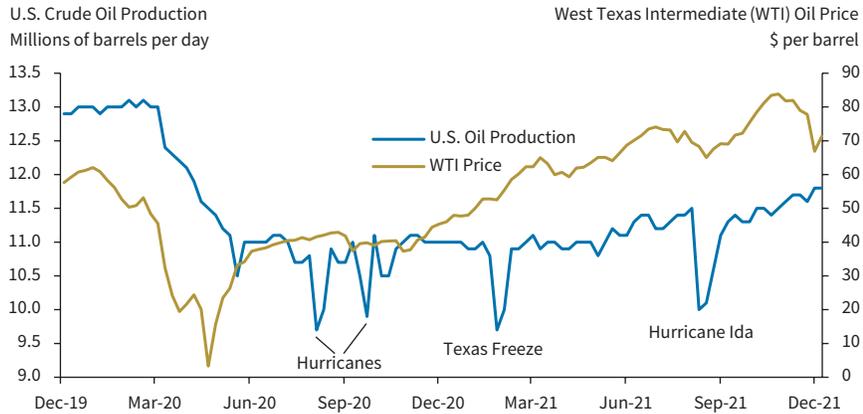
Increasing Global Demand Helped Reduce 2020's Unprecedented Inventory Build and Rebalanced the Oil Market



Source: U.S. Energy Information Administration, Short-Term Energy Outlook March 2022.
Note: Data are quarterly. Actual data are through fourth quarter 2021 and forecast data are through fourth quarter 2023.

Chart 28

Oil Prices Doubled From October 2020 Through 2021, but U.S. Production Was Slower to Respond to Price Signals



Source: U.S. Energy Information Administration.
Note: Weekly WTI spot price and U.S. crude oil production are from December 27, 2019, through December 31, 2021.

level (Chart 29). The decline in mining and logging employment for energy-concentrated states during the pandemic was more severe than the nation, reflecting the steep decline in oil and gas prices and a larger concentration of energy-related jobs. Energy-

concentrated states have at least eight times the concentration of mining and logging employment than the rest of the nation.³¹ Peak-to-trough during the pandemic, mining and logging employment in energy-concentrated states fell 27.2 percent compared

³¹ Based on Bureau of Labor Statistics data for 2021, the location quotient (LQ)—a metric measuring an area's share of industry employment—showed energy-concentrated states have an LQ of 4.1 compared with 0.5 for the rest of the nation.

with 10.1 percent for the rest of the nation.³² By fourth quarter 2021, mining and logging employment was 22.0 percent below its pre-pandemic level across energy-concentrated states compared with 2.5 percent below the pre-pandemic level for the rest of the nation.

The steep decline in the oil and gas industry within energy-concentrated states has contributed to a slightly weaker overall employment recovery than in the rest of the nation. Total nonfarm employment in energy-concentrated states grew 10.0 percent between second quarter 2020 (the recession’s trough) and fourth quarter 2021, compared with 11.3 percent for the rest of the nation. The decline in oil and gas jobs, which are relatively high paying among industry sectors, and reduced capital expenditures in energy states have ripple effects across supporting industries. Many lost oil and gas industry jobs may not return in the near term because of consolidation among O&G firms. Growing environmental, social, and governance (ESG) pressures; mounting competition from renewables; and continuing efforts by employers to reduce energy costs and increase

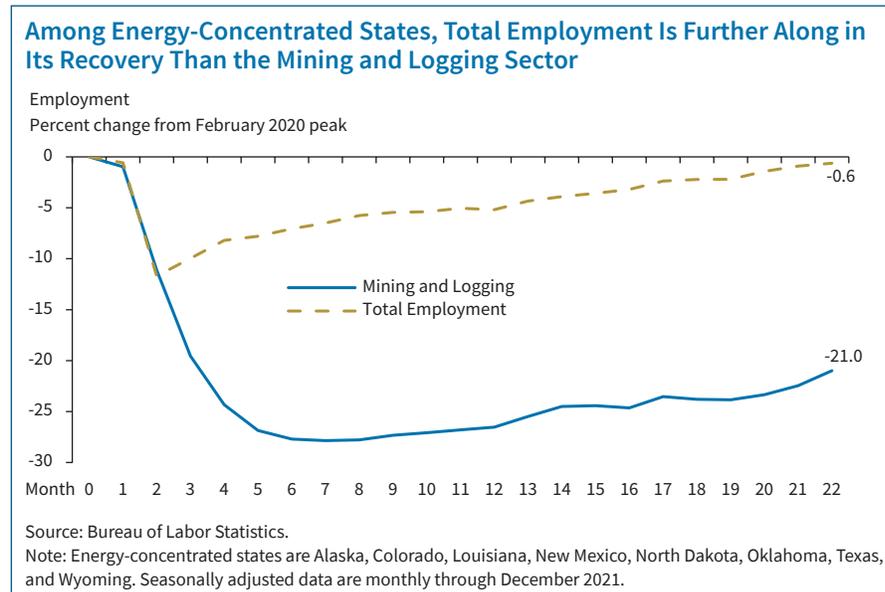
energy efficiency also may affect energy-related employment in these states. How bankers and business leaders respond to the transition away from carbon-based fossil fuels may become increasingly important in communities that are heavily concentrated in fossil fuel employment and production.

Bank lending to the oil and gas industry declined.

While banks do not identify lending to the oil and gas sector on Consolidated Reports of Condition and Income (Call Reports), JPMorgan estimates that between March 2020 and June 2021, total bank lending to the oil and gas sector declined 10 percent and loans to the exploration and production subsector declined just over 16 percent. In most cases, the decline in lending occurred because of reductions in borrowing lines; however, some banks sold entire portfolios at a sizable loss.³³ Asset quality concerns across the sector and ESG-related concerns contributed to a reduction in direct bank exposure.³⁴

O&G firms have increasingly turned to bond markets and other funding sources. New bond issuance to O&G

Chart 29



³² Peaks in mining and logging employment for both energy-concentrated states and the rest of the nation were in first quarter 2020; mining and logging employment in energy concentrated states reached their trough in third quarter 2020, while the rest of the nation reached its trough two quarters later in first quarter 2021.

³³ Tarek Hamid, Aaron Rosenthal, and Evan Piascik, “High Yield Energy: Never Let a Good Crisis Go to Waste,” 2022 Outlook for the High-Yield Markets, JPMorgan, December 2021.

³⁴ Bank Call Reports do not report direct energy sector lending; however, the Shared National Credit program evaluates oil and gas credits held by large banks. In addition, examiner survey responses conclude few community banks have direct exposure to the energy sector.

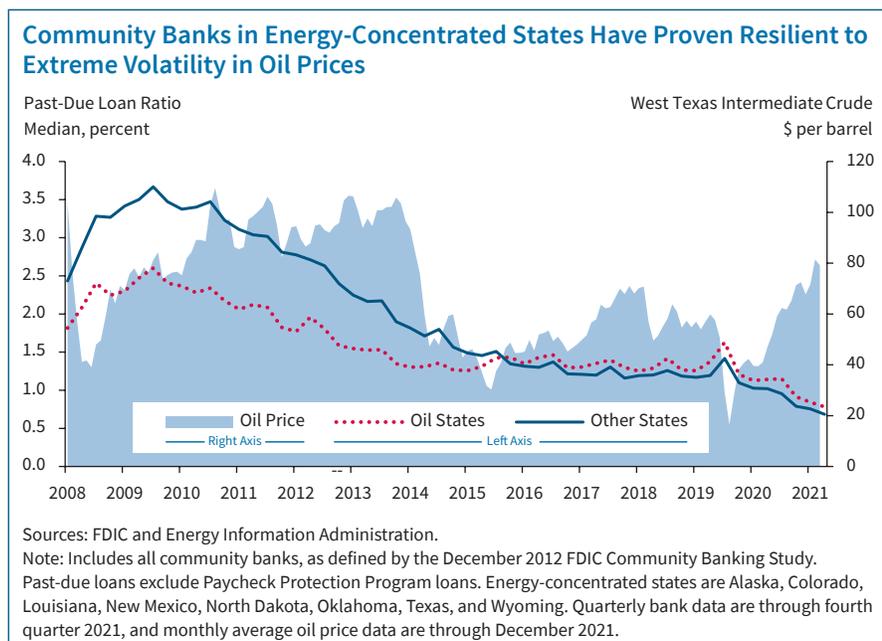
firms reached \$196 billion in 2020, the most since 2014. Issuance in 2021 was down slightly at \$128 billion but still exceeded the pre-pandemic 2019 level. Higher oil and gas prices improved profitability and strengthened balance sheets of many oil producers, which likely contributed to lower default rates on bonds issued by the energy sector. The sector’s default rate on high-yield bonds dropped sharply to 1.5 percent in 2021 compared with 14.0 percent for 2020. Only 20 O&G firms filed for bankruptcy protection in 2021, the lowest number in the past seven years and only slightly more than half of the seven-year average.

Asset quality improved over the past year for community banks in energy-concentrated states. Most direct bank lending to O&G firms is concentrated in the largest banks, while community bank exposure to the sector is primarily indirect from the sector’s influence on local economies. In 2021, community banks that operated in energy-concentrated markets benefited from improved conditions in the energy sector and pandemic-related federal support programs, despite employment weakness in this sector.

Excluding PPP loans, the total past-due loan rate for community banks headquartered in energy-concentrated states was 0.78 percent in fourth quarter 2021, an improvement from the 1.14 percent past-due rate one year earlier and only slightly higher than the 0.68 rate for other community banks. The improvement in the past-due rate among energy-concentrated states was similar to other states (Chart 30).³⁵ The median C&I loan past-due rate (excluding PPP loans) for community banks in energy-concentrated states improved to 0.52 percent in fourth quarter 2021 from 0.80 percent at year-end 2020 but remained well above the 0.25 percent in non-energy concentrated states.

Increased geopolitical uncertainty has contributed to higher energy prices in early 2022. Russia’s invasion into Ukraine raises prospects for a global energy supply shock and increased market volatility. The conflict could also reshape energy policy and planning. The first quarter 2022 price spike in crude oil prices reflected supply concerns arising from the conflict that will likely affect energy consumption patterns and require potentially turbulent global supply adjustments.

Chart 30



³⁵ PPP loans are excluded from past-due ratios to avoid asset quality distortions in commercial and industrial loan portfolios, since PPP loans are forgivable or guaranteed by the U.S. government.

Housing

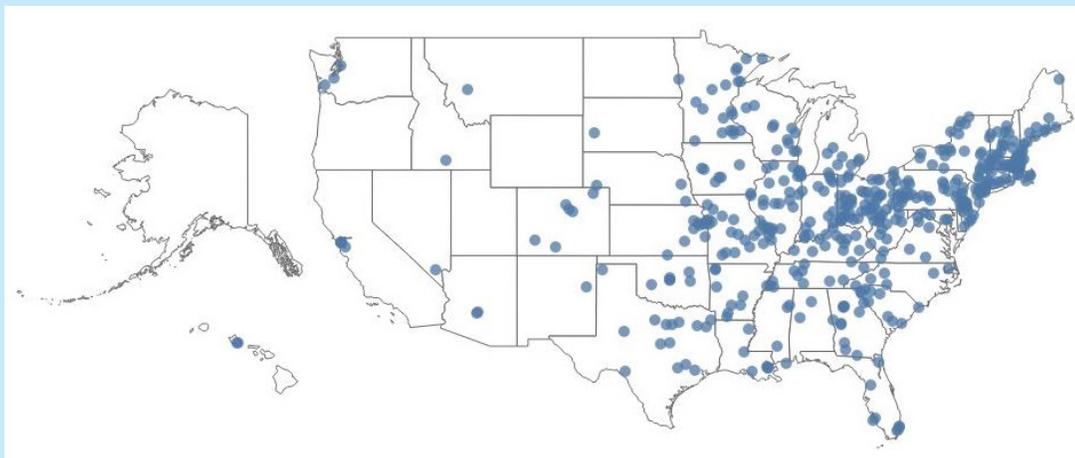
- *Home price growth set a new record in 2021, driven by strong demand, limited inventory of homes for sale, and low mortgage rates.*
- *The banking industry reported a slight increase in 1–4 family residential loans in 2021.³⁶*
- *Asset quality among bank residential mortgage portfolios remains favorable, helped by government support and forbearance programs.*

Residential loans held by banks totaled \$2.5 trillion as of fourth quarter 2021.

- Of the \$2.5 trillion in residential loans, community banks hold 17 percent (\$426 million).
- Ten percent of all banks hold a concentration of residential loans, with residential loans above 300 percent of capital (tier 1 capital and credit loss reserves for loans and leases).
- Roughly 40 percent of community banks reported that residential mortgage loans were the largest lending segment by dollar volume within their loan portfolio.
- Exposure to the residential market, in terms of total residential loans to total loans, is highest in the Northeast.

Regional Exposure to Residential Lending

Dots on the map represent the 504 banks with total 1–4 residential loans above 300 percent of capital.



Source: FDIC.

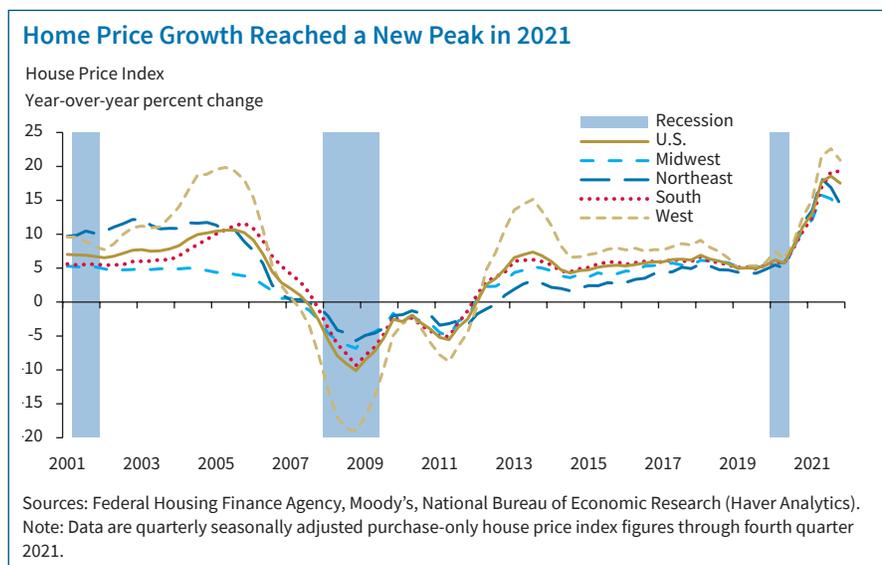
³⁶ One-to-four family residential loans include total real estate loans secured by 1–4 residential properties.

Home prices increased sharply in 2021, setting a record for growth amid strong demand, limited inventory for sale, and low mortgage rates.³⁷ Home price appreciation accelerated in 2021 from highs reached in 2020. In the year ending fourth quarter 2021, home prices nationally rose by 17.5 percent, well above the 11.1 percent rate of growth in the year ending fourth quarter 2020 and just below the record 18.6 percent growth rate in the year ending third quarter 2021. National price growth in 2021 also far exceeded the prior cyclical peak of 10.6 percent in 2005. Home price growth rates in 2021 were highest in the West and the South (Chart 31). Arizona, Utah, Idaho, Florida, and Tennessee led annual home price increases through fourth quarter 2021, with year-over-year increases of about 24 percent or more. Housing markets in these areas benefited from strong in-migration as

prospective home buyers continued to desire more space in comparatively less-costly housing markets.³⁸ Louisiana, North Dakota, and Maryland, states with net out-migration during the pandemic, had the lowest home appreciation rates in 2021.³⁹

Record price appreciation nationwide reflects strong demand for homes and limited inventory of homes for sale. Trends such as increased remote work opportunities and shifts in housing preferences that emerged at the start of the pandemic continued in 2021, including a higher share of millennial home purchase mortgage applications.⁴⁰ Record levels of investor purchases also contributed to strong demand for single-family homes in 2021, leaving fewer homes available for owner-occupant purchases.⁴¹ Investors continued

Chart 31



³⁷ Unless otherwise noted, all data in this paragraph are from the Federal Housing Finance Agency seasonally adjusted purchase-only house price index data beginning in 1991 through fourth quarter 2021; record house price growth reached in the year ending third quarter 2021. Growth in home prices is calculated on an annual basis unless otherwise noted.

³⁸ Census Bureau, migration data through the first half of 2021.

³⁹ Federal Housing Finance Agency, seasonally adjusted purchase-only house price index through fourth quarter 2021. Census Bureau, population and migration data through the first half of 2021. National Association of Realtors, Bureau of Economic Analysis, Census Bureau, Moody's Analytics, housing affordability index data through fourth quarter 2021. While price growth was at or above the national level in Hawaii and California, the states with the lowest affordability, these two states had among the largest outflows of population as residents moved to comparatively more affordable locations.

⁴⁰ Archana Pradhan, "Millennial Homebuyers Dominate in High-Tech and Midwest Metros," CoreLogic, October 4, 2021. Millennials benefited from increased remote work and accounted for 51 percent of home purchase mortgage applications in 2021, up from 46 percent in 2019.

⁴¹ Dana Anderson and Sheharyar Bokhari, "Real Estate Investors Are Buying a Record Share of U.S. Homes," Redfin, February 16, 2022. Investors purchased a record 18.4 percent of U.S. homes in fourth quarter 2021, well above the level of about 10 percent reached during the housing boom leading up to the Great Recession. By volume, the number of homes purchased by investors reached a record in third quarter 2021. Redfin data are subject to revision and cover the 40 most populous U.S. metro areas where sale details are disclosed, with data beginning in first quarter 2000.

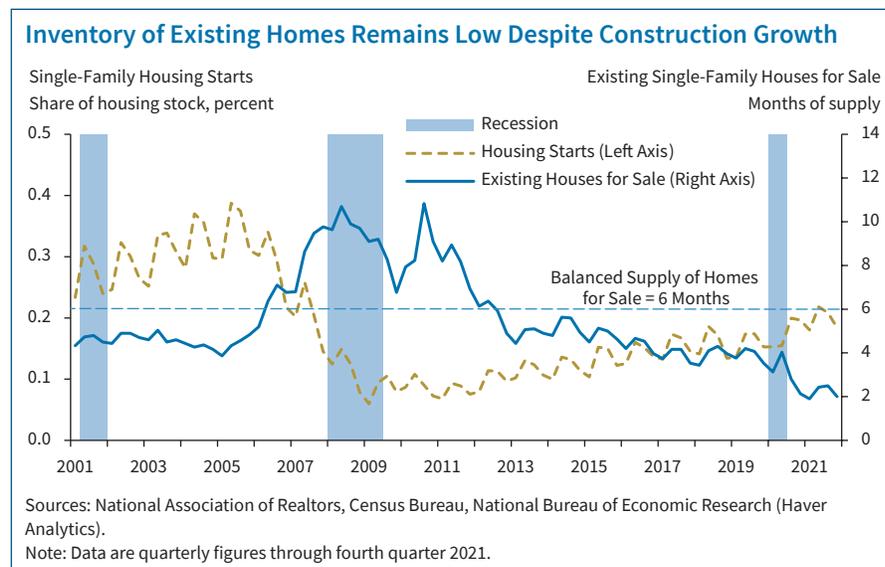
to favor low-priced homes but increasingly purchased homes in middle and higher-priced segments as well.⁴²

While demand for homes remained strong during 2021, the inventory of existing homes for sale remained near historic lows, and well below the six-month level of supply that is indicative of a balanced market.⁴³ As of fourth quarter 2021, the months' supply of existing homes for sale was two months, slightly higher than earlier in the year but below the three-month level going into the pandemic (Chart 32).⁴⁴ Amid the low supply of existing homes for sale, new construction resumed in 2021 after dipping slightly at the start of the pandemic in 2020. As of fourth quarter 2021, starts were more than 20 percent above the pre-pandemic level.⁴⁵ Despite growth, new construction levels may be insufficient to meet demand. Supply chain issues and higher costs of land, labor, and lumber are hampering the ability of builders to construct additional housing.⁴⁶

The banking industry reported a slight increase in 1–4 family residential loans in 2021. Despite strong home sales, bank mortgage balances grew modestly in 2021. As of fourth quarter 2021, banks reported 1–4 family residential loans of \$2.5 trillion, a 0.5 percent increase from one year earlier but 0.8 percent lower than the fourth quarter 2019 pre-pandemic level. Increased competition from nonbank lenders and substantial purchases by all-cash investors contributed to muted growth among banks.

Nationally, banks reported a median concentration of 1–4 family mortgages to capital of 122 percent in fourth quarter 2021, slightly above the previous quarter but near the lowest level since data reporting began in 1984. Slightly higher holdings of residential mortgage loans and lower aggregate capital levels contributed to the quarterly increase but were coupled with the longer-term aggregate trend of residential lending increasingly moving from banks to nonbanks. Community banks reported a median ratio of 1–4 family mortgages to

Chart 32



⁴² Anderson and Bokhari, February 16, 2022.

⁴³ Joint Center for Housing Studies of Harvard University, "The State of the Nation's Housing 2021," https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_State_Nations_Housing_2021.pdf.

⁴⁴ National Association of Realtors, existing single-family homes for sale through fourth quarter 2021. Census Bureau, new single-family homes for sale through fourth quarter 2021. Existing homes accounted for about two-thirds of single-family homes for sale in fourth quarter 2021, down from nearly 80 percent pre-pandemic.

⁴⁵ Census Bureau, single-family home starts through fourth quarter 2021.

⁴⁶ The Economist, "House Party," January 8, 2022.

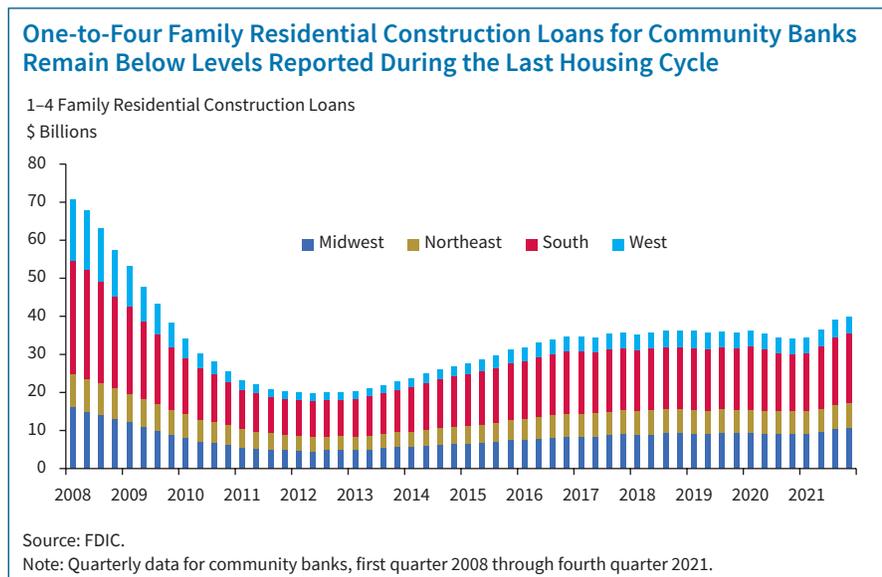
capital of 125 percent in fourth quarter 2021, down from one year earlier and below the 2009 peak of 164 percent.

The banking industry reported increased holdings of traditionally higher-risk 1–4 family residential construction loans, which rose to nearly \$88 billion in fourth quarter 2021, a 14 percent increase from one year earlier. This was the highest balance since 2010, following the Great Recession. Community banks increased 1–4 family residential construction loans by 17 percent year over year in 2021 compared with 11 percent by noncommunity banks. In line with regional single-family home starts, community banks in the South reported the largest year-over-year increase and balance of 1–4 family construction loans, while community banks in the Northeast reported the smallest increase (Chart 33). The share of banks nationwide with a high concentration of typically higher-risk 1–4 family residential construction loans continued to decline from the Great Recession peak, falling to 5.2 percent in fourth quarter 2021 compared with nearly 14 percent at the end of 2008.⁴⁷

The banking industry reported favorable mortgage asset quality in 2021. As of fourth quarter 2021, banks reported an aggregate 1–4 family residential loan past-due rate of 2.7 percent, down from one year earlier and well below the peak of 10.6 percent in 2010. Moreover, nearly half of all banks reported a 1–4 family past-due rate below 1 percent, an improvement from 33 percent of banks reporting this past-due rate level in 2019 (Chart 34). The noncurrent rate on 1–4 family mortgages, mortgages that are more than 90 days past due, also declined from a year earlier.⁴⁸ Excluding Government National Mortgage Association (GNMA) noncurrent balances, the industry noncurrent rate for 1–4 family mortgage loans declined from 1.57 percent to 1.37 percent.⁴⁹ Community banks reported a lower noncurrent rate excluding GNMA balances (0.6 percent) compared with noncommunity banks (1.5 percent).

While favorable housing market conditions in 2021 supported mortgage asset quality, headwinds may challenge the sector’s momentum. Asset quality measures for residential mortgage loans held by banks remained favorable at year-end 2021. The share of mortgages in foreclosure also declined in 2021 to

Chart 33

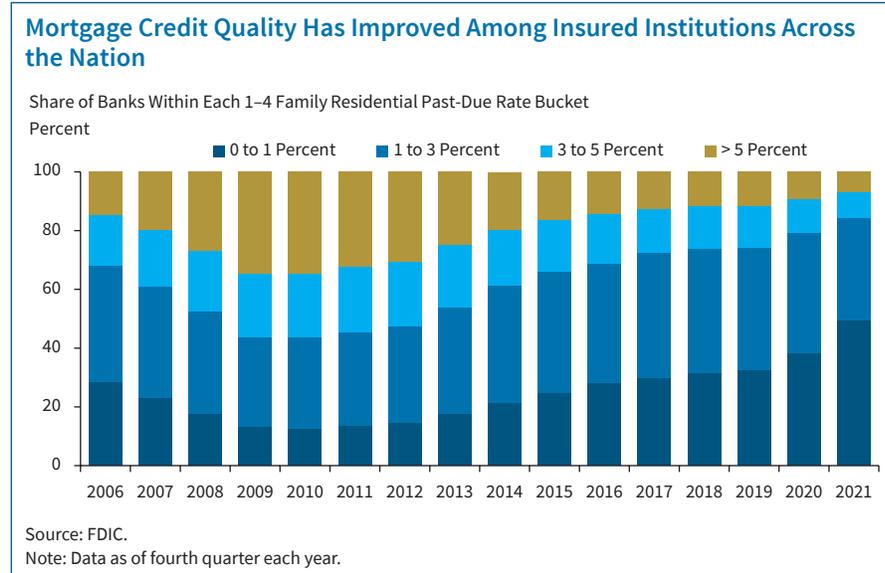


⁴⁷ High concentration is defined as 1–4 family construction loans at 50 percent or more to capital.

⁴⁸ Noncurrent 1–4 family residential loans are those secured by 1–4 residential properties 90 days or more past due and nonaccrual status.

⁴⁹ Nearly 60 percent of the decline was due to the lower rebooked GNMA noncurrent balances, which fell 27 percent from year-earlier levels.

Chart 34



0.4 percent in fourth quarter 2021, the lowest level since 1981.⁵⁰ Underwriting of residential mortgages remained disciplined as the share of all mortgages originated to borrowers with high credit scores remained at a high level.⁵¹ Strong gains in home prices also contributed to the continued decline in the share of underwater mortgages to the lowest level since 2009 and contributed to meaningful gains in homeowner equity.⁵² The share of mortgages in pandemic-related forbearance programs declined to 1.41 percent at year-end 2021 after peaking at 8.55 percent in June 2020.⁵³

While industry estimates suggest home prices will continue to rise in 2022, albeit at a lower rate than in 2021, several headwinds may emerge.⁵⁴ Higher home prices have made homes less affordable, particularly for first-time buyers. A rise in mortgage rates from 2021 near record lows may mute housing demand and affect the affordability of homes, particularly among first-time buyers. In addition, changes in economic conditions, the end of various pandemic-related support programs, and the resolution of mortgages no longer in forbearance could contribute to deterioration in mortgage asset quality from lows reached during the pandemic.

⁵⁰ Mortgage Bankers Association.

⁵¹ New York Fed Consumer Credit Panel/Equifax.

⁵² CoreLogic, "Homeowner Equity Insights," December 9, 2021.

⁵³ Mortgage Bankers Association, "Share of Mortgage Loans in Forbearance Decreases to 1.41 percent in December 2021," January 18, 2022; "Share of Mortgage Loans in Forbearance Increases to 8.55 percent," June 15, 2020.

⁵⁴ On December 2, 2021, CoreLogic's 2022 Housing Outlook forecasted an annual home price of increase 6 percent in 2022 compared with 15 percent in 2021. Freddie Mac's January 2022 Economic and Housing Research Forecast Snapshot indicates annual home price growth of 6.2 percent in 2022 compared with 15.9 percent in 2021.

Leveraged Lending and Corporate Debt

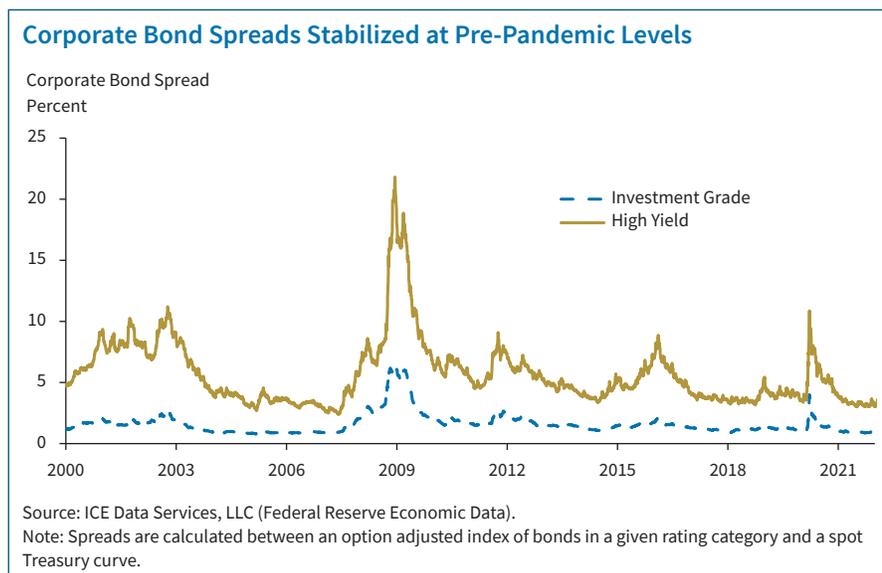
- Conditions in corporate debt markets improved in 2021, and corporate debt levels continued to grow.
- Low borrowing costs drove record issuance of lower-rated high-yield corporate bonds, leveraged loans, and collateralized loan obligations (CLOs).
- Corporate borrowers face continuing challenges from adverse market developments including potentially higher interest rates.
- Banks have direct and indirect exposure to corporate debt markets.

Corporate credit conditions improved in 2021. Corporations reported strong profits and had ample access to credit, which contributed to a decline in corporate defaults. Corporate profits jumped in 2021 as the post-pandemic economic recovery continued.⁵⁵ Higher profits and accommodative borrowing conditions allowed companies to take on more low-interest debt and refinance existing debt. On net, bank lending standards eased throughout 2021 for C&I loans.⁵⁶ Leveraged loan prices recovered from a drop in 2020.⁵⁷ Corporate bond spreads declined in early 2021 and stabilized at pre-pandemic levels through year-end (Chart 35).⁵⁸ Default rates of leveraged loans

and corporate bond issuers have declined since the pandemic peak in third quarter 2020 (Chart 36). However, continuing challenges from the pandemic and high levels of debt could cause defaults to increase, particularly for corporate borrowers in vulnerable sectors such as energy and hospitality.

Corporate debt reached an all-time high in 2021 as borrowing costs declined to record lows, but measures of debt relative to GDP and corporate profits declined.⁵⁹ Following the market turmoil in March 2020 and subsequent actions by the Federal Reserve, corporate debt markets stabilized in the second half of

Chart 35



⁵⁵ Bureau of Economic Analysis.

⁵⁶ Board of Governors of the Federal Reserve System, Senior Loan Officer Opinion Survey.

⁵⁷ S&P LCD.

⁵⁸ ICE Data Indices, LLC.

⁵⁹ Board of Governors of the Federal Reserve System, Financial Accounts of the United States, and ICE Data Indices, LLC.

Chart 36

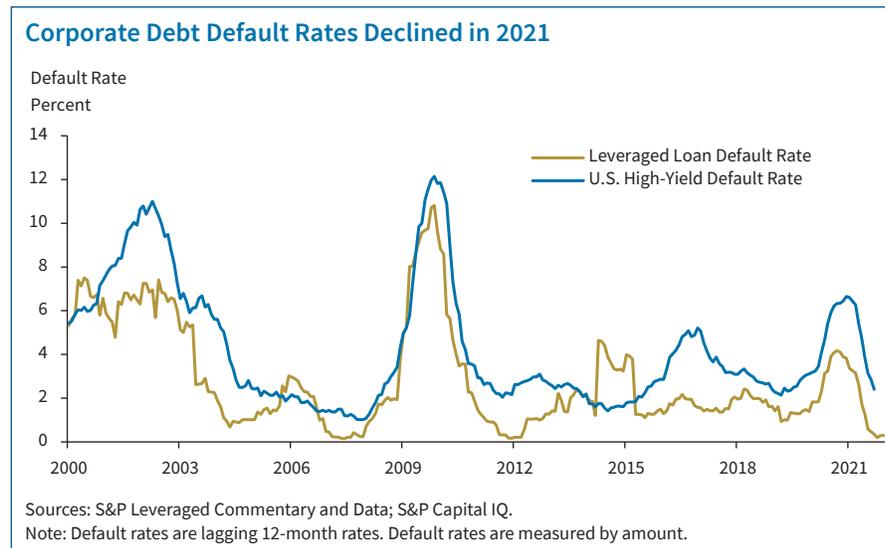
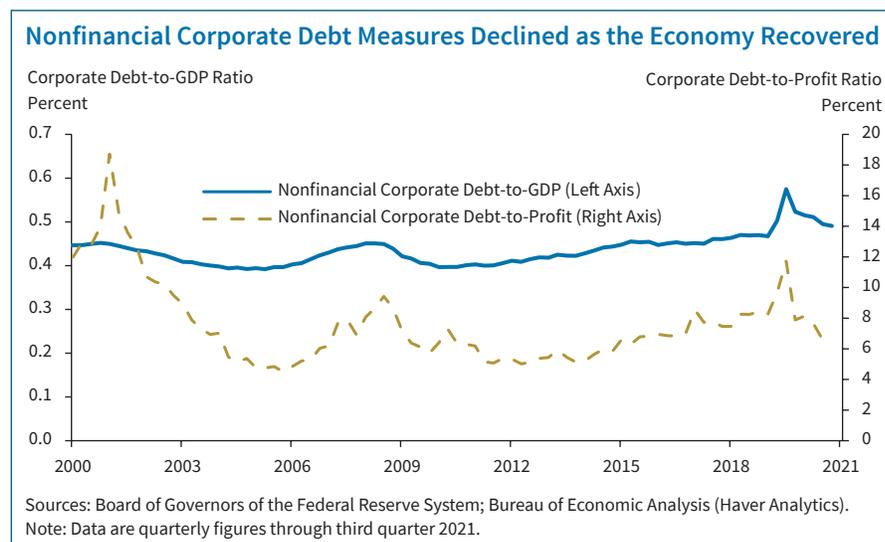


Chart 37



2020 and early 2021. Fueled by ample access to credit and historically low borrowing costs, corporate debt levels rose further in 2021. While the recovery in GDP pulled down the corporate debt-to-GDP ratio from the all-time high reached in 2020, this ratio remains above pre-pandemic levels (Chart 37). Similarly, corporate leverage, or debt as a share of profit, declined to pre-pandemic levels as profits rose in 2021.

Total corporate bond issuance slowed in 2021 despite growth in the lowest-rated segment of the bond market.⁶⁰ The record-setting pace of investment-grade corporate bond issuance in the second half of 2020 slowed slightly in 2021 but remained high compared to historical levels. At the same time, increased investor risk appetite and record-low borrowing costs contributed to the rise in high-yield bond issuance, which reached a record high \$485 billion in 2021, up

⁶⁰ Securities Industry and Financial Markets Association.

15 percent from a year earlier (Chart 38). Companies primarily used this cash to meet refinancing needs and finance mergers and acquisitions.⁶¹

Leveraged loan issuance jumped to a historic high as investor demand for yield rose. Leveraged loan issuance spiked to a record high in 2021, exceeding the previous high by 22 percent (Chart 39). Issuance had declined for three consecutive years before 2021. New

issuance was primarily driven by a spike in investor demand, particularly from CLOs, which account for most leveraged loan funding. CLO issuance also hit a record high in 2021, nearly doubling total issuance in 2020. On the supply side, record high financing related to mergers and acquisitions drove the leveraged loan market.⁶²

As issuance spiked, leveraged loans continued to grow riskier. Over the past decade, the volume of leveraged

Chart 38

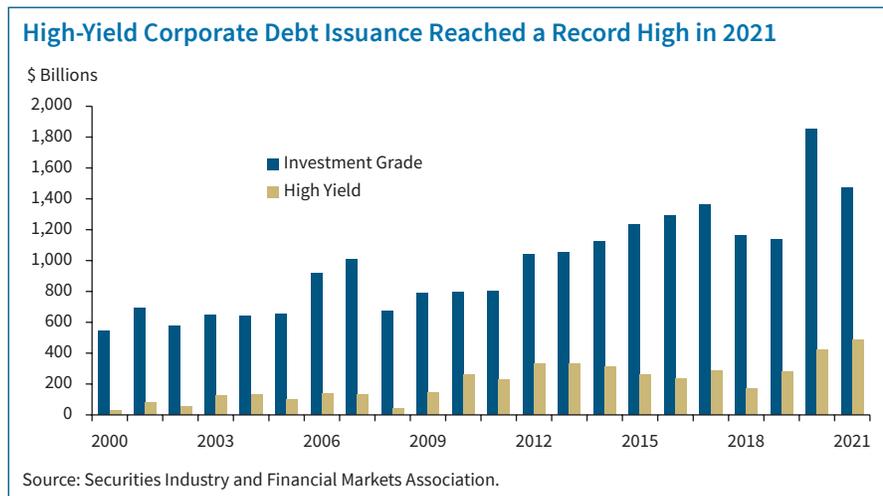
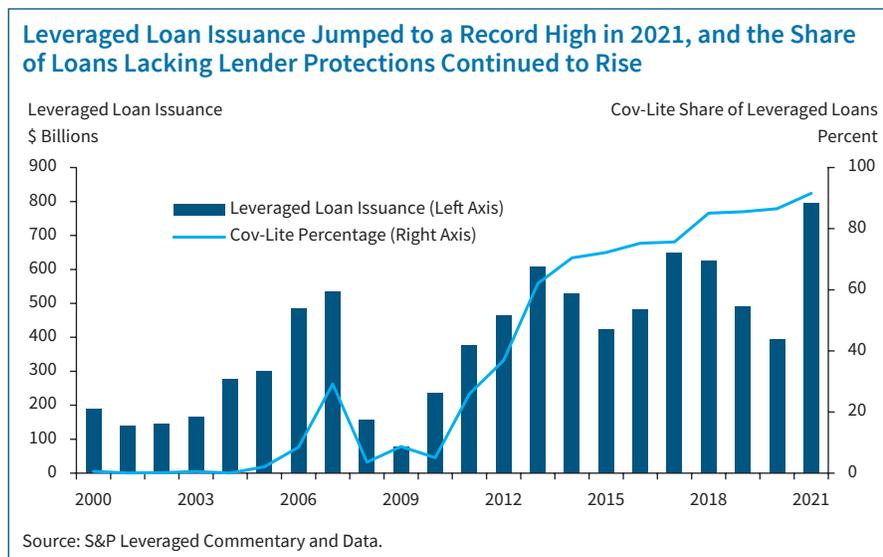


Chart 39



⁶¹ S&P Leveraged Commentary and Data (S&P LCD).

⁶² S&P LCD.

loans without typical lender protections, known as maintenance covenants, has increased. These “cov-lite” loans accounted for 92 percent of all leveraged loans issued in 2021.⁶³ Leverage loan issuance has also risen to all-time highs.⁶⁴ While U.S. banks arrange and originate most of these loans, U.S. bank holdings account for only 8.1 percent of the market.⁶⁵

Banks remain exposed to risks in corporate debt markets both directly and indirectly. Banks have direct risk to corporate debt markets through loans and lines of credit to corporations, CLO holdings, and participation in the arranging of leveraged loans and corporate bonds. However, potential stress in the corporate bond market would have a limited direct impact on bank credit risk, as banks do not hold a significant amount of corporate bonds.⁶⁶ While U.S. bank holdings of leveraged loans are also limited, banks are the primary arranger and originator of these loans. As interest rates rise, a decline in leveraged loan issuance would mean a loss of loan origination fees and income for banks.

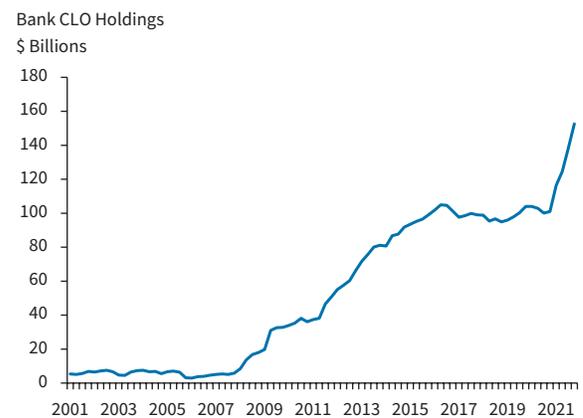
Banks are also exposed to leveraged loans through holdings of CLOs. CLO issuance and bank holdings of CLOs both jumped in 2021 (Chart 40). In fourth quarter 2021, banks held more than \$152 billion in CLOs, up from \$101 billion a year earlier.⁶⁷ While banks have traditionally held the highest-rated CLO tranches, these holdings expose the banking system to disruption in the underlying leveraged loan market.⁶⁸

Banks have indirect exposure to corporate debt, including lending to nonbank financial firms, participation in derivatives markets, and through macroeconomic effects such as slowing growth or rising unemployment. These factors could affect the performance of other bank loans such as commercial and residential mortgages and C&I loans.

Strong bank capital and liquidity may mitigate risks to the banking system from corporate debt markets. Banks are better positioned to withstand shocks than before the Great Recession, as capital levels are higher. Reliance on short-term funding has also declined as deposit funding rose strongly in 2021.⁶⁹ Banks with high loan concentrations to companies in vulnerable industries could face elevated credit losses as these industries continue to be adversely affected by the pandemic and potentially long-term changes in consumer behavior.

Chart 40

U.S. Bank Collateralized Loan Obligation Holdings Jumped Higher in 2021



Source: FDIC.
 Note: The information is reported only among insured depository institutions with at least \$10 billion in assets, though this threshold has changed over time. The information may also include some assets other than CLO holdings. The Call Report line items included in this measure are commercial and industrial loan asset-backed securities and structured financial products whose underlying collateral or reference assets are corporate and similar loans. These holdings include assets held to maturity, available for sale, and held in trading accounts.

⁶³ S&P LCD.

⁶⁴ Leverage is measured as debt/earnings before interest, taxes, depreciation, and amortization and is higher than any point since at least 2003 according to S&P LCD. Actual leverage may be higher than reported leverage, as earnings are routinely adjusted through earnings “add-backs” to increase projected earnings used to calculate leverage ratios.

⁶⁵ S&P LCD.

⁶⁶ FDIC.

⁶⁷ FDIC, Call Reports. Information is reported only for banks with at least \$10 billion in assets and may include some assets other than CLO holdings. Due to the limited coverage of banks, it is likely an underestimate. The Call Report line items included in this measure are commercial and industrial loan asset-backed securities and structured financial products whose underlying collateral or reference assets are corporate and similar loans. These holdings include assets held to maturity, available for sale, and held in trading accounts.

⁶⁸ Board of Governors of the Federal Reserve System.

⁶⁹ FDIC.

Nonbank Lending

- *Loans to nonbank financial institutions reached a record high in 2021.*
- *Exposure to nonbank lending is primarily in the largest banks.*
- *Bank lending to nonbank financial institutions exposes the banking industry to potential stress in other parts of the financial system.*

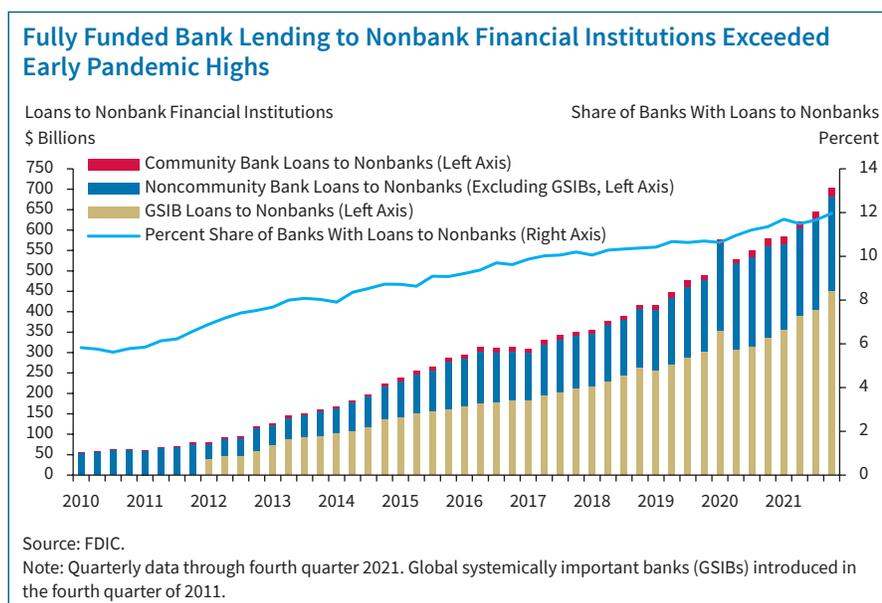
Banks remained an important source of lending to nonbanks in 2021. Banks held \$704 billion in funded loan commitments to nonbank financial institutions in fourth quarter 2021, a record high since data collection began in 2010 (Chart 41).⁷⁰ Year-over-year growth in nonbank financial institution lending in the fourth quarter was more than six times faster than total loan growth over the same period and outpaced growth in all other major loan portfolios in fourth quarter 2021 (Chart 42).

Banks provide credit-line commitments to nonbank financial institutions including investment firms, financial vehicles, nonbank real estate lenders, transaction processors, and other entities. Nonbank

financial institutions rely on banks as a key source of liquidity for day-to-day operations and in times of stress, such as periods of heightened investor redemptions or disruptions in the short-term funding markets. This was evident at the onset of the pandemic when funded commitments from banks to nonbanks rose in first quarter 2020 to 5.3 percent of total loans from 4.7 percent in the prior quarter. By fourth quarter 2021, funded loans to nonbank financial institutions as a percentage of total loans had reached 6.3 percent.

Lending to nonbanks is concentrated among the largest banks. Global systemically important banks (GSIBs) reported 32.7 percent growth in funded nonbank financial institution balances in 2021.⁷¹ Funded nonbank

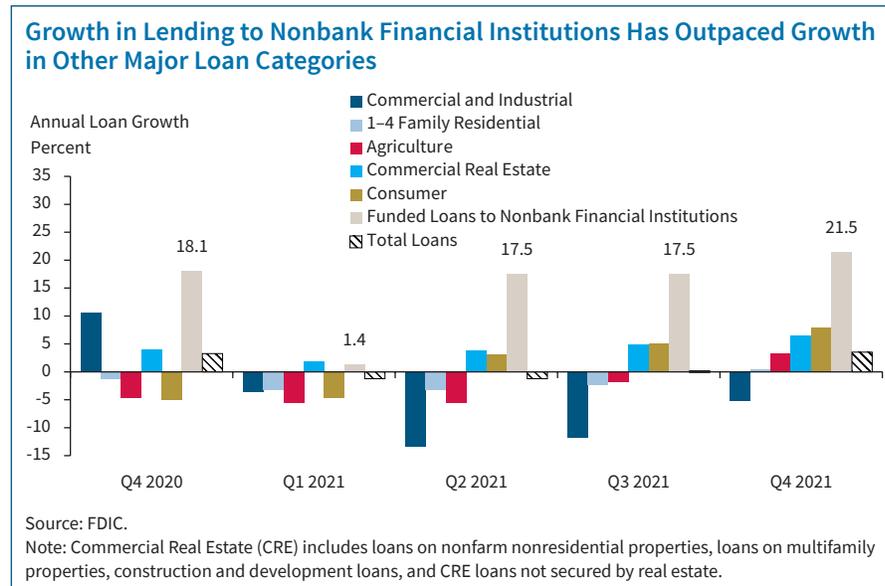
Chart 41



⁷⁰ Loans to nonbank financial institutions were first reported on Call Reports in first quarter 2010.

⁷¹ The eight U.S. GSIBs are Bank of America, Bank of New York Mellon, Citigroup, Goldman Sachs, JPMorgan Chase, Morgan Stanley, State Street Corporation, and Wells Fargo.

Chart 42



financial institution loan balances were 11.6 percent of their total loan portfolios at year-end 2021, up from 8.0 percent at year-end 2019. GSIBs issue term loans, asset-based loans, and other facilities to nonbanks in addition to credit-line commitments. While GSIBs lend to a wide variety of nonbank entities, their largest commitments tend to be to investment firms and financial vehicles.

Community banks also lend to nonbank entities. Loan commitments by community banks to nonbank lenders remains limited. Less than 10 percent of community banks reported funded commitments to nonbanks in 2021, and these loans represent only 1.2 percent of total community bank lending. While confined to a small portion of community banks, loans to nonbanks increased by 7.4 percent in 2021. Most lending to nonbank financial institutions by community banks is through warehouse lines of credit to nonbank mortgage lenders. Nonbank mortgage companies have been expanding their share of the mortgage origination market in recent years and have been increasing their need for bank funding. Many rely on short-term funding,

including warehouse lines from banks, and have limited loss-absorbing capacity in the face of adverse economic shocks.

Bank lending to nonbanks exposes the banking industry to potential stress in other parts of the financial system. Risks from nonbanks can be transferred to banks both directly and indirectly. For example, disruption to nonbank mortgage companies could affect bank servicing operations, especially for nonperforming loans, and pose risks to banks that extend credit-line commitments to them. The acute financial market stress in March 2020 highlighted nonbanks' reliance on bank funding to manage asset liquidation pressures and liquidity mismatches among nonbank financial intermediaries such as hedge funds. These entities relied on credit-line commitments from banks as short-term borrowing sources became unavailable, exposing banks to indirect risk of financial stress in other parts of the broader financial system. Because of the direct and indirect risk inherent in these loans, banks may be vulnerable to distress at nonbank financial institutions.

Small Business Lending

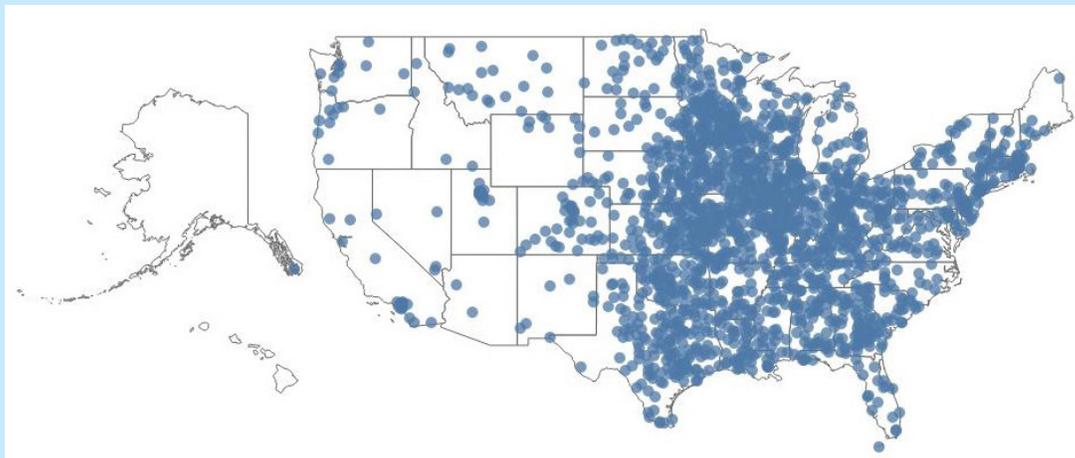
- *Consumer spending rebounded in 2021, supporting small business conditions.*
- *Business loans increased after the PPP ended, supporting new business formation and the re-opening of existing small businesses.*
- *Credit performance for small business lending remained strong despite the pandemic.*
- *Despite the improvements in small business conditions, risks remain and may adversely affect banks.*

Small business lending is a key component of many bank lending portfolios, regardless of location.

- In over 40 percent of banks, small business loans are the majority of their total commercial and industrial loans.

Regional Exposure to Small Business Lending

Dots on the map represent the 2,050 banks with small business loans above 75 percent of total C&I loans.



Source: FDIC.

Note: U.S. territories are not included in the map; one bank in Guam with a concentration of small business loans is not shown.

Strong consumer spending has supported small businesses. In the early months of the pandemic, consumers reduced spending and increased savings. The consumer savings rate jumped from a monthly average of 7.5 percent in 2019 to 33.7 percent in April 2020. Over time, however, the savings rate dropped to 13.7 percent in fourth quarter 2020 and to 7.4 percent in fourth quarter 2021 as consumers resumed spending and slowed savings. Personal consumption expenditures (PCE) increased in 2021 after a sharp year-over-year decline of 3.8 percent in 2020. Durable goods expenditures

rose 7.7 percent in 2020 and more than 27 percent since 2019, as many consumers purchased home improvement products and recreational items during the pandemic. Durable goods drove the improvement in personal consumption, increasing its share of PCE from 13.3 percent in 2019 to 16.3 percent in 2021.

Small businesses have reaped the benefit of the increase in consumption. Based on responses to NerdWallet's August 2021 survey conducted by Harris Poll, slightly more than half of consumer respondents indicated that

they made concerted efforts to shop small and local during the pandemic and 40 percent indicated that they are continuing these habits as the economy recovers.⁷²

Commercial bankruptcy filings declined and new business formations increased. Despite concerns that small businesses would fail in large numbers during the pandemic, that temporarily closed businesses would never reopen, and that potential business owners would be wary of opening a business during a pandemic, none of these concerns were realized. Total commercial bankruptcies were down 37 percent between 2019 and 2021, with Chapter 7 bankruptcies down more than 38 percent and Chapter 11 filings down over 32 percent (Table 1).⁷³ While Chapter 11 bankruptcies rose in 2020 from pre-pandemic levels, the number of business restructurings dropped almost 50 percent in 2021 and were below the 2019 level. Some small businesses may have benefited from the PPP, using funds to keep their business operating during the pandemic and avoid bankruptcy.⁷⁴

Businesses also continued to re-open in 2021. According to Yelp Economic Average, 85 percent of businesses that closed temporarily between March 2020 and September 2021 have reopened, suggesting that many

small businesses adapted their operations in response to the pandemic (for example, offering curbside delivery, online shopping, and outdoor dining).⁷⁵ The data also show that consumer demand for hospitality and leisure activities, which were hurt by early pandemic restrictions, has been rising.⁷⁶

New small businesses also have been forming and opening. According to business formation data from the U.S. Census Bureau, new business applications rose in mid-2020 and remained at an elevated level through 2021 (Chart 43). Business applications increased 53 percent between 2019 and 2021. The largest growth was in applications for non-high propensity businesses (commonly known as sole proprietorships), which increased 63 percent (almost 1.4 million applications). Applications for high propensity businesses—or businesses that employ others—grew 37 percent (almost 480,000 applications). These analyses are supported by the amount of PPP loans originated by banks and the return in business lending after the PPP ended in May 2021.

Bank lending to small businesses declined in 2021 as the PPP ended, but non-PPP business lending grew. PPP loans accounted for much of the increase in

Table 1

Type of Bankruptcy Filing (Commercial Only)	2019 Filings (Number)	2020 Filings (Number)	2021 Filings (Number)	Change Between 2020 and 2021 (Percent)	Change Between 2019 and 2021 (Percent)
Chapter 7 Filings	22,834	19,226	14,145	(26.4)	(38.1)
Chapter 11 Filings	5,519	7,129	3,724	(47.8)	(32.5)
Total Filings	28,353	26,355	17,869	(32.2)	(37.0)

Source: American Bankruptcy Institute.

⁷² Elizabeth Renter, “Survey: Pandemic Shoppers a Lifeline for Small Businesses,” September 21, 2021, <https://www.nerdwallet.com/article/small-business/pandemic-small-business>.

⁷³ Chapter 11 bankruptcy allows a business to reorganize, develop a plan to repay creditors, and keep its assets so that the business may remain open. See 11 U.S.C. §§ 1101 to 1195. Chapter 7 bankruptcy allows a business to liquidate all assets to repay creditors and cease operations. See 11 U.S.C. §§ 701 to 784; see also <https://www.uscourts.gov/services-forms/bankruptcy/bankruptcy-basics>.

⁷⁴ The Paycheck Protection Program provided Small Business Administration-guaranteed funds to small businesses to keep employees on the payroll and to cover basic expenses such as mortgage interest, utilities and rent. The program ran from March 27, 2020, through May 31, 2021. See U.S. Small Business Administration, <https://www.sba.gov/funding-programs/loans/covid-19-relief-options/paycheck-protection-program/first-draw-ppp-loan#section-header-2>.

⁷⁵ Yelp Economic Average, Q3 2021 Report, October 2021, <https://www.yelpeconomicaverage.com/yea-q3-2021.html>.

⁷⁶ Yelp Economic Average measures consumer interest through viewing business pages, posting photos, and posting reviews.

business loans in 2020. C&I loans rose 10.6 percent to \$2.4 trillion in 2020. The PPP ended in May 2021, after which no new PPP loans were originated. Through much of 2021, PPP loan balances were paid off or forgiven. Total PPP loan balances declined by almost \$312 billion (76.4 percent) from fourth quarter 2020 to fourth quarter 2021; community banks and noncommunity banks reported similar rates of decline in PPP loans. During the same period, C&I loans declined by almost \$127 billion (5.2 percent).⁷⁷ The decline in C&I lending at both community banks and noncommunity banks was largely driven by the reduction in PPP lending. Excluding PPP loans, C&I lending grew 10.9 percent at community banks and 8.9 percent at noncommunity banks. This growth reflects the re-opening of small businesses, new business applications, and strong consumer spending.

Community banks remain an important source of funding to small businesses. While small business loans declined in total in 2021 from 2020 levels, the level remains higher than before the pandemic.⁷⁸ Further, these loans remained a larger portion of the C&I loan portfolio at community banks than at noncommunity banks. Community banks saw their share of small business loans as a percentage of total C&I rise from 42.7 percent at year-end 2019 to 48.2 percent at year-end 2020, owing primarily to PPP loans. As PPP loans were repaid or forgiven, the share of small business loans to C&I loans declined (Chart 44). Noncommunity bank small business loans also rose during the pandemic with the PPP, but small business loans represented only 14.6 percent of their total C&I loans. In addition, community banks' share of the industry's small business loans (25.6 percent) is more than twice their share of total C&I loans (10.7 percent) (Table 2).

Asset quality remained strong despite the pandemic stress on small businesses. The banking industry reported improvement in commercial loan quality with a 31 basis point decline in the total C&I loan noncurrent rate to 0.68 percent between fourth quarter 2020 and fourth quarter 2021. Community banks, however, saw a slight rise in the C&I loan noncurrent rate of 5 basis points to 0.71 percent in fourth quarter 2021 (Chart 45). Despite the rise, community banks' C&I noncurrent rate remained

Chart 43

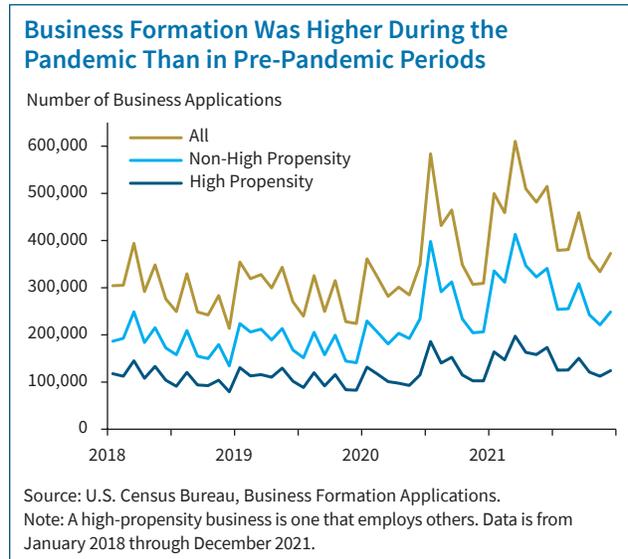
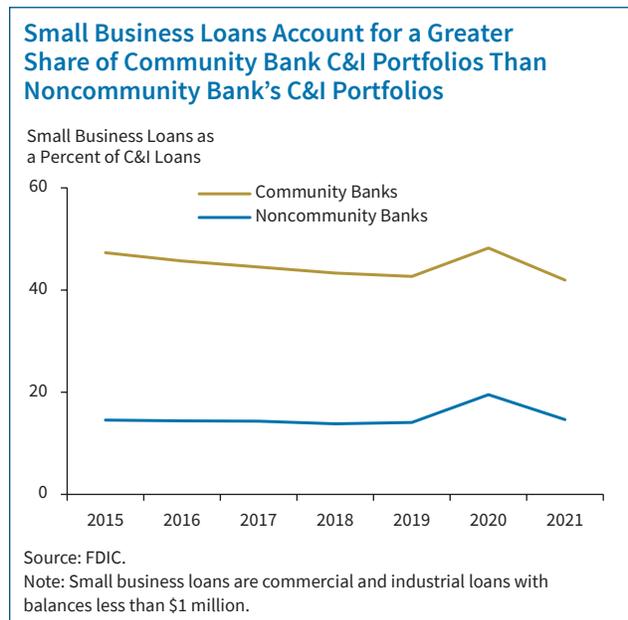


Chart 44



well below the pre-pandemic level. The C&I loan net charge-off rate for the industry improved 35 basis points to 0.13 percent in fourth quarter 2021 from fourth quarter 2020, while the C&I net charge-off rate for community banks improved from 0.32 percent to 0.20 percent.

⁷⁷ In this section, all data referencing community banks and noncommunity banks reflect merger-adjusted performance measures. For an explanation of the reasons for and process of merger adjusting bank data, see Eric Breitenstein and Derek Thieme, "Merger Adjusting Bank Data: A Primer," FDIC Quarterly 13, no. 1 (2019):31-49, <https://www.fdic.gov/analysis/quarterly-banking-profile/fdic-quarterly/2019-vol13-1/fdic-v13n1-4q2018-article.pdf>.

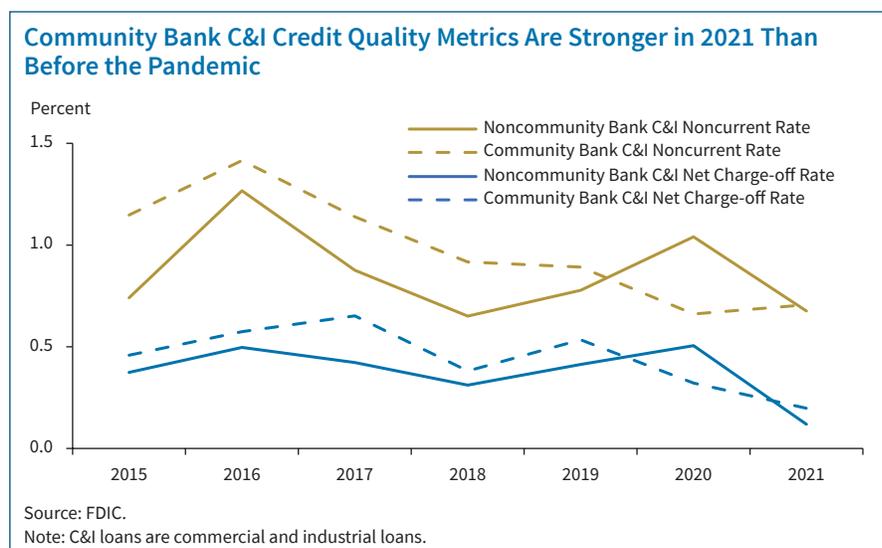
⁷⁸ Small business loans are commercial and industrial loans with balances less than \$1 million.

Table 2

Community Banks Hold an Outsized Share of Small Business Loans Compared to Their C&I Loans								
		2015	2016	2017	2018	2019	2020	2021
Share of C&I Loans (Percent)	Community Banks	8.6	8.7	9.0	9.0	9.3	12.7	10.7
	Noncommunity Banks	91.4	91.3	91.0	91.0	90.7	87.3	89.3
Share of Small Business Loans (Percent)	Community Banks	23.5	23.2	23.4	23.7	23.7	26.5	25.6
	Noncommunity Banks	76.5	76.8	76.6	76.3	76.3	73.5	74.4

Source: FDIC.

Chart 45



Despite improved conditions for small businesses, several risks remain that may adversely affect banks.

First, while business re-openings have occurred in many industries, some sectors continue to be affected by the pandemic, particularly the leisure and hospitality industry.⁷⁹ When these industries will return to pre-pandemic levels of operation is unknown, and this extended closure may negatively affect borrowers and banks in the long term. Second, many small businesses face labor shortages. The December 2021 National Federation of Independent Business (NFIB) survey indicated that 49 percent of respondents could not find workers to fill vacancies in the month. Perhaps to combat the lack of qualified applicants, 48 percent of respondents stated that they raised salaries. Third,

the 2021 inflation rate of 7.0 percent has become a primary concern for 22 percent of the December NFIB survey respondents. Yelp economic data show that reviewers are more frequently reporting increasing prices at businesses. However, these data also show that searches for higher-end businesses rose in recent months (for example, searches for the “\$\$\$” rating are up 56 percent in 2021 from 2019). Although consumers may be adapting to higher prices, businesses remain pessimistic about the economy and the Federal Reserve’s intent to raise interest rates in 2022. Rising interest rates may negatively affect the demand for small business loans.⁸⁰ Small businesses may be reluctant to borrow at higher rates if their business operations have not returned to pre-pandemic levels.

⁷⁹ The American Hotel & Lodging Association in Collaboration with Accenture 2022 State of the Hotel Industry Report, “The Year of the ‘New’ Traveler.”

⁸⁰ National Federation of Independent Business, Small Business Economic Trends, December 2021.

MARKET RISK

Interest Rate Risk and Net Interest Margin

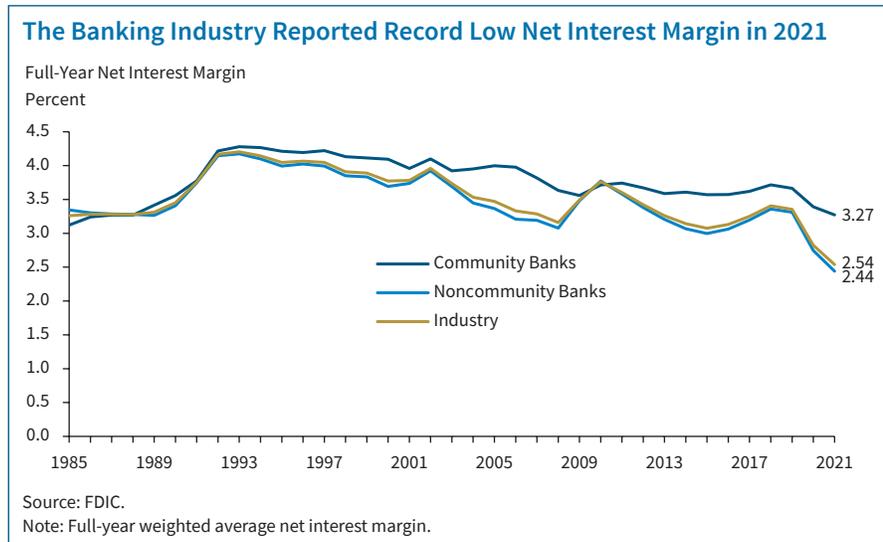
- NIM narrowed to a record low in 2021 as low interest rates and excess liquidity continued to weigh on asset yields, particularly in the first half of the year.⁸¹
- To capture yield as interest rates began to rise, banks extended their balance sheet maturity by holding more long-term securities.
- Rising interest rates in 2022 could pressure bank funding costs and pose interest rate risk challenges to banks that invested heavily in long-term securities in recent years.

The steep decline in interest rates and unprecedented inflow of deposits to the banking system that occurred in 2020 continued to exert downward pressure on NIM in 2021. The industry reported a decline in full-year NIM from 2.82 percent in 2020 to a record low 2.54 percent in 2021. Noncommunity banks, which also reported a record low full-year NIM in 2021, drove the low industry NIM. Community bank NIM also declined, but by less than half that of noncommunity bank NIM in 2021 (Chart 46). The average NIM at community banks narrowed 12 basis points to 3.27 percent, while the average NIM at noncommunity banks narrowed 31 basis points to 2.44 percent. Approximately three-quarters of both community and noncommunity banks

reported a decline in NIM between 2020 and 2021, but different factors drove the decline. Lower net interest income from one year earlier and growth in low-yielding earning assets contributed to lower average NIM among noncommunity banks. Community banks, on the other hand, reported higher net interest income from the prior year from growth in earning assets, but overall asset yields were low enough to drive down the average NIM.

While full-year NIM is lower than one year earlier, the annual decline in 2021 was smaller than in 2020. Quarterly NIM stabilized in the second half of 2021 (Chart 47). Increased deferred fee income from the payoff and forgiveness of PPP loans, rising long-term

Chart 46



⁸¹ All references of “record low” in this analysis of interest rate risk and net interest margin are compared against all dates including and after first quarter 1984.

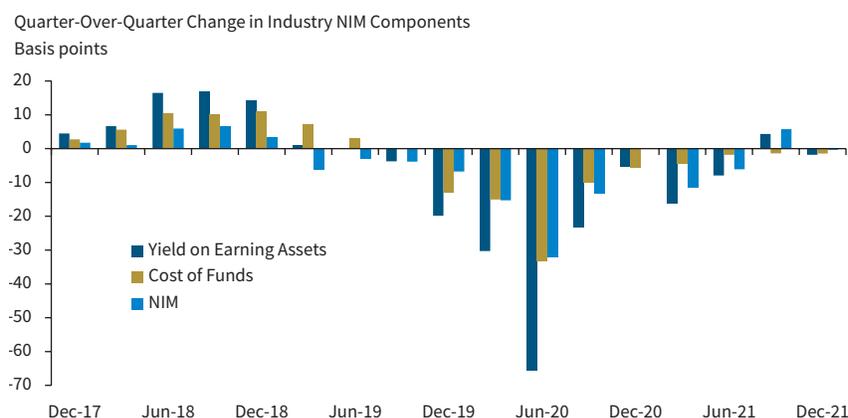
interest rates, continued declines in the cost of funds, and extension into longer-maturity assets on the balance sheet contributed to the NIM improvement.

Banks continued to report high deposit growth and deploy those deposits into low-yielding liquid assets that suppressed asset yields in 2021. The fourth quarter 2021 annual deposit growth rate, while lower than the annual deposit growth rate reported in

fourth quarter 2020, was still greater than any annual deposit growth rate reported between 2012 and 2019. The ratio of deposits to assets reached a record high at noncommunity banks and near-record high at community banks in fourth quarter 2021, but annual growth in this ratio was particularly high at community banks (Chart 48).⁸²

Chart 47

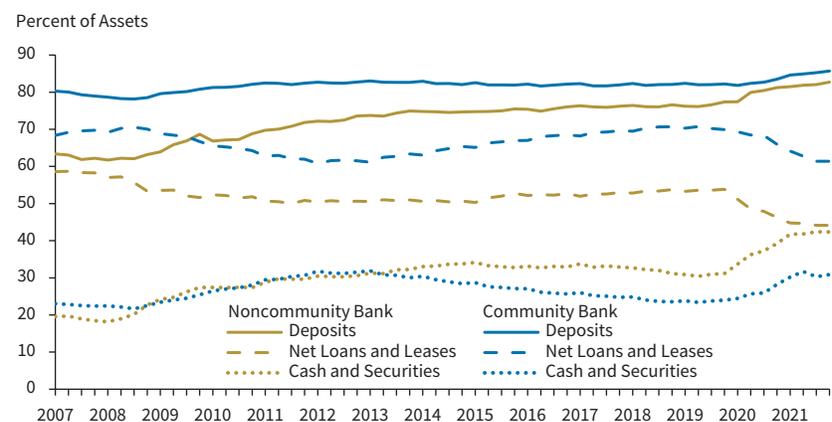
Net Interest Margin Compression Has Slowed or Reversed in Recent Quarters



Source: FDIC.
Note: Quarterly weighted average net interest margin, yield on earning assets, and cost of funds.

Chart 48

Banks Reported Record High Deposits to Assets and Cash and Securities to Assets in 2021



Source: FDIC.
Note: Cash and securities includes balances due from depository institutions.

⁸² The record high ratio of deposits to assets at community banks occurred prior to the timeframe of Chart 48. In second quarter 1985, the ratio reached 87.4 percent.

A shift in the composition of bank assets accompanied the growth in deposits. With low loan demand, banks continued to invest more into low-yielding liquid assets like cash and securities. These balances increased at annual rates not often seen before the pandemic, and the industry ratio of cash and securities to assets reached a record high in fourth quarter 2021.⁸³ Simultaneously, the industry share of loans to assets fell to a record low 47 percent in third quarter 2021. Community banks reported the lowest loans-to-assets ratio since first quarter 2013 (62 percent) and noncommunity banks reported a record low 45 percent.

The continued shift in balance sheet composition into cash and securities, which generally have lower yields than loans, resulted in the lowest full-year yield on earning assets on record in 2021. Community banks reported a smaller decline in asset yields from 2020 (41 basis points) than noncommunity banks (54 basis points).

Market interest rates rose in 2021 and began to alleviate the pressure on asset yields caused by the shift in balance sheet composition, while the decline in funding costs slowed. The industry reported a 52 basis point decline in full-year yield on earning assets in 2021 compared with a decline of 109 basis points in 2020. When broad market interest rates increased between third quarter 2020 and fourth quarter 2021, banks took advantage of the rise in longer-term rates and generally reported smaller quarterly declines in asset yields in 2021 than in 2020.

Despite higher interest rates, industry funding costs continued to decline in 2021; however, the rate of decline slowed during the year. Noninterest-bearing deposit balances grew at a faster pace than interest-bearing deposit balances in 2021, which shifted the composition of total deposits toward no-cost noninterest-bearing deposits. The reduced reliance on higher-cost funding sources allowed banks to lower their full-year cost of funds by 24 basis points from 2020 to a record low 17 basis points in 2021. Community banks,

which reported a slightly larger shift into noninterest-bearing deposits than noncommunity banks, reported a slightly larger decline in cost of funds (down 29 basis points) than noncommunity banks (down 23 basis points).

As market interest rates rose throughout 2021 and supported smaller declines in asset yields, they also began to pressure bank cost of funds. Banks reported ever-smaller quarterly declines in their cost of funds throughout 2021, and in fourth quarter reported a decline of only 1 basis point.

To earn return in a low loan demand and low interest rate environment, banks lengthened the maturity of their securities portfolios. After years of shortening the average maturity of their securities portfolio, community banks increased the share of long-term securities to assets by 5.6 percentage points to 17.2 percent since the onset of the pandemic (Chart 49).⁸⁴ The share of long-term securities held by banks relative to assets is the highest reported since first quarter 2014. The trend was similar at noncommunity banks, which reported a 5.7 percentage point increase in the share of long-term securities to assets since the onset of the pandemic, to a record high 20.9 percent.

The risk of higher interest rates poses challenges to banks that invested heavily in long-term securities when rates were relatively low and will pressure funding costs for all banks. While the maturity extension in the securities portfolio in 2021 may have helped to supplement interest income and generate higher yields, banks now face the challenge of managing this portfolio in a rising interest rate environment. Banks with a higher share of long-term securities may see limited growth in yield on earning assets should market rates rise. If paired with higher funding costs, these fixed yields could lead to greater NIM compression. In addition, the existing long-term securities portfolio may decline in value when rates rise, producing unrealized losses on the available for sale portfolio.

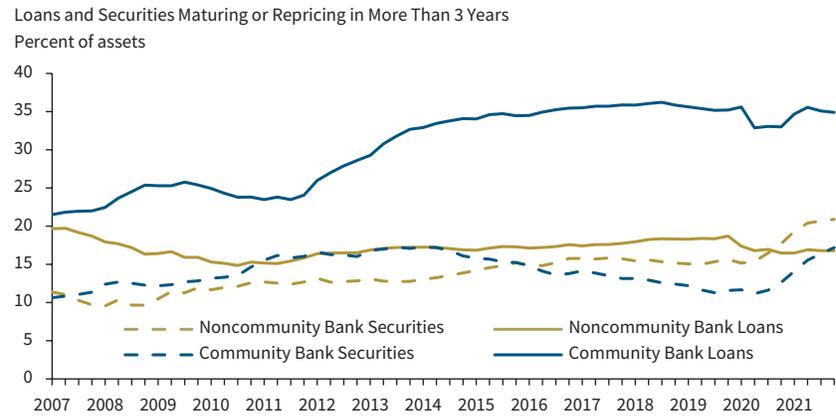
Despite these risks, banks tend to report an expansion in NIM when interest rates rise, as their yield on earning

⁸³ When comparing data to data prior to the pandemic, the quarter of reference is fourth quarter 2019.

⁸⁴ Long-term securities are those maturing or repricing in more than three years.

Chart 49

Banks Have Deployed New Deposits Into Longer-Term Securities Amid Low Loan Demand



Source: FDIC.

assets tends to increase more than their cost of funds.⁸⁵

This supports higher NIM, particularly for community banks for which net interest income is a large share of revenue, and for banks that have more balance sheet capacity to invest in higher-earning assets such as loans and longer-term investments.

⁸⁵ Angela Hinton and Chester Polson, "The Historic Relationship Between Bank Net Interest Margins and Short-Term Interest Rates," FDIC Quarterly 15, no. 2 (2021): 31-41, <https://www.fdic.gov/analysis/quarterly-banking-profile/fdic-quarterly/2021-vol15-2/fdic-v15n2-1q2021.pdf>.

Deposit growth continued to outpace loan demand in 2021. Total banking industry deposits grew by \$1.9 trillion in 2021 to \$19.7 trillion, the highest deposit level since data collection began in 1984. Community banks accounted for \$245 billion of total 2021 deposit growth, a 12 percent increase from 2020 and above the 10 percent increase reported by noncommunity banks. Deposits among community banks reached a record high \$2.4 trillion at year-end 2021 and equaled nearly 86 percent of community bank total assets (Chart 50). Since year-end 2019, community banks have added a record \$534 billion in deposits.

The strong increase in deposits in 2021 far exceeded loan growth. Total banking industry loans increased \$383.2 billion in 2021, of which \$8.1 billion was attributable to community banks. As a result, the community bank loans-to-total assets ratio declined from 67 percent in 2020 to 62 percent.

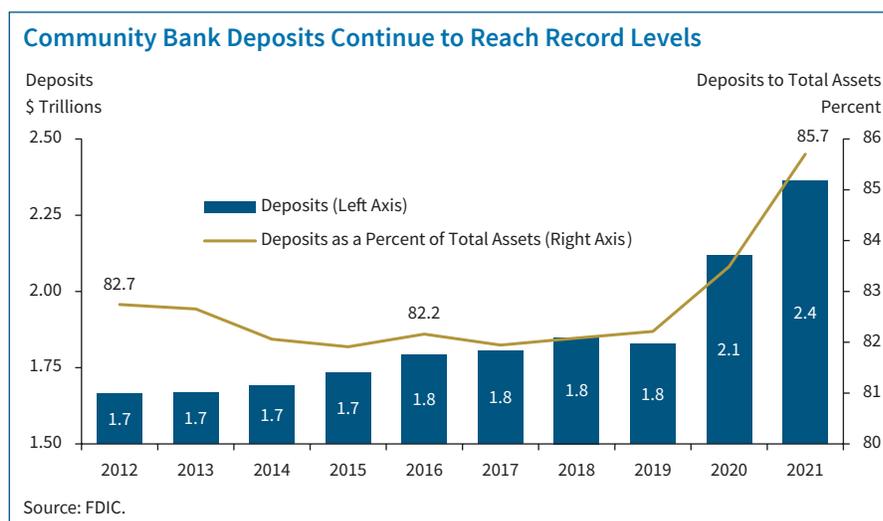
High deposit growth combined with low loan demand contributed to record levels of liquid assets. Financial institutions allocated most of the excess liquidity into securities and interest-bearing cash accounts. Liquid assets held at community banks, including unpledged securities (securities not pledged as collateral), cash and due from accounts, federal funds sold, and securities purchased under resale agreements, increased from 23 percent of total assets in 2020 to 27 percent in

2021 (Chart 51). Unpledged securities make up the largest share. In 2021, community banks reported \$408 billion in unpledged securities, up 50 percent from 2020.

Securities portfolio growth in 2021 was primarily driven by investments in mortgage-backed securities, U.S. Treasuries, and municipal securities. At 44 percent, mortgage-backed securities comprise the largest share of securities held by community banks, followed by municipal securities at 28 percent.

As community bank liquid asset levels increased, wholesale funding fell. Historically, community banks have relied more on traditional deposits to fund loan growth rather than on wholesale funding sources such as Federal Home Loan Bank (FHLB) borrowings, brokered deposits, public funds, and other funding sources like the Paycheck Protection Plan Liquidity Facility (PPPLF), a credit facility introduced in 2020 to help banks maintain adequate liquidity. Strong deposit growth during the pandemic contributed to a reduction in wholesale funding. Among community banks, wholesale funding levels decreased in 2021 as liquid assets grew. The ratio of wholesale funding to total assets at community banks fell to 13 percent in 2021, down from 15 percent in 2020 (Chart 52). The largest declines were in FHLB borrowings and other borrowings. The reduction in other borrowings was largely attributed

Chart 50



to the payoff or forgiveness of credit lines extended through the PPPLF.

Community banks with sufficient liquidity are well positioned for sudden changes in consumer and business customer demands. The permanence of consumer and business deposits is unknown. Banks

with appropriate levels of liquidity are well positioned to meet potential loan funding and deposit outflow demands. Community banks with sufficient levels of liquid assets and strong liquidity risk management programs are best equipped to navigate a changing interest rate environment.

Chart 51

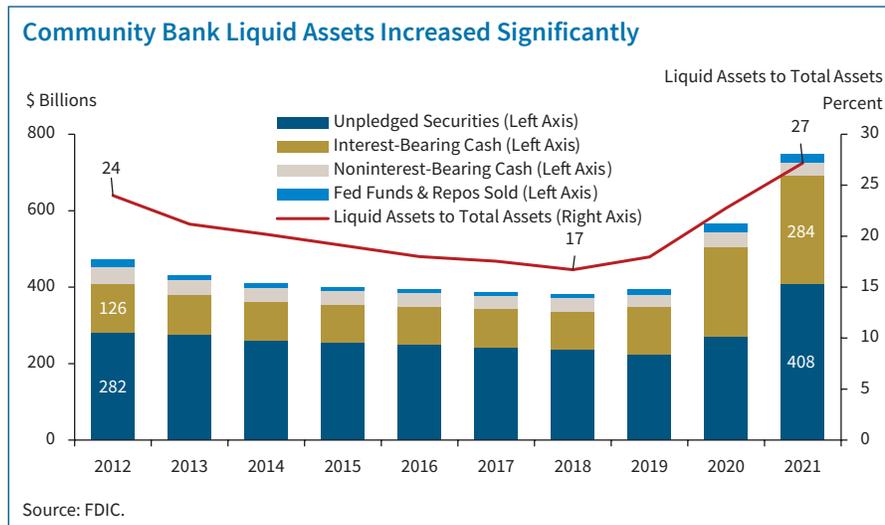
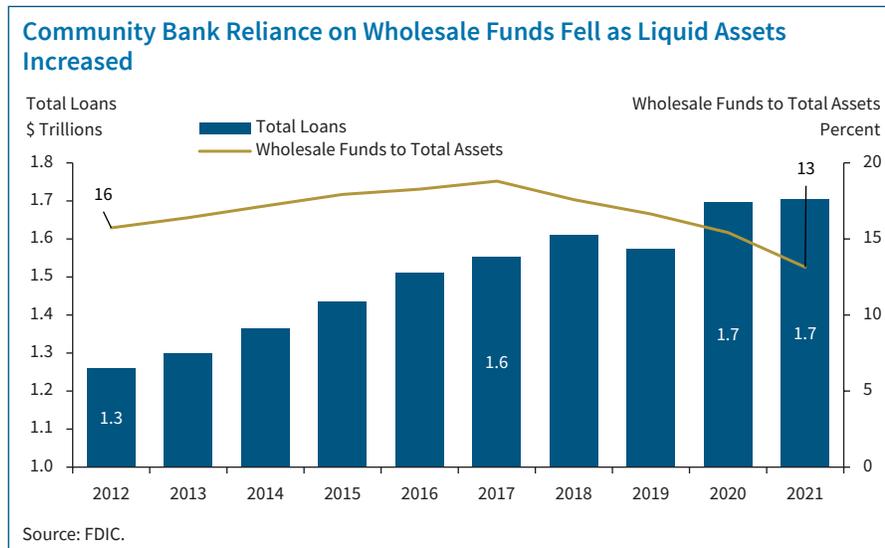


Chart 52



OPERATIONAL RISK

Cyber Threats and Illicit Activities

- *Cyber attacks continue to evolve, become more sophisticated, and multiply as bad actors discover creative ways to exploit technological and operational vulnerabilities.*
- *In 2021, ransomware attacks in financial services offered by banks increased.*
- *Geopolitical events increase the likelihood of cyber attacks on banks.*
- *Zero-day vulnerabilities in software continue to be discovered and present significant risk until they are resolved.*
- *Malicious cyber threat actors pose serious risk to bank information systems by compromising the security of software and computing services provided by third-party suppliers.*
- *Criminals continue to develop innovative techniques to launder funds from illicit activities, demanding that financial institutions remain vigilant.*

Operational risk in banking is one of the most critical risks to banks. Cyber attacks continue to evolve, become more sophisticated, and multiply as bad actors discover creative ways to exploit technological and operational vulnerabilities. To manage new operational demands presented by the pandemic, the banking sector expanded remote financial services to personally owned computers and mobile devices, increased use of remote work options, and relied more heavily on third-party providers including cloud-based environments, all of which have increased the importance of effective cyber controls. To safeguard the security and privacy of customer information, some banks built out telecommunications infrastructures, increased internet capacity in data centers, and enhanced application portfolios to enhance remote productivity. Technology advances require bank managers to continuously improve cybersecurity and other internal controls to create operational resilience and mitigate the risk that their bank will suffer a significant service disruption.

In late 2021 the FDIC, the Board of Governors of the Federal Reserve System, and the Office of the

Comptroller of the Currency issued a joint final rule requiring a bank to notify its primary federal regulator agencies of the most severe incidents.⁸⁷

Geopolitical events increase the likelihood of cyber attacks on banks. The U.S. Department of Homeland Security's Cybersecurity and Infrastructure Security Agency (CISA) issued alerts addressing risks from Russian state-sponsored cyber threats⁸⁸ and highlighting recent malicious cyber incidents suffered by public and private entities in Ukraine.⁸⁹ Given ongoing geopolitical events, CISA, the Federal Bureau of Investigation, and the National Security Agency encourage organizations of all sizes to adopt a heightened state of awareness and to be prepared to respond to disruptive cyber activity.

Bank ransomware attacks increased in 2021. In a ransomware attack, cyber actors encrypt and steal data, and demand a ransom from the bank in exchange for the decryption keys and for a promise not to publicly disclose the attack and stolen data. Reports of such attacks as of June 2021 exceeded the 2020 total (Chart 53). The potential operational impacts of ransomware include disruption of core business activities, operational outages, lockout of business

⁸⁷ See "Computer-Security Incident Notification Final Rule," Financial Institution Letter, FIL-74-2021, November 18, 2021, <https://www.fdic.gov/news/financial-institution-letters/2021/fil21074.html>.

⁸⁸ See CISA, "Understanding and Mitigating Russian State-Sponsored Cyber Threats to U.S. Critical Infrastructure," January 11, 2022, https://www.cisa.gov/uscert/sites/default/files/publications/AA22-011A_Joint_CSA_Understanding_and_Mitigating%20Russian_Cyber_Threats_to_US_Critical_Infrastructure_TLP-WHITE_01-10-22_v1.pdf.

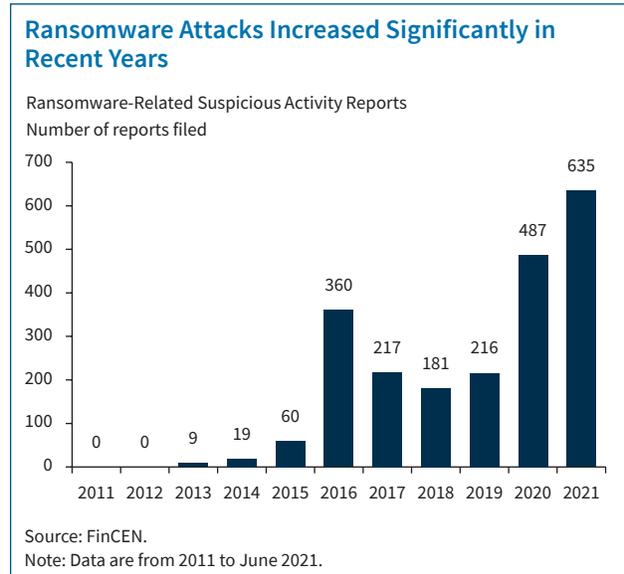
⁸⁹ See CISA, "Implement Cybersecurity Measures Now to Protect Against Potential Critical Threats," January 18, 2022, https://www.cisa.gov/sites/default/files/publications/CISA_Insights-Implement_Cybersecurity_Measures_Now_to_Protect_Against_Critical_Threats_508C.pdf.

data, and the need to switch to manual operations. These attacks typically leverage known software vulnerabilities, compromised credentials, or phishing emails targeting bank employees to gain access to networks through remote access channels. Once threat actors gain access, they conduct ransomware and other extortion campaigns. When banks apply effective cybersecurity risk management and mitigation principles, they reduce the risk of a cyber attack's success and minimize its negative impacts.

There is no indication that the elevated levels of operational risk from threats such as ransomware in the banking sector will abate in the near term. Proliferation of tactics, tools, and accesses have targeted a greater number of networks as experienced malicious cyber actors offer their services to a growing number of unsophisticated recruits, as exemplified by the illicit and prolific Ransomware-as-a-Service (RaaS) business paradigm. Further, outside of developing new ransomware campaigns, the growing professionalization of this “dark market” has precipitated phenomena such as the reintroduction of updated ransomware, which continued to be destructive to network operations of critical infrastructures.

Banks have experienced more sophisticated cyber attacks since the start of the pandemic. Since 2020, there has been a material increase in the number of customers, employees, and other users remotely accessing bank information systems. This increase was driven by an expansion of bank employees working remotely, customers accessing digital banking services, and third-party applications connected to bank systems. At the same time, the FDIC's supervisory and threat monitoring process confirms that banks are encountering substantial security and operational risks from malicious cyber threat actors attacking banks' authentication security. These malicious actors seek to compromise a bank's authentication security to gain unauthorized access to customer information, deploy ransomware and other malware, and initiate fraudulent

Chart 53



transactions on customer accounts. Frequently, these malicious actors leverage customer and user credentials compromised in earlier attacks on unrelated entities, such as merchants and online services. Customers and users frequently register the same credentials across multiple entities' systems, including the bank's information system, which weakens the effectiveness of credentials as part of layered security controls. Malicious actors also use email phishing campaigns and automated hacking tools in their attacks on bank authentication controls for information systems.

On August 11, 2021, the Federal Financial Institutions Examination Council (FFIEC) issued the guidance document, “Authentication and Access to Financial Institution Services and Systems,” which highlights the current cyber threat environment and effective authentication methods.⁹⁰ This guidance provides risk management principles and practices that can support authentication of customers, employees, and other users and devices, which are critical to combating cyber risks, including ransomware.

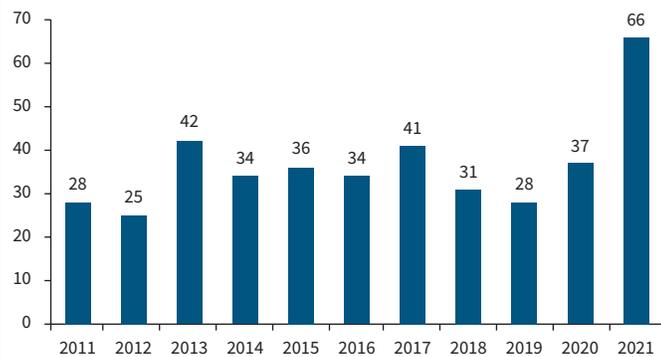
⁹⁰ Federal Financial Institutions Examination Council, “FFIEC Issues Guidance on Authentication and Access to Financial Institution Services and Systems,” news release, August 11, 2021, <https://www.ffiec.gov/press/pr081121.htm>.

Zero-day vulnerabilities continue to be discovered and present significant risk until they are resolved. A

zero-day vulnerability is a computer-software vulnerability for which there is not yet an available patch to cure the vulnerability. Until the vulnerability is patched or otherwise mitigated, threat actors can exploit it to adversely affect systems, data, or a network. As captured by the MIT Technology Review, at least 66 such exploits were found in 2021, approximately double the totals for 2020 (37) and 2019 (28) and more than in any other year on record.⁹¹

Zero Day Hacking Attacks Reached a Record in 2021

Number of Reported Zero-Day Hack Attacks



Source: MIT Technology Review, September 23, 2021.

A recent and notable zero-day vulnerability was detected in certain versions of Apache’s Log4j software library, known as “Log4Shell.” Log4j is widely used in a variety of consumer and enterprise services, websites, and applications—and in operational technology products—to log security and performance information. An unauthenticated remote actor could exploit this vulnerability to take control of an affected system. On December 11, 2021, the director of the U.S. Cybersecurity and Infrastructure Security Agency described the Log4j vulnerability as “being widely exploited by a growing set of threat actors” and presenting “an urgent challenge to network defenders given its broad use.”⁹²

Malicious cyber threat actors seek to gain access to bank information systems by compromising the security of software and computing services provided by third-party suppliers. A bank’s information technology (IT) environment is a complex arrangement of self-developed software, third-party software hosted internally, and third-party software accessed remotely, such as cloud-based software services. Malicious actors have sought to gain illicit access to bank IT systems by inserting malicious software into the third-party

software during its development and by leveraging undiscovered vulnerabilities in the third-party software. The security risks arising from compromised third-party software are challenging to mitigate given the multitude of third-party software within a bank’s IT environment and the sophistication of the software compromises. In addition, these third-party software and computing services supply chain attacks have the potential to negatively affect the security and operations of a bank as the attackers have sought to compromise

⁹¹ Patrick Howell O’Neill, “2021 Has Broken the Record for Zero-Day Hacking Attacks,” MIT Technology Review, September 23, 2021, <https://www.technologyreview.com/2021/09/23/1036140/2021-record-zero-day-hacks-reasons/>.

⁹² Cybersecurity and Infrastructure Security Agency, “Statement from CISA Director Easterly on ‘Log4J’ Vulnerability,” news release, December 11, 2021, <https://www.cisa.gov/news/2021/12/11/statement-cisa-director-easterly-log4j-vulnerability>.

third-party software that controls privileged access and roles within the bank's IT environment, such as network management and security software applications.

The supply chain's vulnerability to cyber attacks was highlighted in 2021 by the SolarWinds attack and later in the year by the Kaseya VSA attack, both of which prompted changes in supply chain protocols and guidelines for the U.S. government and commercial industries. Evidence suggesting that state-sponsored cyber actors may have influenced outcomes in these attacks has intensified the urgency to address supply chain vulnerabilities. These threats, in their current or some other evolved form, are expected to continue in 2022 and beyond.

To provide additional perspective on these risks, the FFIEC published the "Architecture, Infrastructure, and Operations" booklet of the FFIEC Information Technology Examination Handbook (IT Handbook) on June 30, 2021.⁹³ The booklet discusses the interconnections among an entity's assets, processes, and third-party service providers. It also addresses principles and practices for promoting safety and soundness, including secure and resilient architecture design, infrastructure implementation, and operation of information technology systems.

Criminals continue to develop innovative techniques to launder funds from illicit activities through banks, necessitating that banks remain vigilant in detecting potentially illicit financial activity and monitoring for suspicious activity including evolving money laundering, fraud, and other illicit activity typologies. Illicit funds derived from a variety of criminal activities may corrupt and may ultimately destabilize

communities or entire economies. Terrorist networks can facilitate activities when they have financial means and access to the formal or an informal financial system. Individuals and groups engaged in money laundering, terrorist financing, and other illicit financial activities exploit weaknesses in the legitimate financial system by obscuring the source of funds, concealing the originator or ultimate beneficiary of funds, or obfuscating the nature and purpose of the customer relationship. To combat this activity, banks develop, implement, and maintain effective Anti-Money Laundering/Countering the Financing of Terrorism (AML/CFT) programs that address known risks and the ever-changing strategies of individuals or groups engaged in money laundering, terrorist financing, and other illicit financial activities within the U.S. financial system.⁹⁴

To help financial institutions and other covered entities combat money laundering and counter terrorist financing, the U.S. Department of the Treasury's Financial Crimes Enforcement Network (FinCEN) issued the Anti-Money Laundering and Countering the Financing of Terrorism National Priorities (the AML/CFT Priorities) on June 30, 2021.⁹⁵ Consistent with the requirements of Section 6101(b)(2)(C) of the Anti-Money Laundering (AML) Act of 2020, the AML/CFT Priorities were established by the Secretary of the Treasury in consultation with the Attorney General, federal functional regulators, relevant state financial regulators, and relevant national security agencies.⁹⁶ The AML/CFT Priorities focus on threats to the U.S. financial system and to national security, including:

- corruption
- cybercrime, including relevant cybersecurity and virtual currency considerations

⁹³ Federal Financial Institutions Examination Council Information Technology Examination Handbook on "Architecture, Infrastructure, and Operations," June 2021, https://ithandbook.ffiec.gov/media/402799/ffiec_itbooklet_aio.pdf.

⁹⁴ In January 2021, Congress passed the AML Act of 2020, which required FinCEN, in consultation with Federal functional regulators, (collectively referred to as the "Agencies") to promulgate AML/CFT regulations. Due to the addition of the CFT, the Agencies will use the AML/CFT instead of Bank Secrecy Act (BSA)/AML, when referring to a financial institution's compliance program. For consistency, the FDIC will use the term AML/CFT (which includes BSA/AML) instead of BSA/AML when referring to, issuing, or amending regulations to address the requirements of the AML Act of 2020.

⁹⁵ Covered institutions are financial institutions required by BSA regulations to maintain an AML program. See 31 CFR §§ 1020.210(a) (banks); 1020.210(b) (banks without a federal functional regulator); 1021.210 (casinos and card clubs); 1022.210 (money services businesses); 1023.210 (brokers or dealers in securities); 1024.210 (mutual funds); 1025.210 (insurance companies); 1026.210 (futures commission merchants and introducing brokers in commodities); 1027.210 (dealers in precious metals, precious stones, or jewels); 1028.210 (operators of credit card systems); 1029.210 (loan or finance companies); and 1030.210 (housing government-sponsored enterprises). For information on AML/CFT Priorities, see Anti-Money Laundering and Countering the Financing of Terrorism National Priorities, June 30, 2021, at [https://www.fincen.gov/sites/default/files/shared/AML_CFT%20Priorities%20\(June%2030%2C%202021\).pdf](https://www.fincen.gov/sites/default/files/shared/AML_CFT%20Priorities%20(June%2030%2C%202021).pdf).

⁹⁶ Congress passed the AML Act of 2020 on January 1, 2021, as part of the National Defense Authorization Act and is the most comprehensive set of reforms to the BSA since the passage of the 2001 USA PATRIOT Act.

- foreign and domestic terrorist financing
- fraud
- transnational criminal organization activity
- drug trafficking organization activity
- human trafficking and human smuggling
- proliferation financing

At a minimum, the AML/CFT Priorities will be updated every four years to account for new and emerging threats to the U.S. financial system and to national security.

The FDIC, other federal banking agencies, FinCEN, and state bank and credit union regulators issued an Interagency Statement on the Issuance of the National Priorities to clarify that issuing the AML/CFT Priorities does not result in an immediate change in AML/CFT regulatory requirements. The statement further explains that banks are not required to incorporate the AML/CFT Priorities into their risk-based AML/CFT programs until the effective date of a final rule by FinCEN addressing the Priorities, and that the agencies will not examine for the incorporation of the AML/CFT Priorities until the effective date of final revised regulations.⁹⁷

⁹⁷ FDIC, "Interagency Statement on the Issuance of the Anti-Money Laundering/Countering the Financing of Terrorism National Priorities," Financial Institution Letter, FIL-46-2021, June 30, 2021, <https://www.fdic.gov/news/financial-institution-letters/2021/fil21046.html>.

CLIMATE-RELATED FINANCIAL RISK

Climate-Related Events

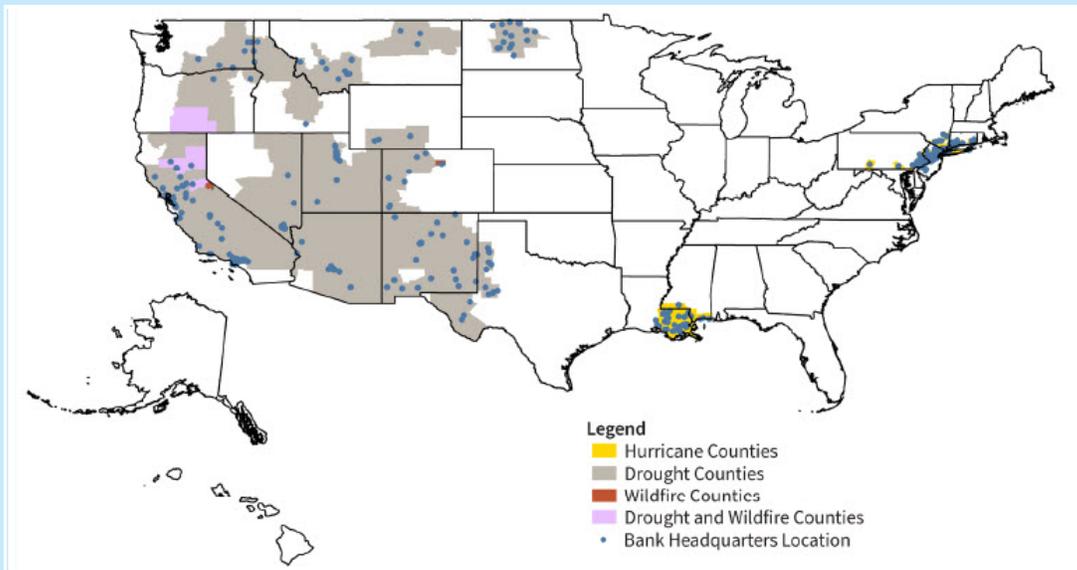
- *The frequency and intensity of severe climate-related events has increased in recent years.*⁹⁸
- *Two hurricanes, several wildfires, and a drought in 2021 affected many local communities and banks.*
- *Identifying and assessing climate-related financial risks to the banking industry and the financial system is a top priority for the FDIC.*

Damages from severe climate-related events in 2021 totaled \$145.0 billion, the third highest total cost since 1980.

- In 2021, severe climate-related events in the United States included two hurricanes, several wildfires, and a major drought.
- The counties affected by those hurricanes, wildfires, and drought were home to 472 bank headquarters and 15,169 total bank branches.
- Of those institutions, 379 were headquarters of community banks and 2,969 were branches of community banks.

Regional Exposure to Climate Change

Dots on map represent banks located in counties affected by weather events in 2021.



Sources: NOAA National Centers for Environmental Information, Federal Emergency Management Agency (FEMA), National Interagency Fire Center, U.S. Drought Monitor, FDIC.

Note: Hurricane counties are FEMA major disaster-declared counties eligible for individual assistance for Hurricane Ida. There were no counties designated as major disaster areas by FEMA for Hurricane Nicholas. Wildfire counties are counties within the perimeter of one of the four most destructive wildfires of 2021. These wildfires include the Caldor and Dixie wildfires in Northern California, the Marshall Fire in Colorado, and the Bootleg Fire in Oregon. Drought counties are counties that experienced at least 12 weeks of “exceptional” drought during 2021.

⁹⁸ “Severe” climate-related events in this paper are those that caused at least \$1 billion in damages. See NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2022), <https://www.ncdc.noaa.gov/billions/>.

The effects of climate change present emerging financial risks to the banking industry.⁹⁹ Climate-related financial risks faced by banks include physical risks and transition risks. Physical risks refer to the financial losses resulting from harm to people and property from climate-related events, such as hurricanes, wildfires, and drought. Transition risks refer to financial risks to certain institutions or industry sectors that arise over time from the process of adjusting toward a low-carbon economy, which may be prompted by changes in climate and environmental policy, technology, or market sentiment. This discussion of climate-related financial risks focuses only on physical risks to communities and banks from severe climate-related events in 2021, as transition risk is a longer-term, prospective risk that is beyond the scope of this retrospective review.

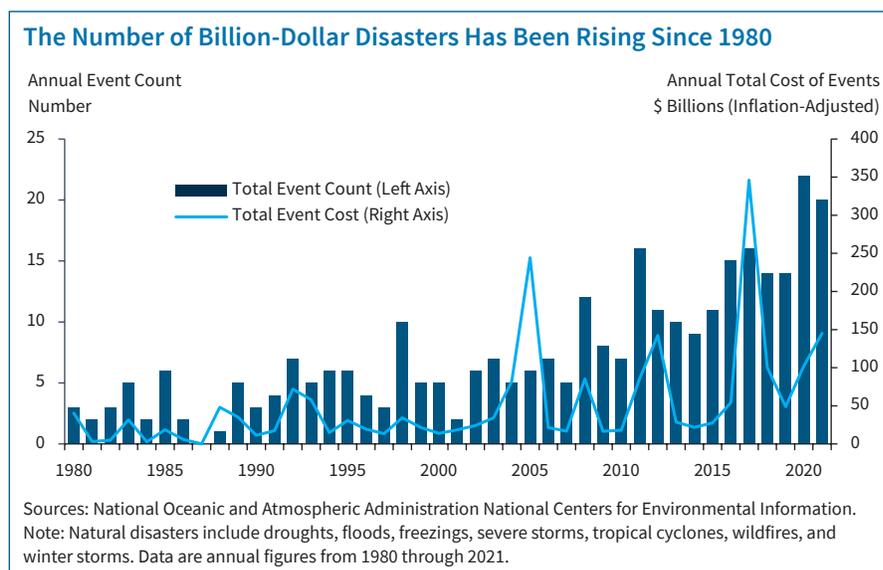
The frequency and intensity of severe climate-related events has increased.¹⁰⁰ According to the National Oceanic and Atmospheric Administration (NOAA), the United States has experienced 310 severe weather

events since 1980 in which overall damage was at least \$1 billion (adjusted to 2021 dollars) (Chart 54). The total cost of these events over the 42-year period was more than \$2.1 trillion, and the number and aggregate cost of these events have risen substantially over those decades.

Severe climate-related events in 2021 were among the costliest since 1980. During 2021, there were 20 severe climate-related events in the United States, slightly below the record high of 22 in 2020. Damages from the 2021 severe climate events totaled \$145.0 billion, the third-highest total cost since 1980 but below the 2017 record of \$346.1 billion.

Estimated damages from two hurricanes in the 2021 hurricane season were considerably higher than the 2020 season. Ida and Nicholas were the only hurricanes that made landfall in the continental United States in 2021. Estimated damages from these two hurricanes totaled \$76.1 billion, an increase from an estimated \$42.1 billion in damages from the six hurricanes in 2020. Hurricane Ida, the more destructive of the 2021

Chart 54



⁹⁹ Statement by Martin J. Gruenberg, Acting Chairman, FDIC Board of Directors On the Request for Comment on the Statement of Principles for Climate-Related Financial Risk Management for Large Financial Institutions, March 30, 2022, <https://www.fdic.gov/news/speeches/2022/spmar3022.html>.

¹⁰⁰ Unless otherwise noted, all weather- and damage-specific data in this section are from NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2022). See <https://www.ncdc.noaa.gov/billions/>, DOI: [10.25921/stkw-7w73](https://doi.org/10.25921/stkw-7w73). NOAA has adjusted its damage estimates for inflation to 2021 dollars.

hurricanes, made landfall as a Category 4 hurricane in August 2021 in Louisiana, about 60 miles south of New Orleans. After weakening into a tropical storm, Ida traveled northeast, where it brought catastrophic rainfall, flooding, and loss of life across a wide region stretching from eastern Pennsylvania to New York.¹⁰¹ Ida caused an estimated \$75 billion in damage, ranking it as the fifth-costliest hurricane to hit the mainland U.S. on record and the most-costly storm in the Northeast since Sandy in 2012.¹⁰² CoreLogic estimated that 40 to 50 percent of Ida's flood damage along the Gulf Coast was covered by insurance.¹⁰³

Just over two weeks after Ida struck, Hurricane Nicholas made landfall as a Category 1 hurricane near Sargent Beach, Texas, about 65 miles south of Houston. Although Nicholas reached hurricane strength for only a few hours, the slow-moving storm deposited a large amount of rain on Galveston, Houston, and other parts of southeastern Texas and southwestern Louisiana. According to NOAA, the storm "produced a fairly standard mix of minimal hurricane impacts."¹⁰⁴ Nonetheless, several communities in the storm's path were still recovering from Hurricane Ida and Hurricane Laura, which struck the Louisiana coast in 2020.

The 2021 wildfire season in the western United States was severe, causing an estimated \$10.6 billion in damages. In California, the 2021 wildfire season was the second largest in the state's history as measured by acres burned (after the 2020 season), with 2.6 million acres burned and more than 3,600 structures damaged or destroyed. The most destructive wildfires in the state in 2021 were the Dixie and Caldor fires in Northern California. The Dixie Fire in July 2021 damaged or

destroyed more than 1,300 structures and burned nearly 1 million acres, making it the state's second-largest wildfire by acres burned after the August Complex Fire in 2020. The Caldor Fire followed a few weeks later, burning over 220,000 acres and damaging or destroying more than 1,000 structures.¹⁰⁵ In southern Oregon, the Bootleg Fire in July 2021 burned over 410,000 acres and damaged or destroyed more than 400 structures.¹⁰⁶ Colorado's Marshall Fire damaged or destroyed more than 1,200 structures in Boulder County in December 2021. This was the state's most destructive wildfire in terms of structures lost.¹⁰⁷

While some wildfires may have been ignited by faulty electrical equipment or were human-caused, climate-change related issues contributed to the spread of and destruction caused by the wildfires. Ongoing drought in the West and record-high temperatures in 2021 left grasslands and forests dry and susceptible to wildfire ignition, in some cases exacerbated by strong winds. All of the counties affected by the year's most severe fires were in "extreme" or "exceptional" drought when the fires started.¹⁰⁸ In addition, population growth and increased construction of homes in the "wildland urban interface," or areas of human development abutting undeveloped wildland, have also contributed to the rising cost of wildfires.¹⁰⁹

A serious drought encompassed much of the West throughout 2021. The effects of the drought were widespread. NOAA estimates the costs of the drought at \$8.9 billion, making it the costliest since 2013. As shown in Table 3, 239 counties in 13 states experienced the worst drought conditions—"exceptional" conditions—for at least 12 weeks in 2021. In four states—New Mexico,

¹⁰¹ In total, the Federal Emergency Management Agency (FEMA) designated 199 parishes and counties across seven states with any level of disaster designation from Hurricane (and later, Tropical Storm) Ida. Of this total, 25 parishes in Louisiana, 8 counties in Mississippi, and 33 counties across New York, New Jersey, Pennsylvania, and Connecticut were declared by the President to be eligible for individual assistance from FEMA.

¹⁰² See data from the National Centers for Environmental Information, available at <https://www.nodc.noaa.gov/archive/arc0153/0209268/9.9/data/0-data/events-US-1980-2021.csv>. By contrast, the costliest hurricane in U.S. history was Katrina in 2005, which caused an estimated \$182.5 billion in damages (adjusted to 2021 dollars).

¹⁰³ CoreLogic, "CoreLogic Estimates \$27 billion to \$40 billion in Insured and Uninsured Losses from Hurricane Ida," news release, September 1, 2021, <https://www.corelogic.com/press-releases/corelogic-estimates-27-billion-to-40-billion-in-insured-and-uninsured-losses-from-hurricane-ida-wind-storm-surge-and-inland-flooding/>.

¹⁰⁴ NOAA National National Centers for Environmental Information, National Climate Report, September 2021.

¹⁰⁵ California Department of Forestry and Fire Protection.

¹⁰⁶ National Interagency Fire Center, Coordination Center's Incident Management Situation Report, p. 5, <https://www.predictiveservices.nifc.gov/IMSR/2021/20210807IMSR.pdf>.

¹⁰⁷ Boulder Office of Emergency Management, "Boulder County Releases Updated List of Structures Damaged and Destroyed in the Marshall Fire," news alert, January 6, 2022, <https://www.bouldercoem.com/boulder-county-releases-updated-list-of-structures-damaged-and-destroyed-in-the-marshall-fire/>.

¹⁰⁸ U.S. Drought Monitor, <https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>.

¹⁰⁹ "Wildfire: An Issue Paper; Lessons Learned from the 2017 to 2021 Events," January 2022, American Academy of Actuaries, Extreme Events and Property Lines Committee, https://www.actuary.org/sites/default/files/2022-02/Wildfire.2022_.pdf.

Table 3

Thirteen States Experienced Prolonged Periods of Exceptional Drought in 2021		
State	Exceptional Drought Counties in 2021 (Number)	Exceptional Drought Counties in 2021 (Percent of Counties in State)
NM	31	94
AZ	14	93
UT	25	86
CA	49	84
OR	14	39
WA	15	38
MT	20	36
NV	6	35
ID	15	34
CO	16	25
ND	12	23
WY	2	9
TX	20	8
Total	239	

Sources: U.S. Drought Monitor and U.S. Census Bureau.
 Note: Only counties that experienced at least 12 weeks of “exceptional” drought in 2021 are included. According to the U.S. Drought Monitor, exceptional drought has the potential to cause exceptional and widespread crop and pasture losses, as well as shortages of water in reservoirs, streams, and wells that create water emergencies.

Arizona, Utah, and California—more than 80 percent of the state’s counties were considered in exceptional drought during the year.

California, the largest agricultural producer in the nation by commodity value, accounting for nearly three-fourths of the nation’s fruit-and-nut production and over one-third of vegetable and melon production, was particularly affected by drought. A University of California-Merced study estimated the direct and indirect economic costs of the drought on California’s agricultural industry to be \$1.7 billion.¹¹⁰ Drought conditions led major state and federal water programs to

cut allocations of surface water to some California farms to zero. The water year ending September 30, 2021, was the second driest in California since 1924 based on precipitation and water runoff.¹¹¹ Major reservoirs in the state reached record-low levels, leading to the shutdown of the hydroelectric power plant on Lake Oroville for the first time since it was built in 1967.¹¹² Record precipitation in October and December 2021 was beneficial, but a dry start to 2022 has caused drought conditions in California to worsen. Snowpack in the Sierra Nevada mountain range was at only 38 percent of the normal level on April 1, 2022, when the snow level typically is at its highest level.¹¹³

¹¹⁰ Medellín-Azuara et al., “Economic Impacts of the 2021 Drought on California Agriculture,” February 24, 2022, p. ES-2, https://wsm.ucmerced.edu/wp-content/uploads/2022/02/2021-Drought-Impact-Assessment_20210224.pdf.

¹¹¹ California Department of Water Resources, “Water Year 2021: An Extreme Year,” September 2021, https://water.ca.gov/-/media/DWR-Website/Web-Pages/Water-Basics/Drought/Files/Publications-And-Reports/091521-Water-Year-2021-broch_v2.pdf.

¹¹² California Department of Water Resources, “DWR Statement on the Status of Hyatt Powerplant at Lake Oroville,” news release, August 5, 2021, <https://water.ca.gov/News/News-Releases/2021/Aug-21/Hyatt-Statement>.

¹¹³ California Department of Water Resources, “Survey Finds Little Snow as Statewide Snowpack Drops to 38 percent Following Record Dry Months,” April 1, 2022, news release, <https://water.ca.gov/News/News-Releases/2022/April-22/April-2022-Snow-Survey>.

Drought and severe heat affected other western states as well. In 2021, the water level in Lake Mead reached a record low leading to the first water shortage declaration. This declaration will result in reduced water released from the reservoirs to Arizona and Nevada in 2022.¹¹⁴ A severe heat wave gripped the West in 2021, with the Pacific Northwest in particular seeing record-high temperatures. For example, temperatures reached 116 degrees in Portland and 108 degrees in Seattle. Ranchers throughout the West sold some of their cattle sooner than expected; almond farmers destroyed water-intensive almond trees before the end of their useful life; and some farmers elected to fallow fields due to lack of water. The USDA made \$4.4 billion in payments to agricultural producers through its crop insurance program for drought- and heat-related claims in 2021. More than three-quarters of those payments were to farmers in the Dakotas, Minnesota, Montana, and Washington. Wheat, corn, and soybean losses received the highest payouts.¹¹⁵ In addition, federal legislation enacted in September 2021 authorizes \$750 million in USDA assistance to livestock producers for losses incurred because of drought or wildfires in 2021.¹¹⁶

Identifying and assessing climate-related financial risks to the banking industry and the financial system is a top priority for the FDIC. The increased frequency and intensity of climate-related events pose risk-management challenges to banks of all sizes, complexity, and business models through damage to bank-owned properties, such as main offices and branches, and properties that serve as collateral for bank loans. Banks operating in communities affected by severe climate-related events also face higher operational risks, such as the dislocation of facilities, personnel, and customers, and increased credit risk from deterioration in borrowers' repayment ability because of higher costs or financial losses resulting from climate-related events. Climate-related financial risks

are transmitted to banks through various channels. For example, severe climate-related events can disrupt local economic conditions and create detrimental effects on the broader economy, such as changes in asset values and migration patterns.

Historically, individual climate-related events have had limited effect on bank performance and asset quality. Insurance proceeds and government assistance, as well as other sources of financial and economic support, risk mitigation strategies, and forbearance programs to borrowers in affected communities have helped insulate banks from the negative effects of individual climate-related events. In many cases, the need for communities to rebuild following these events may create loan demand for banks, which helps to offset losses suffered by those communities because of these events; and, in some cases, increased loan demand has even resulted in increased bank earnings.¹¹⁷ To date, no bank failures have been attributed to individual climate-related events studied by the FDIC.¹¹⁸ However, the FDIC has not studied the impact of sequential climate-related events or the cumulative impact that climate-related financial risks could have on bank performance, asset quality, and the ongoing effectiveness of risk mitigation strategies.

The FDIC will continue to monitor and evaluate climate-related financial risks facing the banking industry. In 2021, the FDIC published several Financial Institution Letters addressing Hurricane Ida, wildfires, and several other severe weather events to encourage banks to work with their adversely affected borrowers. In March 2022, the FDIC approved a proposed Statement of Principles for Climate-Related Financial Risk Management for Large Financial Institutions, as an initial step to promote a consistent understanding of effective management of climate-related financial risks across the banking industry.¹¹⁹

¹¹⁴ Bureau of Reclamation, "Reclamation Announces 2022 Operating Conditions for Lake Powell and Lake Mead," August, 16, 2021, news release, <https://www.usbr.gov/newsroom/#/news-release/3950>.

¹¹⁵ USDA Risk Management Agency, Cause of Loss Historical Data Files, <https://www.rma.usda.gov/SummaryOfBusiness/CauseOfLoss>.

¹¹⁶ Extending Government Funding and Delivering Emergency Assistance Act, Pub. L. No. 117-43 (September 30, 2021).

¹¹⁷ Federal Reserve Bank of New York, "How Bad Are Weather Disasters for Banks?" November 2021.

¹¹⁸ Financial Stability Oversight Council Report on Climate-Related Financial Risk 2021, Chapter 2, p.28, <https://home.treasury.gov/system/files/261/FSOC-Climate-Report.pdf>.

¹¹⁹ FDIC, "FDIC Issues Request for Comment on Statement of Principles for Climate-Related Financial Risk Management for Large Financial Institutions," news release PR-27-2022, March 30, 2022, <https://www.fdic.gov/news/press-releases/2022/pr22027.html>. The draft principles would provide a high-level framework for the safe-and-sound management of exposures to climate-related financial risks. Although all financial institutions, regardless of size, may have material exposures to climate-related financial risks, these draft principles are intended for the largest financial institutions, those with over \$100 billion in total consolidated assets.