SEMIANNUAL RISK PERSPECTIVE

FROM THE NATIONAL RISK COMMITTEE
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The Office of the Comptroller of the Currency (OCC) charters, regulates, and supervises national banks and federal savings associations and licenses, regulates, and supervises the federal branches and agencies of foreign banking organizations. The OCC supervises these banks to ensure they operate in a safe and sound manner, provide fair access to financial services, treat customers fairly, and comply with applicable laws and regulations.

The OCC’s National Risk Committee (NRC) monitors the condition of the federal banking system and identifies key risks. The NRC also monitors emerging threats to the system’s safety and soundness and ability to provide fair access to financial services and treat customers fairly. NRC members include senior agency officials who supervise banks of all sizes and develop bank supervisory policy. The NRC meets quarterly and issues guidance to examiners that provides perspective on industry trends and highlights issues requiring attention.

The OCC’s Semiannual Risk Perspective addresses key issues facing banks, focusing on those that pose threats to the safety and soundness of banks and their compliance with applicable laws and regulations. This fall 2022 report presents data in five main areas: the operating environment, bank performance, special topics in emerging risks, trends in key risks, and supervisory actions. The report reflects data as of June 30, 2022, unless otherwise indicated.

The OCC welcomes feedback by email: NRCReport@occ.treas.gov.

1 Throughout this report, the term “banks” refers collectively to national banks, federal savings associations, and federal branches and agencies.
EXECUTIVE SUMMARY

KEY TAKEAWAYS

- Economic growth slowed sharply in 2022, while high employment rates supported consumer spending and overall bank performance.
- Currently, in aggregate, banks are well capitalized with ample liquidity and sound credit quality, although macroeconomic headwinds are a concern.

KEY RISK THEMES

INTEREST RATE RISK

Bank investment portfolios have been adversely affected by the rising rate environment, resulting in portfolio depreciation.

OPERATIONAL RISK

Operational risk is elevated as banks respond to an evolving and increasingly complex operating environment. Cyber threats continue to evolve, with threat actors continuing to target the financial services industry with ransomware and other attacks.

COMPLIANCE RISK

Compliance risk remains elevated as banks continue to operate in an increasingly complex environment.

CREDIT RISK

The quantity of credit risk in commercial and retail loan portfolios is moderate and is attributed to growth and utilization trends and economic uncertainty. Loan portfolio performance has been resilient, but signs of potential weakening in some segments warrant careful monitoring.
Investment portfolios have been adversely impacted by higher interest rates. Bank access to wholesale funding sources is affected by increasing unrealized investment losses as actions by the Board of Governors of the Federal Reserve System (Federal Reserve) to combat inflation push interest rates and yield curves higher. Market liquidity remains sound, with some increased stress. Deposits and liquid assets declined for the first time since year-end 2019 but remain high.

Operational risk is elevated. Cyber threats continue to evolve, as threat actors target the financial services industry with ransomware and other attacks. The current geopolitical situation further heightens the importance of cyber threat monitoring and adds complexities in operations as banks update processes to comply with financial sanctions issued by the U.S. government. The use of third parties by banks continues to increase and non-bank relationships continue to grow in complexity, presenting opportunities and risks.

Compliance risk remains elevated as banks continue to operate in an increasingly complex environment, with expanded use of innovative technology for product and service delivery, imposition of frequent and complex sanctions related to Russia’s invasion of Ukraine, and adjustments to work environments. In response to the pandemic and industry changes, banks continue to adjust their products and services and expand their partnerships with third parties, such as financial technology (fintech) firms, elevating implementation risk and the importance of risk management for potential unfair or deceptive acts or practices.

The quantity of credit risk in commercial and retail loan portfolios is moderate. Loan growth and increasing line utilization coupled with economic uncertainty contribute to the moderate quantity of risk. Inflation, rising interest rates, and the potential for a slower economy have not yet significantly affected loan portfolios. Credit performance indicators started to turn negative in the third quarter, affecting both commercial and retail portfolios. Prudent risk management practices and a positive economic environment have kept loan portfolios resilient to date.

**CLIMATE RISK UPDATE**

Physical risks have received heightened attention recently with the increased frequency, severity, and economic impacts of wildfires, flooding, drought, and storms like Hurricanes Fiona and Ian. Transition risks also continue to rise given trends in power pricing from different energy sources. Both physical and transition risks may have safety and soundness implications for OCC-regulated entities.

The OCC continues to consider the comments on its draft Principles for Climate-Related Financial Risk Management for Large Financial Institutions issued in December 2021 and working with our interagency colleagues to determine next steps.

2 Refer to the Federal Emergency Management Agency’s [web page on declared disasters](https://www.fema.gov/disasters).

The OCC also engages in interagency efforts via its membership on the Financial Stability Oversight Council’s (FSOC) Climate-related Financial Risk Committee (CFRC). In pursuit of the FSOC’s 2021 Climate Report’s recommendation for enhanced coordination among members, the OCC is actively engaged in the work of the CFRC.

SUPERVISION ACTIVITIES

OCC supervision activities focusing on climate-related financial risks continues with efforts to better understand how the climate-related financial risks may affect the safety and soundness of institutions. At the largest financial institutions (those with over $100 billion in total consolidated assets) examiners will continue to focus on developing an understanding of banks’ efforts in integrating climate-related financial risks into their risk management frameworks. Examiners will monitor the development of climate-related financial risk management frameworks at these banks and will engage with bank management to understand the challenges banks face, such as data and metrics, governance and oversight, policies, procedures, and limits, strategic planning, scenario analysis capabilities and techniques, and incorporation of the frameworks into current bank risk management processes.4

OFFICE OF CLIMATE RISK

The OCC established the Office of Climate Risk and, on September 12, 2022, appointed Dr. Yue (Nina) Chen as the Chief Climate Risk Officer to lead the unit.5 The Office of Climate Risk will advance the agency’s climate risk management efforts related to supervision, policy, and external engagement. The new office reports directly to the Acting Comptroller and is tasked with overseeing the OCC’s activities pertaining to climate-related financial risks and supervision, including

- developing communication guidance for examiners and other OCC staff on messaging around climate-related financial risks,
- co-leading the development of policies on climate-related financial risk supervision with Bank Supervision Policy,
- developing examination strategy guidance and review of strategies with respect to climate-related financial risks, for the largest financial institutions (those with over $100 billion in total consolidated assets),
- developing training for OCC staff,
- coordinating across OCC business units, and
- promoting interagency collaboration and knowledge sharing.


Part III of this report discusses the OCC’s approach to crypto-assets. The OCC continues to approach crypto-asset products, services, and activities cautiously for a variety of reasons. These include high volatility among crypto-assets, high-risk lending and leverage within crypto-asset markets, high interconnectedness and concentration within the crypto industry, and a lack of consistent or comprehensive regulation for certain crypto-asset entities. Although crypto-asset products and services may share some risks with traditional products and services, risks may manifest in novel ways due to the market structure and underlying technology.
PART I

OPERATING ENVIRONMENT

U.S. ECONOMIC GROWTH SLOWED IN 2022

Lingering effects from the pandemic and shocks from Russia’s invasion of Ukraine continue to disrupt the U.S. economy in 2022. Real gross domestic product (GDP) declined during the first two quarters of the year, which raised recession concerns. The declines in output were, however, mostly from a fall in net exports in the first quarter and a slowdown in private inventory accumulation in the second quarter, both of which are volatile components of GDP. Real personal consumption expenditures, which accounted for slightly less than 70 percent of real GDP, continued to expand during the first half of 2022, albeit at a slow pace. Other important economic indicators, such as payrolls, industrial production, and manufacturing activity, also slowly expanded in the first half of the year, while real retail sales and real personal income (less transfers) were mostly flat. Given the lack of a sustained decline in these indicators, the National Bureau of Economic Research, the official arbiter of recessions, has not yet determined that a recession has begun. Economic growth slowed sharply, however, from last year’s strong rebound. Moreover, higher interest rates from the Federal Reserve’s tightening stance are expected to slow growth even further in the coming year. Accordingly, the Blue Chip Consensus Forecast (consensus) expects annual real GDP growth to slow from 5.7 percent last year to 1.6 percent in 2022 and 0.2 percent in 2023. See figure 1.
The U.S. labor market remained extremely tight in 2022. Total nonfarm employment surpassed its pre-pandemic peak in August, completing the recovery of jobs lost during the pandemic. But the recovery has been uneven, with employment in several Northeast and Midwest states still significantly below their prior peaks. Strong job growth helped push the unemployment rate from 4.0 percent in January to 3.5 percent in September, matching its pre-pandemic low point. However, the consensus forecast is for the quarterly unemployment rate to rise to 4.6 percent by the fourth quarter of 2023, reflecting the expected slowdown in GDP growth. See figure 2. With a constrained labor supply and record high job openings, firms have had to increase wages to fill open positions. As a result, worker compensation grew by 5 percent on a year-over-year basis in the second quarter, adding inflationary pressure to the economy.
High inflation, and the Federal Reserve’s response to it, remain the primary headwinds facing the U.S. economy. The Personal Consumption Expenditures (PCE) Price Index, the Federal Reserve’s preferred measure of inflation, has been increasing by more than 6 percent on a year-over-year basis throughout the first half of 2022. Despite this persistence, consumer and financial market inflation expectations over the next five years remain anchored at 3 percent or below as of September. This is in sharp contrast to 1980, when the central bank had to overcome inflation expectations of 10 percent. The consensus forecast is for the PCE Price Index to slowly fall over the next two years, reaching about 3 percent by the end of 2023. See figure 3.
The Federal Reserve’s tightening cycle has been aggressive and is expected to prioritize price stability over economic growth. The central bank increased the federal funds rate by 3 percentage points this year through September to slow consumer spending and bring inflation under control. The consensus forecast is for the quarterly three-month Treasury yield to peak at 4.3 percent in the first quarter of 2023. But supply constraints arising from snarled distribution chains, pandemic-related production disruptions, and constrained labor supply have also contributed to inflation challenges over which the central bank has no control. This could make it harder for the Federal Reserve to slow inflation and increases uncertainty over how restrictive monetary policy could return inflation to the Federal Reserve’s 2 percent target.

GLOBAL GROWTH CHALLENGED BY MULTIPLE SHOCKS

The combined effect of persistent inflation, Russia’s invasion of Ukraine, and slower-than-expected growth in China contributes to a challenging outlook for the global economy. Disruptions of Russia’s gas supplies have many economists forecasting at least a moderate recession in Europe by late 2022. The European Central Bank started raising rates to combat inflation, adding to the downward pressure on GDP growth. China’s GDP growth is hampered by COVID pandemic-related restrictions and problems in its real estate...
industry; GDP growth is now expected to be below 3.5 percent, the lowest level since at least the 1980s (except for 2020).

The U.S. economy is somewhat isolated from these global shocks; however, a sizable recession in Europe, in combination with a strong dollar, could reduce demand for U.S. goods. In addition, disruptions to markets for energy commodities could be a source of financial market spillovers. More generally, higher interest rates on the U.S. dollar and many other currencies are contributing to a tightening of global financial conditions. This has already contributed to higher default risk among some emerging market economies. Prolonged tightening of financial conditions and additional shocks to the real global economy (particularly in countries exposed to the Russia-Ukraine crisis), could be a source of further increases in foreign sovereign and corporate credit risk.

RESIDENTIAL REAL ESTATE PRICE GROWTH SLOWS, BUT LARGE NATIONAL HOME PRICE DECLINES ARE NOT EXPECTED

Economists expect home price growth to slow over the next year, and residential real estate prices are beginning to soften as higher interest rates reduce affordability. Some metropolitan areas that experienced significant, fast home price appreciation over the past two years may see modest price declines. For example, although home prices continued to report large annual gains over the summer, month-over-month prices declined for a handful of metropolitan areas for the first time since 2012, according to Black Knight Financial. See figure 4. Fewer home sales combined with greater volumes of homes available for sale also demonstrate weakening near-term housing demand. Because homes are taking longer to sell, many homebuilders are beginning to pull back, with home starts slowing at varying levels across the country.

The United States still faces a housing supply deficit, caused by a decade of underbuilding. While higher year-over-year prices and rising interest rates dampen near-term housing demand, younger generations are aging into home buying. These demographic trends, coupled with less construction, will further exacerbate the long-term mismatch between housing supply and demand. Therefore, despite the recent slowing of home price growth, large national home price declines are not expected due to a number of factors, including a decade of conservative underwriting, material household cash reserves, persistent underbuilding, and younger generations aging into home buying.
COMMERCIAL REAL ESTATE

OUTLOOK FOR THE OFFICE SECTOR REMAINS UNCERTAIN

The office sector continues to face challenges as it adjusts to the new normal of increased telework brought on by the pandemic. While overall demand for office space turned positive during the first half of the year, new supply coming onto the market caused vacancy rates to increase modestly (see figure 5). Office properties in downtown and urban business districts are seeing the most stress as properties continue to lose tenants. The outlook for this sector is uncertain, and it may take years to fully stabilize as tenants may choose to hold off on downsizing decisions until their leases expire.

Other sectors of commercial real estate continue to grow. The retail sector, driven by the growth of consumer expenditures, saw vacancies fall during the first half of the year. Tenant demand for multifamily units moderated in 2022 after vacancy rates were pushed to their lowest level on record in 2021. While multifamily vacancy rates moved higher in 2021 and 2022 as a result of new supply, tenant demand remains positive. Robust leisure travel helped support the hotel industry in 2022; however, some higher-end hotels that cater to business travelers have been slow to recover occupancy from pandemic losses.
FIGURE 5: ELEVATED VACANCIES FORECASTED THROUGH 2023 FOR OFFICE SECTOR

COMMERCIAL REAL ESTATE VACANCY RATES

Source: CoStar Portfolio Strategy (historical data through 2Q:2022, baseline forecast updated August 2022)

CORPORATE PROFITS CONTINUE TO GROW

Nonfinancial corporate profits continued to grow in the second quarter, suggesting that many firms have been successful at passing on rising costs to consumers. Nominal after-tax corporate profits rose 14.4 percent in the second quarter of 2022 from a year earlier, while profit margins as measured by after-tax profits as a share of gross value-added rose to 15.5 percent, the highest level since 1950. Still, there are indications that some industries are having more difficulty passing on rising costs than others. As reported by FactSet, aggregate net income for public companies in the S&P 1500 consumer discretionary and communication services industries fell in the second quarter of 2022 compared with the second quarter of 2021. Other industries could see profit margin compression as rates rise and consumers pull back on spending due to higher prices and a slowing economy.
Financial conditions tightened in 2022 with less supportive fiscal policy, higher interest rates, and commodity price volatility. Current and expected measures of inflation have consistently been elevated over this period, and short-term interest rates have increased at a higher-than-average pace. This raises the risks of a material slowdown in interest-sensitive sectors of the economy and a more broad-based cooling of economic activity. See figure 6.

**FIGURE 6: FINANCIAL CONDITIONS REMAIN TIGHTER THAN AVERAGE**

**U.S. FINANCIAL CONDITIONS INDEX**

Source: Bloomberg (data through October 19, 2022)

Note: The U.S. Financial Conditions Index tracks the overall level of financial stress in the U.S. money, bond, and equity markets to help assess the availability and cost of credit. A positive value indicates accommodative financial conditions while a negative value indicates tighter financial conditions relative to pre-2008 crisis norms.

Some risks to the U.S. financial market outlook faded from the first half of 2022, including a modest reduction of the geopolitical risk premiums in energy markets, and easing of pandemic-related public health restrictions in the United States. These positives were outweighed by other macroeconomic concerns, including ongoing supply chain stress, the potential for a prolonged energy supply disruption to Europe, and the prospect of persistently higher and entrenched inflation. The Federal Reserve increased the magnitude and pace of interest rate hikes in response to these inflation dynamics and is expected to further reduce the size of its balance sheet. The pace of economic growth is expected to remain lower over the next few
quarters and well below the pace of 2021 or the average of the previous expansions. As a result, rates on longer-maturity Treasury bonds rose less than shorter-maturity notes, and the yield curve flattened (or inverted in some cases). The implied probability of recession from an inverted yield curve remains at levels consistent with slowing economic growth rather than contraction.

U.S. Treasuries and fixed-income securities continued to see less favorable funding conditions in the second half of 2022. Measures of Treasury market volatility remained elevated as market participants priced higher uncertainty. In wholesale markets, repo and U.S. dollar funding market indicators reflected average levels of financial stress. This is consistent with ample levels of financial system liquidity due to the Federal Reserve’s asset purchase program. Banking system reserves have fallen this year but are above levels that could adversely affect funding markets.

**FIGURE 7: MARKET INFLATION EXPECTATIONS HAVE EASED, BUT INFLATION DYNAMICS REMAINED ELEVATED**

**U.S. TREASURY 5-YEAR BREAK-EVEN INFLATION RATE, PERCENT**

![Graph showing U.S. Treasury 5-year break-even inflation rate](source="Bloomberg (data through October 19, 2022)"

Note: The break-even inflation rate represents a measure of expected inflation derived from Treasury Constant Maturity Securities.

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6 The near-term Treasury term spread (three-month Treasury forward rate 18 month ahead-three-month Treasury bill) and the 10-year note-three-month bill Treasury term spread are positive as of October 19, 2022.
Equity and corporate fixed-income market prices were lower on elevated inflation uncertainty, expectations for slowing growth, and a significantly higher path for the federal funds rate than in the first quarter of 2022. Other measures of financial conditions further tightened as many risk asset classes fell into bear markets after reaching all-time highs in late 2021 or early 2022. Survey-based and market-based inflation expectation measures have modestly declined in the most recent quarter but remained elevated above the central bank target. See figure 7. Equity market volatility, measured by the S&P 500 VIX Index, increased modestly over the past two quarters but remained above post-pandemic lows, as falling commodity prices, a stronger dollar, higher input costs, uncertainty in the outlook for inflation, and expectations for higher short-term interest rates increased uncertainty for corporate profits.

Credit spreads widened alongside the downward move in equity markets. Investment-grade and high-yield corporate bond markets have experienced issuance declines this year as the outlook for higher interest rates and recession risk dampened investor demand. There are several risks that may increase volatility in asset markets in the next few quarters, including a more aggressive tightening of monetary policy, an increase in geopolitical risks, a prolonged energy crisis in Europe, and unexpected inflation dynamics. As of October 2022, international equity indexes underperformed U.S. benchmarks this year. The U.S. dollar appreciated to a multi-decade high against developed market peers when measured in inflation-adjusted terms on a trade-weighted basis.
Amid economic and geopolitical uncertainty, stemming from continued supply and demand imbalances as well as Russia’s ongoing invasion of Ukraine, the banking industry remains well capitalized and with ample liquidity in case of a recession. Although bank capital ratios and liquidity have declined slightly in recent years, they remain well above historical levels. In December 2006, the tier 1 leverage ratio for the system was 7.7 percent, compared with 8.5 percent as of June 2022. For banks with less than $5 billion in assets (hereafter referred to as community banks), there was a similar improvement, from 9.6 percent to 10.8 percent over the same period. Bank liquidity levels also remain sound due to policy developments and an emphasis on stronger risk management since the end of the global financial crisis. The federal banking system’s ratio of liquid assets to total assets was at 21.7 percent as of June of this year, up from just 2.5 percent in 2006.

Meanwhile, higher consumer price growth has proven to be longer lasting, peaking at 9.1 percent in June 2022 on a year-over-year basis, steering the Federal Reserve to front-load increases to the federal funds rate. For the federal banking system, rising rates have been a benefit to net interest income while inflation has provided a boost to nominal loan growth. The consensus view is uncertain whether rising interest rates will drive spread revenues\(^7\) and avoid a recession.

Even though spread revenues increased in the first half of 2022, profitability for the system declined from elevated levels in the prior year, as provisions to allowances for credit losses turned positive. As shown in figure 8, return on equity was up significantly in 2021, exceeding its pre-COVID pandemic level for both the banking system, which is driven by the largest banks, and for community banks. Bank earnings were buoyed in the prior year by loan-loss reserve releases resulting from better-than-expected credit performance. With

\(^7\) Blue Chip Economic Indicators (October 2022).
provisions normalizing in the first half of 2022 and other temporary sources of revenue also waning, return on equity inched down to 10.7 percent for the system, below its 2019 level of 11.9 percent. The outlook for the remainder of 2022, given the rising rate environment and strong loan demand, especially consumer lending, remains reliant on the Federal Reserve’s ability to curb inflation while not tipping the economy into recession.

Due to rising rates affecting bank margins, net interest income growth was very strong in the first half of 2022 for the system and for community banks. Despite the strong increase in net interest income, gains were more than offset by a slowdown in other sources of revenue as well as an increase in noninterest expenses and loan-loss provisions. See table 1.

In response to higher interest rates, mortgage banking has slowed, and this has reduced revenue from gains on sales of loans. Banks also built up reserves in the first half of 2022, in contrast with the reserve releases that had previously boosted net income in 2021. Noninterest expense, which has been under pressure from rising labor costs since early in the pandemic, continued to increase through both direct (salaries and employee benefits) and indirect costs, such as data processing, consulting, and advisory fees that banks report as other noninterest expense. Tight labor market conditions and elevated consumer inflation expectations have placed upward pressure on salaries and benefits, as increased costs are passed...
on to consumers, who in turn demand higher wages to keep up with rising price growth. These conditions contributed to a decline in net income for the banking system in the year, albeit from elevated levels.

Behind the large growth in net interest income in the first half of 2022 was a significant improvement in the net interest margin (NIM) for the federal banking system compared with the prior year. See figure 9. This suggests that similar to the early-2015 interest rate tightening cycle, banks are able to pass rate increases to borrowers while holding funding costs low. The increase in NIM for the federal banking system, driven by the largest banks, was more pronounced, with an increase of 17 basis points from an all-time low of 2.4 percent in 2021. Although NIM increased for community banks in the second quarter of 2022 on a year-to-date annualized basis, NIM inched down by 4 basis points in 2022 compared with 2021 on a full-year basis.

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8 Federal Reserve Bank of New York Survey of Consumer Expectations (September 2022).
Despite a contraction in real GDP of 0.6 percent on an annualized basis in the second quarter of 2022, nominal loan growth surged in the banking system from COVID pandemic lows. Excluding Paycheck Protection Program (PPP) loans from all of the growth rates shown in figure 10, loan portfolios increased by 9.7 percent, compared with a decline of 1.4 percent in the prior year. Demand for borrowing increased significantly from both retail and business customers, despite the aggressive normalization in monetary policy, rising interest rate environment, increased discretionary spending, and higher inflation.

In particular, consumer loans and commercial and industrial (C&I) loans, which combined make up 43 percent of total loan portfolios, increased by 10.5 percent and 20.7 percent, respectively. Credit card loans, which make up slightly more than half of total consumer loans, increased 12.5 percent, while all other consumer loans were up by 8.3 percent. Although credit card balances for the system grew by $84 billion over the year, they remain just below their pre-pandemic level, accounting for 10.5 percent of total loans compared with 11.9 percent in the fourth quarter of 2019.

![Figure 9: Trend in Net Interest Margins](image.png)

Source: Integrated Banking Information System (OCC)

Note: Annual data through year-end 2021 and annualized for the first half of 2022. Banks with less than $5 billion in total assets exclude credit card and trust banks.
Utilization rates, which dropped dramatically early in the pandemic, started to increase from record-low levels for C&I loans as of the second half of 2021 for both the system and for community banks, increasing to 49.2 percent and 64.1 percent, respectively, as of the most recent quarter. Similarly, credit card utilization rates also started to increase from record-low levels recently, rising to 17.1 percent for the system as of the most recent quarter. This compares with a pre-pandemic credit card utilization rate of 18.9 percent as of the fourth quarter of 2019.

According to the Federal Reserve’s July 2022 senior loan officer opinion survey on bank lending practices, the majority of banks reported stronger demand for C&I loans from large and middle-market firms, and a moderate net share of banks reported stronger demand from small firms. Non-depository financial institution lending slowed compared with the prior year but still had a strong gain of 14.9 percent from year-ago levels, making up 7 percent of total loans. For community banks, total loan growth accelerated to 13.6 percent, driven by an increase in both consumer and commercial loan portfolios.

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9 Board of Governors of the Federal Reserve System, Senior Loan Officer Opinion Survey on Bank Lending Practices (July 2022).
This year’s dislocations in crypto markets and the associated failures of crypto firms have highlighted several key risks, which reinforce for banks and supervisors the importance of taking a careful and cautious approach to crypto activities and engagement with crypto-related firms.

**Crypto industry risk management practices lack maturity.** Most crypto market participants appear unprepared for the stresses and surprises that have taken place this year, resulting in substantial losses for millions of consumers. Risk management and governance practices continue to evolve and are not yet robust. Scalability and efficiencies have not yet been obtained. Hacks and outages are frequent, and fraud and scams remain high throughout the industry. In some cases, ownership rights, custody arrangements, and financial representations have created a high degree of confusion. Addressing these risks and poor practices is a necessary, but not wholly sufficient, step toward market maturation.

**Stablecoins may be unstable.** Stablecoins are cryptocurrencies that are designed to have a relatively stable value. The collapse of an algorithmic stablecoin in the spring revealed the potential for run risk with stablecoins. The collapse affected not only algorithmic stablecoins but also asset-backed stablecoins, with some losing their pegs for periods of time. While stablecoin reserve practices have incrementally evolved since then, most stablecoins remain susceptible to run risk.

**Contagion risk is high within the crypto industry.** The events of this year in the crypto industry have revealed a high degree of interconnectedness between certain crypto participants through a variety of opaque lending and investing arrangements. The market stresses revealed that crypto participants may be engaging in highly leveraged trading, in addition to providing brokerage, custody, and exchange-like services to customers. The result is a high risk of contagion among connected parties.
The OCC continues to maintain a careful and cautious approach to crypto-assets in the federal banking system. The agency’s focus is on whether banks are engaging in these activities in a safe, sound and fair manner. The agency is also working with the other federal and state agencies researching and assessing certain crypto-asset activities. OCC-supervised institutions considering these activities should take a careful and incremental approach to ensure appropriate controls and risk management practices are in place before scaling or engaging in additional activities. National banks and federal savings associations interested in engaging in crypto-asset activities should discuss the activities with their supervisory office before engaging the activities. Some activities may require a supervisory non-objection under OCC Interpretive Letter #1179.
TRENDS IN KEY RISKS

A. RISING INTEREST RATES ARE CAUSING SIGNIFICANT INVESTMENT PORTFOLIO DEPRECIATION

INVESTMENT PORTFOLIO UNREALIZED LOSSES

Rising long-term rates have caused significant depreciation in investment portfolio market values. Federal Reserve actions to combat inflation have pushed interest rates and U.S. Treasury yields higher in 2022. The effective federal funds rate increased 300 basis points this year to 3.08 percent as of October 2022, and the 10-2-year U.S. Treasury yield spread has been inverted since early July 2022 despite the 10-year U.S. Treasury yield increasing 289 basis points since year-end 2021. Through the nine months ending September 30, 2022, banks with more than $10 billion in total assets reported approximately 7 percent depreciation in available-for-sale portfolios and approximately 14 percent depreciation in held-to-maturity portfolios. Banks with less than $10 billion in total assets reported approximate available-for-sale portfolio depreciation of 11 percent and approximate held-to-maturity portfolio depreciation of 12 percent.

Investment portfolio depreciation affects banks’ access to timely and cost-effective wholesale sources of funding through reduced fair market values for collateral pledging or to meet margin requirements. Investment portfolio values and banks’ access are likely to remain under pressure as the Federal Reserve ramps up quantitative tightening measures (balance-sheet runoff) and continues to raise short-term interest rates to fight inflation. Banks with assets less than $50 billion are projecting, on average, about a 4 percent decline in portfolio values for every 100-basis-point rate increase.

Investment portfolio losses will likely remain unrealized as long as banks maintain sufficient access to efficient sources of liquidity. The portfolio will earn below market yields. Abundant system-wide liquidity persisted through 2022. Deposits and liquid assets remain high, though levels declined in the third quarter of 2022 with quantitative tightening and increasing rates as contributing factors. The difference between deposit rates and yields on other investment types has grown significantly due to banks’ ability to control
deposit costs despite increasing short-term interest rates. This is driving deposits into other investment opportunities. Further widening of this gap as rates continue to rise may cause additional migration out of deposits. Bank borrowings did increase in the third quarter, but overall wholesale funding remains low. While liquidity remains robust, declining liquidity buffers in a period of rising rates and quantitative tightening could have a material impact on earnings and capital if a bank needs to liquidate securities.

**STRESS TESTING**

It is important to consider a robust suite of scenarios and sufficient stress testing in liquidity and interest rate risk management practices, especially given rising rates, quantitative tightening, and current economic uncertainty. Scenario analysis, stress testing, and planning can support a broad understanding of potential outcomes and risks to earnings and capital as well as help ensure access to efficient sources of funding. It is important that contingency funding plans are both current and robust, and consider stress events that may have a significant impact on banks’ liquidity. Considerations of both the current environment and an environment of further quantitative tightening and rising interest rates are central to understanding potential impacts to funding sources and uses. These stress scenarios can help banks understand the effects of further depreciation in investment portfolio values and whether wholesale sources, such as borrowing lines and repurchase agreements, will remain accessible and at sufficient levels to meet potential liquidity needs. Scenarios involving liquidation of depreciated securities to maintain sufficient liquidity can support assessments of earnings and capital impacts from realized investment portfolio losses.

Deposit stability is also a key consideration in the current environment. The stability of large and pandemic-related surge deposits presents particular uncertainty. These include deposits over the Federal Deposit Insurance Corporation insurance limit, where growth has slowed and balances have declined in some banks. Sensitivity analyses of deposit runoff rates are vital to liquidity stress testing in the current environment given the likelihood of a widening spread between deposit rates and other investment yields, as well as increased deposit competition.\(^\text{10}\)

**INTEREST RATE RISK MODELING**

The uncertainty in the current environment surrounding deposit stability may also have interest rate risk ramifications. Most banks expect to benefit from rising interest rates. For example, data\(^\text{11}\) collected from OCC interest rate risk examinations show the median bank\(^\text{12}\) projecting a 7 percent increase in net interest

\(^{10}\) Refer to OCC Bulletin 2010-13, “Liquidity: Final Interagency Policy Statement on Funding and Liquidity Risk Management,” for more information on contingency funding plans, stress testing, and other key liquidity risk management principles.

\(^{11}\) Refer to the OCC’s Interest Rate Risk Statistics Report (Spring 2022).

\(^{12}\) “Median bank” refers to the median national bank and federal savings association supervised by the OCC’s Midsize and Community Bank Supervision Department.
income given a +200 basis point shock to interest rates. The accuracy of these projections, however, largely depends on deposit repricing assumptions. Sensitivity analyses of deposit assumptions are important to understand interest rate risk exposures given different scenarios, such as higher-than-expected repricing rates or less optimal deposit mixes. The type of interest rate scenario is also critical to the accuracy of these projections. Consideration of a robust suite of rate scenario types (e.g., shocks, ramps, parallel, and non-parallel) are important to understand a bank’s interest rate risk profile, especially given the current inverted yield curve and uncertainty surrounding future rate and yield curve movements.\textsuperscript{13}

**B. OPERATIONAL RISK IS ELEVATED AS BANKS RESPOND TO AN EVOLVING AND INCREASINGLY COMPLEX OPERATING ENVIRONMENT**

**CYBERSECURITY**

Operational risk continues to be elevated as cyber attacks evolve and become more sophisticated and damaging to the U.S. economy. Continuing cyber attacks and the current geopolitical tensions highlight the importance of heightened threat monitoring and safeguarding against disruptive attacks targeting the financial sector. In recent months, there has been an upward trend in ransomware attacks targeting banks’ service providers and other third parties. These attacks continue to leverage phishing emails targeting employees and compromised credentials to gain access to networks through remote access solutions, and then to conduct ransomware and other extortion campaigns that can affect bank customers. Distributed denial of service attacks have also been observed. Cyber actors continue to exploit publicly known software vulnerabilities and weak authentication against broad target sets, including banks and financial service providers. To mitigate against cyber risks, it is important for banks to maintain heightened threat and vulnerability monitoring processes and implement more stringent security measures, including the use of multifactor authentication, hardening of systems configurations, and timely patch management. Banks also should consider how to effectively implement and regularly test backups for key systems to provide operational resilience, including maintaining immutable backup of critical data in the event malware encrypts or corrupts systems.

The risk to supply chain management operations continues to increase and evolve as attacks target vulnerabilities in software systems commonly used by large numbers of organizations. Threat actors are increasingly exploiting vulnerabilities in third-party-developed software products used in financial institutions to conduct malicious cyber activities while negotiating ransom payments. These attacks demonstrate the importance of banks assessing the risks arising from their third parties and developing a comprehensive approach to operational resilience, inclusive of supply chain risk.

\textsuperscript{13} Refer to OCC Bulletin 2010-1, “Interest Rate Risk: Interagency Advisory on Interest Rate Risk Management,” for more information on interest rate risk stress testing, sensitivity analyses, and other key interest rate risk management principles.
Additionally, it is important for banks and their service providers to monitor how technological innovation may affect security controls. An example of emerging technology with security implications is quantum computing, which has the potential to render current encryption technology ineffective. While broad implementation of this technology will likely not be available in the near term, banks and service providers should be aware of the potential risk implications. The National Institute of Standards and Technology (NIST) has identified the first group of encryption tools\(^\text{14}\) that are designed to safeguard for risks posed by advances in quantum computing. Banks and service providers should consider how to effectively monitor these developments as they manage future infrastructure investments.

**INNOVATION AND ADOPTION OF NEW PRODUCTS AND SERVICES**

Banks continue to leverage new technology and innovative products and services to further their digitalization efforts and to meet evolving customer demand and expectations. Examples of innovations include faster and real-time payment products, increased use of mobile and digital technologies to deliver financial services, application programming interfaces, data aggregation services, contactless payment devices, and distributed ledger technologies.

While these products and services can offer many benefits to both banks and their customers, adoption of these new products, services, and delivery channels, as well as expanded relationships with fintech firms and other entities, can contribute to a complex operating environment, emphasizing the importance of banks having appropriate due diligence, change management, and risk management processes. An example of these risks is heightened fraud risk associated with many of the innovative peer-to-peer payment platforms. While peer-to-peer platforms have provided enhanced capabilities and ease to consumers for managing payments, the faster and streamlined payment capabilities also have been used to facilitate scams and consumer fraud. Banks can help to protect consumers by clearly communicating risks, educating customers on potential scams, and enhancing internal fraud monitoring capabilities. Examiners continue to assess how banks are managing these and other risks related to changes in operating environments driven by these innovations.

Distributed ledger technologies and growing adoption of digital assets, such as crypto-assets, stablecoins, and other tokenized assets, have broadened the universe of entities delivering banking and bank-like products and services and raise questions regarding the regulatory perimeter and financial stability. Banks may require additional or different controls to safeguard against fraud, financial crimes, violations of Bank Secrecy Act, anti-money laundering, and Office of Foreign Assets Control (BSA/AML/OFAC) requirements, and consumer protection or fair lending laws, or operational errors, and to maintain comprehensive operational resilience frameworks commensurate with the size and complexity of products, services, and operations being supported. Strategic planning and risk management processes need to be sufficiently robust to manage, partner, or compete with new fintech entrants as needed.

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\(^{14}\) NIST, "NIST Announces First Four Quantum-Resistant Cryptographic Algorithms" (July 5, 2022).
THIRD-PARTY RISK MANAGEMENT AND OTHER OPERATIONAL RISKS

Third-party risk management continues to be an area of heightened supervisory focus. Digitalization and technological advances have continued to reinforce the increasing trend of banks outsourcing technology operations and banks entering into partnerships or other arrangements with third parties, including fintech firms, to deliver innovative financial products and services. To help safeguard against disruption of critical activities, effective management and oversight of third-party relationships are essential. Before engaging with a third party, it is important for banks to conduct appropriate due diligence. The scope and depth of due diligence, as well as ongoing monitoring and oversight of the third party’s performance, should be commensurate with the nature and criticality of the proposed activity.

The banking industry experienced a great deal of change over the last two years in response to the pandemic and then return-to-office strategies. In addition, demand for staff with specialized experience and technical expertise has required banks to increasingly focus on the recruitment and retention of individuals in key positions. The potential for increased merger and acquisition activity in an evolving operating environment also underscores the importance of effective governance and strong due diligence.

Operational risk is often a lagging indicator, and some of the risk exposure may manifest in the coming quarters. It is important for the industry to remain vigilant and fully assess its risk exposure.

C. COMPLIANCE RISK REMAINS ELEVATED

BSA/AML AND OFAC COMPLIANCE RISK

As financial institutions adopt or consider innovative technology solutions related to new products or services, or when evaluating potential engagement in digital asset activities, it is important that strong risk management practices are in place to mitigate operational and compliance risks. Use of new technologies or entry into new markets may cause familiar risks to manifest in different ways or may necessitate new techniques to appropriately identify, measure, monitor, and control them. Areas to consider include third-party risk management practices related to areas highlighted by the Financial Crimes Enforcement Network (FinCEN) issuances, including the recent alert addressing fraudulent schemes involving convertible virtual currency.15

Banks should also be aware that FinCEN recently issued an advisory to alert financial institutions to the rising trend of elder financial exploitation targeting older adults and to highlight new typologies and red

15 FIN-2020-Alert001, “FinCEN Alerts Financial Institutions to Convertible Virtual Currency Scam Involving Twitter.”
flags. In addition, FinCEN and the U.S. Department of Commerce’s Bureau of Industry and Security issued a joint alert urging financial institutions to be vigilant against efforts by individuals or entities to evade the bureau’s export controls implemented in connection with Russia’s invasion of Ukraine.

CONSUMER COMPLIANCE

Banks continue to adjust their business strategies due to multiple factors, including changes in the market, opportunities to increase operational efficiencies, and continuing reductions to, or elimination of, overdraft protection and non-sufficient funds fees. While these actions may result in a more consumer-friendly approach, they do not eliminate compliance risk; instead, they change it from product risk to implementation risk. If changes are not effectively managed and clearly disclosed to customers, breakdowns could result in unfair or deceptive acts or practices.

Additionally, banks continue to work with third parties to support bank operations, expand services, or reach new customers. For example, some banks are partnering with fintech firms allowing the fintech firm to provide banking services, or to provide opportunities for customers to enter the digital asset market. These relationships may also increase the risk of unfair or deceptive acts or practices because of the coordination, communication, and disclosure challenges involved in these partnerships, including coordination in managing the customer relationship. Unclear or arbitrary partnership agreements may result in implementation breakdowns, untimely resolution of issues, or failure to deliver products or services as intended, and may result in significant customer remediation.

Inflation has the potential to affect the compliance operating environment. As the costs of goods and services increase, bank customers may face challenges managing debt obligations. It is important that banks are prepared to handle an increase in inquiries and requests from customers seeking assistance and ensure customer responses are handled in a fair and timely manner.

COMMUNITY REINVESTMENT ACT AND FAIR LENDING

In May 2022, the OCC issued OCC Bulletin 2022-14, “Community Reinvestment Act: Interagency Notice of Proposed Rulemaking to Implement the CRA,” which communicated that, in conjunction with the Federal Reserve and Federal Deposit Insurance Corporation, the three agencies issued a joint notice of proposed rulemaking to strengthen and modernize the Community Reinvestment Act. The comment period closed August 5, 2022, and the agencies have been reviewing the public comments. While some banks are already anticipating operational changes, actions taken based on a proposal could be costly and resource-intensive to reverse if a final rule is delayed or is implemented with provisions that differ from the proposal.

Additionally, fair lending supervisory efforts highlight the need for appropriate controls, including self-evaluations, to monitor, identify, and adequately address areas of elevated redlining risk. This represents a continuing challenge and can be exacerbated due to the ongoing volatility in the work environment, e.g., challenges retaining or replacing compliance staff, particularly those with specific subject matter expertise.
Bank indicators of loan quality stress increased in the third quarter. Emerging weaknesses are noted in both commercial and retail loans. Commercial loans are challenged by higher interest rates and inflation. Retail loans, which are centered in credit cards and auto lending, benefited from low rates.

**COMMERCIAL CREDIT**

Special mention and classified assets for banks are manageable in relation to capital and economic headwinds. Balances in C&I, CRE, and highly leveraged loans have continued to grow. While call report data indicate nominal stress in most portfolios, continuing inflationary pressure and increasing interest rates may affect bank credit quality across numerous industries. The extent of this impact is difficult to quantify. Borrowers’ operating margins in certain industries are under pressure due to the inability to pass off enough increasing input costs. Higher input costs are having a greater effect on repayment capacity than increasing interest expense. The Federal Reserve continues to increase interest rates in an effort to combat inflation. The rate increases will add incremental pressure on cash flow given the variable rate structure for the majority of commercial credit.

CRE is of heightened concern. Stress in commercial retail (primarily shopping malls and power centers) and hotel sectors remains noteworthy; however, the office sector commands particular attention in the near term, as evidenced by the high vacancy rates and the amount of sublease space available in most major urban business districts. Rising interest rates will affect capitalization rates lowering collateral values. Leasing decisions are still in process for many companies as they determine space and location needs in light of decisions to accommodate remote, hybrid, and in-person work arrangements. Preference changes for consumers and businesses in terms of shopping, travel, and remote work present income and valuation challenges. While the multifamily market remains mostly stable, rising inflation has begun to affect rent growth and absorption. New home sales from homebuilders have also been affected, as evidenced by increasing contract cancellations primarily attributed to rising mortgage rates.

CRE remains a concentration in many midsize and community banks and has been increasing primarily in the residential construction and development sector. At the time of the last publication, the number of banks exceeding the thresholds in the CRE concentration guidance had materially increased for the first time in more than two years; that number has increased for several quarters now and is consistent with growth rates posted in late 2015. Given the current stress in certain CRE sectors and geographies, it is important that banks remain vigilant and maintain prudent risk management practices.

Other areas of concern include the potential stress on grain inventories from Russia’s continuing invasion of Ukraine and drought in the United States, pending OPEC production decisions, and newer loan products requiring increased technology use to remain competitive.
It is important for banks to make stress testing and sensitivity analysis their key risk management activities given the current trajectory of interest rates and the uncertain macroeconomic environment. It is also important for banks to have risk management processes and practices in place to analyze the effect of current macro events and any significant unique risk events that could impair repayment or refinance capacity. Banks should consider making concentrated portfolios and vulnerable borrowers a particular focus, as they may necessitate additional consideration in determining risk and loan-loss provisions. Maintaining safe and sound credit risk management practices, including accurate and timely risk identification and ratings, remains a top priority for lenders.

**RETAIL CREDIT**

Performance across all retail credit classes remains strong, with low delinquencies and low net credit losses. Consumer balance sheets are strong. Prudent underwriting, effective risk mitigation, low unemployment, and an unprecedented level of government stimulus resulted in retail and residential real estate loan portfolio performances that have exceeded expectations.

Income from wages, salaries, and investments continues to grow, which is a sign of strength for the consumer. Household balance sheets are strong, with good cash reserves, moderate leverage, and low debt burdens and delinquency rates. The average household debt burden remains near a 40-year low. Most outstanding consumer debt is priced at a fixed interest rate, minimizing the impact of rising rates. While cash buffers remain elevated, median deposit balances are down across all income segments for the first time since the second quarter of 2020. Despite favorable performance of consumer portfolios, economic and geopolitical headwinds continue to challenge consumer performance and retail credit quality. Inflation of 8.3 percent is at a 40-year high and is expected to increase or remain elevated for the foreseeable future, exacerbated by ongoing supply chain issues and labor shortages. Housing rents are growing at a much faster rate than the consumer price index. These economic challenges have not yet had an observable impact on retail and mortgage credit quality.

With inflation currently exceeding wage growth, most households have felt the effects of inflation. The average consumer is spending 35 percent more year-over-year on gas and approximately 6 percent more on recurring bills and other nondiscretionary categories. Credit card balances are expected to increase as conditions and spending behavior normalize post-pandemic. Some portion of the balance increase will likely result from line usage for basic nondiscretionary spending such as gas, food, and utilities. Higher credit card balances coupled with rising interest rates will likely affect defaults and expected losses. Borrower net worth will be negatively affected by declining residential real estate prices. Home price declines are expected to stabilize by 2023.

Economists typically view inflation as regressive. The most vulnerable segments of households are in lower income brackets, on a fixed income, or are highly leveraged. Low-wage employment has not yet rebounded despite large wage gains and abundant job openings. Also, borrowers with variable-rate debt are more susceptible to direct and indirect inflation impacts than those with fixed-rate mortgages and fixed debt payments. It is important for banks to remain vigilant in identifying, monitoring, and managing weaker
portfolio segments. Specific actions may include stress testing vulnerable segments, adjusting underwriting standards, adjusting loss mitigation and collection strategies, implementing increased portfolio monitoring, selling or hedging assets, and appropriately allocating for risk in the allowance for credit losses. Strong governance, transparency, and documentation of assumptions and judgments, including those for scenario selection and weighting, are critical to ensuring an adequate loan-loss reserve amount and methodology.

With most banks loosening retail and mortgage underwriting standards that were proactively tightened during the height of the pandemic, bank management needs to closely guard against complacency in underwriting practices. Banks should consider monitoring potential impacts on credit quality from changes in market conditions such as elevated asset valuations, the effect of inflation on borrower disposable income, increasing credit score improvement, changes in the payment-hierarchy-to-risk relationship, and an increasing interest rate environment. Some banks are looking to reverse pandemic-related loan volume declines by marketing new products, such as buy now pay later loans, and with more aggressive marketing of home equity loans and other products. These products may promise low barriers to entry, rapid growth, and quick profits, especially with substantial reliance on third parties. Banks should approach these initiatives with caution and discipline, conducting due diligence to support appropriate governance, monitoring, and controls.
The OCC communicates supervisory concerns to a bank’s board and management in the form of matters requiring attention (MRA), which consist of one or more subsidiary concerns. MRA concerns include practices that deviate from sound governance, internal control, or risk management principles. Such deviations, if not addressed appropriately, could adversely affect a bank’s condition or risk profile, or result in violations of laws or regulations, leading to enforcement actions. Figure 11 shows the composition of outstanding MRA concerns.

**FIGURE 11: OUTSTANDING MRA CONCERNS ARE STABLE**

**OPEN CONCERNS - PRIMARY RISK**

- Operational: 42%
- Credit: 24%
- Compliance: 23%
- Strategic: 5%
- Interest Rate: 2%
- Liquidity: 2%
- Reputation: 1%
- Price: 1%

Source: OCC data

Note: Figures do not add to 100 percent due to rounding.