Office of the
Comptroller of the Currency

Semiannual Risk Perspective

From the National Risk Committee

Fall 2018

Contents

About This Report

The Office of the Comptroller of the Currency (OCC) charters, regulates, and supervises national banks and federal savings associations (collectively, banks) and licenses, regulates, and supervises the federal branches and agencies of foreign banks. 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, as well as officials from the policy units. 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 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 OCC publishes the report twice a year, drawing on the most current data as available. The fall 2018 report reflects bank data as of June 30, 2018, unless otherwise indicated.

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

Executive Summary

The condition of the federal banking system was strong for the first half of 2018. The financial performance of banks making up the federal banking system improved in the first half of 2018 compared with 2017, driven by lower taxes and stronger operating performance. Profitability continued to strengthen, with large and small banks seeing improvement in return on equity (ROE). System-wide ROE surged to just more than 12 percent, exceeding 10 percent for the first time since 2008. Net interest income increased 8 percent, driven by margin expansion at banks of all sizes. The net interest margin for the federal banking system reached its highest level in six years. Credit quality remains sound, with delinquencies, nonperforming assets, and loan losses at relatively low levels compared with historical performance. Capital and liquidity are at or near historical highs, and earnings have strengthened. Recent examination findings indicate incremental improvement in banks' overall risk management practices.

Accelerated U.S. economic growth in 2018 continued to support loan growth and bank profitability. Nevertheless, the bank operating environment poses a number of challenges that elevate risks for banks. These challenges include strong competitive pressures from banks and nonbanks, significant growth in nonfinancial corporate debt, eased loan underwriting standards, particularly in leveraged loans, increasing interest rates, and rapid technological innovation. Unlike prior credit cycles, a substantial and increasing volume of credit is handled by nonbanks. Bank management should understand and manage potential linkages between banks and the broader financial system and the potential implications for the banks' credit risk. In addition, the implementation of the current expected credit losses (CECL) standard, the likely alternative reference rate reform, and innovation in financial services pose potential operational and strategic risks for banks.

Key risk themes highlighted by the NRC include credit, operational, compliance, and interest rate. These areas continue to evolve in the context of changing economic, technological, and bank operating developments. The financial services sector continues to experience rapid growth in financial technology (fintech), which provides products and services to customers, and regulatory technology (regtech).[1] While evolving technologies can benefit banks and their customers, they also can disrupt bank business models and pose risks in many of the same areas already discussed.

- Credit quality remains strong when measured by traditional performance metrics. Nonetheless, credit risk is increasing because of accumulated risk in loan portfolios from successive years of incremental easing in underwriting, risk layering, concentrations, and rising potential impact from external factors. The OCC continues to monitor the effects of strong competition, within and outside the federal banking system, particularly on the origination quality of new loans. In addition, the OCC is monitoring for any increased levels of lender complacency within credit risk identification and management.

[1] Regtech includes any technology or software created to address regulatory challenges and help companies understand regulatory requirements and stay compliant.

- Operational risk is elevated as banks respond to an evolving and increasingly complex operating environment. Cybersecurity continues to be a key operational risk, especially in light of the continually evolving threat landscape. Innovation in the banking industry emphasizes the need for banks to effectively manage operational changes as technology advances. Banks increasingly rely on third-party service providers to deliver key services, which presents distinct risks. Further, there are examples of core activities for the industry that are concentrated in a handful of third-party service providers. Additional factors contributing to elevated operational risk are the expected increase in mergers and acquisitions activity as well as rising trends in fraud and attempted fraud. Operational disruptions underscore the need for effective change management when implementing new products, services, and emerging technologies.
- Compliance risk remains elevated as banks seek to manage money-laundering risks in a complex, dynamic operating and regulatory environment. In addition, the adoption of new technologies and other innovations and implementing changes to policies and procedures to comply with amended consumer protection requirements are challenging banks' compliance risk management processes.
- Interest rate risk poses potential challenges given the current rising rate environment, competitive pressures, changes in technology, and untested depositor behavior. All of these factors make it difficult to forecast liability costs. The advances in technology, such as online banking, mobile banking, and the acceleration of fintech, have made it easier to move money, potentially causing depositors to switch financial institutions or switch to nonbank competitors. Banks may experience unexpected shifts in liability mix or increasing costs that could reduce earnings or increase liquidity risk.

The NRC monitors other issues that may develop into key risks. Other issues that warrant awareness among bankers and examiners include

- incremental easing in commercial credit underwriting practices.
- concentrations of commercial real estate (CRE) and the need for sound concentration risk management.
- low or declining prices for grain, livestock, and dairy that result in lower cash flow and increased farm carryover debt for agricultural borrowers.
- CECL implementation, which may pose operational and strategic risk to some banks when measuring and assessing the collectability of financial assets.

This edition of the *Semiannual Risk Perspective* also highlights the risks posed by the growth in nonfinancial corporate debt, which is included in part III of this report as a special topic in emerging risks. In addition, this edition includes a credit underwriting assessment supplement in part V.

Part I: Operating Environment

U.S. real gross domestic product growth accelerated to 4.2 percent on an annualized basis in the second quarter from 2.2 percent in the first quarter of 2018.[2] Accelerated growth was fueled primarily by an increase in consumer spending and a surge in exports. Hiring remained solid, with employers adding on average 215,000 jobs per month through the end of June. This is slightly above the average number of jobs added in 2016 and 2017, as the economy responded to the recently passed tax cuts for individuals and businesses and as the federal government increased spending. Job growth remained balanced across the country, as hiring picked up in commodity-dependent areas and the pace of technology hiring remained strong.

The consensus Blue Chip Economic forecast[3] is for this nine-year expansion to continue through at least 2019. With no economy-wide imbalances apparent, the consensus forecast expects strong growth for 2018 before slipping to 2.6 percent in 2019. Short- and medium-term risks include an increased likelihood of the economy overheating, unexpected developments in U.S. trade policies, increasing level of corporate debt, and geopolitical events. Long-term risks include slow productivity growth and skilled worker shortages.

Banks face strong competition for retail and commercial loans from bank and nonbank lenders. Over the last several years, the volume of new loan originations has increasingly shifted away from banks. In retail lending, nonbanks originate more than half of all new residential loans, and nonbanks have increased their share of personal and automobile loans. In commercial lending, nonbanks have increased their share of leveraged loan originations, middle-market loans, and commercial real estate loans. Previous editions of the *Semiannual Risk Perspective* have addressed incremental easing in underwriting standards as banks compete with nonbank lenders. This trend continued through the first half of this year. Recently, the OCC noted easing in residential mortgage underwriting standards, particularly in government-guaranteed or -insured loans. Refer to part V, “Credit Underwriting Supplement,” for more information. In addition, abundant investor liquidity is driving demand and continues to drive eased underwriting and risk layering in new commercial loans.

U.S. Implementation of the Current Expected Credit Losses Standard

In the period leading up to the Great Recession, institutions and financial statement users expressed concern that current U.S. generally accepted accounting principles (GAAP) restricted the ability to record credit losses that are expected but that do not yet meet the “probable” threshold. After the crisis, various stakeholders requested that accounting standard setters work to enhance standards on loan-loss provisioning to incorporate forward-looking information. Standard setters concluded that the existing approach for determining the impairment of financial assets, based on a “probable” threshold and an “incurred” notion, delayed the recognition of credit losses on loans and resulted in loan-loss allowances that were “too little, too late.” On June 16, 2016, the Financial Accounting Standards Board (FASB) issued a new accounting standard

---

[2] Data are from the U.S. Bureau of Economic Analysis.

[3] Data are from the Blue Chip Economic Forecast, November 2018.

for recognizing current expected credit losses, commonly referred to as CECL, to address this concern.

The effective date for CECL is staggered based on a bank's characteristics (see table 1). CECL will apply to all banks, regardless of size and

- will result in earlier recognition of credit losses by removing the "probable" threshold and the "incurred" trigger for loss recognition. Instead, CECL will reflect banks' current estimate of lifetime expected credit losses.
- is forward looking and requires consideration of not only past and current events but also reasonable and supportable forecasts that affect collectability.
- is a single-measurement approach applicable to all loans and debt securities carried at amortized cost.

Upon adoption of CECL, credit loss allowances may increase, which would decrease retained earnings and thereby affect common equity tier 1 capital for regulatory capital purposes. On May 14, 2018, the U.S. banking agencies issued a notice of proposed rulemaking for a rule that would allow banks the option to phase in the day-one impact of CECL on regulatory capital on a straight-line basis over three years.[4]

CECL implementation poses operational risk, including the failure to properly transition internal processes or systems, which could lead to call report errors, financial misstatements, or operational losses. Successful implementation may require adjustments to existing data elements and credit loss methods. The OCC expects banks to give advance consideration to any necessary changes to policies, procedures, and controls to adopt CECL. In addition, banks using third parties for any part of their CECL implementation should consider whether appropriate third-party risk management processes are in place. Banks are encouraged to perform due diligence early so that third-party services can be established in time to accommodate any necessary parallel runs or any other implementation target dates.

[4] "Regulatory Capital Rules: Implementation and Transition of the Current Expected Credit Losses Methodology for Allowances and Related Adjustments to the Regulatory Capital Rules and Conforming Amendments to Other Regulations," 83 Fed. Reg. 22312 (May 14, 2018).

Table 1: CECL Implementation Timeline

Entity type	U.S. GAAP effective date	Call report effective date *(calendar year-end filers)*
Public business entities (PBE) that are U.S. Securities and Exchange Commission filers	Fiscal years beginning after December 15, 2019, including interim periods within those fiscal years	First quarter, 2020 (March 31, 2020)
Other PBEs* (non-SEC filers)	Fiscal years beginning after December 15, 2020, including interim periods within those fiscal years	First quarter, 2021 (March 31, 2021)
Non-PBEs**	Fiscal years beginning after December 15, 2021, and interim periods within those fiscal years	First quarter, 2022 (March 31, 2022)
Early application	Early application permitted for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years	Permissible no earlier than March 31, 2019

Source: OCC

* A PBE that is not a U.S. Securities and Exchange Commission filer would include (1) an entity that has issued securities that are traded, listed, or quoted on an over-the-counter market, and (2) an entity that has issued one or more securities that are not subject to contractual restrictions on transfer and is required by law, contract, or regulation to prepare U.S. GAAP financial statements and make them publicly available periodically (e.g., pursuant to section 36 of the Federal Deposit Insurance Act and part 363 of the FDIC's regulations).

** On August 20, 2018, the FASB issued a proposed Accounting Standards Update that would amend the transition and effective date provisions in Accounting Standards Update 2016-13 for entities that are non-PBEs so that the credit losses standard would be effective for non-PBEs for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years.

Developments in Financial Instrument Reference Rates

Market participants are working to establish a new short-term benchmark that is quantitatively supported and repeatable. Reference rates, a rate that determines payments in a financial contract, are widely used as benchmarks for a broad range of financial products from derivatives to loans. The London Interbank Offered Rate (Libor) has served for decades as a significant benchmark throughout the U.S. and global financial system for setting payments on a variety of financial instruments. Libor was established to represent the short-term wholesale cost of unsecured funds to banks. The total assets referencing U.S. dollar Libor securities are about $199 trillion, of which the derivatives notional amount is $190 trillion.

In recent years, unsecured short-term inter-bank borrowing has decreased significantly. Libor does not necessarily indicate the overall cost of bank funding based on actual transactions. Libor panel banks,[5] a selection of banks that lend one another unsecured funds on the London money market, are increasingly reluctant to contribute quotes because of associated legal risk. According to the U.K. Financial Conduct Authority, banks on the panel voluntarily agreed to submit the rates through 2021, but there is no guarantee that Libor publication will continue beyond 2021. Without preparation, a cessation of Libor could disrupt financial markets and contracts and could present risks to financial stability.

[5] The Intercontinental Exchange (ICE) is currently bank panel administrator.

At the Financial Stability Oversight Council's (FSOC) suggestion, the Board of Governors of the Federal Reserve System organized the Alternative Reference Rates Committee[6] in 2014 to identify alternative rates in response to the potential discontinuation of U.S. dollar Libor. Committee membership is broad and includes banks, central counterparties, financial industry groups, and other interested parties. This committee identified the Secured Overnight Funding Rate (SOFR) as an alternative short-term U.S. dollar interest rate. This newly established rate is quantitatively based on overnight U.S. Treasury repurchase (repo) transactions that had more than $700 billion in daily transactions last year.

On April 3, 2018, the Federal Reserve Bank of New York began publishing SOFR rates. SOFR is being implemented through a transition plan that strives to encourage voluntary adoption of the new rate. Two challenges with moving to SOFR are:

- SOFR differs from Libor in that it is an overnight rate, whereas Libor is published across a number of maturity periods.
- Unlike Libor, SOFR does not contain an embedded credit risk premium.

Bank management should be aware of the risk of potential Libor discontinuation and replacement. Bank management also should implement appropriate proactive action plans. Bank management should mitigate risks associated with owning securities, making loans, and entering into derivatives contracts that reference Libor. SOFR is a recently developed financial benchmark, and banks could apply existing guidance when reviewing its potential adoption. Guidance includes OCC Bulletin 2017-43, "New, Modified, or Expanded Bank Products and Services: Risk Management Principles."[7] Specifically, bank management may consider the following actions to help mitigate the effect of moving away from Libor:

- For existing contracts, banks could take inventory of Libor exposures and review the fallback language in the relevant documentation to assess the robustness of existing fallback provisions. This could help identify the need for re-negotiation and modification of such contracts should Libor be discontinued.
- For new contracts, banks could take the risk of Libor discontinuation into consideration when entering into financial instruments and consider having robust fallback language with respect to reference rates.
- Bank management should consider following the work of the Alternative Reference Rates Committee,[8] including consultation documents published as SOFR is developed.

[6] The Board of Governors of the Federal Reserve System and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee to identify best practices for alternative reference rates, identify best practices for contract robustness, develop an adoption plan, and create an implementation plan with metrics of success and a timeline.

[7] Refer to OCC Bulletin 2017-43.

[8] Refer to the Alternative Reference Rates Committee.

Technology and Customer Preferences Driving Financial Innovation

Technology and evolving customer preferences continue to drive change within the financial services industry at an unprecedented pace. The latest cycle of financial innovation began sometime ago, but the speed of adoption of technology and innovation by financial institutions and by customers has not slowed down. In fact, adoption of emerging technology and new products and services by banks has increased significantly in the last two years. Banks are prioritizing implementation of innovations that are more efficient, reduce costs, and increase speed to market. The top three innovation trends identified for banks are (1) cloud computing, (2) artificial intelligence/machine learning, and (3) digitization of existing processes and products. These trends could enable financial institutions to reduce costs, increase efficiencies, and improve user experiences.

It is important for management at banks of all sizes and business models to consider innovation and emerging industry trends in their strategic planning processes. Strategic planning should include a discussion of the evolving needs and preferences of existing and potential future bank customers. Failure to appropriately consider innovation and the responsible adoption of technology could pose strategic risk to some banks. Consumer compliance, Bank Secrecy Act/ anti-money laundering (BSA/AML), third-party, and operational risk should be closely monitored depending on the partnerships, products, and technologies adopted by the bank.

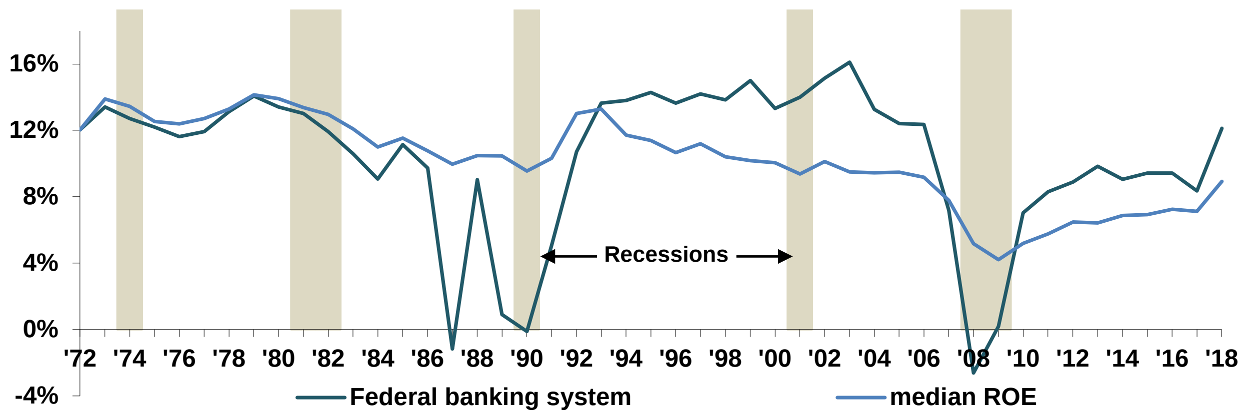
Part II: Bank Performance

Profitability and Asset Quality Remain Strong

Tax Cuts and Expanding Net Interest Margins Spur Bank Performance

Federal banking system profitability benefitted from strong underlying performance and tax cuts[9] in the first half of 2018. ROE jumped to 12.12 percent, exceeding 10 percent for the first time since before the Great Recession (see figure 1).

Figure 1: Trend in Bank Return on Equity



Source: Integrated Banking Information System (OCC)

Note: Annual data through year-end 2017. June 2018 year-to-date annualized. 2008 results are sum of quarterly net income and include estimates from consolidated financial statements for bank holding companies to restore income eliminated because of purchase accounting treatment of Countrywide (second quarter of 2008), Washington Mutual (third quarter of 2008), Wachovia, National City, and Downey (fourth quarter of 2008). Data on federal savings associations not available before 1984.

Net income grew 25 percent to $79 billion from the year-earlier period, with tax cuts accounting for about 40 percent of the increase (see table 2). Pre-tax income rose 10 percent to $101 billion, reflecting strong revenue growth. Net interest income continued to grow at an 8 percent pace, spurred by margin expansion at banks of all sizes. Noninterest income growth accelerated to 6 percent from 1 percent a year earlier, assisted by stronger growth in trading revenues. Provisions for loan losses were nearly flat, reflecting strong lagging credit risk measures. Noninterest expense growth picked up a bit, but noninterest expenses grew more slowly than revenues.

[9] The Tax Cuts and Jobs Act, passed in December 2017, effectively cut tax rates for all banks except subchapter S banks (typically smaller banks), which pass income through directly to owners to be taxed at personal tax rates of the owners.

Table 2: Trends in Bank Net Income

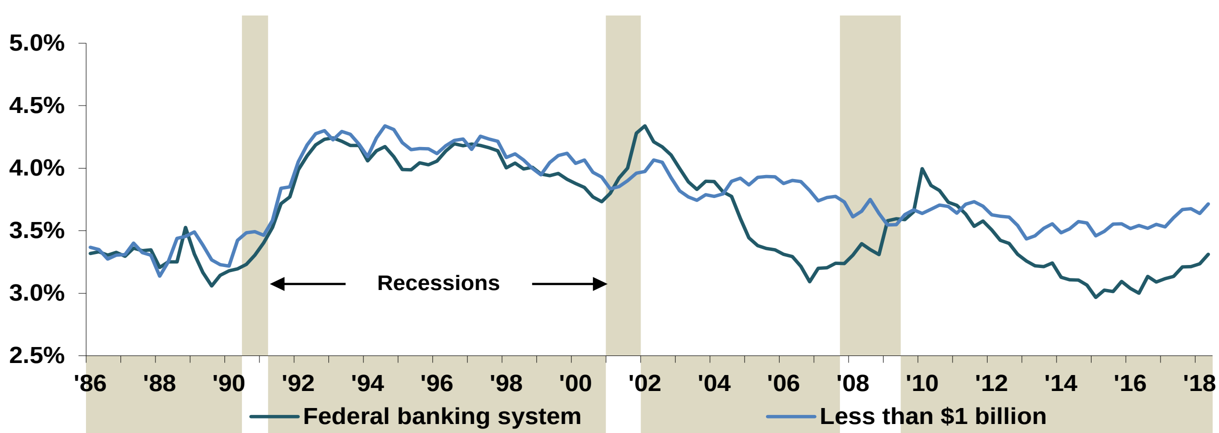
	Federal banking system			Banks with total assets of less than $1 billion		
	6/30/2016	6/30/2017	6/30/2018	6/30/2016	6/30/2017	6/30/2018
Year-to-date revenue in billions of dollars						
Net interest income	149.6	162.5	175.5	3.8	4.0	4.3
Noninterest income	92.0	93.2	98.5	1.4	1.4	1.5
Realized securities gains and losses	1.6	1.1	0.4	0.0	0.0	0.0
Year-to-date expenses in billions of dollars						
Provision expense	18.6	17.8	17.7	0.1	0.2	0.2
Noninterest expense	141.4	146.6	155.1	4.5	4.6	4.9
Pre-tax net income	**82.9**	**92.2**	**101.3**	**1.3**	**1.4**	**1.6**
Income taxes	26.7	29.4	22.4	0.2	0.3	0.2
Net income	**56.3**	**62.9**	**78.9**	**1.1**	**1.1**	**1.4**

Source: Integrated Banking Information System (OCC)

Note: Data are merger-adjusted and held constant for banks in continuous operation from the first quarter of 2010 to the second quarter of 2018. Banks with total assets less than $1 billion exclude credit card and trust institutions. Pre-tax net income includes discontinued operations.

Net interest margins expanded as asset yields rose faster than funding costs (see figure 2). Funding costs benefitted from the elevated level of low-cost core deposits[10]—currently nearly 60 percent of assets, a 25-year high. Over the past year, net interest margins rose 18 basis points to 3.31 percent, the highest margin since 2012 for the federal banking system. At small banks under $1 billion in assets, margins expanded by 11 basis points to 3.71 percent, the highest margin since 2011.

Figure 2: Trend in Net Interest Margins



Source: Integrated Banking Information System (OCC)

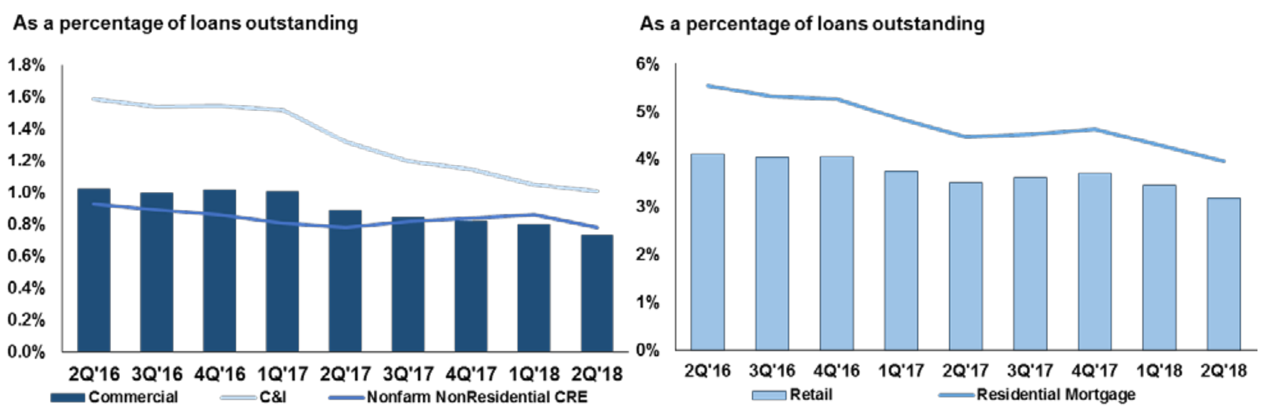
Note: Quarterly data through the second quarter of 2018. Less than $1 billion excludes credit card and trust institutions.

[10] Core deposits are total domestic deposits excluding large time deposits of more than $250,000 and brokered deposits. Before 2010, core deposits excluded time deposits between $100,000 and $250,000.

Credit Quality Remains Sound, Yet Risk Continues to Build

Lagging asset quality metrics remain strong. The level of loans 30+ days past due and nonaccrual continues to decline and fell to 1.86 percent in the second quarter of 2018. Both commercial and retail portfolios saw decreasing delinquencies driven by lower commercial and industrial (C&I) and residential mortgage and credit card delinquencies (see figure 3). Delinquent non-farm, non-residential real estate loans rose slightly for the three previous quarters before falling in the second quarter and remain at a low level.

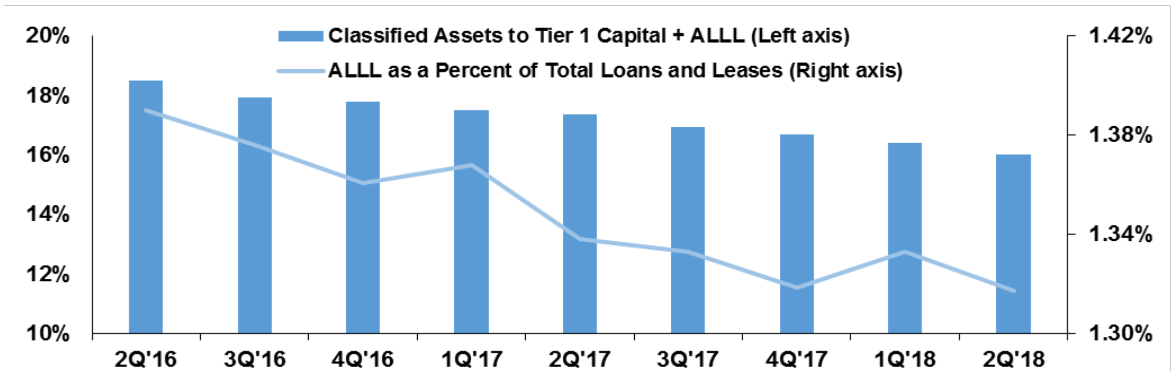
Figure 3: Trends in Loan Delinquencies and Nonaccruals for Commercial and Retail Loans



Source: Integrated Banking Information System (OCC)

Classified assets declined as a percent of tier 1 capital plus the allowance for loans and lease losses (ALLL) and were at 16 percent as of the second quarter of 2018 (see figure 4). Banks in the OCC's Large Bank Supervision (LBS) program are the principal driver for the decline in classified assets. The OCC continues to monitor the adequacy and directional consistency of the ALLL, which has declined as a percentage of total loans. While quantitative risk measures remain positive, it is important that bank managers fully consider factors such as trends in credit structures, loan terms, underwriting exceptions, concentrations, and the external credit environment when assessing potential credit losses.

Figure 4: Recent Trends in Classified Assets and ALLL



Source: Integrated Banking Information System (OCC)

Note: Data reflect average ratios for all banks.

Despite strong lagging asset quality indicators, credit risk is building. In the broader financial sector, demand for higher-yielding assets remains strong and has driven an increased appetite for credit assets with higher risk, lower quality, and narrower pricing. Banks continue to see increased competition from nonbanks for loan originations, which can stress banks' willingness to maintain credit discipline. Refer to part III, "Special Topics in Emerging Risks," for more information.

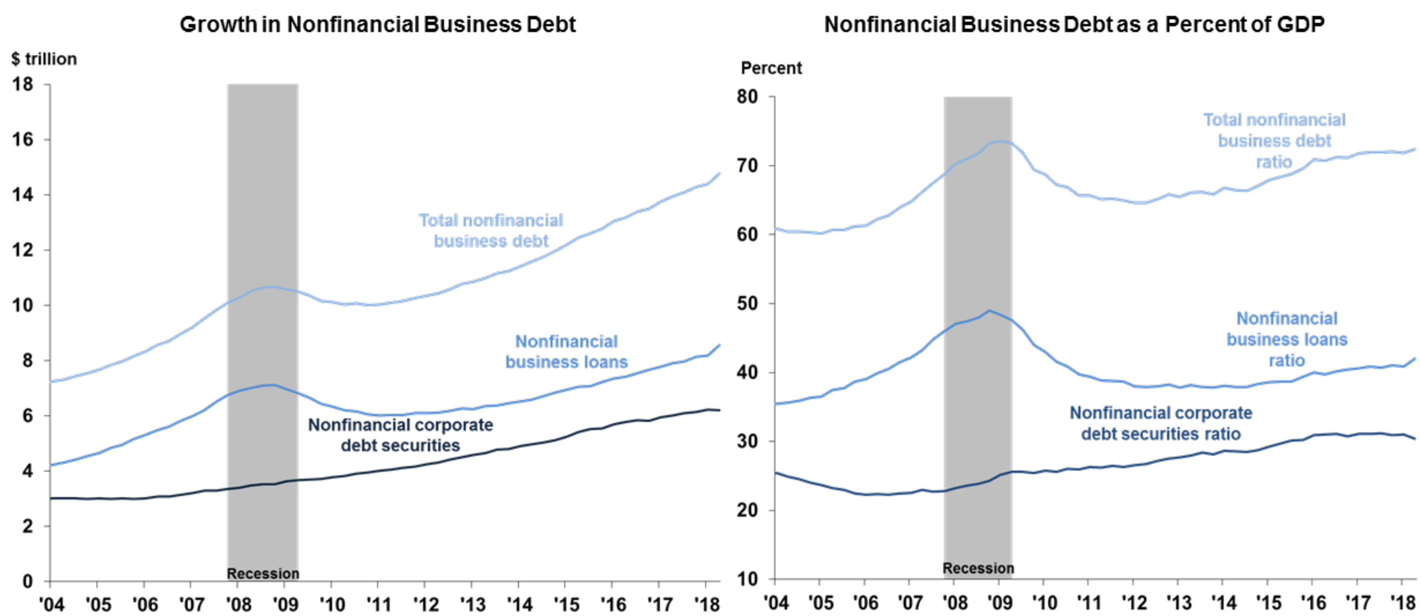
Abundant investor liquidity is fueling demand and driving eased underwriting and risk layering in new commercial loans, most notably in C&I lending and leveraged loans. Also, there is increasing concern that strong loan performance is masking the accumulated risk in loan portfolios from successive years of eased underwriting and low interest rates, as well as contributing to greater complacency in risk assessment. Risk management weaknesses related to credit policy exceptions and credit analysis, as indicated in matters requiring attention (MRA) data as of September 2018, suggest that increased credit risk oversight is appropriate. CRE concentrations remain elevated, although growth in CRE has abated in the past 12 months, particularly in community banks. Agricultural lending risks are increasing because of continuing weakness in commodity prices, increasing expenses, and the effect of unexpected developments in U.S. trade policies.

Part III: Special Topics in Emerging Risks

Assessing Risks Posed by Conditions Present in Corporate Bond and Lending Markets

Nonfinancial business debt, including bonds and loans, has risen since the Great Recession and is near a record share of GDP (see figure 5). It is important for bank management to remain attentive to risks posed by growing exposure to corporate bond and loan markets. Lenders should continue to evaluate whether current lending practices still reflect accepted risk tolerances and appetites and consider how external factors, such as corporate debt market conditions, can impact asset quality in their institutions.

Figure 5: Trends in Nonfinancial Business Debt



Source: Integrated Banking Information System (OCC)

Commercial loans and leases now represent 60 percent of banks' outstanding loans and leases, compared with 49 percent in 2005, and are at the highest level in 30 years. Commercial and industrial loans, including loans to non-depository financial institutions, is the call report category where most corporate loans are reported and now make up 43 percent of commercial loans and leases. A deterioration in corporate bond and loan markets may affect supervised institutions more profoundly than in previous periods.

Current characteristics of the corporate debt market, including bonds and loans, include strong investor demand underpinned by abundant liquidity, search for yield, sound economic conditions, and sanguine near-term economic forecasts. However, risks include growth in lower-quality originations, eased underwriting, higher leverage, and capital structures with limited subordinated debt cushions.

Favorable markets can turn quickly and unpredictably. A market dislocation or an economic downturn could adversely affect the liquidity, pricing, or terms for corporate loans and bonds. If market conditions become less favorable, then banks with corporate loan or bond exposures, direct and indirect, are vulnerable to exceeding their internal risk tolerances and appetites. The following are factors to consider when assessing exposures.

Economic environment. The strong corporate earnings associated with the current U.S. economic expansion and optimism about the U.S. economic outlook generally support domestic corporate borrowing and debt repayment capacity. Historically low, albeit rising, interest rates encourage corporate borrowing.

An economic environment characterized by optimism and low interest rates motivates some lenders to originate or hold lower-quality loans or bonds to capture yield and fees. This may create unexpected and undue exposure when external market conditions deteriorate. For example, slower economic growth or higher interest rates can compromise corporate credit quality and refinancing capacity, especially for companies with high leverage. Given these risks, the OCC continues to monitor the effects of market conditions on the quality of new loans and credit risk management.

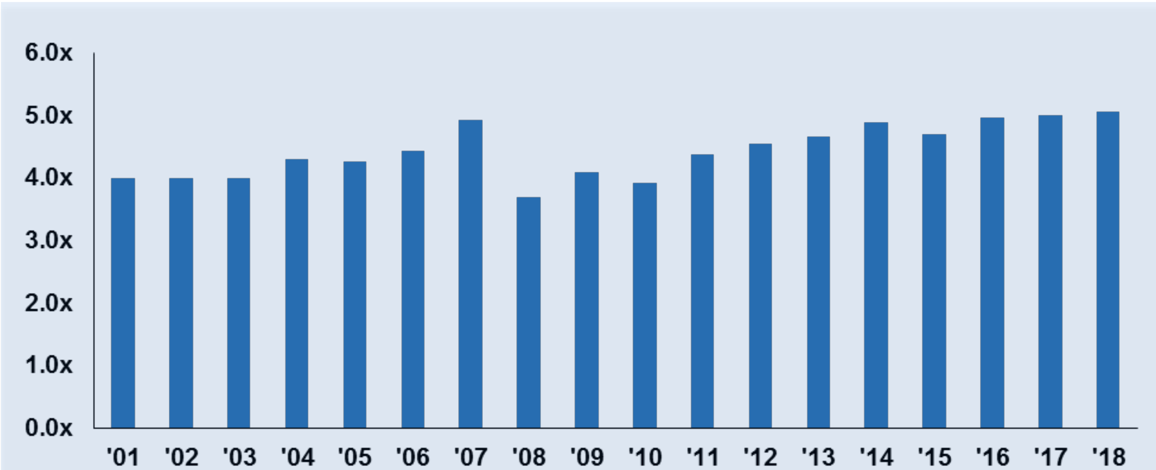
Demand for corporate debt and easing of underwriting. Strong investor appetite for corporate bonds and loans is a function of abundant market liquidity, higher comparative risk-adjusted returns of corporate debt securities relative to other investments, and strong demand for floating-rate loans. This allows borrowers to raise incrementally higher levels of debt at terms and pricing more favorable to borrowers and less protective for lenders.

For investment grade corporate borrowers, issuance of BBB/Baa-rated debt, the lowest category of investment grade ratings assigned by credit rating agencies, as a percentage of investment grade issuance was at a record high in 2017 and continued at a record pace through the first half of 2018. While the BBB/Baa space has historically experienced few defaults, the higher volume of issuance could introduce the potential for a greater volume of borrowers migrating to speculative-grade ratings as well as higher default risk.

Growth in the leveraged lending market continues with near-record issuance through the first half of 2018, partly driven by investor rotation from fixed-rate bonds to floating-rate loans due to the rising interest rate environment. Notwithstanding the benign economic environment and generally satisfactory credit quality of leveraged loans, the OCC remains focused on transactions with increasing leverage, weaker capital structures, and looser credit agreements. Average leverage for large corporate loans, calculated as the ratio of debt to adjusted earnings before interest, taxes, depreciation, and amortization (EBITDA), is at a record high (see figure 6). In addition, capital structures are being formulated with less subordinated debt to protect senior debt holders.

If credit quality deteriorates, then the cumulative impact of these riskier underwriting factors may result in lower recovery values than in previous economic downturns. Also, if market optimism about supportive economic conditions changes, or if prevailing interest rates materially increase, investor appetite may shift from riskier debt into less risky assets, which could escalate the refinancing risk for leveraged companies. Higher interest rates may also affect the financial performance of these highly leveraged borrowers.

Figure 6: Trends in Multiple of Debt to EBITDA



Source: OCC; S&P LCD Quarterly second quarter 2018

Note: Media and telecom loans excluded before 2011. EBITDA adjusted for prospective cost savings and synergies.

The continuing decline in the percentage of first-lien loans with protective covenants remains a concern, as it could impair the ability of lenders to take proactive action to protect their interests. Key covenants in first-lien leverage loans that were once commonplace have been significantly reduced in credit agreements (see table 3). Additionally, provisions permitting additional debt incurrence with few restrictions are increasingly included in credit agreements, which raises concerns about credit agreements that allow for collateral stripping without lender consent.

Table 3: Trends in Key Covenants in First-Lien Leveraged Loans

Declining Percentage of Key Covenants in First-Lien Leveraged Loans					
Year	CapEx	Debt to EBITDA	Fixed charge coverage	Interest coverage	Senior debt to EBITDA
1997	86.0	86.0	67.0	38.0	13.0
2007	36.4	77.9	27.8	36.2	24.8
2017	3.8	75.9	3.8	15.4	10.3
LTM 6/30/2018	1.6	70.4	3.0	11.8	5.9

Source: OCC; S&P LCD Quarterly 2Q2018

Note**:** Media and telecom loans excluded before 2011. EBITDA adjusted for prospective cost savings and synergies. CapEx stands for capital expenditure. LTM stands for last 12 months.

The OCC expects banks to assess the risks posed by direct and indirect exposure to corporate bond and loan markets. Bank risk assessments should consider how external factors, such as corporate debt market conditions, can affect overall credit quality. For example, robust pipeline management processes typically consider the potential for changing market conditions. Also, a large volume of leveraged debt is held outside the banking system. Bank risk managers should remain attentive to and provide objective risk analysis and assessment about vulnerabilities to external market conditions in the corporate debt market.

The OCC remains attentive to the heightened risks in the corporate bond and loan markets, and in particular, the leveraged lending market. OCC examiners continue to evaluate credit underwriting for all loans, including leveraged loans, through ongoing supervision processes and the Shared National Credit program.

Part IV: Trends in Key Risks

A. Operational Risk Is Elevated as Banks Respond to an Evolving and Increasingly Complex Operating Environment

Severity of cyber threats is increasing in the number and sophistication of malicious actors.

Evolving cyber risks present significant challenges to managing cyber threats and vulnerabilities across complex operational frameworks. Cyber threats target operational vulnerabilities that could expose large quantities of personally identifiable information and proprietary intellectual property, facilitate misappropriation of funds and data at the retail and wholesale levels, corrupt information, and disrupt business activities. Failure to maintain proper internal controls can lead to material negative effects on institutions and the banking industry if wide-scale attacks succeed. While financial institutions are generally responding to high-frequency and low-impact events, malicious actors are able to find and willing to develop tools to exploit new security flaws, forcing the industry to maintain an adaptive defensive posture.

Strong user awareness campaigns reinforced through testing, such as anti-phishing or social engineering prevention training, are key tools to reduce the risk of unauthorized access and prevent breaches of systems. Deploying strong authentication mechanisms to prevent malicious actors from gaining access to banking systems is another key control. Staff with privileged access, such as systems and database administrators, and those with the ability to move funds and to access sensitive employee, customer, or corporate information should employ strong authentication.

Use of unpatched or unsupported software and hardware by banks and their service providers is another common vulnerability that may be exploited through phishing or social engineering. A sound system-development life cycle requiring regular maintenance, patching, timely system updates, and disposition at end-of-life is important to protect against these weaknesses.

The OCC expects banks to exercise continued diligence with respect to third-party service providers. Cybercrime and espionage increasingly target third-party service providers to gain access to bank information or systems. Before establishing a third-party relationship, the bank management should understand remote access, system interfaces, and access entitlements and should understand the third party’s ability to implement the appropriate controls to manage risk.

Resilience testing is critical given the increasing operational risk arising from and severity of consequences associated with cyber attacks and operational disruptions. It is important for bank management to designate appropriate personnel for key responses, which include personnel from operations, business units, public affairs, and legal, as well as personnel for coordination with service providers, law enforcement, and other government entities.

Various readily available guides, such as the Financial Sector Cyber Exercise Template developed by the interagency Financial and Banking Information Infrastructure Committee, provide banks with tools to evaluate their readiness to respond to cyber attacks.[11] The template provides a high-level scenario and a series of questions that bank management should be able to answer when responding to an incident. The recently released Federal Financial Institutions Examination Council (FFIEC) *Cybersecurity Resource Guide for Financial Institutions* provides additional information on how to connect with these and other resources.[12]

Use of Third-Party Service Providers Is Increasing, and Critical Operations Are Increasingly Concentrated in a Few Large Service Providers

Banks rely heavily on third-party service providers for technology and other solutions to enable more efficient and effective operations and deliver innovative products. Risks and any resultant operational events, if not properly managed by the service providers and their clients, could have a systemic impact on the financial services industry. While the reliance on third-party service providers is increasing, the control systems at these service providers are generally effective.

Reliance by banks of all sizes on third-party service providers for payments, transaction processing, maintaining customers' sensitive information, and other critical functions can result in more complex risk for banks and the industry. Banks' increased focus on third-party risk management in recent years has resulted in fewer open concerns and MRAs related to the use of third parties. Effective due diligence is essential for banks to improve the management of risks associated with the (1) use of third-party service providers for critical services, (2) increasing interdependencies and interconnectivity, and (3) implementation of new products and services offered through emerging firms that leverage innovative technologies and delivery channels.

Banks depend on a limited number of third-party service providers for specialized products and services. The use of these service providers has made it easier for community banks to remain competitive. On the other hand, increased reliance on a limited number of entities creates concentrations that increase systemic risk to the financial services sector. The federal banking agencies have enhanced their long-standing interagency approach to supervising services offered to the banking industry by these service providers and continue to work cooperatively to ensure effective supervision of the largest third-party service providers.

B. Compliance Risk Remains Elevated as Banks Seek to Manage Money-Laundering Risks and Comply With Amended Consumer Protection Requirements

The underlying technology that supports innovation in fintech and regtech and development of product and service solutions may also be used to facilitate illicit activity, thereby increasing BSA/AML and OFAC risk exposure.

Complex, dynamic money laundering, terrorist financing, and other criminal activities challenge banks in complying with BSA and anti-money laundering requirements. It is important for bank

[11] Refer to the Financial and Banking Information Infrastructure Committee's Financial Sector Cyber Exercise Template.

[12] Refer to the *FFIEC Cybersecurity Resource Guide for Financial Institutions*.

management to assess and, when necessary, adapt BSA/AML and OFAC[13] risk management systems to match the complexity of their business models, products, and services. The OCC identified instances when banks have not adjusted or realigned BSA/AML and OFAC risk assessments to reflect changes in risk profiles resulting from multiple factors. These factors include growth (organic and through mergers and acquisitions), the introduction of new products and services, substantial changes in customer volume or types (particularly in high-risk areas), and significant increases in transaction volume. Complex and dynamic activity is not only in the form of traditional products and services but now may also relate to increases in virtual currency and crypto assets, which may create vulnerabilities that criminals can exploit for money laundering, terrorist financing, and other criminal enterprises. The majority of BSA/AML-related deficiencies identified by the OCC stem from issues related to customer due diligence/enhanced due diligence, customer risk identification, and processes related to suspicious activity monitoring and reporting.

The OCC expects banks to be aware of regulatory changes and to have made changes to systems to comply with the new regulatory requirements. One such change is the Financial Crimes Enforcement Network's Customer Due Diligence/Beneficial Ownership regulation, implemented in May 2018.[14] Necessary updates to training, quality assurance, independent testing, and controls[15] also are expected to be in place. The recently published "Interagency Statement on Sharing Bank Secrecy Act Resources,"[16] available at OCC Bulletin 2018-36, addresses instances in which banks may decide to enter into collaborative arrangements to share resources in order to manage their BSA/AML compliance obligations more efficiently and effectively.

New U.S. economic and trade sanctions, as well as additional requirements in existing sanctions programs based on foreign policy and national security goals, may increase compliance and operational risk for banks as they attempt to address the resulting issues. The increase in the number and complexity of OFAC-administered trade and financial sanctions programs challenges banks to maintain effective OFAC monitoring systems and elevate compliance risk exposure. Many banks are assessing new technology solutions to manage this risk.

The OCC is monitoring the broader impact of innovation in financial services, including expanded and enhanced bank product and service offerings using advanced technology. These offerings—many of which are delivered at near real-time speeds—can benefit bank customers with increased access to financial products and services and enhanced customer experiences.

The OCC is monitoring the risks as banks increasingly explore and implement artificial intelligence, machine learning, and other innovative technologies in BSA/AML systems. It is important for banks to employ sound due diligence and validation practices when assessing and implementing technology solutions to perform or enhance BSA/AML compliance functions.

---

[13] OFAC is the U.S. Department of the Treasury's Office of Foreign Assets Control.

[14] "Customer Due Diligence Requirements for Financial Institutions," 81 Fed. Reg. 29398 (May 11, 2016).

[15] 31 CFR 1020.210.

[16] Also refer to OCC News Release 2018-107, "Federal Agencies Issue a Joint Statement on Banks and Credit Unions Sharing Resources to Improve Efficiency and Effectiveness of Bank Secrecy Act Compliance."

Banks Face Compliance Challenges From Inside and Outside the Industry

Developments in fintech and the popularity of mobile technology applications offer banks access to new payment delivery channels and customers. These advances in technology promote the development of new products and services but also may result in increased risk exposure. The highly competitive environment with nonbanks, particularly in the residential mortgage market, results in banks seeking to improve operating efficiency and considering introducing new consumer products.

Fair lending risk may increase as banks attempt to increase efficiency and effectiveness of underwriting through the use of artificial intelligence or alternative data. Banks should understand and monitor underwriting and pricing models to identify any potential disparate impact and other fair lending issues. In addition, new technology and systems for evaluating and determining creditworthiness, such as artificial intelligence and machine learning, add complexity while sometimes limiting transparency, and bank management should understand and be able to explain and defend model decisions.

Regulatory changes may necessitate modifications to existing operations, policies, procedures, and systems. These changes may result in significant compliance and reputational risk if not implemented correctly and with appropriate change management processes. The OCC has linked many risk assessment concerns to weaknesses in change management processes, such as bank processes that fail to include a compliance function when decisions are being made about changes in products or services.

Attracting and retaining competent staff necessary to manage compliance risks remain a challenge at some banks. As a result, some banks are using third-party service providers to supplement and support existing compliance operations. Such practices should be accompanied by initial and ongoing due diligence and appropriate oversight. The absence of or gaps in due diligence, oversight, and controls may result in elevated risk levels and increase the potential for violations.

These developments may present challenges for compliance management systems. Banks should reassess how these changes may affect consumer compliance management programs and whether they increase the risk of noncompliance with applicable laws and regulations, disrupt operations, and potentially increase costs.

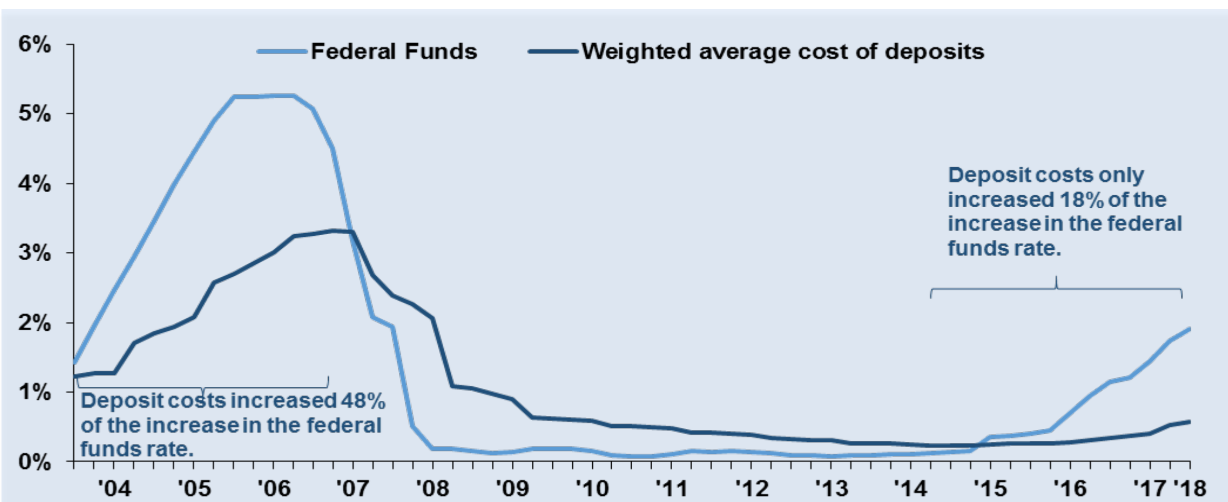
C. Rising Interest Rates and Increased Competition for Deposits May Result in Changes in Funding Mix or Costs

Growth in non-maturity deposits (NMD), such as traditional savings accounts, a rising rate environment, and technological advances that ease the ability of depositors to move money could result in behavior that differs markedly from recent norms, which could lead banks to potentially underestimate future liability costs and liquidity risk.

After the Great Recession, banking deposits grew as customers sought the safety of insured deposits and built liquidity (cash reserves). The interest rate environment, however, has changed considerably since 2015 as the Federal Reserve increased rates 170 basis points while the 10-year U.S. Treasury only increased 80 basis points, resulting in a flattening yield curve. Despite the changes in the interest rate environment, banks raised deposit rates more slowly than lending rates, expanding net interest margins. To measure the responsiveness of bank deposit rates to changes in market rates, deposit betas can be estimated and evaluated relative to earlier periods. Lower betas since 2015 indicate banks have not increased deposit interest rates as much as in prior cycles, such as 2004-06. It is uncertain whether that relationship will hold if interest rates and competitive pressures continue to increase. Indeed, in past cycles, deposit betas have typically increased as interest rates rise.

The current bank liability mix has a higher-than-average proportion of NMDs. Bank margins continue to benefit from a high level of low-cost deposit funding and low repricing rates. In 2018, deposits accounted for 77 percent of asset funding, 11 points higher than the historical average, with NMDs funding 61 percent of assets. Deposit stability, predominantly from NMDs, supported recent asset growth as banks have not reported liability structure changes nor sought significant increases in wholesale funding. Deposit repricing rates lagged recent increases in short-term interest rates (federal funds rate) considerably more than in previous rate cycles; the difference between bank deposit and short-term interest rates widened substantially (see figure 7). While beneficial for banks, it is unknown if, or when, depositors will begin to seek higher-deposit rates more in line with previous rate cycles. A shift to a more traditional liability mix with a larger percentage of higher-yielding time deposits could compress net interest margins.

Figure 7: Increase in Interest-Bearing Deposit Cost Compared With Increase in Federal Funds Rate



Source: Integrated Banking Information System (OCC)

Note: Data are quarterly through June 30, 2018.

Technological advances contribute to the difficulty in estimating deposit stability. Growth in the usage of money movement applications, including on mobile devices, has accelerated in recent years. Depositors can now move funds easily between institutions, potentially increasing the rate sensitivity of deposits. Moreover, an increasing number of internet, mobile banking, fintech, and other asset and wealth management providers adds to the number of institutions competing for deposits.

These competitive pressures may increase the average cost of deposits as interest rates increase. But despite the many new competitors, the majority of rate pressure for smaller banks continues to be driven by online channels and by larger banks when they increase deposit rates more than smaller banks. The potential effect of recently enacted liquidity requirements for banks with total assets greater than $250 billion could affect liquidity and funding costs for banks below that threshold. Banks with assets greater than $250 billion must comply with the Liquidity Coverage Ratio (LCR) rule which may increase competition for more stable insured retail deposits.[17]

Some banks' interest rate risk models are incorporating assumptions for deposit betas that may be in excess of actual repricing rates. It is uncertain whether this trend will continue. Historical experience suggests customers become more likely to move funds to banks that pay higher rates as interest rates increase. The interagency "Advisory on Interest Rate Risk Management," available at OCC Bulletin 2010-1, reminds banks to be aware of the complexities with deposit assumptions in environments in which institutions are subject to heightened competition for deposits.

[17] 12 CFR 50.

Part V: Credit Underwriting Supplement

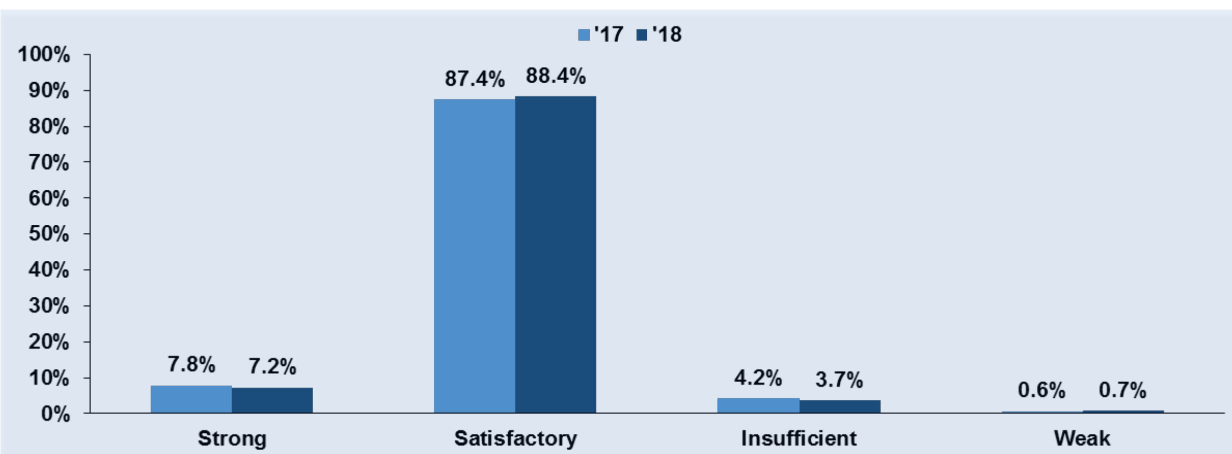
The OCC has identified incremental easing in credit underwriting standards as a key credit risk for several years. As a result, in the fourth quarter of 2015, the OCC implemented a uniform process to evaluate and record credit underwriting assessments for all supervised banks. As part of each bank's examination cycle, OCC examiners conduct credit underwriting assessments to determine the adequacy of board-approved underwriting policies, the quality of underwriting practices, and the direction of underwriting practices since the previous examination.[18] The assessments may be completed for the overall loan portfolio, the commercial loan portfolio, the retail loan portfolio, or certain loan products. In addition to these underwriting assessments, the OCC performs periodic horizontal underwriting reviews of select banks. These horizontal reviews may target certain lending products, such as automobile or commercial real estate, or a mix of loan types.

The results reported here are based primarily on conclusions from the overall loan portfolios, unless noted otherwise, and from the 12-month periods ended June 30 of 2017 and 2018.

Overall Credit Portfolio Underwriting Assessments

Bank credit policies are generally sound. About 95 percent of bank credit policies were rated strong or satisfactory (see figure 8). Banks' lending policies generally established appropriate risk appetites and provided good direction, guidelines, and parameters to credit staff for originating various types of credit. Policies usually contained sufficient procedures to evaluate approval requirements and described processes for identifying and reporting credit exceptions. Less than 1 percent of board-approved policies were considered weak in both years. Lending policies in midsize and large banks were rated slightly better than those in community banks.

Figure 8: Percent of Assessments for Board-Approved Credit Underwriting Policies



Source: OCC

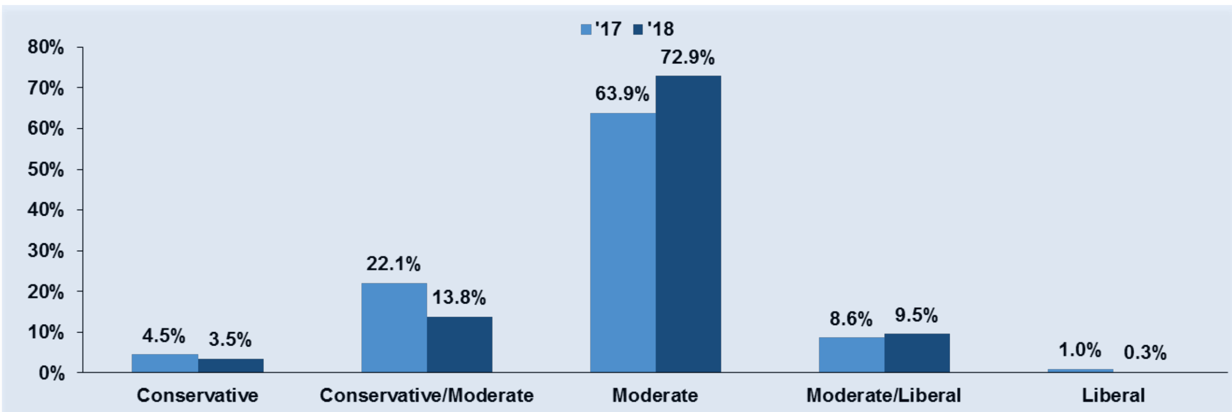
Note: Data are four-quarter sums as of June 30.

---

[18] Credit underwriting policies may be assessed as strong, satisfactory, insufficient, or weak. Credit underwriting practices may be assessed as conservative, conservative-moderate, moderate, moderate-liberal, or liberal. The direction of credit underwriting practices may be assessed as tightened, unchanged, or eased.

Underwriting practices generally present a reasonable level of risk, although market factors are pressuring terms and conditions. About 90 percent of underwriting practices were rated moderate or better in both periods. While most underwriting practices were rated moderate, there has been a noticeable transition from conservative practices in 2017 to moderate practices in 2018 (see figure 9). Underwriting practices rated moderate-liberal or liberal remained unchanged at almost 10 percent. The change in these ratings reflects the influence of strong competition, abundant liquidity, and lenders' willingness to adjust underwriting practices to the upper end of their risk tolerances.

Figure 9: Percent of Assessments for Credit Underwriting Practices

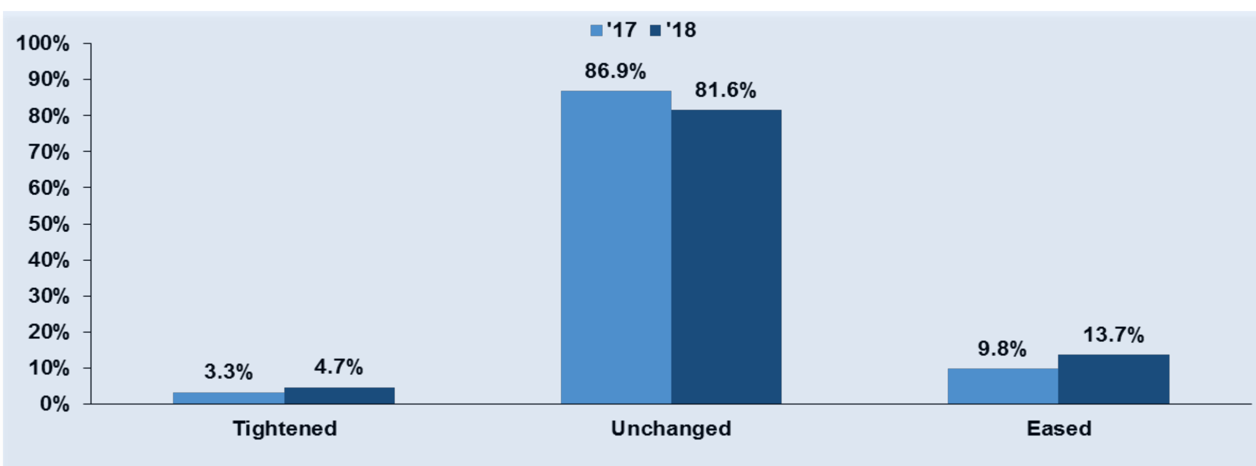


Source: OCC

Note: Data are four-quarter sums as of June 30, 2018.

Overall, the direction of underwriting practices is largely unchanged, although assessments from both years indicate more easing than tightening (see figure 10). More than 80 percent of the assessments viewed underwriting practices, in the aggregate, as generally unchanged, although large banks were assessed as easing to a greater degree than community and midsize banks.

Figure 10: Percent of Assessments for Direction of Credit Underwriting Practices



Source: OCC

Note: Data are four-quarter sums as of June 30, 2018.

Eased Underwriting and Policy Exceptions

As noted in this report, market conditions influence underwriting terms and practices. While banks generally maintain moderate underwriting practices, they continue to respond to intense competition, including from nonbanks, strong investor demand, and a desire for growth through eased terms or policy exceptions. Examples of eased underwriting or policy exceptions:

- Leveraged loans with ineffective or no covenants, terms that extend amortization or liberalize debt repayment, and provisions allowing borrowers to increase debt with minimal or no restrictions. Examiners noted a higher number of loans where the cash-flow analysis included generous add-backs, as well as an increasing number of community and midsize banks purchasing participations in these leveraged loans.
- Commercial real estate loans with extended interest-only periods, particularly on stabilized properties; longer maturities; fewer meaningful covenants and weaker repayment guarantees; and higher levels of cash-out on property refinancing. Examiners noted some loans with weak or little analysis of refinance risk, including the assessment of interest rates and capitalization rates to measure the likelihood that a loan can be refinanced at market terms upon maturity. On the other hand, many of these loans demonstrated mitigating factors such as strong performance and repayment capacity, sizable equity, and lower loan-to-value (LTV) ratios.
- First-lien residential mortgage underwriting that included higher back-end debt-to-income thresholds, higher acceptable loan-to-value ratios, and lower down payment requirements. Much of this easing is in direct response to competition from nonbank lenders. Examiners noted greater use of asset dissipation underwriting, a practice used to qualify borrowers using a hypothetical income stream from their asset liquidation rather than debt-to-income ratios. Some banks have initiated this practice without the appropriate risk governance controls, including specific policies outlining the eligibility, quality, and liquidity of identified assets; the calculation of the hypothetical income annuity to match the loan term; and the segregation of loans using asset dissipation for performance monitoring.
- General commercial loans, predominantly in community banks, that included price concessions, inadequate credit analysis or loan-level stress testing, relaxed loan controls, noncompliance with internal credit policies, and weak risk assessments. Loan control weaknesses included the lack of covenants, inadequate financial statement requirements, and lack of or weak collateral monitoring requirements.
- Automobile loans or underwriting practices with longer amortization periods, more liberal calculations of loan-to-value, debt-to-income, and payment-to-income ratios, more liberal definitions of a new automobile, and high levels of allowable dealer add-ons. Many loans exhibited risk-layering, where the loan contained both longer amortization and higher loan-to-value. Nonetheless, most bank automobile lending remained focused to super-prime[19] and prime borrowers.

Despite rating most credit policies as satisfactory and most underwriting practices as moderate or better, examiners identified more supervisory issues related to credit underwriting. The volume

---

[19] While the term “super prime” means the highest possible score band(s) within a range of score bands for a credit bureau score, each score model uses different cut-offs to make the designation.

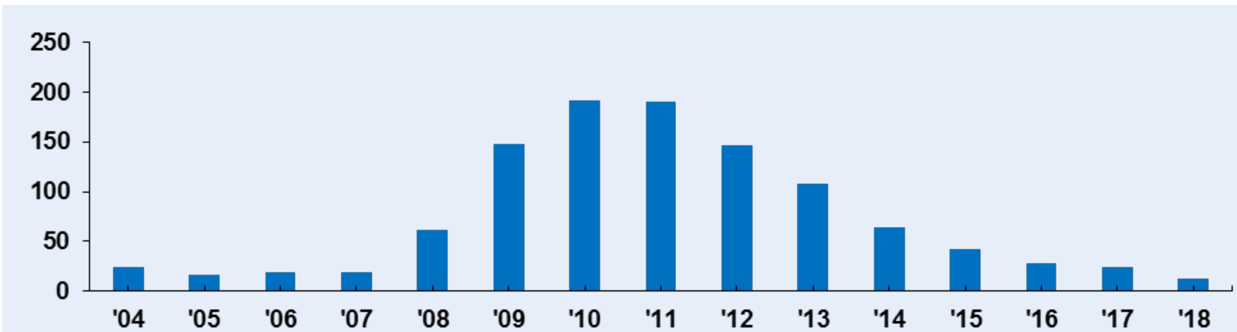
of MRA concerns resulting from underwriting weaknesses increased 7 percent from 2017 to 2018. Most of these concerns resulted from internal control weaknesses, including inadequate credit analyses or weaknesses in the ability to identify, track, mitigate, and document underwriting exceptions.

Part VI: Supervisory Actions

Number of Banks Rated 4 or 5 Is Low

The number of OCC-supervised banks with composite ratings of 4 or 5 has continued to decline since year-end 2017 and is at the lowest level since 2005 (see figure 11). The decline since the peak in 2010 is attributable to a variety of factors, including merger and acquisition activity, failures or liquidations, and composite rating upgrades resulting from recapitalizations and improvements in risk management.

Figure 11: Number of OCC-Supervised Banks Rated 4 or 5



Source: OCC

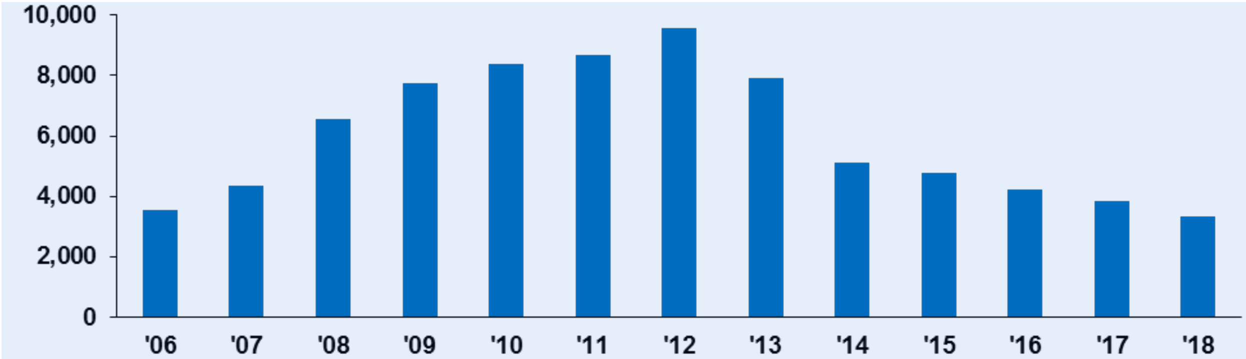
Note: Data for 2018 are as of September 30. All other data are as of year-end. Includes federal savings associations since July 21, 2011.

Outstanding MRA Concerns Declined

The OCC communicates supervisory concerns to a bank's board and management in the form of MRA concerns or enforcement actions (EA). Supervisory concerns include practices that deviate from sound governance, internal control, or risk management principles.[20] Such deviations, if not addressed appropriately, could adversely affect a bank's condition or risk profile, result in violations of laws or regulations, and result in EAs. The number of outstanding MRA concerns peaked in 2012 and declined steadily through September 30, 2018, to the lowest level since 2006 (see figure 12). Since year-end 2017, MRA concerns declined 20 percent.

[20] See OCC Bulletin 2018-18, "Comptroller's Handbook: Revised and Updated Booklets and Rescissions."

Figure 12: Number of MRA Concerns Outstanding



Source: OCC

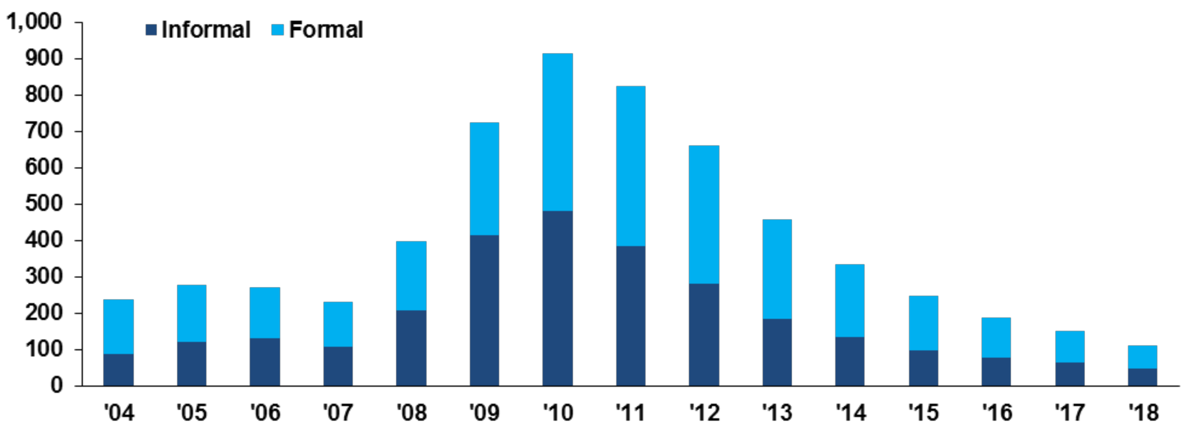
Note: Data for 2018 are as of September 30. All other data are as of year-end. Includes federal savings associations since July 21, 2011.

As of September 30, 2018, the top three MRA concern risk areas for midsize and community banks were operational (36 percent), credit (29 percent), and compliance (22 percent). For large banks, the top three MRA concern risk areas were operational (45 percent), compliance (30 percent), and credit (17 percent).

Outstanding Enforcement Actions Continue to Decline

The OCC uses EAs to address more acute deficiencies requiring corrective action. Informal EAs include commitment letters, operating agreements, conditions imposed in writing, memorandums of understanding, individual minimum capital ratios, and notices of deficiency issued under 12 CFR 30. Formal EAs are made available to the public and include cease-and-desist/consent orders, capital directives, prompt corrective action directives, formal agreements, safety and soundness orders issued under 12 CFR 30, and civil money penalties. Generally, the OCC may take these actions for violations of laws or regulations; deficient practices, including those that are unsafe or unsound; or violations of final orders, conditions imposed in writing, or written agreements entered into with the OCC. The number of EAs outstanding against banks has steadily declined since peaking in 2010 (see figure 13), reflecting overall improvement in banks' risk management practices, recapitalization efforts, and other factors. Compliance or operational failures continue to be the leading cause of EAs. These EAs address a lack of appropriate governance, oversight, and risk management systems and controls.

Figure 13: Number of Outstanding Enforcement Actions Against Banks



Source: OCC

Note: Data for 2018 are as of September 30. All other data are as of year-end. Includes federal savings associations since July 21, 2011.

Abbreviations

ALLL	allowance for loans and lease losses
AML	anti-money laundering
BSA	Bank Secrecy Act
C&I	commercial and industrial
CapEx	capital expenditure
CECL	current expected credit losses standard
CRE	commercial real estate
EA	enforcement action
EBITDA	earnings before interest, taxes, depreciation, and amortization
FASB	Financial Accounting Standards Board
FFIEC	Federal Financial Institutions Examination Council
fintech	financial technology
FSOC	Financial Stability Oversight Council
GAAP	generally accepted accounting principles
LBS	Large Bank Supervision
Libor	London InterBank Offered Rate
LTM	last 12 months
MRA	matter requiring attention
NMD	non-maturity deposit
NRC	National Risk Committee
OCC	Office of the Comptroller of the Currency
OFAC	Office of Foreign Assets Control
PBE	public business entity
regtech	regulatory technology
repo	repurchase agreement
ROE	return on equity
SOFR	Secured Overnight Funding Rate

Index of Figures