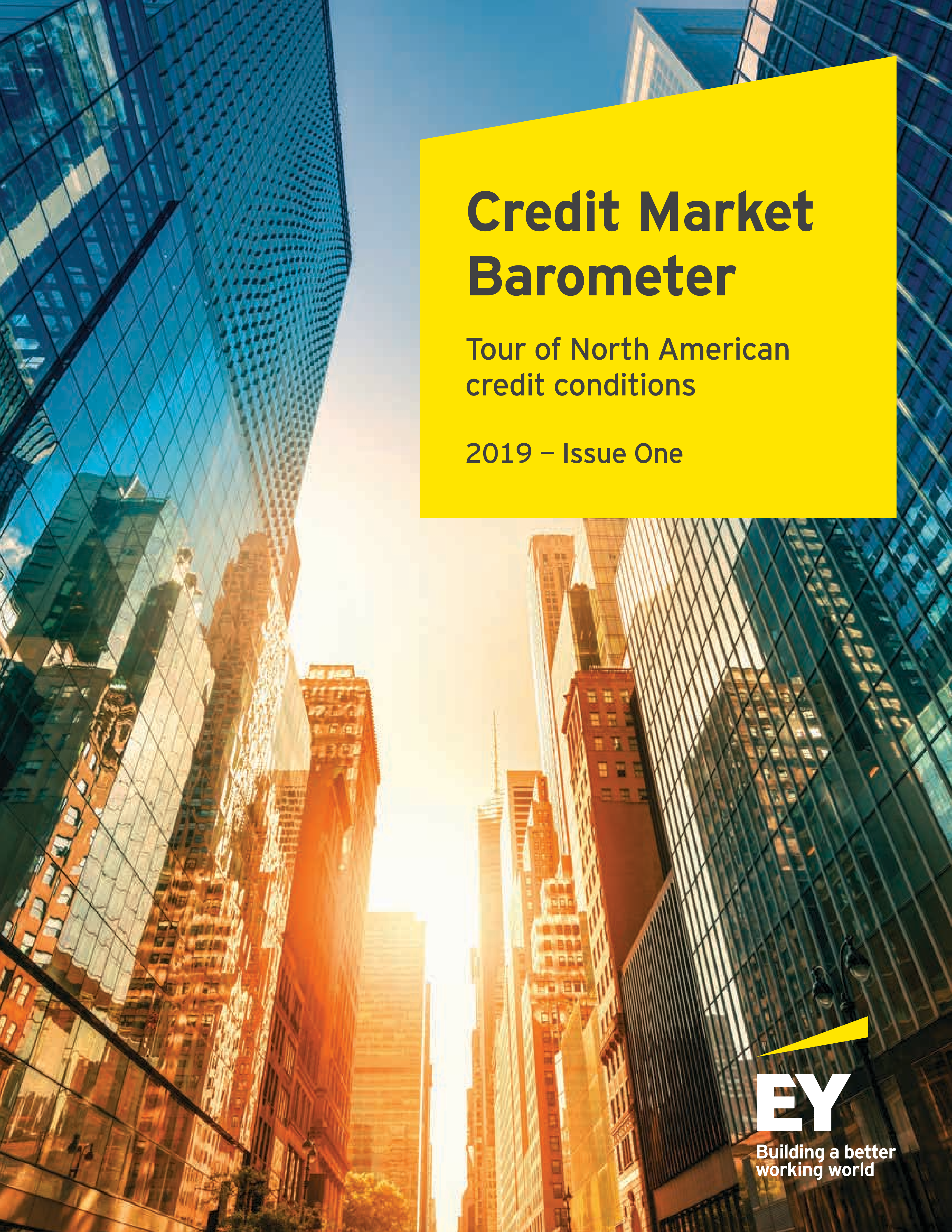


Credit Market Barometer

Tour of North American credit conditions

2019 – Issue One

EY

Building a better working world

Welcome to the Credit Market Barometer (CMB).

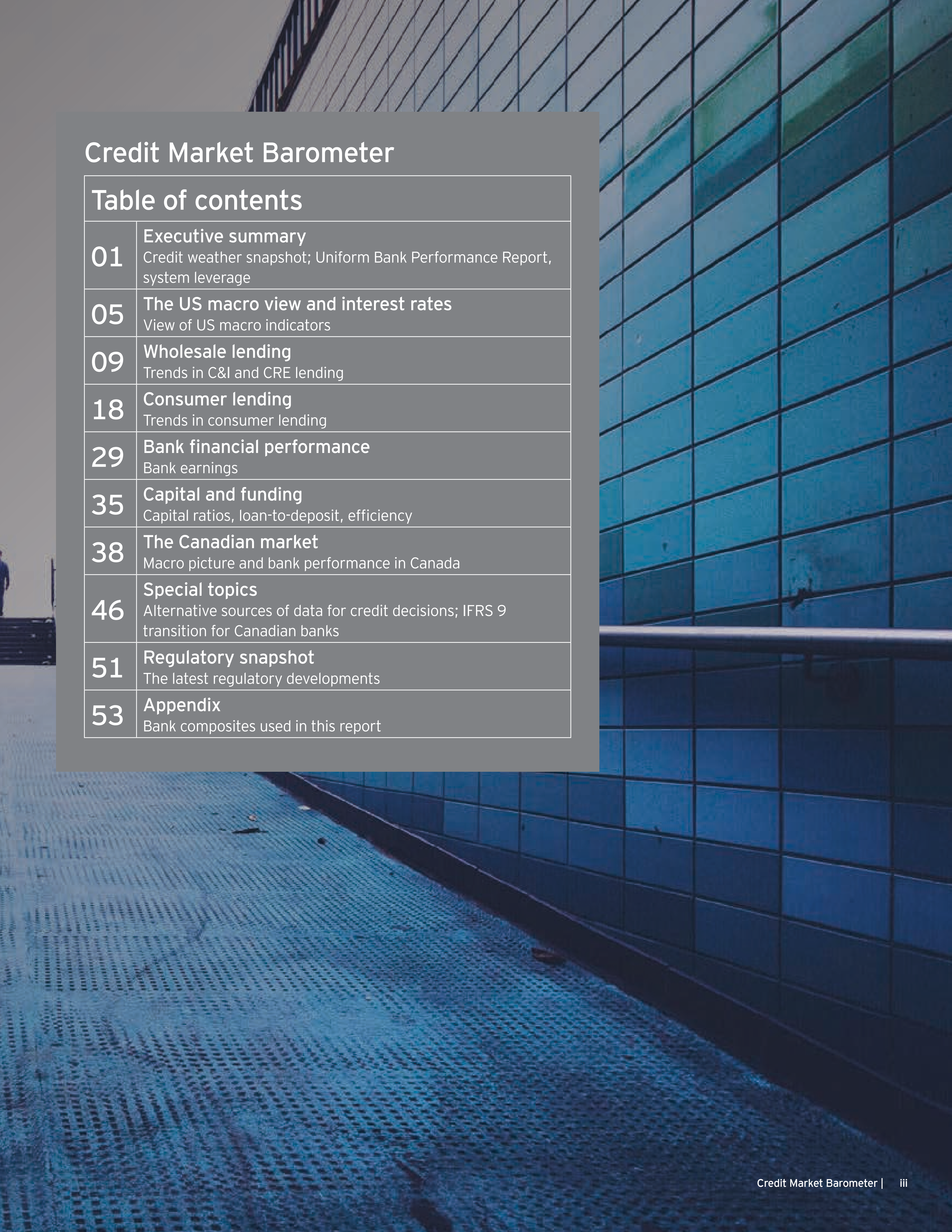
The economy is deaccelerating — are we in the early phases of an inevitable downturn, or will 2019's theme just be slowing but growing?

The Federal Open Market Committee (FOMC) has reacted by placing a hold on any further increases in the Fed Funds rate for the remainder of 2019. The FOMC's March projections for the United States' full-year 2019 growth dropped to a range of 1.6% to 2.4%, down from 2.0 to 2.7% in the December forecast. The Bureau of Economic Analysis' reading for Q4 2018 GDP growth was 2.2%, down from 3.4% in Q3 2018. And the Atlanta Fed's GDPNow forecast model is currently estimating that GDP growth for Q1 2019 will be materially under 2%.

As market watchers look closely at the data, lenders are reminded that measuring the economy is difficult, and predicting the economy is even more difficult. One of the challenging realities of measuring any large-scale economy is that underneath the data lie many regional, local and sector-related stories of growth and slowdown. We believe that understanding the data beneath the surface of the headlines is worth the effort.

The benefits to understanding market data go beyond an understanding of the economy — it can make businesses and lending decisions more aware of vulnerabilities and other risks. If the leveraged lending market is a contributor to risks facing your firm, then gaining a deeper understanding of its drivers should be influencing risk appetite today.

This edition of the CMB contains two special topics. First, we introduce how we are implementing advanced analytics to support lending decisions. Second, a recently completed study of US commercial finance by the Secured Finance Network (formerly the Commercial Finance Association), and assisted by Ernst & Young LLP, provides a detailed examination of seven subcategories of US secured finance: asset-based lending, factoring, supply chain finance, equipment finance and leasing, leveraged lending, cash flow lending and asset-backed securitization. As lenders explore areas of growth, we encourage you to connect with us for a briefing on what's been revealed in the study.



Credit Market Barometer

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Executive summary

Credit Market Barometer 2019 — issue one

"We are actively looking to hire persons with prior workout experience."

— Chief credit officer of a regional bank

What we're seeing

- High interest in preparedness for a potential downturn in credit conditions
- Readiness for examiners' focus on credit risk management processes during the 2019 exam cycle
- Demand for understanding the signals emerging from the leveraged lending market
- Improving the efficiency of credit risk operating models in underwriting and in credit risk review

Macro picture

- The second reading of real GDP growth in Q4 showed slowing in the US economy, with a reading of 2.2%, down from 3.4% in Q3
- The Fed's signaling for a slower trajectory of interest rate rises has been warmly received, which is best represented by the recovery of equity valuations in early 2019. The markets generally showed muted reactions to the federal Government's shutdown during most of January

Risks to the economy

- Over the course of 2018, the St. Louis Fed Financial Stress Index rose well off its near record low at the end of 2017. The index reached its second highest level since November 2011
- Several of the larger market vulnerabilities have been the prices of US equities, the US treasury bond premium and US housing prices

Loan growth

- The **loan and lease balances** of US commercial banks grew at a seasonally adjusted 4.9% rate year-over-year (YoY) in Q4 2018, after growing at rates of 4.2% and 4.9% in Q3 and Q2 2018, respectively, based on Fed H.8 data
- **Commercial and industrial (C&I)** loans and closed-end residential mortgages led loan balance growth in Q4, rising a surprisingly high 10.3% and 7.2% YoY, respectively

Bank performance

- Q4 2018 bank reporting was strong. 2018 marked a record year for profits for many North American banks Q1 2019
- Credit performance across most loan classes remains strong. Low levels of early-stage delinquencies generally are indicating no serious cracks in most borrowers' ability to support debt loads

Credit weather snapshot

There are signs of cooling in the economy. The 12-month average change in nonfarm payrolls dropped to 209,000 in February. Hourly wage inflation, however, climbed to 3.4% YoY, rising to $27.66/hour. Inflation, as measured by the Consumer Price Index (CPI), fell to 1.6% YoY in January, led by falling gasoline prices. Average 30-year mortgage rates in the US fell during the first three months of 2019.

US macro

US nonfarm payrolls, mo. change (k)
196 (Mar)
-802 -140 522
3/'09 Peak and trough since 2000 5/'10

Unemployment rate, U-3 (%)
3.8 (Mar)
3.7 6.9 10.0
10/'18 Peak and trough since 2000 10/'09

Real GDP, ann. change (%)
2.2 (4Q)
-8.4 -0.5 7.5
4Q'08 Peak and trough since 2000 2Q'00

Inflation, CPI, ann. change (%)
1.6 (Jan)
-2.0 1.8 5.5
7/'09 Peak and trough since 2000 7/'08

Case-Shiller US housing pr. index (HPI)
205 (Dec)
100 153 206
1/'00 Peak and trough since 2000 10/'18

Expenditures, PCE, ann. change (%)
4.0 (Dec)
-3.0 3.0 9.0
5/'09 Peak and trough since 2000 3/'00

US rates

LIBOR – 3 mo. (%)
2.64 (Feb)
0.23 3.51 6.79
5/'14 Peak and trough since 2000 6/'00

Mortgage rate US avg., 30-yr. fixed (%)
4.35 (2/28)
3.31 5.98 8.64
11/'12 Peak and trough since 2000 5/'00

2-yr.-10-yr. UST spread (%)
0.17 (3/26)
-0.41 1.21 2.83
4/'00 Peak and trough since 2000 2/'10

Fed funds effective rate (%)
2.40 (3/1)
0.07 3.31 6.54
7/'11 Peak and trough since 2000 7/'02

US bank credit growth

Ann. change loan/lease, comm. banks (%)
4.72 (4Q)
-6.96 2.49 12.71
1Q'10 Peak and trough since 2000 3Q'05

Ann. change, total consmr. credit (%)
4.65 (4Q)
-3.79 4.45 12.75
1Q'10 Peak and trough since 2000 1Q'01

US bank asset quality

NPLs, all loans, comm. banks (%)
0.95 (4Q)
0.70 3.17 5.64
2Q'06 Peak and trough since 2000 1Q'10

NPLs, commercial loans (%)
0.65 (4Q)
0.49 2.05 3.61
4Q'14 Peak and trough since 2000 3Q'09

US bank performance

ROAA, >$100b banks (%)
1.34 (4Q)
-0.58 0.44 1.45
4Q'08 Peak and trough since 2005 4Q'06

ROAE, >$100b banks (%)
12.1 (4Q)
-6.61 4.54 15.68
4Q'08 Peak and trough since 2005 4Q'06

US bank capital

CET1 ratio, >$100b banks (%)
12.6 (4Q)
7.86 10.25 12.63
3Q'05 Peak and trough since 2005 3Q'17

Leverage ratio, >$100b banks (%)
9.26 (4Q)
6.34 7.84 9.34
2Q'06 Peak and trough since 2005 2Q'18

Sources: EY, Federal Reserve Economic Data, S&P Global Market Intelligence

Note: Generally favorable or trending favorably for banks; Generally not favorable or trending unfavorably for banks; Generally neutral for banks

Uniform Bank Performance Report

Uniform Bank Performance Report (UBPR) data provides a stratified view of bank performance by asset size. Returns on average equity (RoAE) slipped 10 to 14 basis points (bps), between the nine-month period ending Q3 2018 and full-year 2018 for banks in the greater than $100b, $3b-$10b, and $1b-$3b groups. The $10b-$100b bank group improved by 2 bps over the same period, but this group remains the laggard in average RoAE levels. Overall, annual trends shown below indicate that US banks are healthy.

Size group		>$100b	$10b-$100b	$3b-$10b	$1b-$3b
Banks in group		25	89	143	369
Profitability					
RoAE (%)	2018	11.31	11.04	11.73	11.72
	2017	8.72	8.46	8.85	9.26
	2016	8.17	8.73	9.26	9.54
RoAA (%)	2018	1.28	1.36	1.34	1.24
	2017	1.00	0.99	0.99	0.97
	2016	0.93	0.99	1.05	1.00
Yield on assets and cost of funds					
Interest income (% avg. assets)	2018	3.33	3.96	4.07	4.14
	2017	2.92	3.57	3.74	3.90
	2016	2.60	3.37	3.61	3.74
Interest expense (% avg. assets)	2018	0.70	0.61	0.64	0.63
	2017	0.41	0.37	0.40	0.43
	2016	0.30	0.29	0.33	0.37
Non-spread income					
Non-int. income (% avg. assets)	2018	1.63	0.86	0.92	0.83
	2017	1.62	0.90	0.93	0.86
	2016	1.63	0.97	0.94	0.85
Efficiency					
Efficiency ratio (%)	2018	58.58	54.70	57.71	61.83
	2017	60.47	56.31	58.80	62.07
	2016	61.68	57.64	60.24	63.71
Funding					
Net loans lease/total deposits (%)	2018	70.40	88.24	89.59	86.90
	2017	69.83	87.16	89.35	85.00
	2016	68.46	84.27	88.74	83.85
Asset quality					
90+PD non-accruals loans (%)	2018	0.81	0.59	0.62	0.63
	2017	0.97	0.71	0.62	0.66
	2016	1.20	0.84	0.74	0.73
Capitalization					
CET1 ratio (%)	2018	12.65	12.53	13.27	13.26
	2017	12.91	12.45	12.95	12.96
	2016	12.70	12.40	12.66	12.94

Source: Federal Financial Institutions Examination Council, UBPR

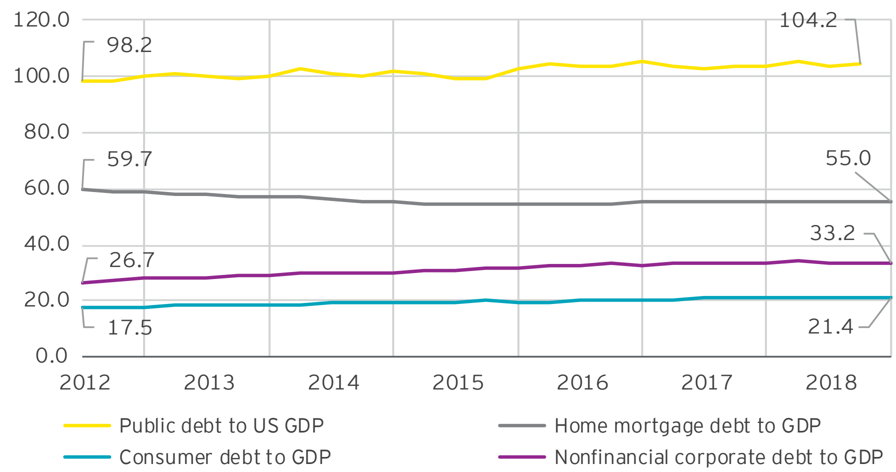
Notable points

- The spreads between interest income and interest expense (as percent of total assets) has risen by 14%, 9%, 5% and 4% across the greater than $10b, $10-$100b, $3b-$10b and $1b-$3b size categories, respectively, over the past three years
- The largest US banks have reduced their efficiency ratios by 310 bps on average since 2016. By comparison, banks in the $1b-$3b category have lowered efficiency ratios by just 188 bps, on average, over the same three-year period
- Overall asset quality, based on serious delinquencies (90-day past due loans and non-accruing loans), is still generally trending favorably

System leverage and loan growth

Overall leverage in the US financial system generally has steadied but remains high as measured relative to US real GDP. Residential mortgage debt, which had greatly shrunk relative to real GDP, has leveled in recent quarters. US commercial banks' loan and lease balances grew 4.9% YoY in Q4, up from a 4.2% YoY growth rate in Q3.

Public, corporate, home mortgage, consumer debt-to-GDP (%)

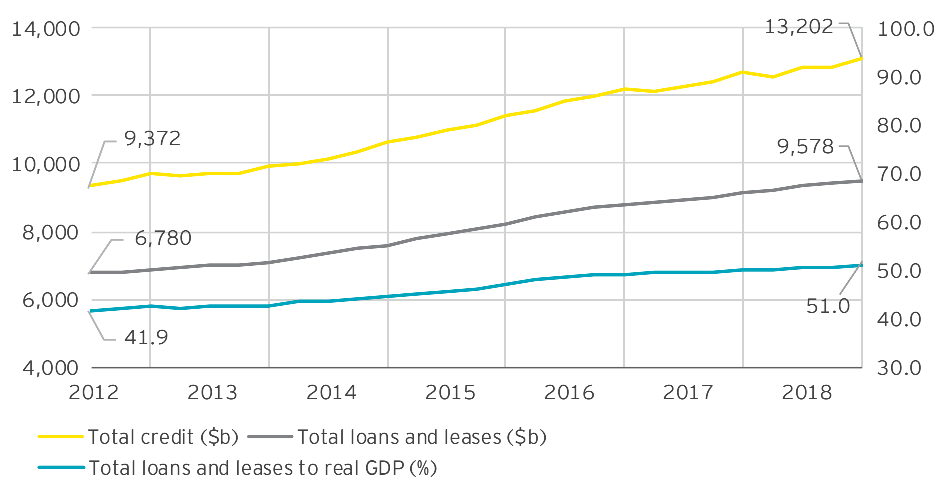


Source: Federal Reserve Economic Data, latest available Fed Z.1 data

Leverage relative to GDP

- Total US government-related (public) debt-to-real GDP was up slightly to 104.2% in Q3 2018 (last officially reported value), from 103.8% in Q2. The ratio was also up slightly from 103.4% one year prior
- Household mortgage debt was 55.0% of real GDP in Q4, compared with 55.3% one year prior
- Non-financial corporate debt-to-real GDP was 33.2% in Q3, down slightly from 33.8% one year prior
- Consumer debt (non-mortgage)-to-real GDP was 21.4% in Q4, up from 21.0% one year prior

Total credit held by commercial banks ($b)



Source: Federal Reserve Economic Data; total credit is all fixed income securities plus loans and leases held by US commercial banks

Total credit and total loans and leases

- Total US commercial bank credit holdings were $13.2t at the end of Q4 2018, up 3.4% from one year prior, which was a slower growth rate than the four-year compound annual growth rate (CAGR) of 5.5%
- Total loans and leases held by US commercial banks were $9.6t at Q4 2018, up 4.5% YoY, also slower than the four-year CAGR of 5.9%
- US commercial bank loans and leases relative to GDP were 51.0%, up from 50.0% one year prior

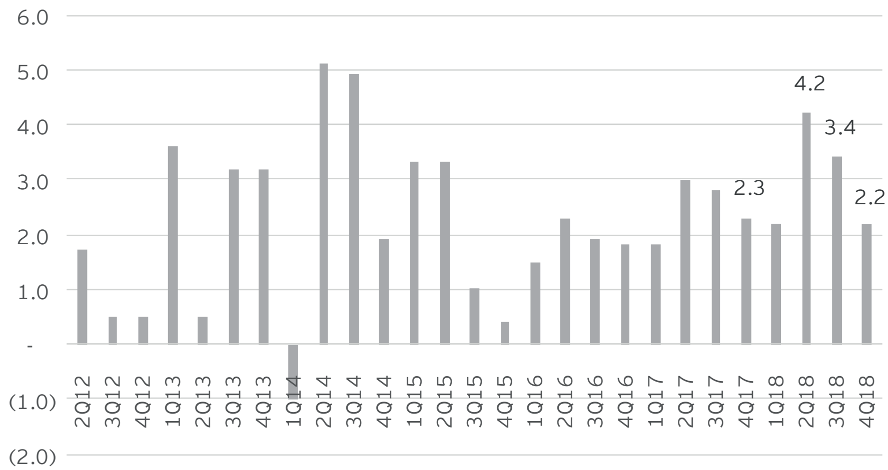
The US macro view and interest rates

Executive summary

- **Real GDP growth:** While slowing to 2.2% in Q4, real GDP growth rates in Q2 and Q3 2018 were the highest readings since mid-2014
- **Job growth:** February 2019's job creation data indicated some slowing in labor growth; however, the past 12-month average remains at a healthy level of 209k
- **Wages:** Wage growth YoY remained above 3% as of February, well above the average of approximately 1.8% in the 2009–14 period
- **Consumers:** Sentiment improved on a month-over-month basis in February, but is about 6% lower today vs. one year ago February 2018. Over the past half century, consumer sentiment has reached current levels in only two other periods – the late 1990s and in 1964-65
- **Markets:** In Q4, US equity indices dropped materially and the spread between 2-year and 10-year US Treasury bonds tightened further, both signaling an erosion in the market's confidence that currently strong economic conditions can continue much further

US GDP and the unemployment rate are healthy and stable. The first estimate of real GDP growth for Q4 2018 was 2.6%, down from the 3.4% level of Q3 2018. The US labor market remains tight.

Real GDP growth (%)



Source: Federal Reserve Economic Data

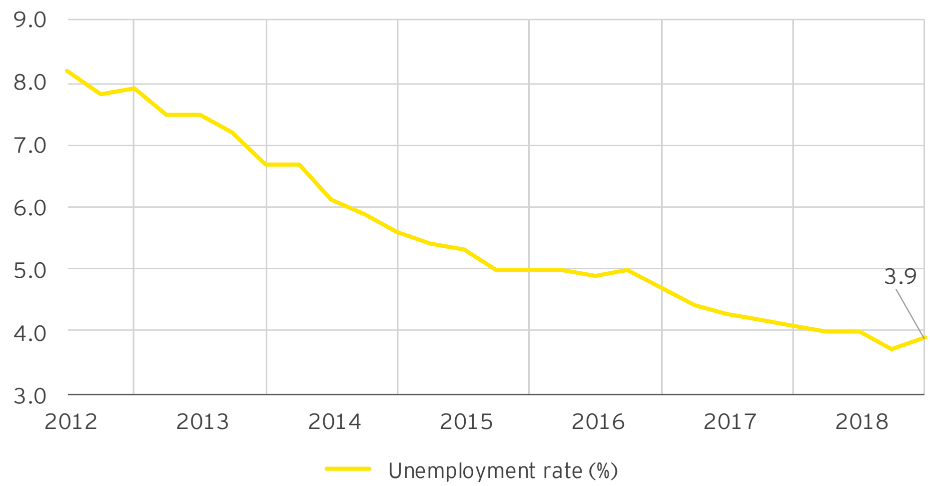
Last shown reading Q4 2018

Real GDP growth

- GDP growth was 2.2% in Q4 2018 (second reading), down from a four-year high of 4.2% in Q2. On a YoY basis, GDP growth was down by 0.1%
- Personal consumption expenditure (PCE) growth was 4.0% YoY in December. PCE growth peaked at 5.0% in 2018, but the slowing pace of spending growth signals future slowing of real GDP growth
- Most economists expect real GDP growth to slow in 2019, but there are few signs that a material slowdown is imminent

> "The spread between 10- and 2-year nominal Treasury yields narrowed to near the 20th percentile of its distribution since 1971. Investor perceptions of increased downside risks to the outlooks for domestic and foreign economic growth, including growing concerns over trade frictions between the United States and China, reportedly weighed on yields."
>
> – FOMC's December meeting minutes

Unemployment rate (%)



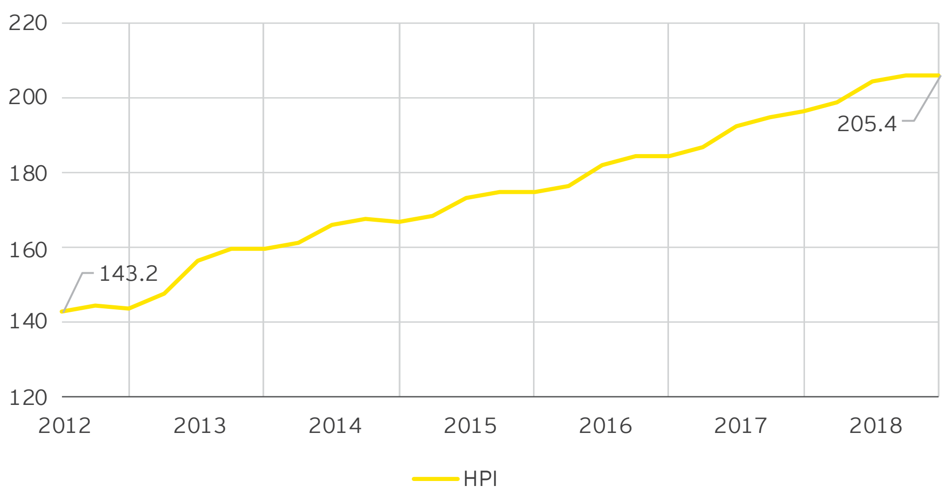
Source: Federal Reserve Economic Data

Unemployment rate

- The February monthly unemployment rate was 3.8%, a downtick from 4.0% in January
- Jobs creation cooled in February, falling to 20k from 311k in January
- In the 86 months since January 2012, monthly job creation has been below 100k nine times. In only two of those nine readings was the monthly payroll change weaker than February 2019's reading (May 2016 and September 2017)

US housing prices are 11.2% above pre-financial crisis peaks, nationally, as of January 2019.

Case-Shiller national housing price index (HPI) (%)



Source: Federal Reserve Economic Data

Last shown reading October, 2018

HPI

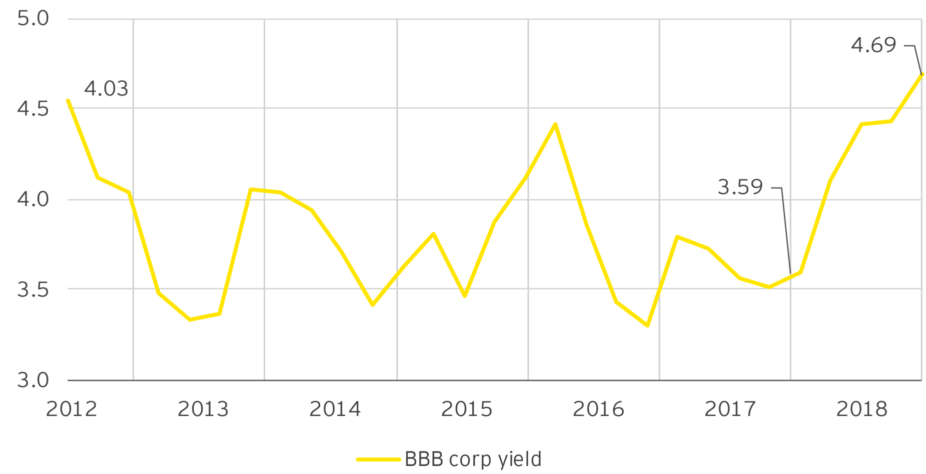
- The annual rate of home price increases is slowing, but the US housing market continues to exhibit strong pricing overall. The Case-Shiller national HPI dipped slightly to 205 in January, its first decline since January 2016. The index remains well above its 196 level of one year ago
- The three US cities with the highest one-year index increases were Las Vegas at 11.4%, Phoenix at 8.0% and Atlanta at 5.9%. Falling out of the top three was San Francisco, where the average home price change slowed to 3.6% as of January 2019

> "Even at the reduced pace of 4.7% per year [nationally], home prices continue to outpace wage gains and inflation."
>
> – David Blitzer, Chair of Index Committee at S&P Dow Jones Indices

The US macro view and interest rates *cont.*

Corporate credit yields for BBB-rated corporate issuers rose 110 basis points (bps) over 2018 to 4.69%, the sharpest one-year rise in the last seven years.

BBB corp yield (%)



Source: Federal Reserve Economic Data, ICE BofAML US Corporate BBB Index

Last shown reading Q4 2018

BBB corporate yield

- Average effective yields among BBB-rated bonds rose to 4.69% at the end of Q4 2018, its highest level since emerging from the financial crisis
- Over Q4 2018, BBB yields rose 26 bps. The Q4 rise was lower than Q1 and Q2 2018 jumps of 51 bps and 31 bps, respectively

What the Fed is focused on

On March 19, 2019, the Federal Open Market Committee (FOMC) held the target federal funds rate to 2.4% for 2019, citing declining inflation and slowing economic growth. The FOMC also updated its summary of economic projections, shown in the table below. The FOMC's real GDP growth projection for 2019 was revised down to 2.1% from 2.3% in the December projections; however, overall revisions to the outlook were slight.

	Median				Central tendency				Range			
Variable	2019	2020	2021	Longer run	2019	2020	2021	Longer run	2019	2020	2021	Longer run
Change in real GDP	2.1	1.9	1.8	1.9	1.9-2.2	1.8-2.0	1.7-2.0	1.8-2.0	1.6-2.4	1.7-2.2	1.5-2.2	1.7-2.2
December projection	2.3	2.0	1.8	1.9	2.3-2.5	1.8-2.0	1.5-2.0	1.8-2.0	2.0-2.7	1.5-2.2	1.4-2.1	1.7-2.2
Unemployment rate	3.7	3.8	3.9	4.3	3.6-3.8	3.6-3.9	3.7-4.1	4.1-4.5	3.5-4.0	3.4-4.1	3.4-4.2	4.0-4.6
December projection	3.5	3.6	3.8	4.4	3.5-3.7	3.5-3.8	3.6-3.9	4.2-4.5	3.4-4.0	3.4-4.3	3.4-4.2	4.0-4.6
PCE inflation	1.8	2.0	2.0	2.0	1.8-1.9	2.0-2.1	2.0-2.1	2.0	1.6-2.1	1.9-2.2	2.0-2.2	2.0
December projection	1.9	2.1	2.1	2.0	1.8-2.1	2.0-2.1	2.0-2.1	2.0	1.8-2.2	2.0-2.2	2.0-2.3	2.0
Core PCE inflation	2.0	2.0	2.0		1.9-2.1	2.0-2.1	2.0-2.1		1.8-2.2	1.8-2.2	1.9-2.2	
December projection	2.0	2.0	2.0		2.0-2.1	2.0-2.1	2.0-2.1		1.9-2.2	2.0-2.2	2.0-2.3	
Federal funds rate	2.4	2.6	2.6	2.8	2.4-2.6	2.4-2.9	2.4-2.9	2.5-3.0	2.4-2.9	2.4-3.4	2.4-3.6	2.5-3.5
December projection	2.9	3.1	3.1	2.8	2.6-3.1	2.9-3.4	2.6-3.1	2.8-3.0	2.4-3.1	2.4-3.6	2.4-3.6	2.5-3.5

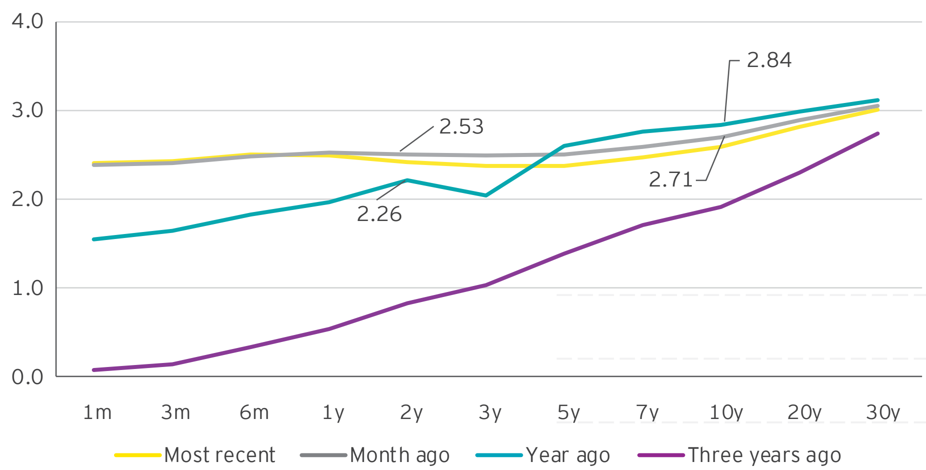
Source: Summary of economic projections, FOMC (March 2019)

- The FOMC also noted the solid employment data as well as slower household spending and business fixed investment
- The FOMC updated its expectation that core PCE price inflation would reach just 1.8% in 2019, due to declines in consumer energy prices

Interest rates

Short-term rates rocketed higher in 2018, tightening the spread between the longer and shorter ends of the curve. Implications for banks likely include growing pressures on deposit rates.

Treasury yield curve (%)



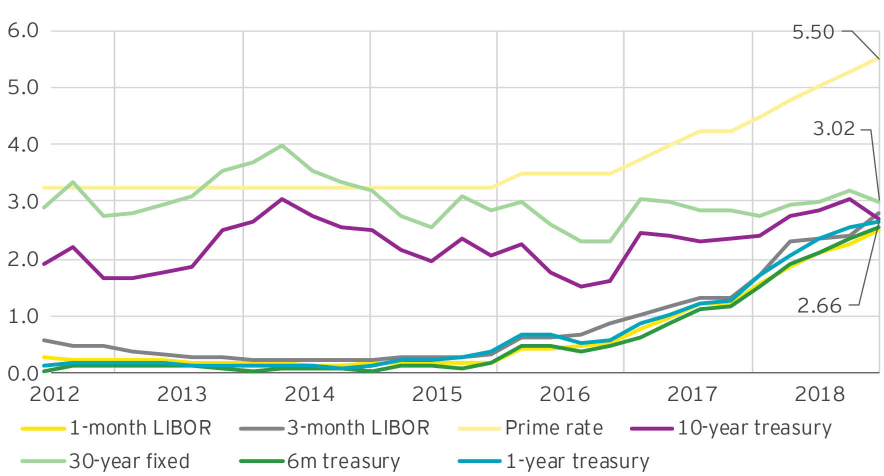
Source: S&P Global Market Intelligence

Data as of March 14, 2019

Key rates

- The yield curve continues to hold a positive slope. The 10-year minus 2-year US Treasury (UST) spread was holding above 20 bps as of March, after falling to 18 bps in February
- The 10-yr UST yield held in the 2.65%--2.75% range for most of the first two months of 2019 after reaching as high as 3.24% in November 2018
- The 2-year UST yield was 2.55%, only 30 bps higher than one year prior
- One-month LIBOR rose 94 bps to 2.44% in the one-year period from March 2018 to March 2019

Key rates (%)



Source: Federal Reserve Economic Data

- The prime rate is up 100 bps over the past year to 5.50%
- 30-year USTs are yielding 3.13% as of March, and the 1-year UST is yielding 2.55%
- 1-month and 3-month LIBORs have risen by 94 bps and 79 bps to 2.52% and 2.80%, respectively, over the past year ending March 2019

Wholesale lending

Robust growth in commercial loans

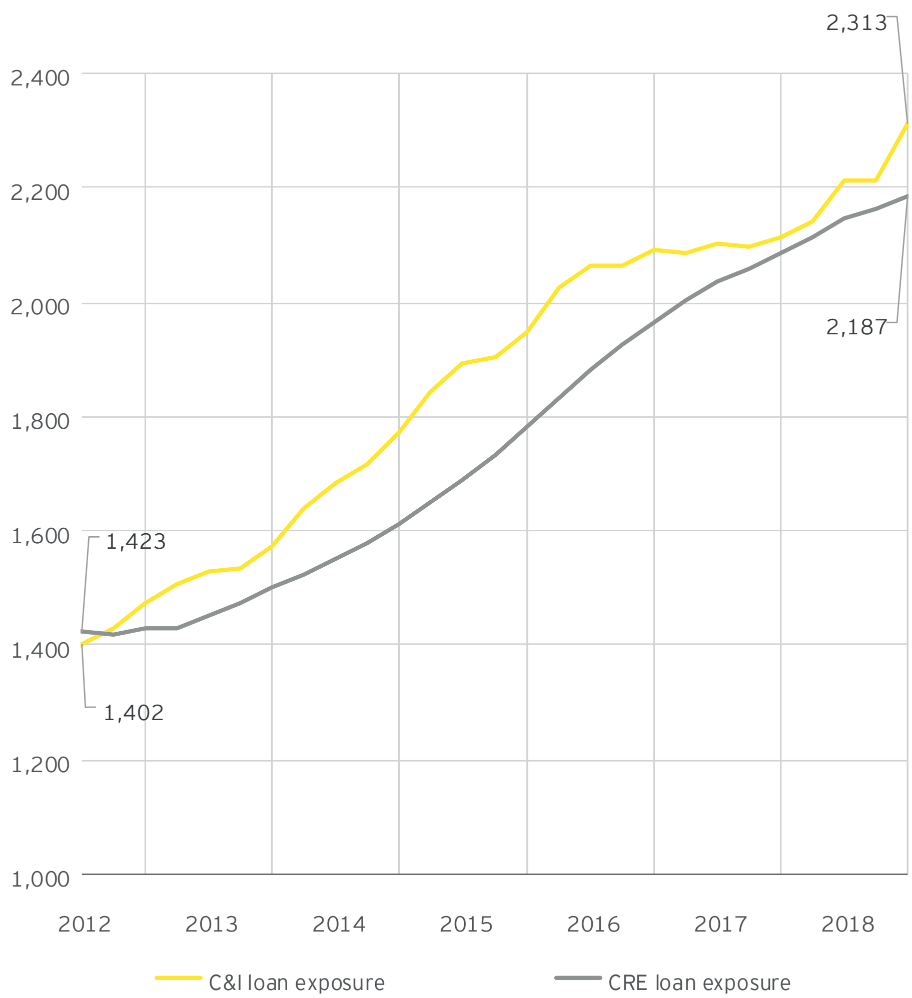
- Wholesale loan balances nationally grew over the 12-month period ending Q4 2018 and are continuing to grow in Q1 2019
- The total borrowings by US nonfinancial corporations is $9.4t, up $3.3t since the end of the 2008-09 recession, the highest ever as a share of gross domestic product
- In Q4 2018, C&I delinquency rates for our universal bank composite were essentially unchanged QoQ at 0.90%, fell by 3 bps to 0.76% for super-regionals, and fell by 25 bps for the regional bank composite
- Market concerns about C&I lending has been linked with the rise of BBB-rated investment-grade corporate bonds and deterioration in leveraged lending underwriting standards
- The growth in CRE lending is fueled by multi-family loans, which experienced YoY growth of 5.15% in Q4
- Regional bank lenders participated in the overall healthy CRE conditions, with YoY CRE lending growth of 6.61% across 2018

"Surveys of businesses, such as the Institute for Supply Management's purchasing managers index and similar regional indexes, have generally moved lower over the past six months, reversing much of the run-up seen in 2017 and late 2016. The National Federation of Independent Business's Small Business Optimism Index is also lower than its mid-2018 peak, although it remains well above the levels of 2015 and much of 2016."

— Federal Reserve Governor Lael Brainard in her speech *Navigating Cautiously*, March 7, 2019

Among all US commercial banks, C&I and CRE loan balances grew by 9.58% and 4.72% YoY in Q4 2018. The growth was accompanied by market concerns on the increasing volume of near-investment-grade corporate bonds and Fed commentary on the need for a heightened focus on risk management practices, especially in leveraged loan portfolios.

Total wholesale loan exposure ($b)



Source: Federal Reserve Economic Data; last shown reading end of Q4 2018

Wholesale lending, all US commercial banks

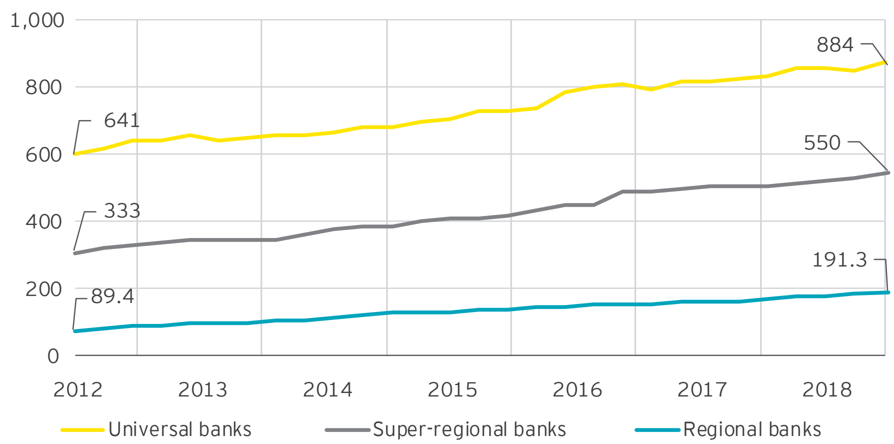
- Total wholesale exposure rose to $4.50t as of Q4 2018, a 7.16% increase YoY
- C&I loan balances drove the increase, growing by 9.58% YoY and rising by 4.42% quarter-over-quarter (QoQ), while CRE balances rose by 4.72% YoY and 1.00% QoQ
- C&I's sharp increase in Q4 occurred as the leveraged lending market saw one of its most turbulent quarters since the end of the financial crisis
- According to the Fed's January 2019 Senior Loan Officer Opinion Survey (SLOOS), credit standards on loans to large and middle market firms were mostly unchanged, while 20% of surveyed banks indicated at least a modest decline in demand from large and middle market firms, contrasting the growth seen in C&I overall
- Of the 15 of 71 banks surveyed that indicated some tightening of credit standards on loans to large and middle market firms in Q4 2018, a "more uncertain economic outlook" (13 of 15 banks surveyed) and "reduced tolerance for risk" (9 of 15 banks surveyed) were either "somewhat important" or "very important" in the tightening decisions
- Of the 17 of 71 banks surveyed that indicated some easing of credit standards on loans to large and middle market firms in Q4 2018, "more aggressive competition from other banks or nonbank lenders" (17 of 19 banks surveyed) was either "somewhat important" or "very important" in the easing decisions

C&I lending

C&I lending encompasses a significant number of loan subcategories (e.g., equipment finance, small business loans, middle market) that together make this loan class somewhat of a bellwether for lending overall. Growth across C&I overall, among our three bank composites, was especially strong for the regional bank group.

Note: The composites below include 6 banks in the "universal" group, 16 banks in the "super-regional" group, and 45 banks in the "regional" group.

C&I lending by bank segment ($b)

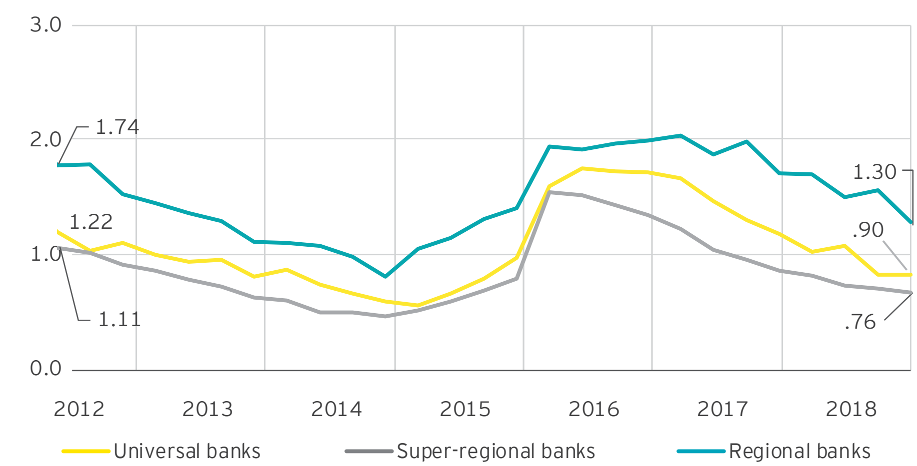


Source: S&P Global Market Intelligence

C&I lending, US composites

- C&I loan balances grew 5.91% YoY for universal banks, 8.10% for super regional banks and 11.67% for regional banks in Q4 2018
- These YoY increases highlight the acceleration in C&I lending in Q4. By contrast in Q3 2018, YoY increases were 3.00%, 4.48% and 10.40% for the universal, super-regional and regional composites, respectively
- Q3 2018 SLOOS survey data showed easing in lending standards, terms and covenants, along with narrowing spreads. January SLOOS data, however, generally showed a cooldown in these trends

C&I loan delinquency rate (%)



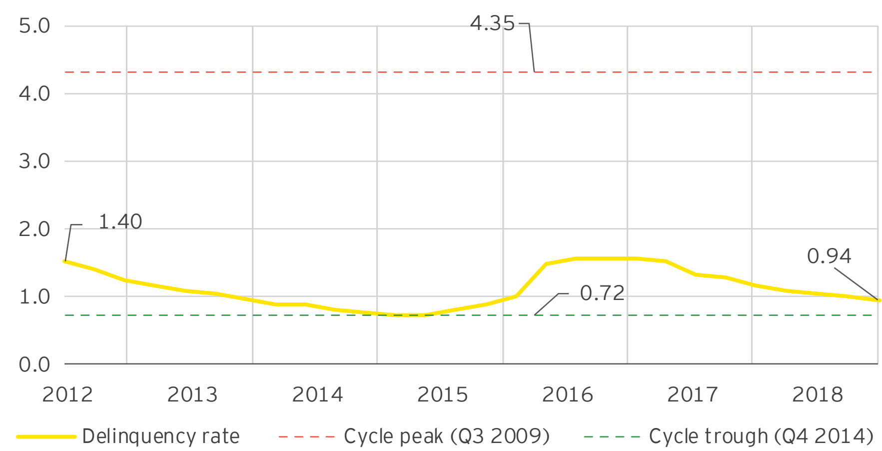
Source: S&P Global Market Intelligence

C&I delinquency rate, US composites

- In Q4 2018, C&I delinquency rates were unchanged for universal banks at 0.90%, fell by 3 bps for super-regional banks to 0.76%, and fell by 55 bps for regional banks to 1.30%

C&I asset quality across all US commercial banks generally improved in Q4 2018. Delinquency rates and net charge-off rates (NCOs) are off current cycle troughs reached during the 2014–15 period. The reduced tax rates have provided new capacity for debt servicing for profitable commercial borrowers.

C&I delinquency rate vs. cycle peak and trough (%)*

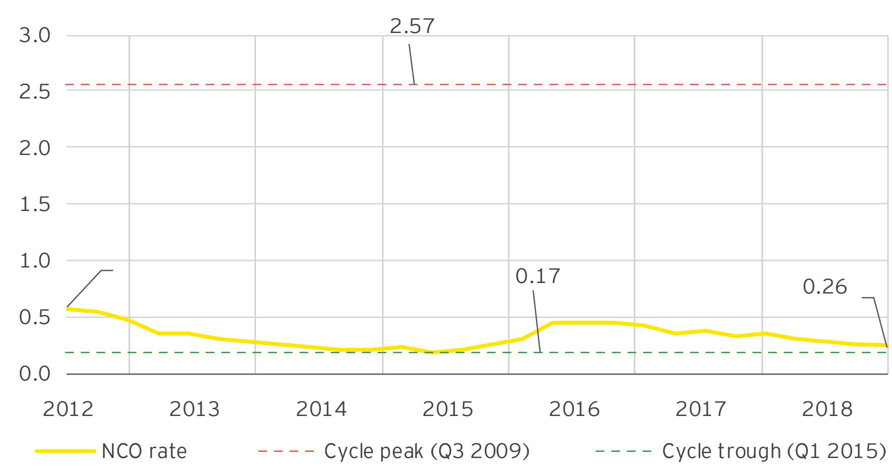


Source: Federal Reserve Economic Data

C&I delinquency rate, all US commercial banks

- The overall C&I delinquency among US commercial banks dropped by 7 bps during Q3 2018 to 1.00%. The delinquency rate further dropped in Q4 2018 to 0.94%, the tenth consecutive quarterly drop in delinquencies
- C&I delinquencies remain above the current cycle trough level of 0.72%

C&I NCO rate vs. cycle peak and trough (%)*



Source: Federal Reserve Economic Data

*Data captures all US commercial banks

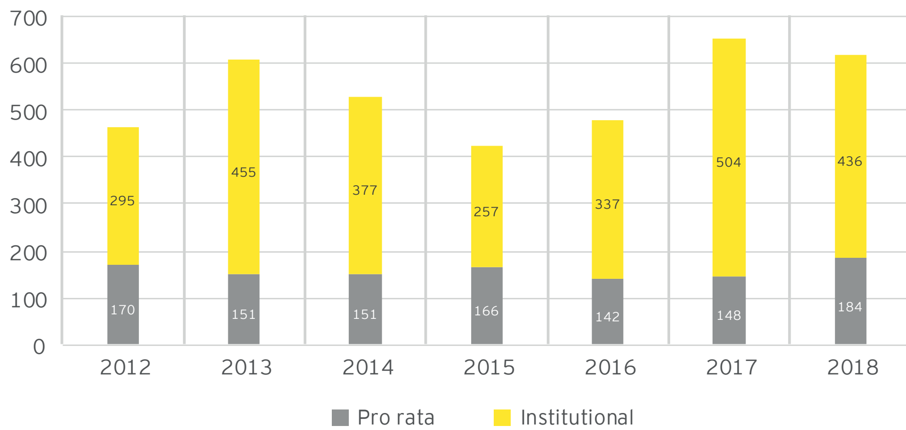
C&I NCO rate, all US commercial banks

- The C&I NCO rate fell by 1 bps to 0.26% in Q3 2018. The NCO rate was unchanged in Q4 2018
- Q4's NCO rate was 9 bps lower than the 0.35% rate recorded at the end of Q4 2017

Leveraged lending

Total US dollar-denominated leveraged loan issuance fell 5% in 2018, as measured by S&P LCD. 2018 was still the second highest year for deal volume, finishing the year at $620b. Leveraged loans issued for institutional buyers fell by 13% to $436b in 2018, whereas pro rata leverage loans rose by 24% to their highest level ever, at $184b.

Volume of annual US dollar-denominated new-issue global leveraged loans ($b)

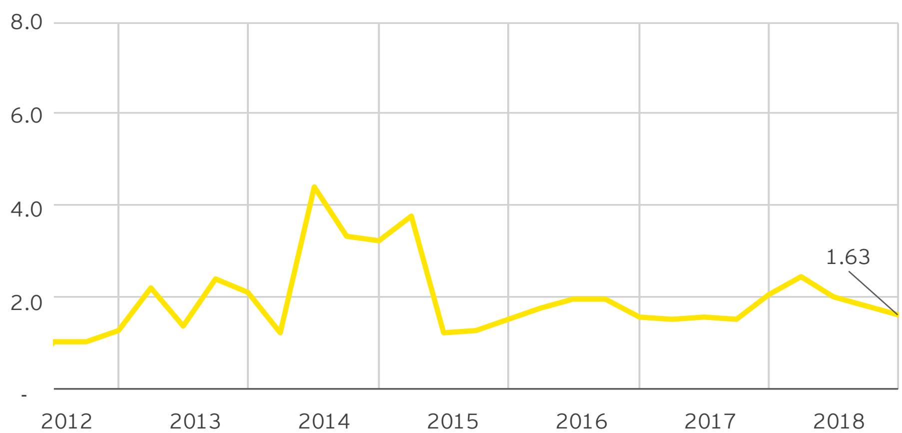


Source: S&P Global Market Intelligence. Through Q4 2018

Leveraged lending

- Global leveraged loan production volume was $620b in 2018, $32b short of 2017's record year of $652b
- The number of leveraged loans issued in 2018 was 1,314, just slightly below 2017's record of 1,333. The average annual number of leveraged transactions between 2010 and 2016 was just 758
- Covenant-lite, or cov-lite, transactions are now 80% of the entire leveraged loan market, up from less than 30% from 2008 – signaling a dramatic weakening in covenant protections

LTM default rate of all leveraged loans (%)*



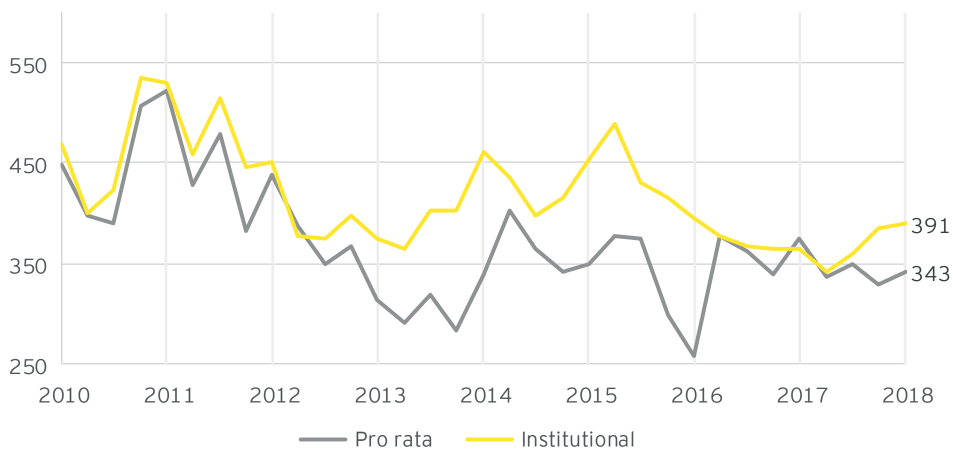
Source: S&P Global Market Intelligence

Default rates

- The prior 12-month default rate by dollar volume for leveraged loans as of Q3 2018 was 1.81% and was 1.63% as of year end 2018

Leveraged loan spreads in the primary market still reflect high appetites for non-investment-grade corporate debt, despite a sharp drop in bid prices for leveraged loans in the secondary market in Q4, which occurred in part due to market worries about trade and a tiring economy. Spreads on B+/B institutional leveraged loans reached post-crisis lows early in 2018 but finished 2018 about 50 bps higher than Q1 2018 levels.

Quarterly average new-issue B+/B spreads (LIBOR+X bps)

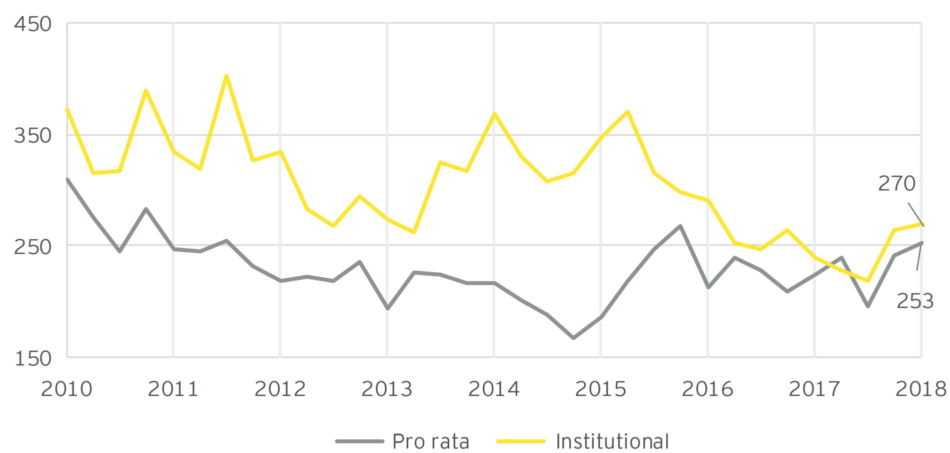


Source: S&P Global Market Intelligence

Leveraged loan spreads (single-B)

- High and mid-single B-rated leveraged loans cleared to institutional buyers at an average spread to LIBOR of 386 bps in Q3 2018, a 27 bps increase QoQ. The spread continued to widen in Q4, but by just 5 bps, finishing the year at 391
- The average spread to LIBOR on pro rata leveraged loans declined by 18 bps in Q3, followed by a widening of 13 bps in Q4, finishing the year at 343 bps

Quarterly average new-issue BB/BB- spreads (LIBOR+X bps)



Source: S&P Global Market Intelligence

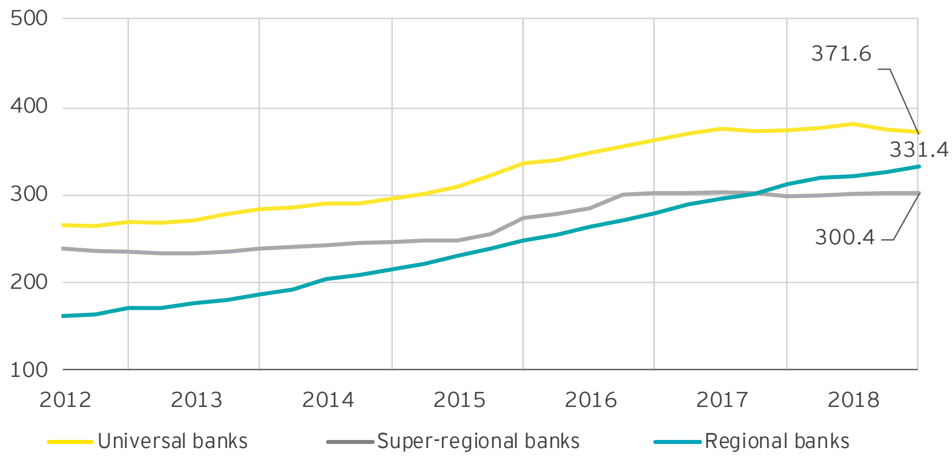
Leveraged loan spreads (double-B)

- Institutional and pro rata spreads on BB/BB- loans each rose by 45 bps to 264 bps and 242 bps, respectively, in Q3, and continued to rise to 11 bps and 7 bps in Q4, finishing the year at 270 bps and 253 bps

CRE lending

CRE lending growth among our tracked bank groups was mixed. Universal and super-regional banks participated less in the overall healthy CRE conditions than regional banks.

CRE lending by segment ($b)

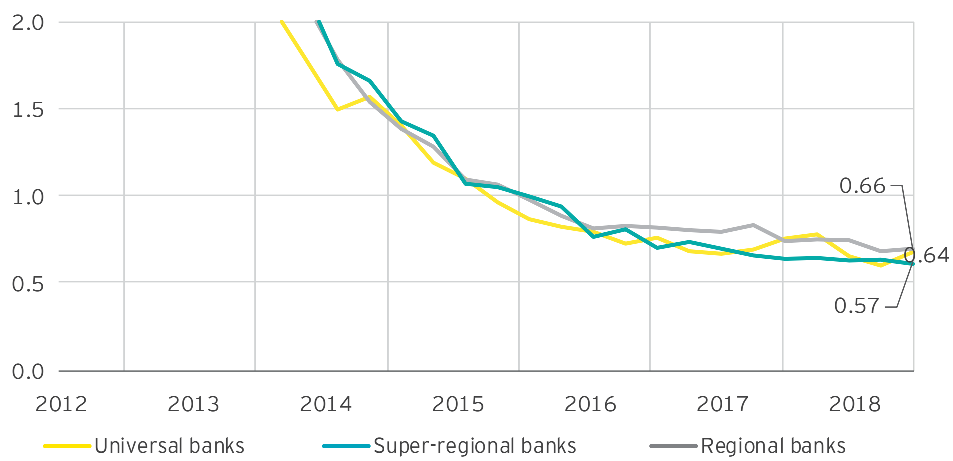


Source: S&P Global Market Intelligence

CRE lending, US composites

- CRE exposure for the universal bank composite fell by 0.49% YoY in Q4 2018, after falling by 1.77% QoQ in Q3. The super-regional bank composite was up 1.19% YoY in Q4, and the regional bank composite was up 6.61% YoY
- CRE exposures at regional banks have grown at a four-year CAGR of 11.79% as of Q4 2018, relative to four-year CAGRs of 6.03% and 5.29% for universal and super-regional banks, respectively
- CRE lending remains a specialty of regional lenders, as these loans often require deep knowledge and relationships in local markets. Real estate is generally more predictable to underwrite vs. small business loans, where revenues may be more volatile

CRE loan delinquency rate (%)



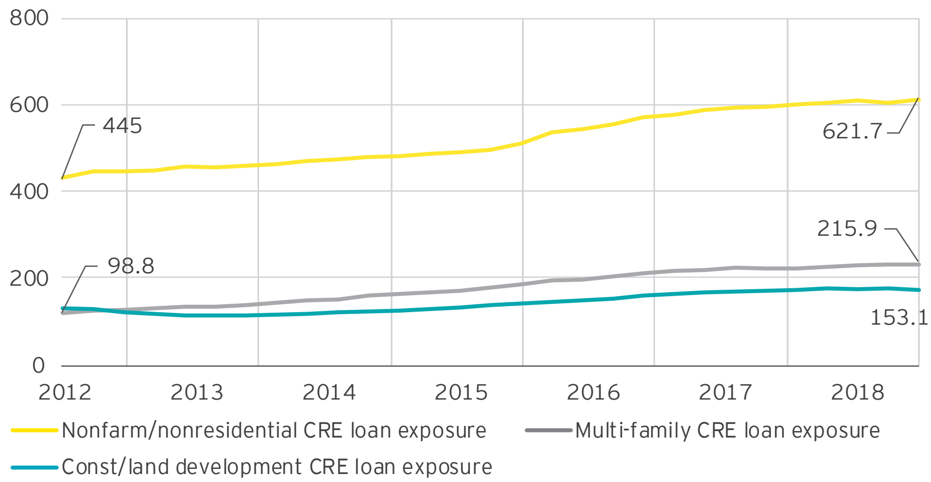
Source: S&P Global Market Intelligence

CRE delinquency rate, US composites

- On a YoY basis in Q4 2018, delinquencies had declined at universal, super-regional banks and regional banks by 8 bps, 4 bps and 3 bps, respectively
- QoQ in Q4, delinquencies rose by 8 bps to 64 bps for universal banks, rose by 1 bps to 66 bps for super-regional banks, and fell by 3 bps to 57 bps for regional banks

The graphs below show CRE lending totaled across our three bank-size composites (yellow line), with breakouts of multi-family (gray line) and construction and land development (blue line) loan exposures. The data shows how multi-family has begun some tapering after rapidly growing during the 2014–16 period. Multi-family remains the best performing asset class in credit quality, as evidenced by the lowest level of delinquencies. "It's hard to imagine commercial and multifamily mortgages performing much better," according to a statement in the Mortgage Bankers Association Q4 2018 Commercial/Multi-family Delinquency Report of March 7, 2019

CRE lending by loan type ($b)

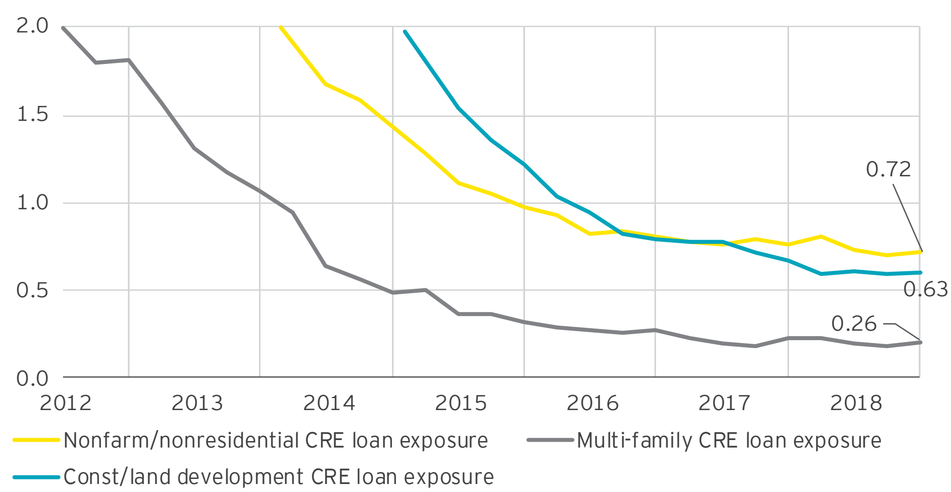


Source: S&P Global Market Intelligence

CRE lending, loan types within US composites

- Nonfarm/nonresidential mortgage exposure grew 2.02% YoY in Q4 2018. Included in that change was multi-family CRE, which grew 5.15% YoY, and construction/land development exposure, which fell 0.14% YoY
- The multifamily CRE market has been one of the strongest-performing asset classes, as evidenced by the US average vacancy rate of 4.80%, per Real Estate Information Services (REIS)

CRE loan delinquency rates by loan type (%)



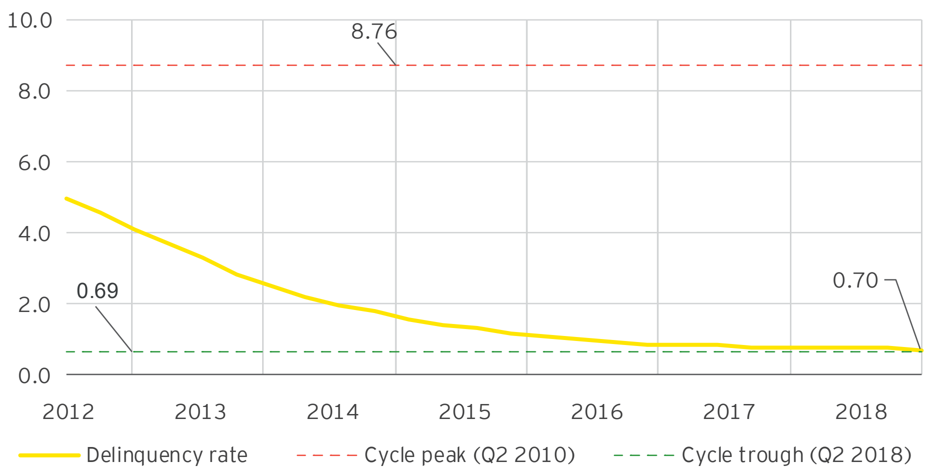
Source: S&P Global Market Intelligence

CRE delinquencies, loan types within US composites

- While the data from the Mortgage Bankers Association showed a new bottom in CRE delinquency rates in Q4 2018, the bottom in delinquency rates for our bank groups occurred in Q3 2018. Overall CRE delinquency rates were 0.72% for all nonfarm/nonresidential loans, 0.26% for multi-family CRE loans, and 0.63% for construction and land development loans as of Q4

The asset quality of CRE loans across all US commercial banks is exceptionally strong, with delinquencies below pre-crisis levels and at current cycle lows. Net charge-offs had ticked higher at the end of 2017 to 0.04% but fell back to 0.02% as of the end of 2018.

CRE delinquency rate vs. cycle peak and trough (%)*

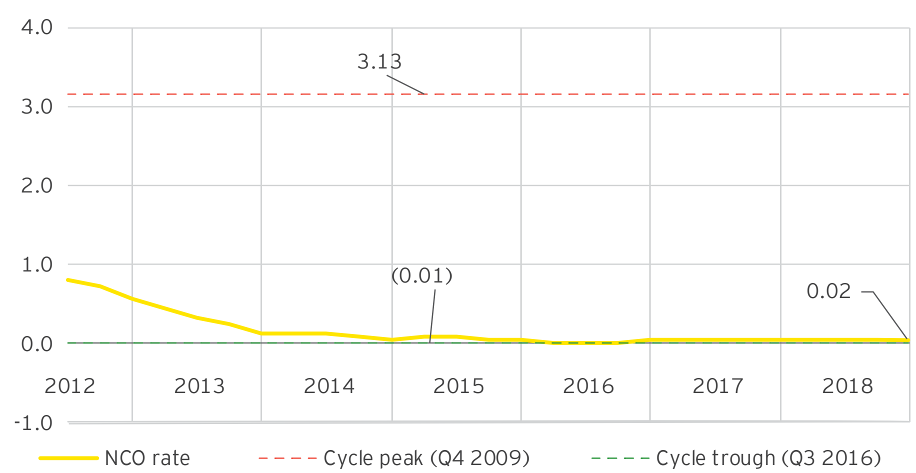


Source: Federal Reserve Economic Data

Delinquency rates, all US commercial banks

- Delinquencies on all CRE loans outstanding at commercial banks fell 4 bps over 2018, ending the year at 0.70%
- Delinquencies had fallen to a new low in Q3 2018 of 0.69%

CRE NCO rate vs. cycle peak and trough (%)*

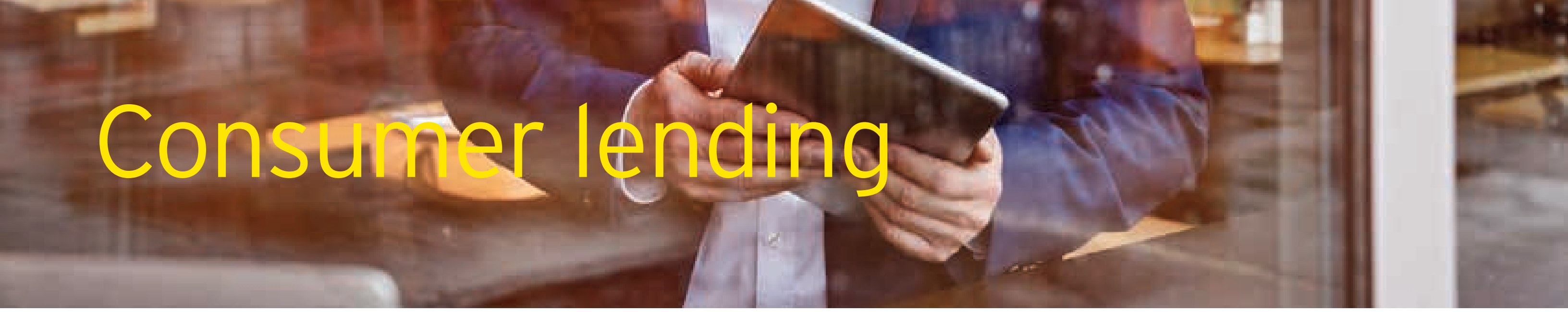


Source: Federal Reserve Economic Data

*Data captures all US commercial banks

CRE NCO rate, all US commercial banks

- The net charge-off rate on CRE loans was 0.02% in Q4, unchanged from Q3's reading and 1 basis point above Q2 2018's level
- The CRE NCO rate has been no higher than 0.05% every quarter since Q1 2015
- The CRE NCO rate has remained low as interest rates are still historically low. Per Green Street's Property Price Index (PPI), commercial real estate values are above pre-recession peaks in nearly every asset class. As of February 2019, the PPI was 132.5, an all-time high; it is indexed to 100 in August 2007



Consumer lending

"Consumers have significantly altered their approach to retail credit following the Great Recession. With hundreds of thousands of homeowners going 'underwater' on their mortgages, and the ability to gain access to credit becoming more difficult for millions of consumers, a massive shift in how consumers prioritized and pay their debts has taken place."

— Lead researcher for a major credit reporting agency

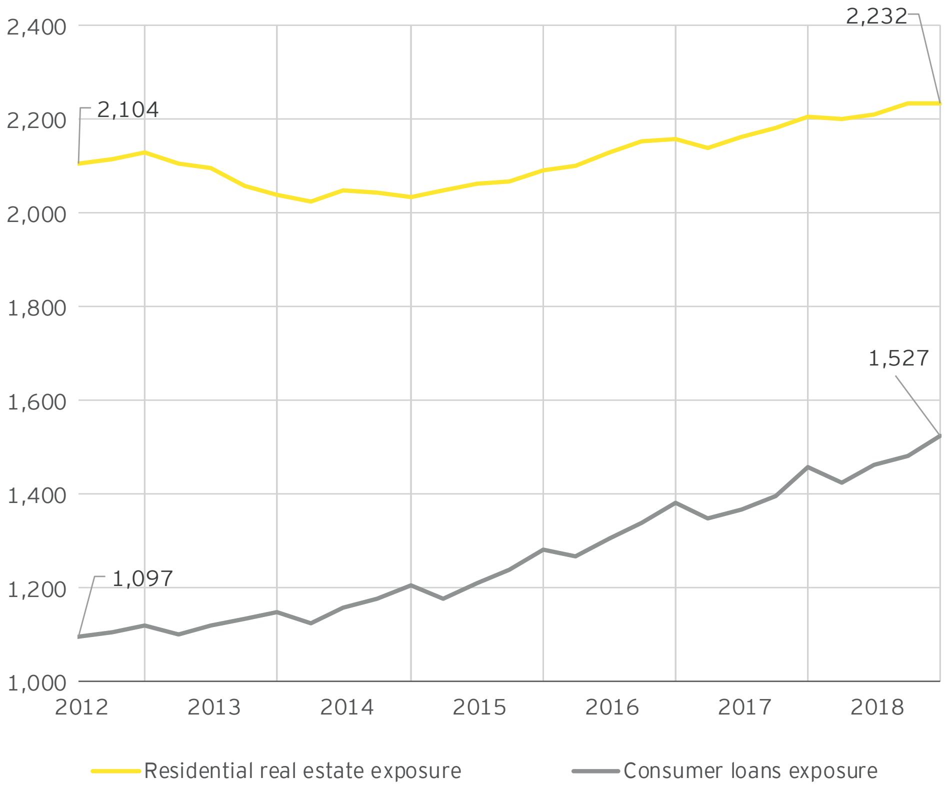
Weak residential mortgage growth persists

- Consumer loans balances across all US commercial banks were up 2.6% YoY at the end of Q4 2018. Nonresidential loans drove the growth, with regional banks leading the way
- RRE loans continued the weak growth trend, with balances growing YoY at 1.4% for closed-end 1-4 family loans and falling 10.5% for HELOC. Recoveries exceeded charge-offs in both Q3 and Q4
- Auto lending continues to be an area of concern, as delinquencies rose to a new 7-year high in Q4 2018. Other than auto lending, consumer loan delinquencies across US commercial banks remained low by historical standards
- Credit card balances continued steady growth, with super-regional banks commanding the growth rates of almost 6% YoY
- All segments increased their other consumer loan balances during 2018. With super-regional and regional banks increasing their personal loan balances by rates 7.7% and 7.1% YoY, respectively, these banks are growing their loans at more than double the annual US GDP growth rate

Consumer lending

Growth rates of outstanding balances of consumer loans held by US commercial banks, including residential real estate and nonresidential consumer loans, slowed to 2.62% YoY in Q4 2018. The slowing was driven by residential real estate loans, which grew just 1.15% YoY in Q4. Nonresidential consumer loan balances held by US commercial banks grew at a 4.86% rate YoY.

Total consumer loan exposure ($b)



Source: Federal Reserve Economic Data; quarter-end data, last shown reading Q4 2018

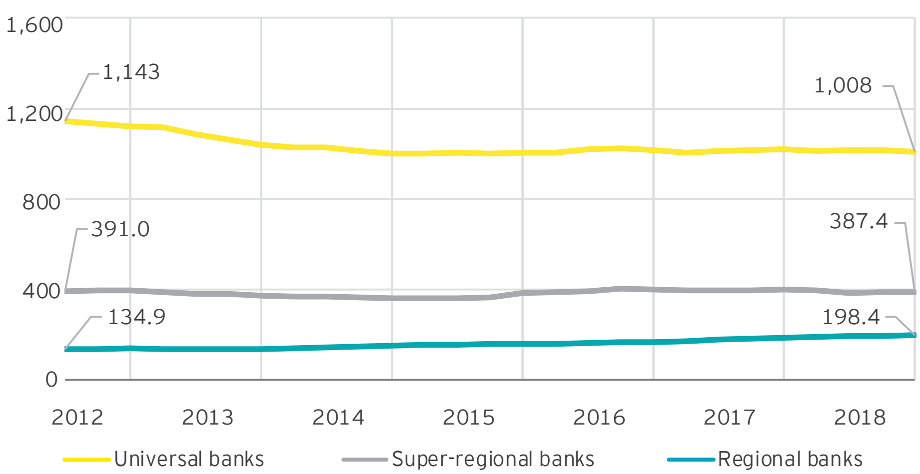
Consumer loan exposure, all US commercial banks

- Total consumer loan balances at US commercial banks grew by 1.17% QoQ and 2.62% YoY in Q4 2018. The period ended at $3.76t
- Residential real estate lending is the more significant cause of weakness for US commercial banks
- Two factors are contributing to the slowness in residential real estate lending: non-banks taking more market share from US commercial banks, and the shrinkage of the home equity line of credit, which has suffered from the pullback of interest-only loan structures and from the rising prime interest rate
- Nonresidential consumer loan balances at US commercial banks grew by 4.86% YoY in Q4 2018, a healthy rate, but slower than the 6.03% CAGR of the last four years
- The Fed's March 2019 G19 report, which is a broader measure of US nonresidential loan balances and includes both student loans held by the federal Government and nonresidential loans held by non-banks, showed a 4.90% YoY growth rate for 2018

Residential real estate (RRE) lending continued its trend of weak growth, with the universal and super-regional composites posting YoY declines, while asset quality continued improving.

Note: The composites below include 6 banks in the 'universal' group, 16 banks in the 'super-regional' group, and 45 banks in the 'regional' group. See Appendix for more information on these composites.

RRE lending by composite ($b)

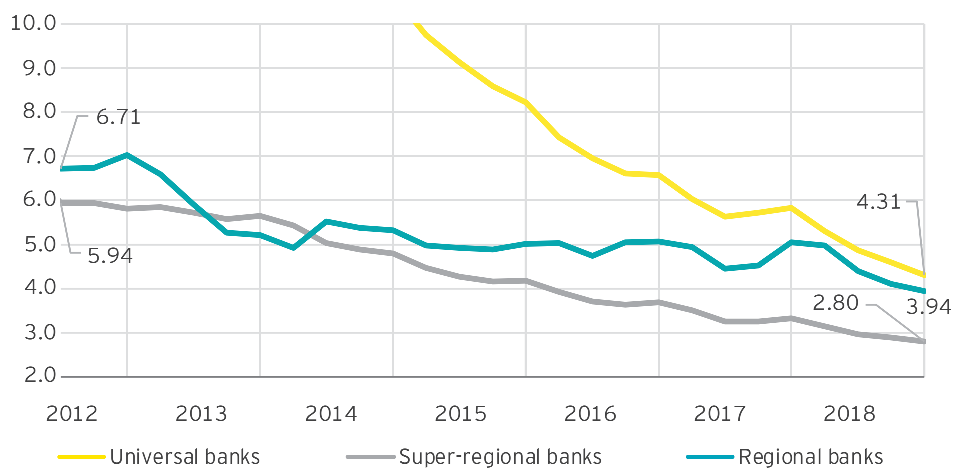


Source: S&P Global Market Intelligence

RRE lending, US composites

- RRE loan balances among the universal banks have declined by 1.28% YoY and 0.66% QoQ ending Q4 2018. Regional banks, on the other hand, have grown RRE balances by 6.09% YoY and 2.2% QoQ over the same period
- Digital mortgages have helped continue the growth in market share of non-depository institutions in the residential real estate market. According to a recent Mortgage Banker's Association report, nonbank market shares have more than doubled their market share since 2008 lows, and now originate >50% of single-family home loans

RRE loan delinquency rate (%)



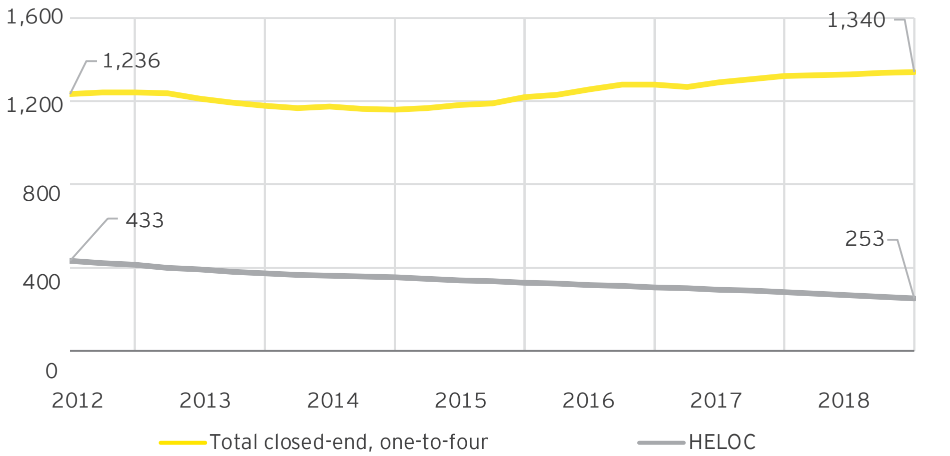
Source: S&P Global Market Intelligence; data includes delinquencies of loans held with federally backed guarantees

RRE delinquencies, US composites

- Delinquency rates for RRE for all bank types improved slightly in Q4, with the universal composite at 4.31%, the super-regionals at 2.80%, and the regional composite at 3.94%

The steady decline of the home equity line of credit (HELOC) is continuing. Low availability of interest-only HELOCs and the steady rise of interest rates are driving demand for HELOCs far lower. Meanwhile, homeowners' capacity for HELOCs is climbing to an all-time high at current home valuations. Asset quality for closed-end, one-to-four family mortgages overall continues to improve, while HELOCs improve at a slower rate.

RRE lending by loan type ($b)

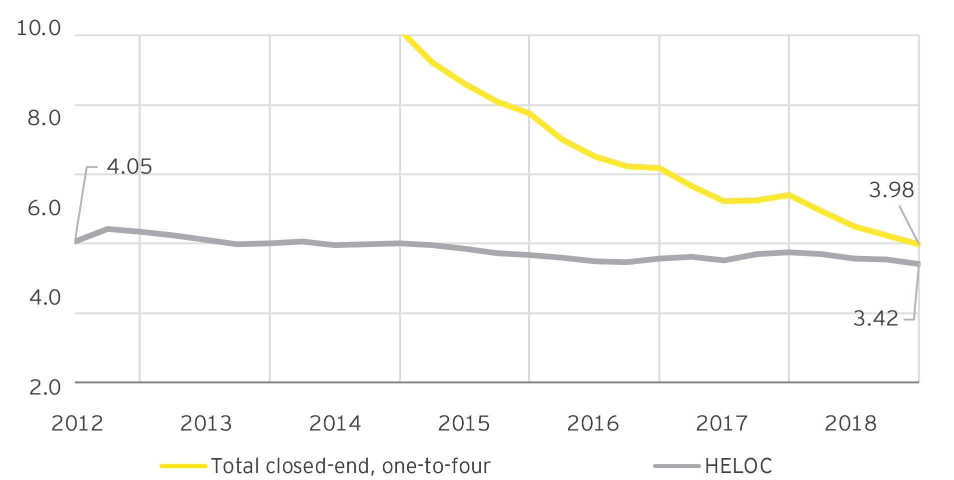


Source: S&P Global Market Intelligence; HELOC balances are included in the overall residential mortgage values shown in the graph

RRE loan types (within our three composites)

- HELOCs continued to decline, down $30b or 10.49% YoY in Q4. Closed-end, one-to-four family residences continued to increase slowly, rising 1.37% YoY through Q4 2018
- Home equity levels held by homeowners is continuing to grow, standing at nearly $6t nationwide. The level has grown at least 16% just since 2006

RRE loan delinquency rates by loan type ($b)



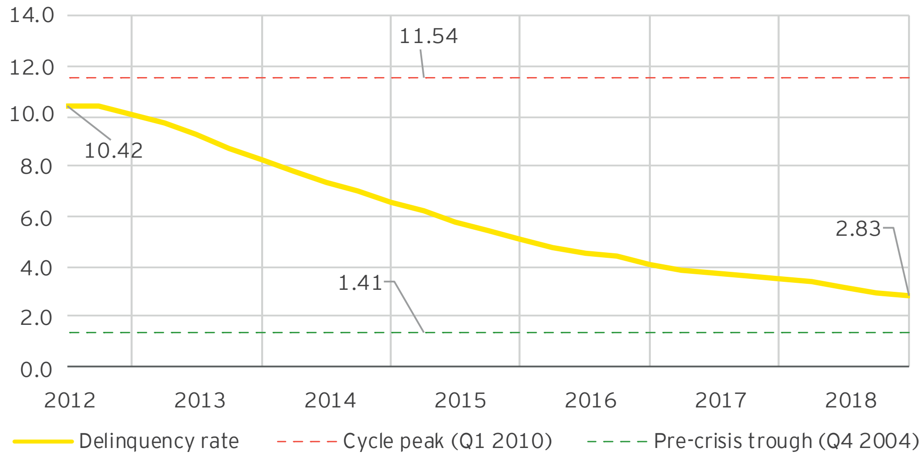
Source: S&P Global Market Intelligence; HELOC delinquencies are included in the overall residential mortgage values shown in the graph

RRE delinquency rate (within our three US composites)

- Delinquency rates on closed-end, one-to-four family residences continued their steady improvement, declining 25 bps to 3.98% in Q4, another new seven-year low, while delinquency performance in HELOC loans declined 12 bps to 3.42%

Delinquencies and losses in RRE also continue to decline for US commercial banks as a whole. NCO rates for residential mortgages are holding near all time lows.

RRE delinquency rate vs. cycle peak and trough (%)*

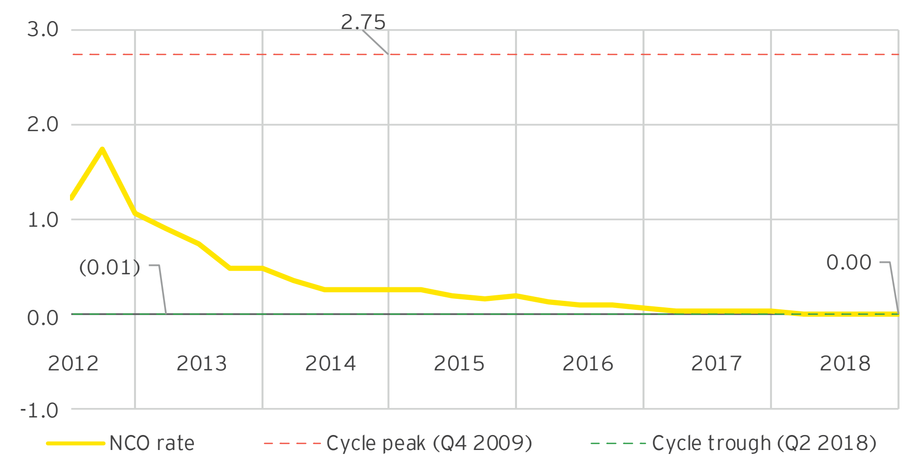


Source: Federal Reserve Economic Data

RRE delinquencies, all US commercial banks

- Overall +30-day delinquency rates for residential real estate (including HELOCs) continued to decline, dropping 17 bps QoQ to end Q4 2018 at 2.83%
- Although continuing to trend downward, albeit at a slower pace from the previous years, delinquencies remain above their pre-financial crisis low of 1.41%, recorded in Q4 2004

RRE NCO rate vs. cycle peak and trough (%)*



Source: Federal Reserve Economic Data

*Data captures all US commercial banks

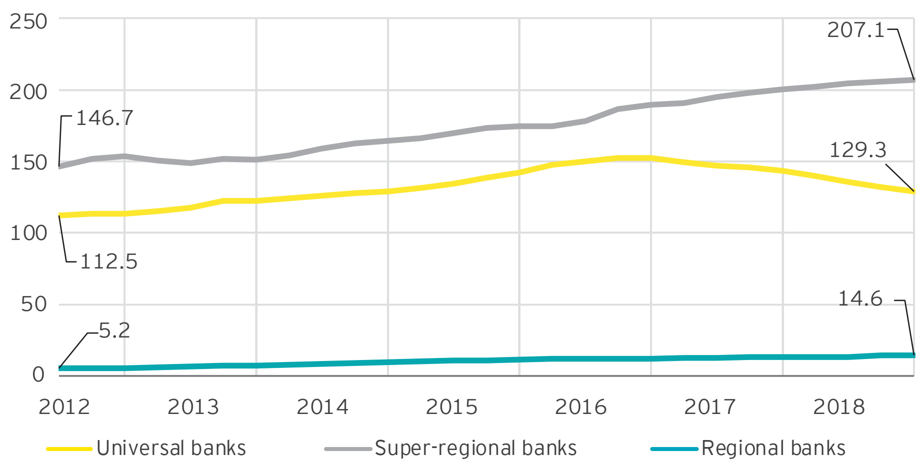
RRE net charge-offs, all US commercial banks

- With recoveries matching losses in Q4 2018, the annualized NCO rate for RRE was 0.00%, up 1 bps from -0.01%, a level held in both Q3 and Q2 2018

Auto lending

Auto lending continues to be an area of concern, as delinquencies rise to new peaks for this credit cycle. Universal banks have taken steps to clean their portfolios, as their outstanding loan balances are shrinking while realizing a YoY drop in delinquencies.

Auto lending by composite ($b)

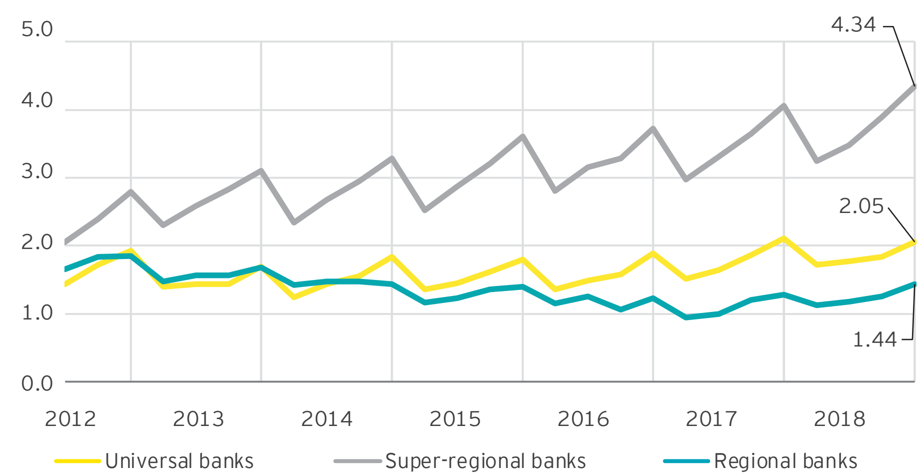


Source: S&P Global Market Intelligence

Auto lending, US composites

- YoY through Q4 2018, universal banks had reduced their auto lending balances by 9.85%, while conversely, regional bank auto lending balances grew 9.53%
- QoQ in Q4, universal banks reduced their auto lending by 2.67%. Over the same period, regional banks grew their auto lending by only 0.45% - a substantial shift, in comparison to the 11.05% growth of the previous quarter
- Auto lending by super-regional banks has been relatively flat, with 0.45% QoQ and 3.24% YoY rises in outstanding balances

Auto delinquency rate (%)



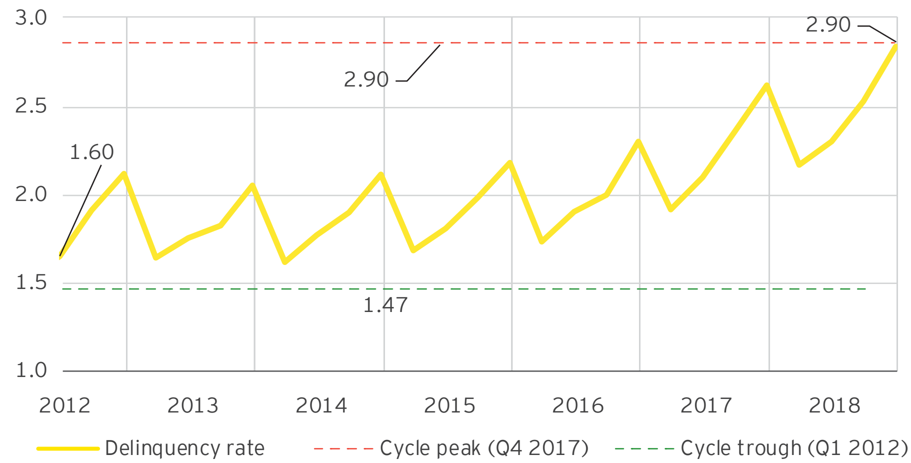
Source: S&P Global Market Intelligence

Auto delinquencies, US composites

- Auto delinquency rates continued to increase for all segments QoQ. Super-regional banks were hardest hit, with their rate rising 45 bps to 4.34% in Q4. This follows the trend of larger increases for super-regional banks in the past 2 quarters
- On a YoY basis through Q4, super-regional and regional banks saw increases in auto delinquency rates of 28 bps and 16 bps, respectively, while universal banks saw their auto delinquency rate fall by 6 bps over the same period

The trend of increasing auto loan delinquencies continues across US commercial banks nationally, hitting a new seven-year high in Q4.

Auto delinquency rate vs. cycle peak and trough (%)*

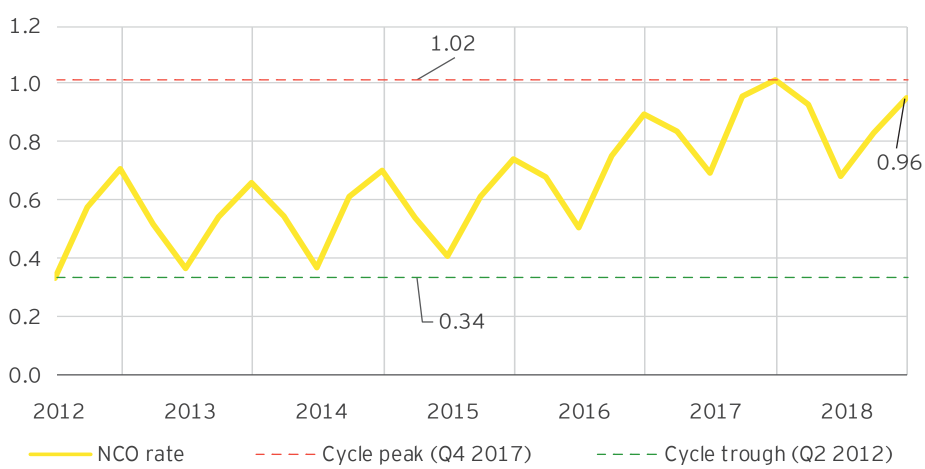


Source: S&P Global Market Intelligence

Auto delinquencies, all US commercial banks

- Auto loan delinquencies rose to a new seven-year high in Q4, reaching 2.90%, 24 bps above the level at the end of 2017
- While delinquencies are expected to follow their season pattern of falling in Q1, the trend line for auto delinquencies is not showing signs of slowing

Auto NCO rate vs. cycle peak and trough (%)*



Source: S&P Global Market Intelligence

*Data captures all US commercial banks

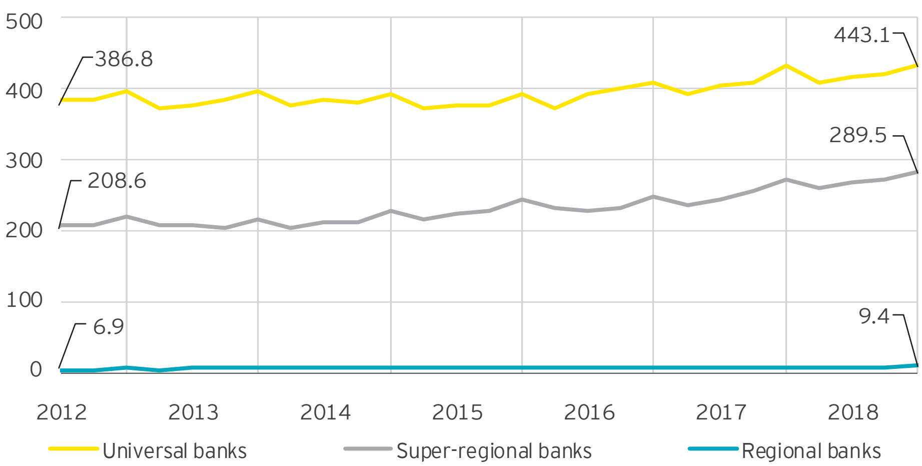
Auto net charge-offs, all US commercial banks

- Despite the rise in delinquency rates and the high auto NCO rates by historical standards, rates fell by 6 bps YoY to 0.96%
- NCO rates follow a consistent seasonal pattern of first- and second-quarter decreases, followed by increases in loss rates in the latter half of each year; this trend continued with auto NCO rates rising 12 bps QoQ

Credit card lending

Credit card balance growth remains steady but slower, particularly for universal and regional banks. Delinquency rates saw a quarterly increase but have dropped or remained stable since this period last year.

Credit card lending by composite ($b)

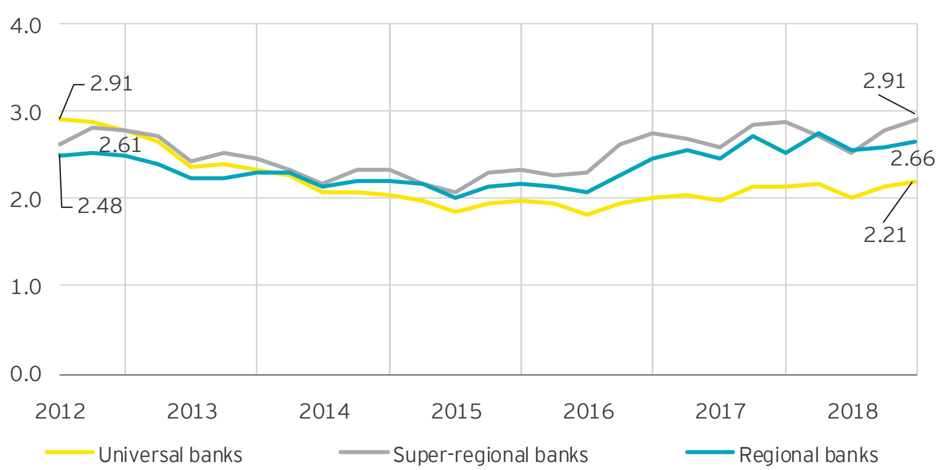


Source: S&P Global Market Intelligence

Credit card lending, US composites

- Consistent with the seasonal rise typically seen in the Q4 2018, credit card lending continued to grow steadily for each segment, with universal, super-regional, and regional banks seeing QoQ growth of 4.77%, 5.82%, and 3.00%, respectively
- While YoY growth is slower for other segments, super-regional banks have continued to see substantial growth YoY, seeing 6.67% in Q3 and 5.93% in Q4 YoY growth

Credit card delinquency rate (%)



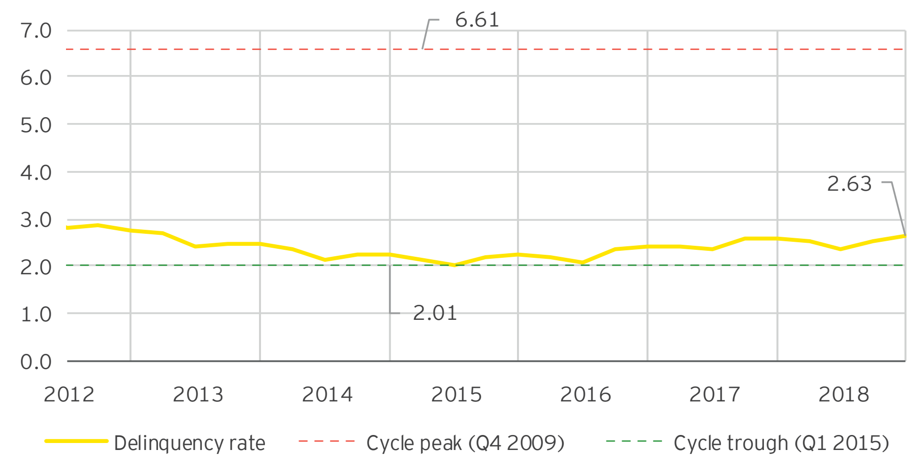
Source: S&P Global Market Intelligence

Credit card delinquencies, US composites

- QoQ in Q4, credit card delinquency rates rose for all segments; super-regional banks saw the highest quarterly rise, with an increase of 13 bps in Q4 to 2.91%
- YoY, regional banks saw delinquency rates rise by 14 bps to 2.66%. Over the same period, universal and super-regional banks saw YoY rise of 9 and 4 bps, respectively

Delinquency and loss performance in credit cards across all US commercial banks, while clearly above the cycle lows seen in 2015, remain relatively strong.

Credit card delinquency rate vs. cycle peak and trough (%)*

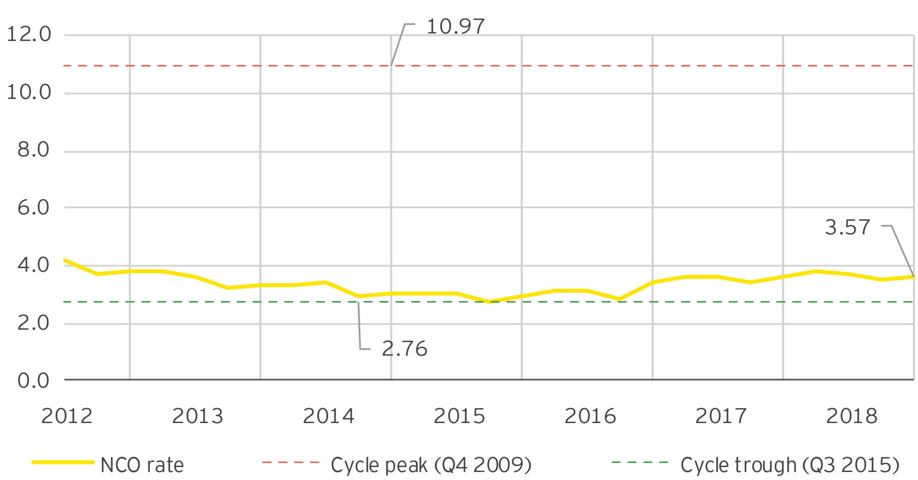


Source: Federal Reserve Economic Data

Credit card delinquency rate, all US commercial banks

- While credit card delinquency rates remain well below the peak delinquency rates seen in 2009, they are up 62 bps from Q1 2015 lows
- Delinquency rates were relatively flat over the past year, up 7 bps, finishing 2018 at 2.63%

Credit card NCO rate vs. cycle peak and trough (%)*



Source: Federal Reserve Economic Data

*Data captures all US commercial banks

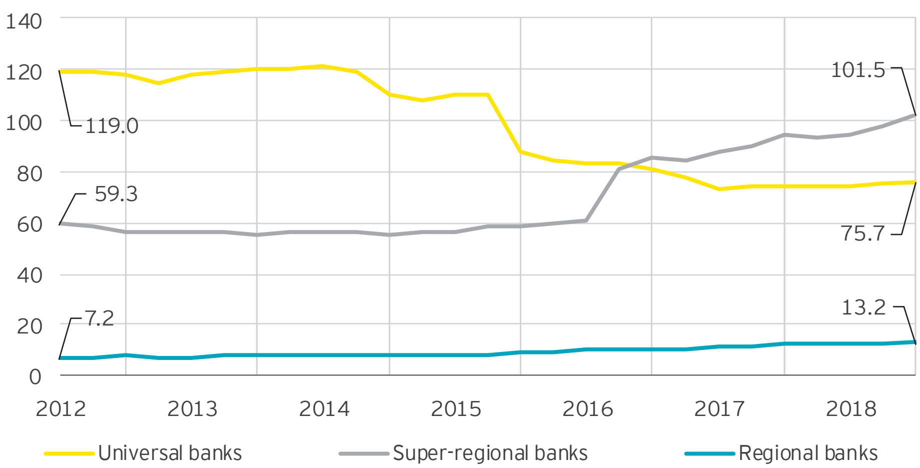
Credit card NCO rate, all US commercial banks

- Across all US commercial banks, NCO rates dropped by 6 bps YoY in Q4 2018 to 3.57%
- For the fourth-quarter, charge-off rates followed a normal seasonal pattern of rising, climbing 11 bps over the period
- According to the Credit Union National Association, card losses for smaller banks that have gone after sub/non-prime are much higher: 8% on average. Given the historically low NCO rate, these losses signal weakness in lower-quality credit card debt

Other consumer lending *cont.*

Loan balances within "other consumer" have overall trended lower among universal banks, consistent with trends seen for universals in mortgage and auto portfolios. The decline in the universal composite was in part due to Citi's selling its OneMain subsidiary in late 2015. The super-regional and regional groups, in contrast, continue to push into this space. The rise of loan balances in the super-regional composite in 2016 was due to a reclassification of American Express' loan balances from "other loans" to "other consumer loans."

Other consumer lending by composite ($b)

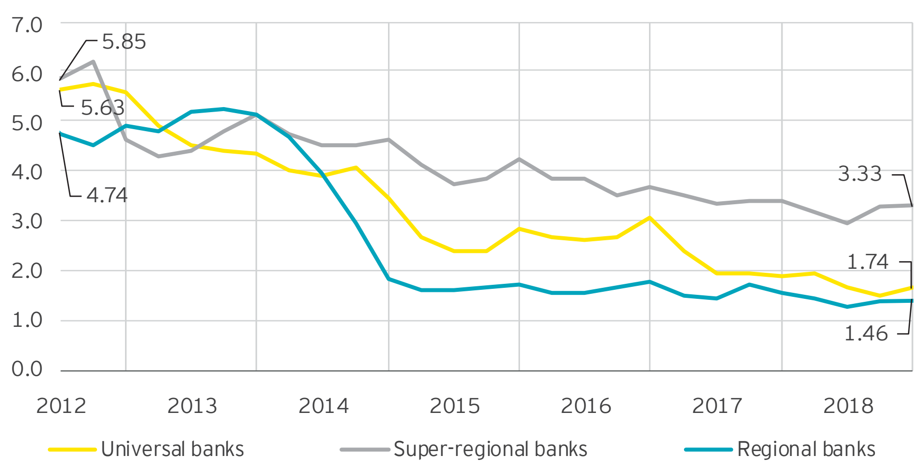


Source: S&P Global Market Intelligence

Other consumer loans, US segment composites

- Universal, super-regional, and regional banks all saw quarterly growth in other consumer lending balances; universal banks had the slowest, at 0.35% growth
- YoY, super-regional and regional banks saw substantial growth of 7.65% and 7.13%, respectively. Universal banks grew balances by 1.82% YoY

Other consumer delinquency rate (%)



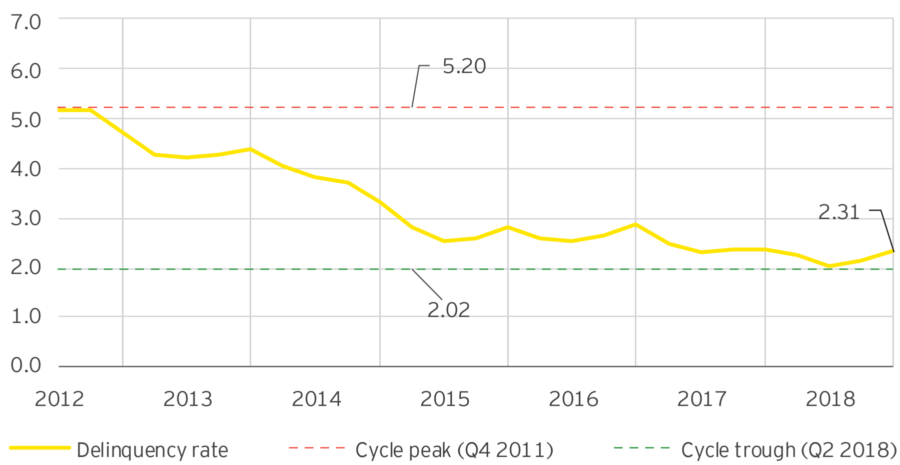
Source: S&P Global Market Intelligence

Other consumer loan delinquencies, US segment composites

- On a QoQ basis in Q4, all three composites saw meaningful increases in delinquencies. Universal banks experienced the largest increase, rising 24 bps, whereas super-regional and regional composites saw smaller increases of just 3 bps and 6 bps, respectively. It is possible the bank groups reached a low point in delinquencies in 2018 and an upward trend may be beginning
- On a YoY basis, loan delinquencies fell for universal, super-regional, and regional banks by 13 bps, 6 bps, and 8 bps, respectively

Delinquency and loss performance in the "other consumer" loan category across all US commercial banks ticked somewhat weaker on a QoQ basis in Q4 2018 but remains at or very near historic lows.

Other consumer delinquency rate vs. cycle peak and trough (%)*

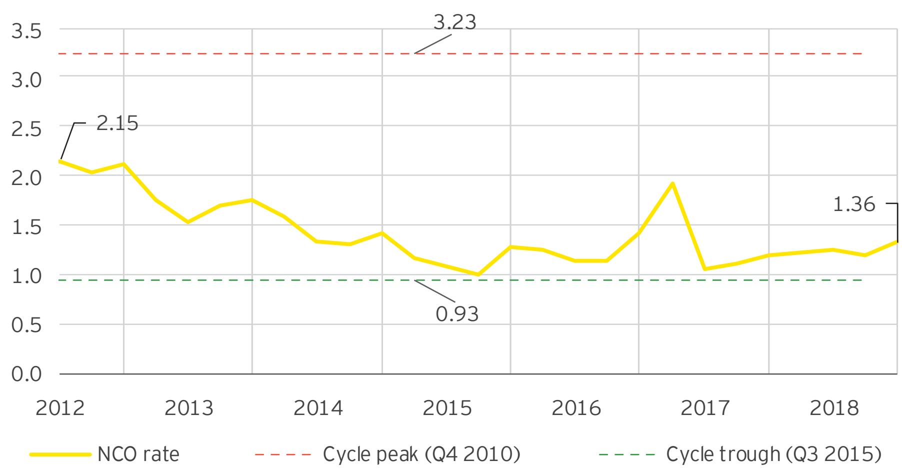


Source: S&P Global Market Intelligence

Other consumer loan delinquencies, all US commercial banks

- Consumer loan delinquencies rose 16 bps QoQ in Q4 to 2.31%. Delinquencies are still down 7 bps YoY as of Q4 2018
- Delinquencies reached their cycle low in Q2 2018 at 2.02%, and since then, have risen by 29 bps. Over the same two-quarter period in 2017, delinquencies only rose by 8 bps

Other consumer NCO rate vs. cycle peak and trough (%)*



Source: S&P Global Market Intelligence

*Data captures all US commercial banks

Other consumer loan NCO rate, all US commercial banks

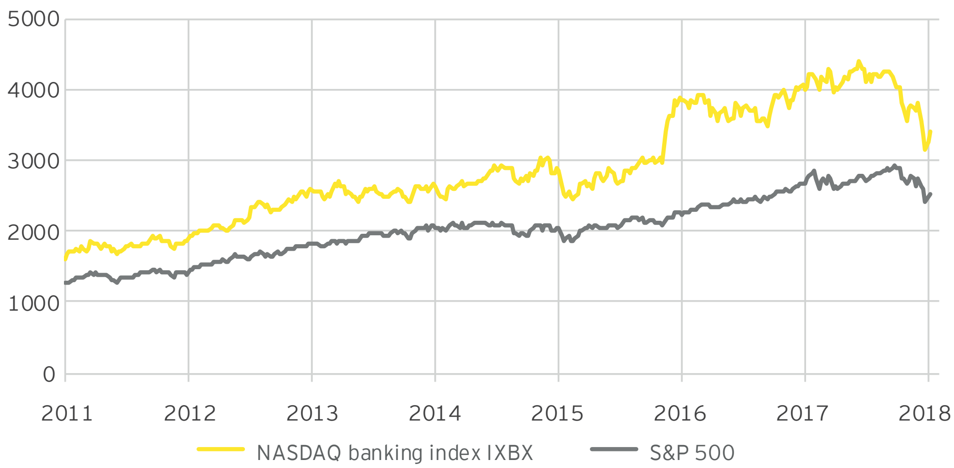
- YoY in Q4 2018, the NCO rate on other consumer loans grew by 17 bps to 1.36%, compared with a YoY drop of 23 bps in 2017

Bank financial performance

- Net interest income (NII), net interest margins (NIM), net income, and ROAA and ROAE mostly continue to trend favorably due to rising rates, lower tax rates and the continued favorable economy
- Q4 earnings were overall strong given continued loan and asset growth and continued NIM expansion
- Q1 2019 is expected to be weaker as capital markets activity is off to a slow start for universal banks and the economy's slowing is likely to show up in slower loan growth
- We highlight in this edition how non-interest income across all bank composites is noticeably stagnant and not keeping pace with net interest income growth
- As rates rise, analysts are watching deposit and loan betas, which measure the percentage of benchmark rate increases that are passed on to depositors and borrowers. Thus far, deposit betas are still low but have started to rise, albeit at different levels dependent on firms' market position and nature of existing client base. Loan betas continue to increase. The effects are reflected in generally stronger net interest income levels shown in our composites

The NASDAQ banking index lost significant ground in the last quarter of 2018, as did the broader equity markets, but had since regained its footing through March 2019. The market was concerned about the benefits and risks of rising rates and the impact on loan growth. Net incomes of banks rose strongly in 2018, due in large part to reduction of US corporate tax rates.

NASDAQ bank index, S&P 500 Index



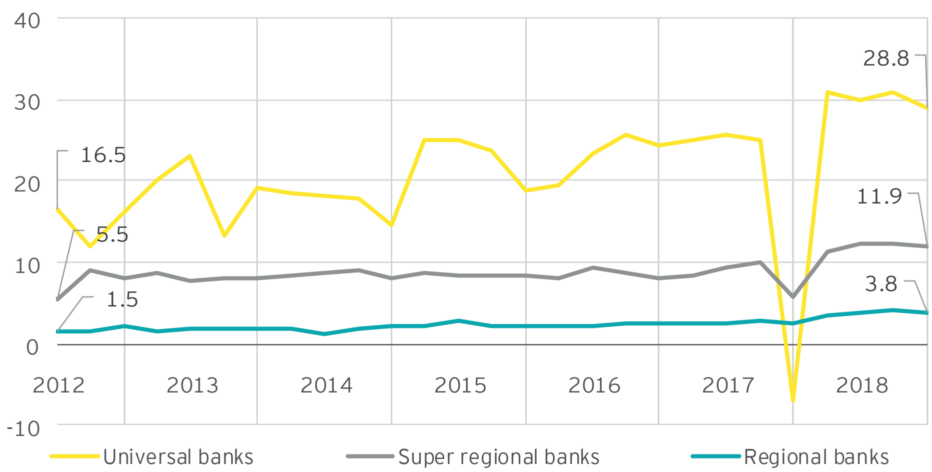
Source: NASDAQ

NASDAQ bank index

- The NASDAQ IXBX index was down 18% for the year 2018, with a more notable decline since Q3 2018. The S&P 500 was down 5.3% for the year
- Q4 2018 saw significant market volatility driven by concerns about an end of the credit cycle, impacts of a trade war, and a slowdown in China
- Bank valuations, as measured by price-to-tangible book values of 329 public banks in the SNL Bank Index, averaged 1.62x as of the end of 2018. That was down from a level of 2.00x one year prior and down from the peak of 2.17x seen in the third week of January 2018

> "The average return on assets rose by 29 basis points to 1.41 percent, the highest quarterly level reported by the industry since the Quarterly Banking profile began in 1986. The percentage of unprofitable banks in the third quarter declined to 3.5 percent, from 4 percent a year earlier."
>
> – FDIC Quarterly Banking Profile for third quarter, 2018

Net income by segment ($b)



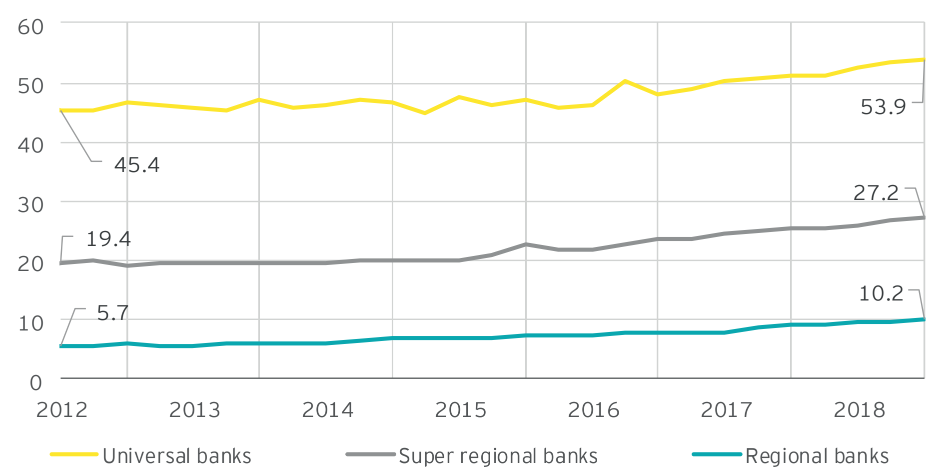
Source: S&P Global Market Intelligence

Net income

- YoY earnings of each of our three bank composites increased across all of 2018. Earnings at universal, super-regional and regional banks increased 23.4%, 20.2% and 52.5%, respectively, YoY in Q3, the last quarter with meaningful comparisons. Increases were due to rising interest rates, a lower effective tax rate and the continued favorable credit environment

Net interest income (NII) and net interest margin (NIM) continued to increase steadily in 2018, primarily due to loan growth and the Fed's rate increases.

Net interest income by segment ($b)

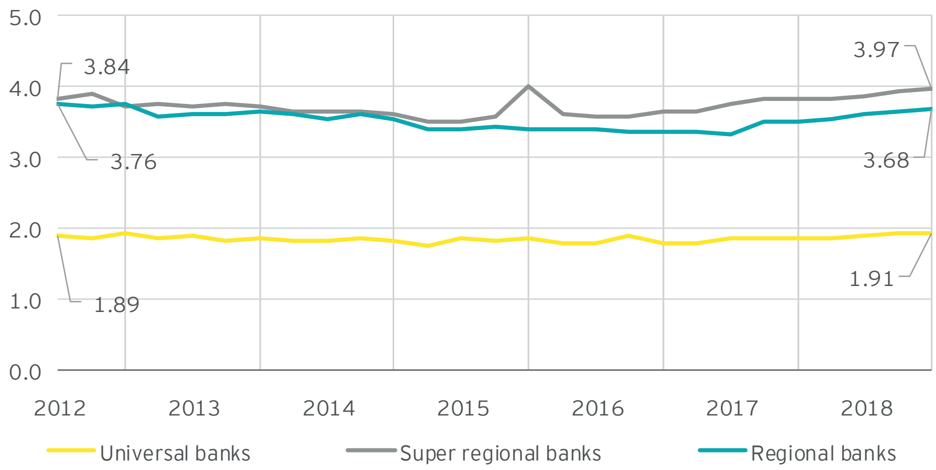


Source: S&P Global Market Intelligence

Net interest income

- NII for Q4 2018 increased YoY across all bank groups. Regional banks experienced a 12.7% increase followed by super-regional and universal banks at 6.4% and 5.4%, respectively
- The increase in NII was due to both a continued increase in interest-bearing assets and some modest NIM improvements over 2018 as a whole

Net interest margin by segment (%)



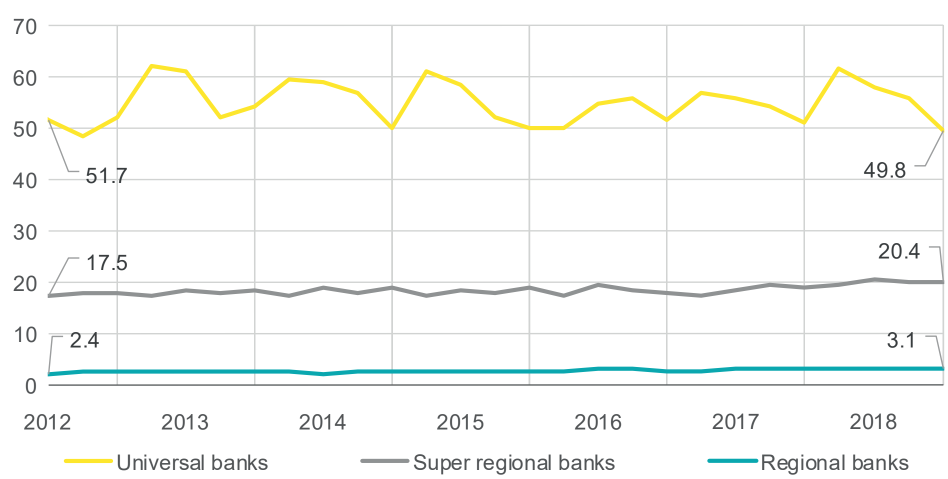
Source: Federal Reserve Economic Data

Net interest margin

- NIMs expanded YoY across all bank groups as the increase in earnings for interest-bearing assets continues to outpace increases in funding costs
- Universal banks experienced a 6 bps increase in NIM YoY, while super-regional and regional banks experienced YoY increases of 15 bps and 17 bps, respectively

US commercial banks have not been able to grow non-interest income in any meaningful way in the post-financial crisis era.

Non-interest income by segment ($b)

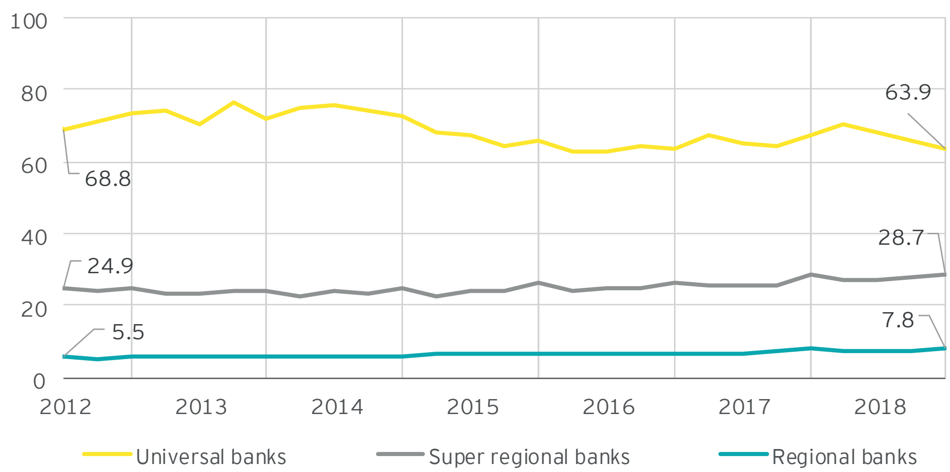


Source: S&P Global Market Intelligence

Non-interest income

- Non-interest income for the universal bank composite dropped by 11.0% QoQ and 2.9% YoY in Q4 2018. The declines were consistent with seasonable experience of the past four years. The regional bank composite dipped slightly in Q4, falling by 4.4% QoQ and 0.6% YoY
- Non-interest income had risen YoY across all composites at rates of 3.2%, 3.3% and 2.4% for universal, super-regional and regional banks, respectively. in Q3 2018

Non-interest expense by segment ($b)



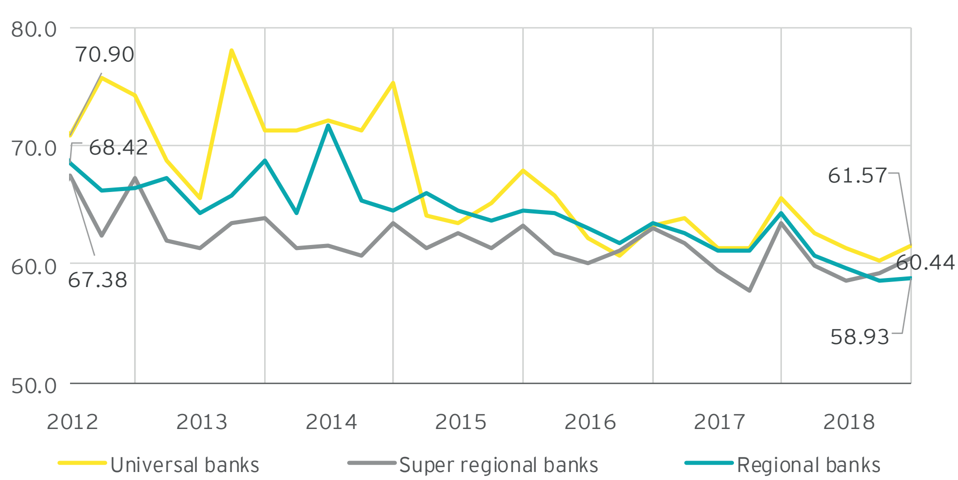
Source: S&P Global Market Intelligence

Non-interest expense

- YoY in Q4 2018, non-interest expense fell 4.8% for universal banks, but rose 1.2% and 0.2%, super-regional and regional banks, respectively, in Q4
- Efficiency programs including branch closures continue across the US while firms make targeted investments into customer facing and non-customer facing technology

Efficiency ratio improvements across our three bank composites have slowly trended better, but remain not far removed from 60% on average. Net charge-offs overall ticked higher in Q4 2018.

Efficiency ratio (%)

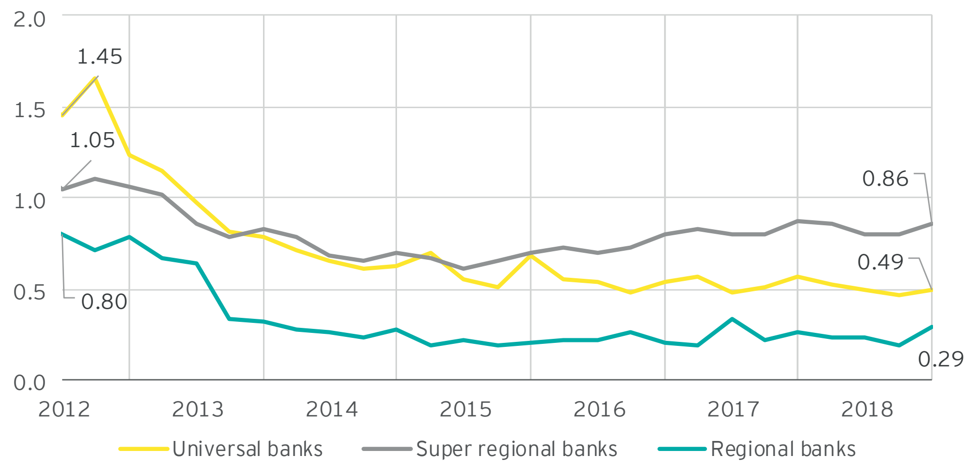


Source: S&P Global Market Intelligence

Efficiency ratio (%)

- Efficiency ratios across all three groups ticked slightly higher (deterioration) in Q4, consistent with a seasonal pattern that can be seen since 2014
- Universal and regional banks had showed a marginal YoY decrease (improvement) by 116 bps and 265 bps, respectively. On the other hand, super-regional banks showed 149 bps YoY increase (deterioration) as of Q3 2018

Net charge-offs/average loans (%)



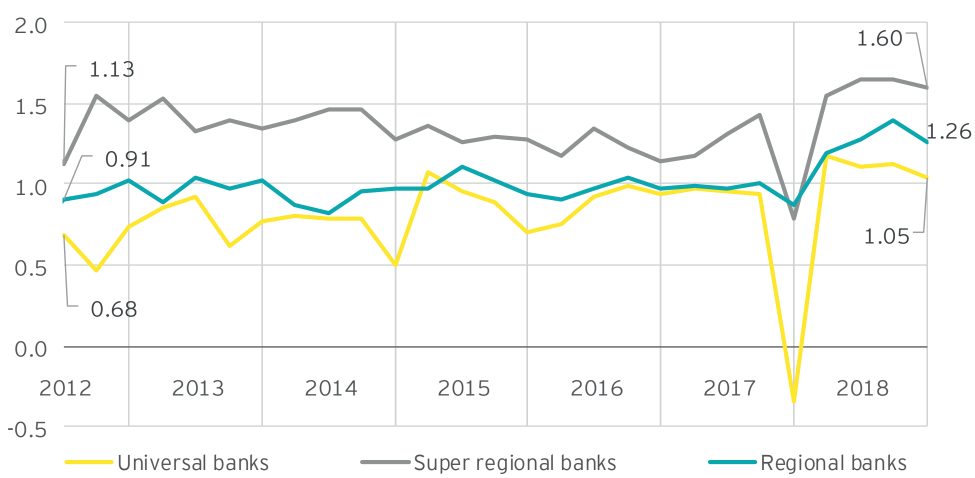
Source: S&P Global Market Intelligence

Net charge-offs/average loans (%)

- Net charge-offs remain low, but did tick higher in Q4 2018. The super-regional banks saw a 6 bps increase in Q4 and regional banks saw nearly a 10 bps increase
- Net charge-offs stood at 0.49% for universal banks, down 7 bps YoY. Super-regionals were down 2 bps YoY, whereas the regional bank composite was up 2 bps from one year prior

RoAAs and RoAEs peaked in Q2 and Q3 2018 from the overall better economic growth during those two quarters, as well as the corporate tax relief that benefited all quarters in 2018. Super-regional banks are enjoying the largest RoAE boost since the enactment of corporate tax reductions, having increased returns by 354 bps on average.

Return on average assets by segment (%)

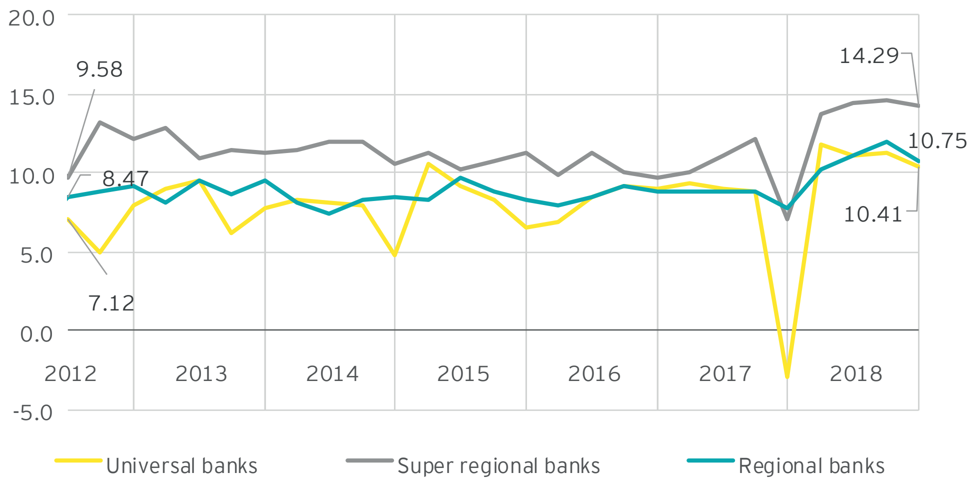


Source: S&P Global Market Intelligence

Return on average assets

- RoAAs fell slightly across all three composites in Q4 2018
- RoAAs for Q3 2018 rose on a YoY basis for all bank composites and stood at the highest quarterly level reported by the industry since the FDIC's Quarterly Banking Profile began in 1986*. Universal, super-regional and regional banks increased by 19 bps, 21 bps and 38 bps to 1.13%, 1.65% and 1.39%, respectively, on a YoY basis

Return on average equity by segment (%)



Source: S&P Global Market Intelligence

* FDIC Quarterly Banking Profile for third Quarter, 2018

Return on average equity

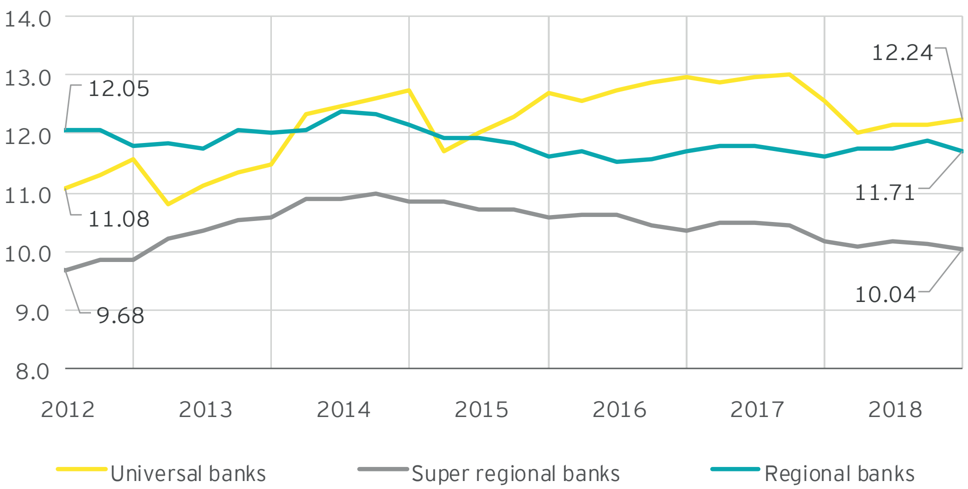
- RoAEs held mostly flat in Q4 2018, after increasing on a YoY basis for all bank groups in Q3 2018
- Universal, super-regional and regional bank composites finished 2018 with RoAEs of 10.41%, 14.29% and 10.75%, respectively
- Comparing LTM ending Q4 2018 with LTM ending Q3 2017, the universal composite improved RoAE by 209 bps, super-regionals by 354 bps, and regionals by 223 bps

Capital and funding

Executive summary

- Capital levels remained strong through Q4 2018
- Firms have been looking for opportunities to reduce what they perceive as excess capital; 2018 dividends and share buybacks are at record levels
- The Fed's proposed stress capital buffer (SCB) may require some of the largest firms to reassess their capital strategies
- Deposit betas are anticipated to increase further, which likely will put some pressure on bank earnings' strength over the coming year
- Industry continues to push FASB (Financial Accounting Standards Board) on delaying current expected credit loss (CECL) implementation date due to anticipated higher income and capital volatility

CET1 capital ratio (%)

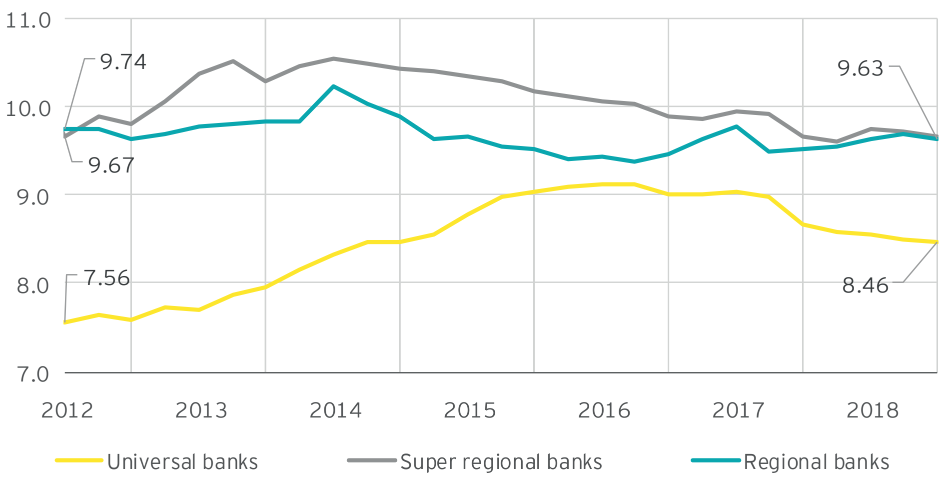


Source: S&P Global Market Intelligence

CET1 capital ratio

- In Q4 2018, there were only marginal changes in Common Equity Tier 1 (CET1) capital ratios
- Universal banks, super-regional banks and regional banks reported 12.24%, 10.04% and 11.71%, respectively, in Q4 2018, well above the statutory requirements but down from a year ago due to Q4 2017 Tax Cuts and Jobs Act and higher total payout ratios

Leverage ratio (%)



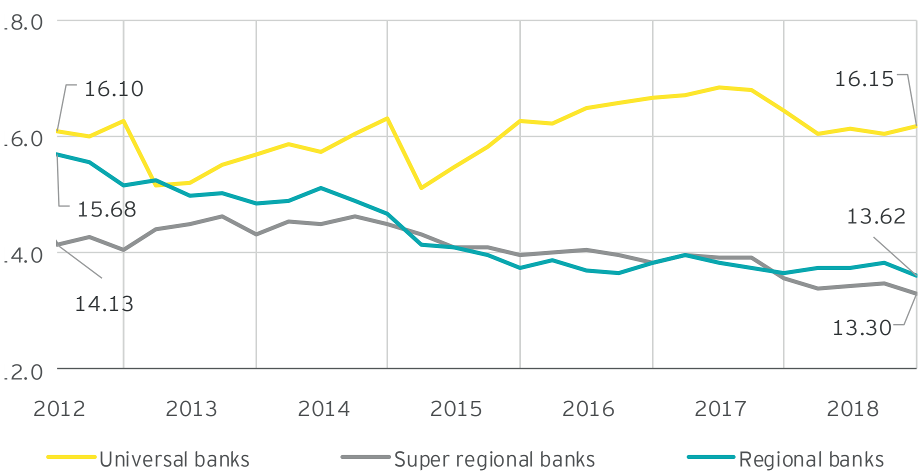
Source: S&P Global Market Intelligence

Leverage ratio

- Over the past few years, leverage ratios of super-regionals and regional banks have remained relatively flat
- Universal banks' leverage ratios, however, have increased by almost 200 bps between 2011 and 2015 due to post-crisis capital retention. Ratios remained mostly flat in 2015/2016 before decreasing slightly due in part to the Q4 2017 Tax Cuts and Jobs Act
- Universal banks, super-regional banks and regional bank composites averaged 8.46%, 9.65% and 9.63%, respectively, in Q4 2018

Total capital ratios have begun declining in recent periods for smaller firms but not for the largest banks.

Total capital ratio (%)

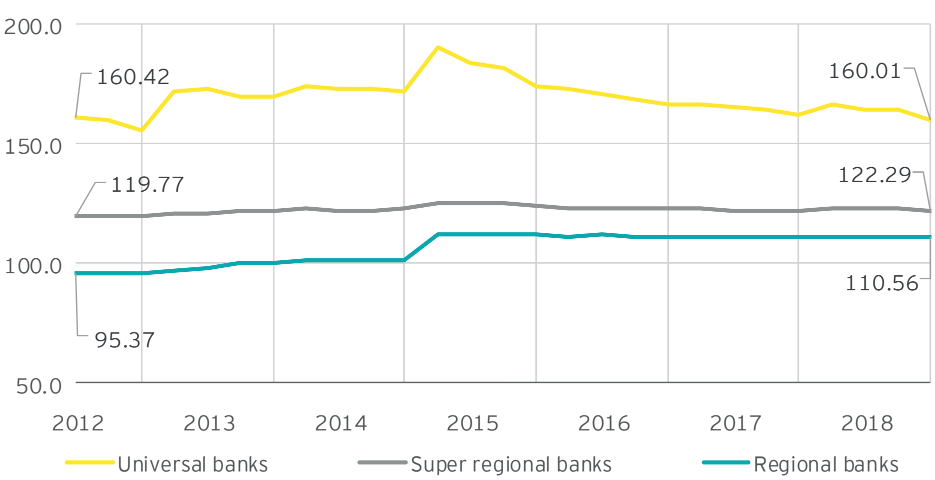


Source: S&P Global Market Intelligence

Total capital ratio

- Over the past few years, total capital ratios have been steadily declining for super-regional and regional banks as firms focused on capital efficiency
- Universal banks' total capital ratios, however, have remained relatively elevated at around 16%, which is in part due to their higher capital requirements
- In Q4 2018, universal banks, super-regional banks and regional banks reported their total capital ratios as 16.15%, 13.62% and 13.30%, respectively

Credit RWA to loans and leases by composite (%)



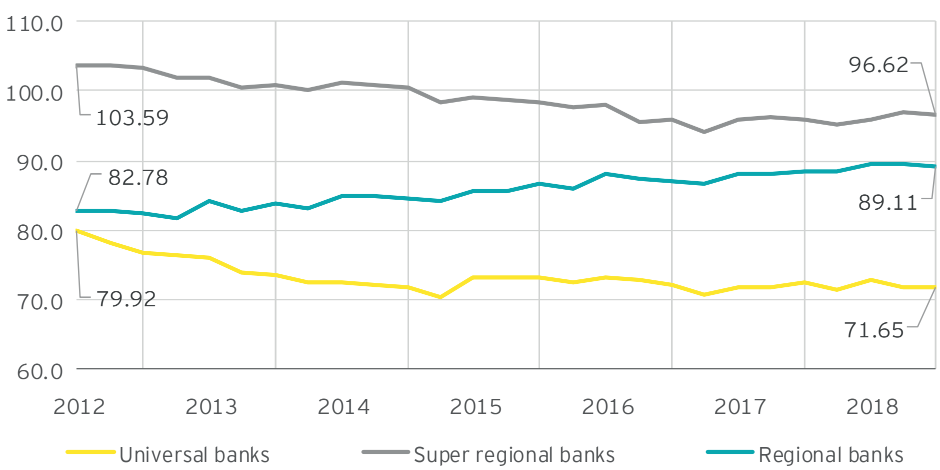
Source: S&P Global Market Intelligence

Credit RWA to loans and leases (%)

- Credit risk-weighted asset (RWA) to loans and leases has remained relatively flat over the past several years
- In Q4 2018, on a YoY basis, the ratio declined by 156 bps for universal banks, increased by 86 bps for super-regional banks and declined by 16 bps for regional banks

Rising interest rates are expected to further increase competition for deposits.

Loan-to-deposit ratio (%)

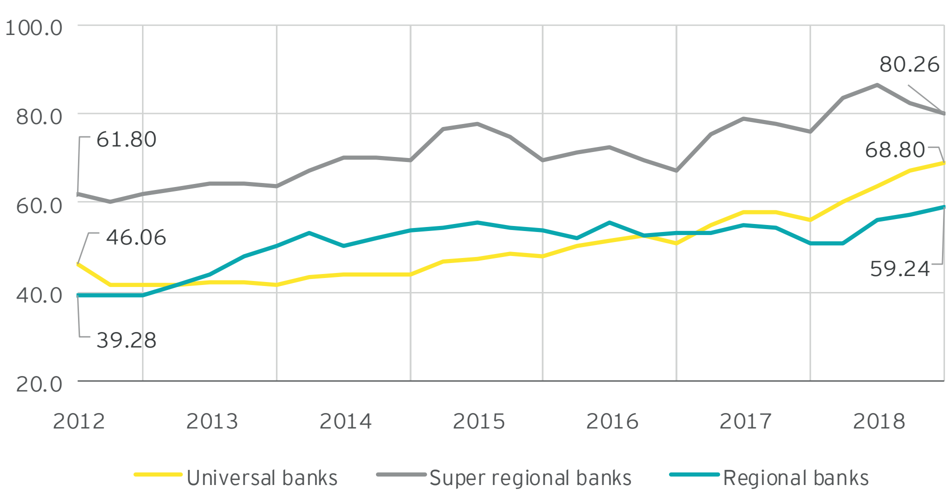


Source: S&P Global Market Intelligence

Loan-to-deposit ratio (%)

- Longer-term trends show that super-regionals have eased away from the near or above 100% ratio level seen several years ago, to a more normalized level in the mid-90% range
- While universal banks, over the last five years, have remained fairly stable within a band of 70%-74%, regional banks have gradually increased from around 84% to near 90%.
- Rising interest rates are expected to further increase competition for loans and deposits, which could impact the ratios in the coming quarters

Reserves/NPLs (%)



Source: S&P Global Market Intelligence

Reserve-to-NPLs (%)

- YoY in Q4, reserve balances in relation to nonperforming loans (NPLs) showed a meaningful increase: 1244 bps, 425 bps and 841 bps, respectively, for universal, super-regional banks and regional banks
- It is unclear how much the upcoming accounting change to the CECL reserving standard is influencing the rise, vs. actual signs of credit deterioration

The Canadian market

"Although we figured the economy was in for a detour at the end of last year, that detour may wind up being longer than we had expected. However, we still expect Canadian economic growth to pick up later in the year, supported by ongoing strength in employment and rising wages."

— Lynn Patterson, Deputy Governor of the Bank of Canada, March 7, 2019

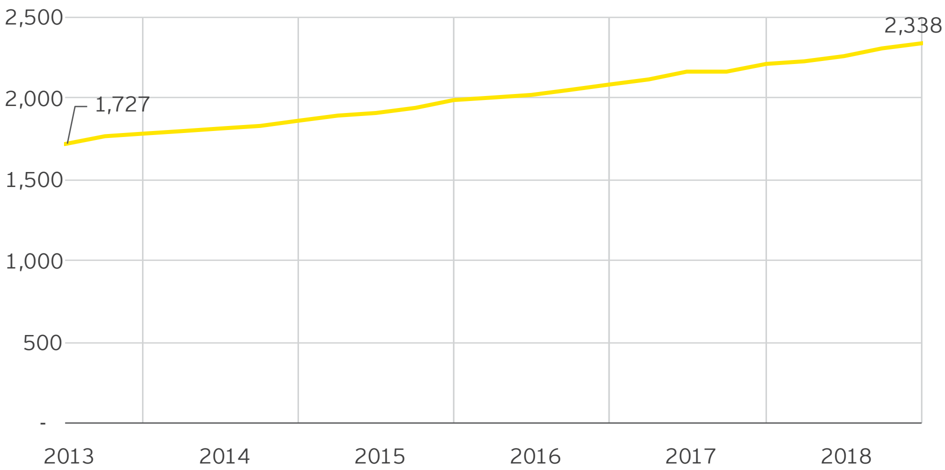
Executive summary

- While credit growth slowed in recent quarters, the quality of new borrowers has improved with the introduction of the new mortgage guidelines
- As expected, the slowdown in GDP growth was mainly attributed to the oil patch amid slumping commodity prices and production cuts in Alberta. The weakness was not only associated with the oil and gas sector as domestic demand and residential investments took a dive during the quarter
- Even though the mortgage growth increased slightly in the fourth quarter, according the Bank of Canada, consumer growth was lower than expected, suggesting Canadians are cutting back on their debt levels due to higher interest rates
- The credit quality of retail loans remains stable and higher than historical levels. However, some potential headwinds are starting to surface, as the rising interest rate environment and the recent decline in oil prices may be impacting delinquency in 2019
- Revenue growth reflects stronger growth on higher deposit margins, loan and deposit volume growth, fee income growth and a lower corporate tax rate
- Compared with last year, deposit growth slightly outpaced loan growth. This could be explained by the rising interest rates that helped slowdown credit growth in 2018 compared with 2017

Overview

While credit growth slowed in recent quarters, the quality of new borrowers has improved with the introduction of the new mortgage guidelines.

Total bank credit* (CA$b)

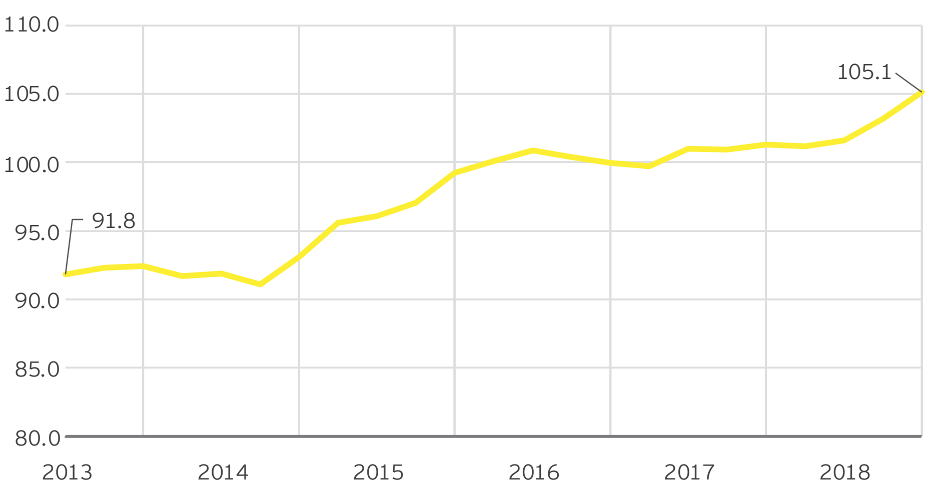


Source: Bank of Canada

System-wide leverage

- Total credit outstanding at banks rose by 5.8% YoY in Q4 2018, compared to 6.3% a year earlier
- This trend is supported by "a slowing in the combined growth of personal loans and credit cards from about 4% in December 2017 to about 2% in December 2018," according to the Bank of Canada.
- While credit growth slowed down in the recent quarters, the quality of new borrowers has improved with the introduction of the new mortgage guidelines

Total bank credit* to GDP (%)



Source: Bank of Canada; Statistics Canada

*Includes only domestic exposure

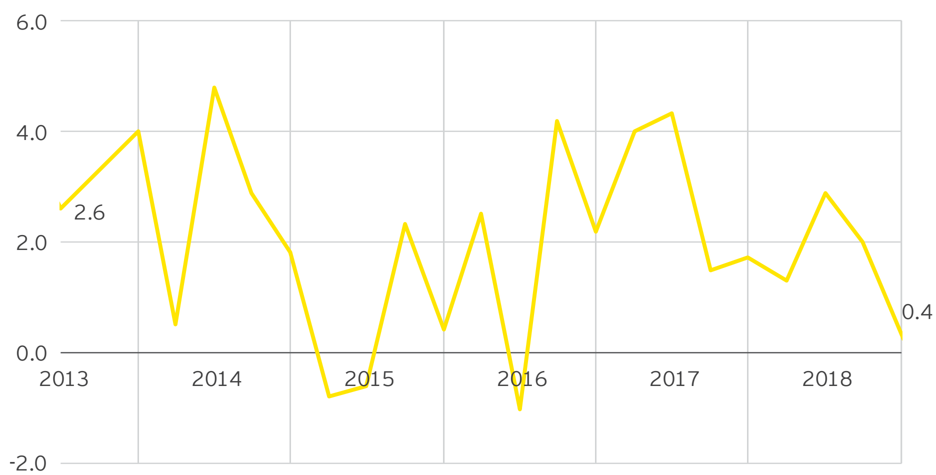
Credit-to-GDP ratio

- Credit to GDP rose by a strong 198 bps compared to the prior quarter. YoY, the ratio was up 382 bps
- The stronger growth in credit combined with the recent slowdown observed in the Canadian GDP continues to drive the high increase in the credit-to-GDP ratio

The macro view

Soft economic data, slowing household debt growth and stable inflation are likely to keep the Bank of Canada on hold from any near term rate increases.

GDP growth rate (%)

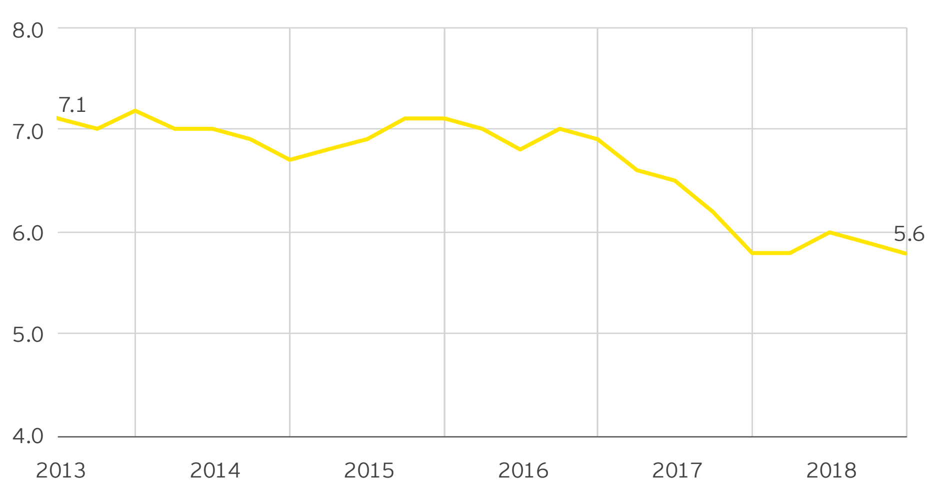


Source: Thomson Reuters Eikon

GDP

- GDP rose by 0.4 % in Q4 2018 compared to 2.0% in Q3 2018
- As expected, the slowdown was mainly attributed to the oil patch amid slumping commodity prices and production cuts in Alberta. The weakness was not only associated with the oil and gas sector as domestic demand and residential investments took a dive during the quarter
- According to RBC Economics, "added to already slowing household debt growth and stable inflation trends, soft economic data over the winter is just another reason for the Bank of Canada to hold off on further rate hikes for now"

Unemployment rate (%)



Source: Statistics Canada

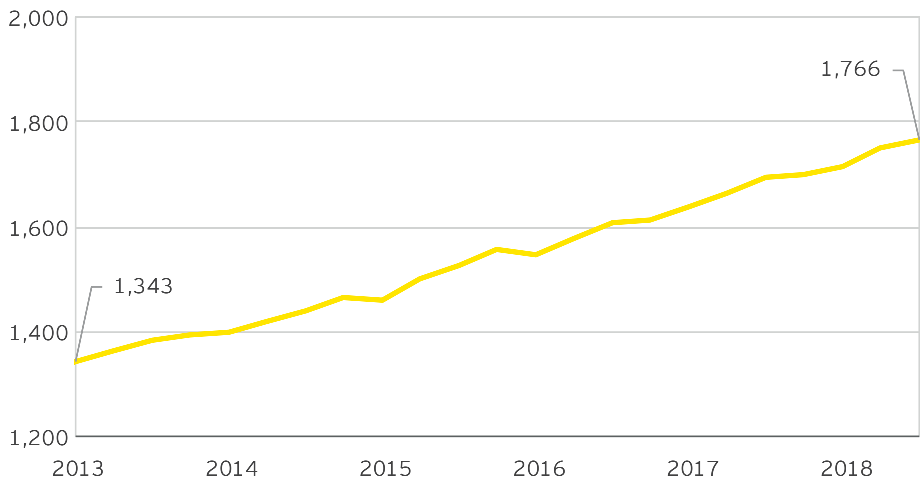
Unemployment rate

- The unemployment rate declined marginally by 40 bps to 5.6% QoQ
- The economy remains close to full employment and no shifts from current trends are projected in the short term

Loan exposure

Even though the mortgage growth increased slightly in the fourth quarter, according the Bank of Canada, consumer growth was lower than expected suggesting Canadians are cutting back on their debt levels due to higher interest rates.

Retail loans* ($b, CAD)



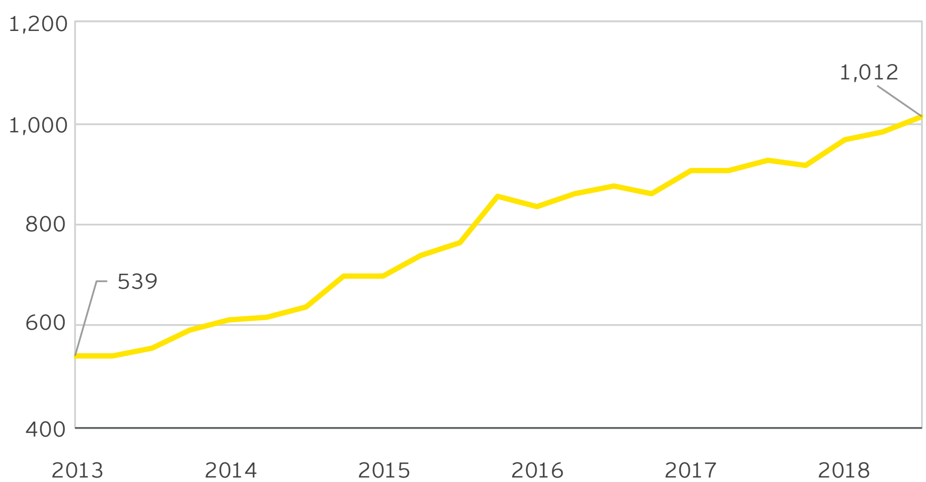
Source: Bank Investor Relations

* Includes retail mortgages and HELOCs

Retail exposure

- Consumer loan exposure for the Canadian banks rose by 4.2% YoY. On a QoQ basis, the increase was more modest (0.9%)
- Even though the mortgage growth increased slightly in the fourth quarter, according the Bank of Canada, consumer growth was lower than expected suggesting Canadians are cutting back on their debt levels due to higher interest rates
- Despite the slowdown, labor market conditions and demographic fundamentals in Canada's big cities are expected to continue to support positive growth of the banks' portfolios

Wholesale loans* ($b, CAD)



Retail and wholesale loan exposure includes exposure to Canada, the US and other countries

Source: Bank Investor Relations

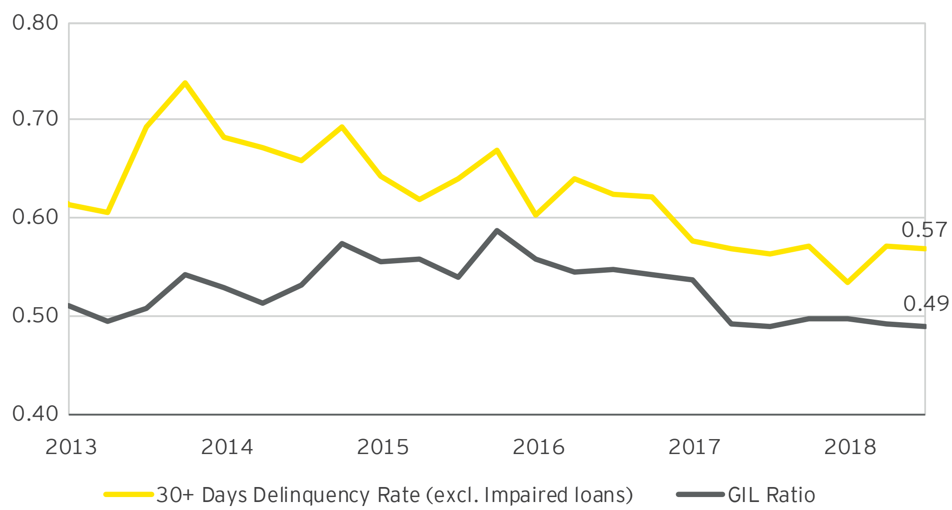
Wholesale exposure

- Wholesale lending continues to exhibit strong growth rates quarter after quarter (9.3% YoY in Q4 2018 vs 8.2% in Q3)
- The good momentum in US commercial banking is driving the strong growth in the wholesale book, according to comments from BMO

Loan credit quality

The credit quality of retail loans remains stable and higher than historical levels. However, some potential headwinds are starting to surface, as the rising interest rate environment and the recent decline in oil prices may be impacting delinquency in 2019.

Retail loans* — Delinquency rate and GIL ratio (%)**

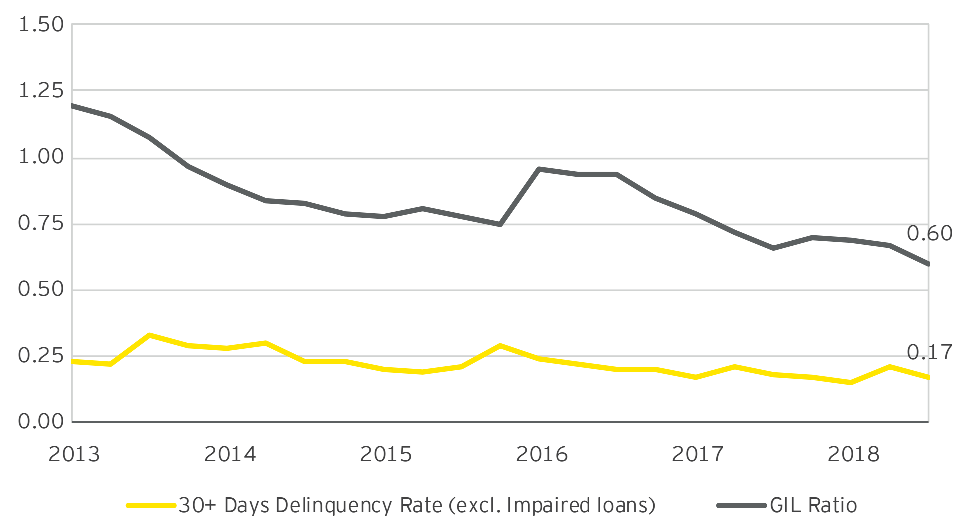


Source: Bank Investor Relations

Retail loans credit quality

- 30+ days delinquency rate and gross impaired loans ratio remained flat YoY and QoQ
- The credit quality of retail loans remains stable and higher than historical levels. However, some potential headwinds are starting to surface, as the rising interest rates and the recent decline in oil prices may be impacting delinquency in 2019
- According to RBC Economics, "a severe downturn remains unlikely despite higher interest rates increasing risk for Canada's housing market"

Wholesale loans — Delinquency rates and GIL ratio (%)**



Source: Bank Investor Relations

Wholesale loans credit quality

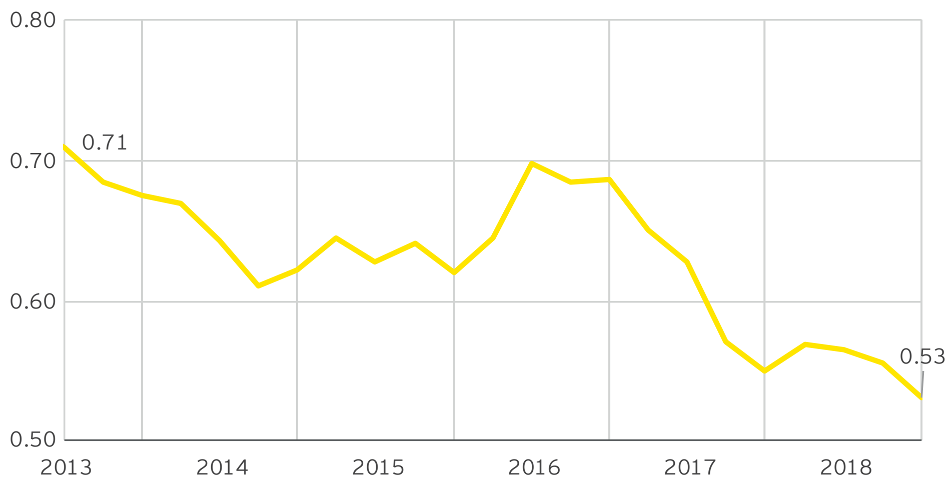
- Wholesale delinquency and impaired metrics improved QoQ and YoY
- In the short term, the oil patch in the energy sector did not seem to affect the credit quality ratios for Canadian banks

* Includes retail mortgages and HELOC
**Gross impaired loans (GIL) as a percentage of gross loans and acceptances

Bank credit performance

At 53 bps, GIL ratio is at its lowest level of the past 6 years. In light of the recent decline in commodity prices, some banks commented about the quality of their energy portfolio. Despite the slight uptick in PCL ratio, Canadian bank executives suggest that the solid economic fundamentals and the strong credit environment will continue to drive a good credit performance.

GIL ratio* (%)



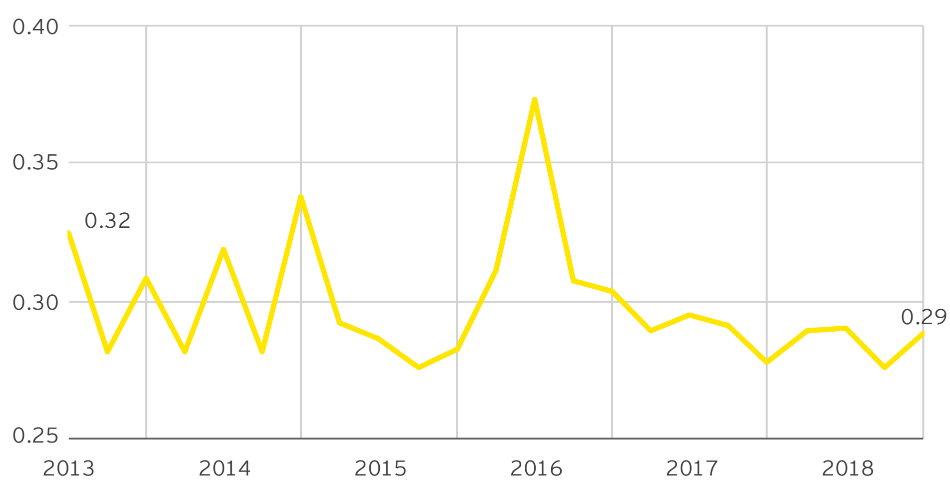
Source: Bank Investor Relations

*GIL as a percentage of gross loans and acceptances

Gross impaired loans

- Gross impaired loans ratio improved YoY and QoQ mainly due to wholesale loans. At 53 bps, GIL ratio is at its lowest level of the past 6 years
- In light of the recent decline in commodity prices, some banks commented about the quality of their energy portfolio. BMO and TD highlighted that it represents less than 2% of total loans, of which more than 75% is investment grade

PCL ratio (%)**



Source: Bank Investor Relations

**Provision for credit losses (PCL) as a percentage of average net loans and acceptances

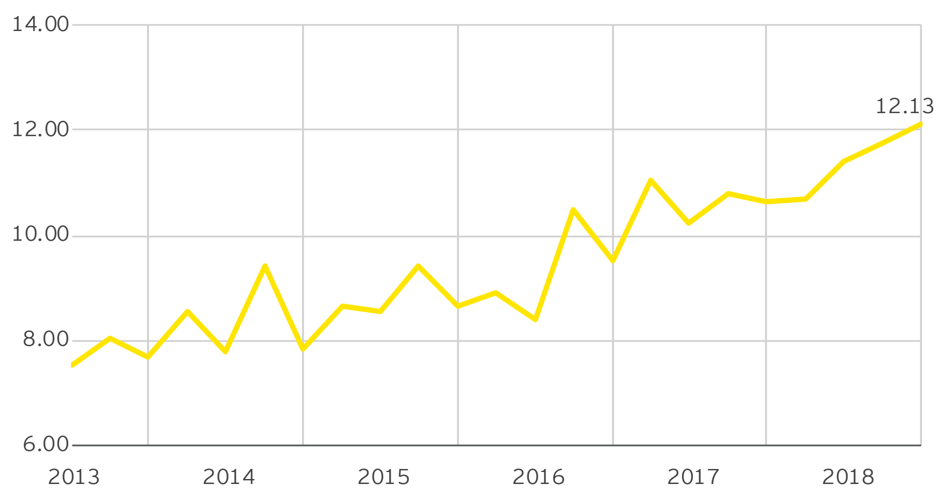
Provision for credit losses

- Provision for credit losses ratio is at 0.29%, up 1 bp QoQ and YoY
- Despite the slight uptick in PCL ratio, Canadian bank executives suggest that the solid economic fundamentals and the strong credit environment will continue to drive a good credit performance

Bank financial performance

Revenue growth reflects stronger growth on higher deposit margins, loan and deposit volume growth, fee income growth and a lower corporate tax rate.

Net income ($b, CAD)

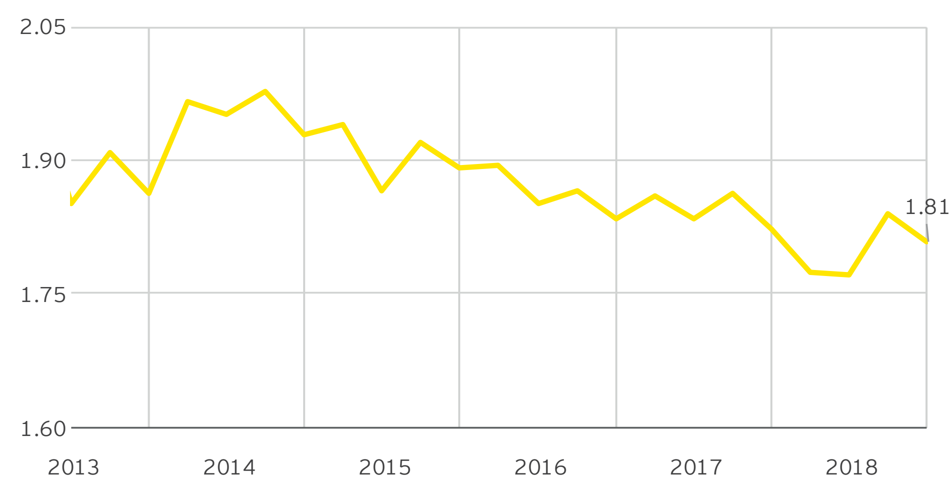


Source: S&P Global Market Intelligence

Net income

- Net income rose by 13.8% in Q4 2018 on a YoY basis and increased by 3.2%% on a QoQ basis
- Revenue growth reflects stronger growth on higher deposit margins, loan and deposit volume growth, fee income growth and a lower corporate tax rate
- According to comments in the quarterly earnings calls, Banks continue to generate positive operating leverage by managing well their expenses

Net interest margin (%)



Source: S&P Global Market Intelligence

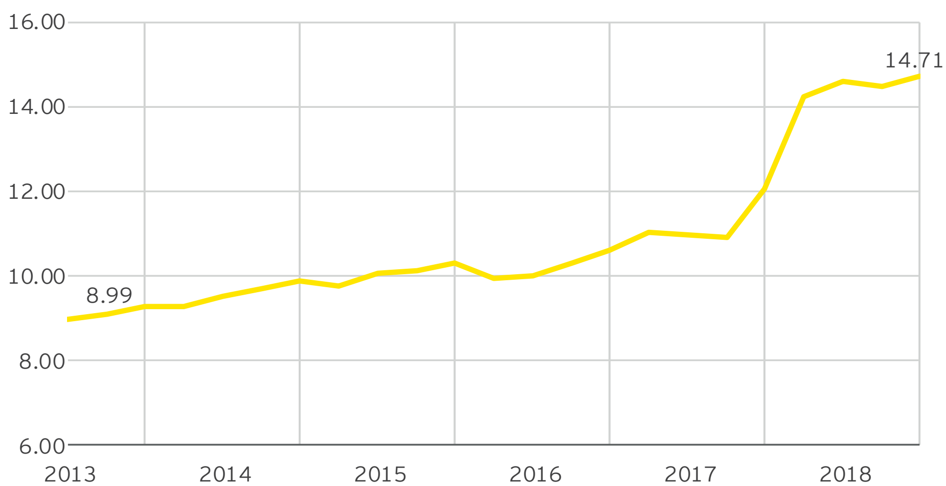
Net interest margin

- Net interest margin decreased by 2 bps YoY, to 1.81% in Q4 2018 (down 3 bps QoQ)
- According to comments from TD, a higher NIM is expected in 2019 compared to 2018, with some compression in the fourth quarter if no additional rate increases are applied by the BoC

Capital and funding

Compared with last year, deposit growth slightly outpaced loan growth. This could be explained by the rising interest rates that helped slow down credit growth in 2018 compared with 2017.

Common equity tier 1 (CET1) ratio (%)

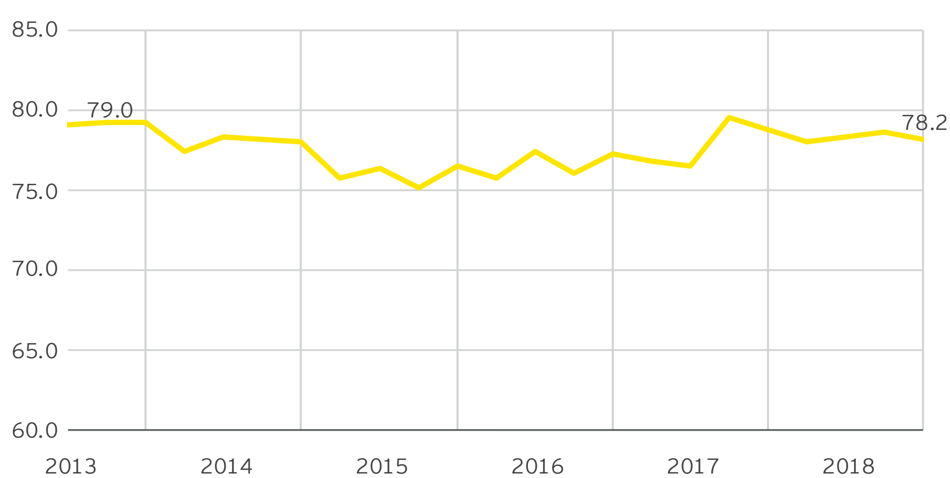


Source: S&P Global Market Intelligence

Tier 1 capital ratio

- The Tier 1 capital ratio stands at 14.71% as of Q4 2018, up 267 bps over the year
- Growth is coming mainly from internal capital generation, offset by higher RWA growth coming from strong loan growth
- Business growth and regulatory changes will continue to put pressure on capital for banks

Loan-to-deposit ratio (%)



Source: S&P Global Market Intelligence

Loan-to-deposit ratio

- Loan-to-deposit ratio was 78.2% as of Q4 2018, down 39 bps QoQ and 50 bps YoY
- Compared with last year, deposit growth slightly outpaced loan growth. This could be explained by the rising interest rates that helped slowdown credit growth in 2018 compared with 2017

Special topics

The Secured Finance Network Market Sizing and Impact Study

"The volume of US secured financing for commercial entities was over $4 trillion in 2018, affecting either directly or indirectly, about one-fifth of US GDP."

— Study findings

The Secured Finance Education Foundation's **Market Sizing and Impact Study**, completed in March 2019, provides insights on the dimensions, influence and potential of secured financing activity for commercial enterprises in the US.

The study is the most comprehensive assessment of the secured finance ecosystem ever commissioned by the Secured Finance Network, the Foundation's membership-based affiliate. The Foundation aims to use the study for attracting capital, strategic planning and assisting in advocacy efforts on behalf of the industry.

EY was honored to hold a role assisting the Foundation bolster its voice as a leader in the commercial finance space.

The scope of the study

The study covers the US secured finance universe across seven major financing types: asset-based lending (ABL), factoring, supply chain finance, equipment finance and leasing, leveraged lending, cash flow lending and asset-backed securitization.

Why conduct such a study?

Understanding a loan product's total market size is an important first step to understanding market share and the potential for growth.

Despite US banks being required to report thousands of data points in quarterly call reports and Y-9C, data specific to commercial finance is generally rolled into a single C&I reporting category, making it difficult to parse the multiple sub-categories of commercial finance. Further adding to the challenge of dimensioning the market is the point that non-depository institutions have only a fraction of the reporting requirements of US banks.

The study should be valuable to any lender seeking to strategically about expanding for growth opportunities.

The Secured Finance Network Market Sizing and Impact Study *(cont.)*

Highlights: *The US secured finance market encompasses over $4 trillion of transaction volume annually.*

- **Asset based lending (ABL)** drives about $164 billion of loan transaction volume per year, as of 2018. ABL's growth since the financial crisis has slightly lagged C&I growth overall, but still reached into the 6%–7% ranges for 2018. The total level of ABL commitments outstanding was $465 billion at the end of 2018, representing about 8.5% of the total funded C&I loans in the US. The four largest US banks hold about 37% of total ABL commitments. ABL structuring techniques are increasingly being utilized in ways that do **not** meet the four traditional criteria for meeting ABL standards. These structures, referred to as "ABL light," will be important to watch through the next downturn.
- **Factoring**, which is a purchase transaction where a factor advances money to a client based on the value of specific account receivables owned by the client, is about $101 billion volume market in the US annually. Although the amount of factored receivables outstanding is likely near just $6 billion, because receivables outstanding at any point in time are typically paid over short periods measured in weeks. Factoring has grown at a slower pace in the US in part because it is essentially competing with lenders willing to offer ABL structures on the same account receivables.
- **Supply chain finance is one of the most complex and least understood markets, but an area of significant potential. The study estimated the** market to be $416 billion in transaction volume in 2018, a 9% increase over the prior year. Encompassing "purchase order finance," "supplier finance" and "inventory finance," supply chain finance supports US imports and exports and its presence represents an amount equal to 12% of total US trade receivables 2018.
- **Equipment Finance and Leasing** helped enterprises and public institutions acquire nearly 60% of the $1.76 trillion in total equipment and software purchases in 2018 through either lease, loan or line of credit financing. Growth in software purchases outpaced equipment by 200 basis points, underscoring the importance of this component of the equipment finance landscape.
- **Leveraged Lending** will likely continue to be an area of high focus for the foreseeable future — the study illuminates why measuring this market is challenging. The outstanding principal balances of leveraged loans at year-end 2018 was about $4.3 trillion, according to the study. Approximately $726 billion of institutional loan volume was issued in 2018, down from $919 billion in 2017 indicating a cyclical turn. On a combined pro rata and institutional basis, leverage lending was off by 11.6% in 2018, but both 2017 and 2018 were materially higher than all prior years. The volume of loans trading in the leveraged loan secondary market grew to over $1.1 trillion in 2018.
- **Cash Flow Lending.** 2018 was a record year for issuance of investment-grade cash flow loans, rising 26% above 2017, reaching $1.035 trillion.
- **Asset-backed Securitization.** Total outstanding commercial finance-related ABS has grown at a 9.3% CAGR since 2010. At $305 billion as of the end of 2018, these securities represent 40% of outstanding ABS, not including collateralized loan obligations (CLOs).

Please contact us for an overview of the study and how we may assist you in better understanding the market dynamics behind each of these lending areas.

Alternative uses of data in credit decisions

With the proliferation of cloud and big data technology in the financial industry, we are observing an emerging trend of financial institutions' leveraging artificial intelligence (such as machine learning coupled with natural language processing, NLP) to make use of alternate sources of data in credit monitoring and decisions.

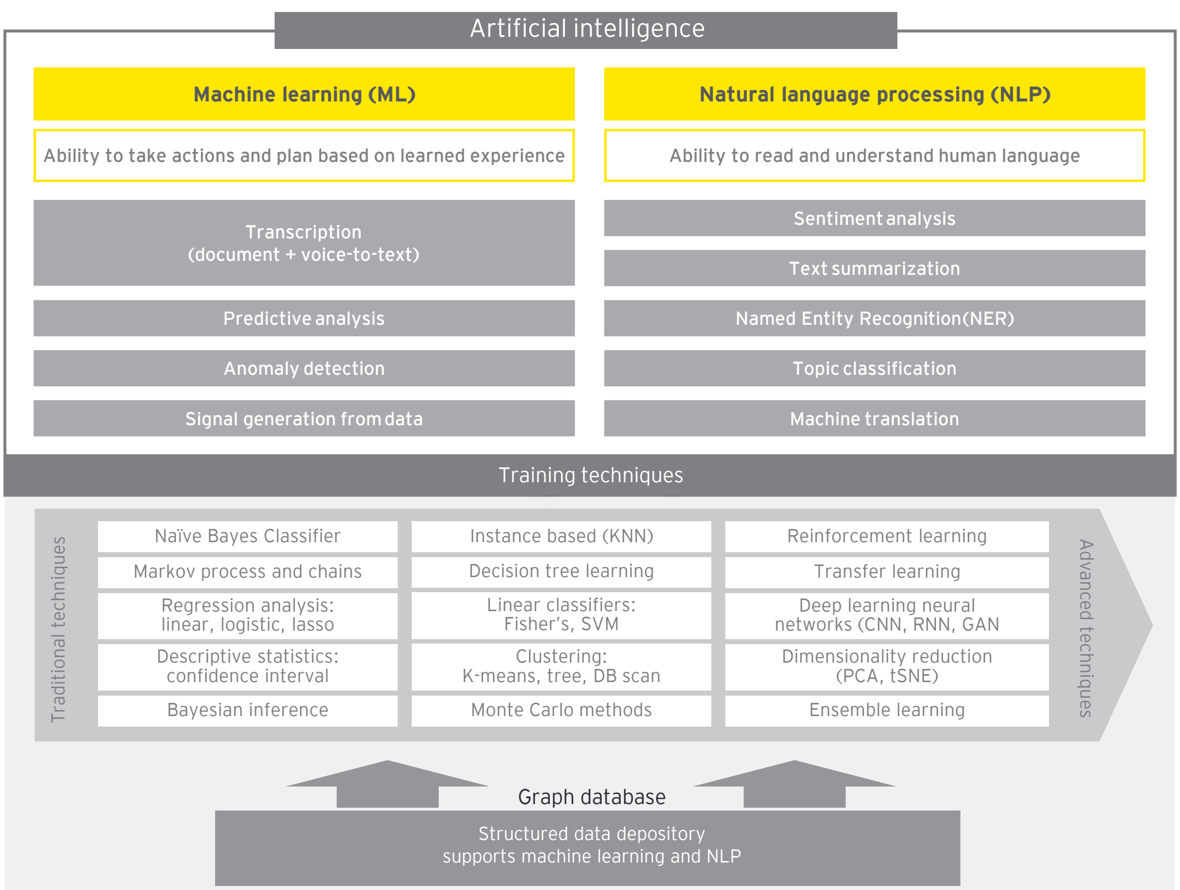
Using advanced analytics in financial services functions is already significant. Examples include:

- Detecting emerging risk or fraudulent behaviors
- Prioritizing financial crime reviews
- Personalizing customer touchpoints and experiences
- Recommenders and next best actions to clients and financial advisors
- Automating routing of legal contracts to lines of business
- Automating monitoring of customer servicing environments and rep actions
- Automating the identification and categorization of customer complaints
- Reviewing marketing materials for regulatory concerns

A key question we explore with lenders is: How can the technologies underlying these use cases be applied to lending decisions? One technique is to create crawlers to extract structured and unstructured data from alternate data sources. These new sources include news and social media outlets, regulator portals, and financial and regulatory disclosures. The data from the procedure is typically stored on data lakes. Advanced modeling techniques, such as through NLP, are deployed to glean insights from the alternatively procured data, and these insights help inform credit monitoring and decisions.

The approach permits identifying entity economic interdependence or entity control relationships to support single counterparty credit limits regulation and sentiment analyses. By monitoring favorable or unfavorable events associated with current and potential clients and counterparties, the lender can be better alerted to emerging risks across its portfolio.

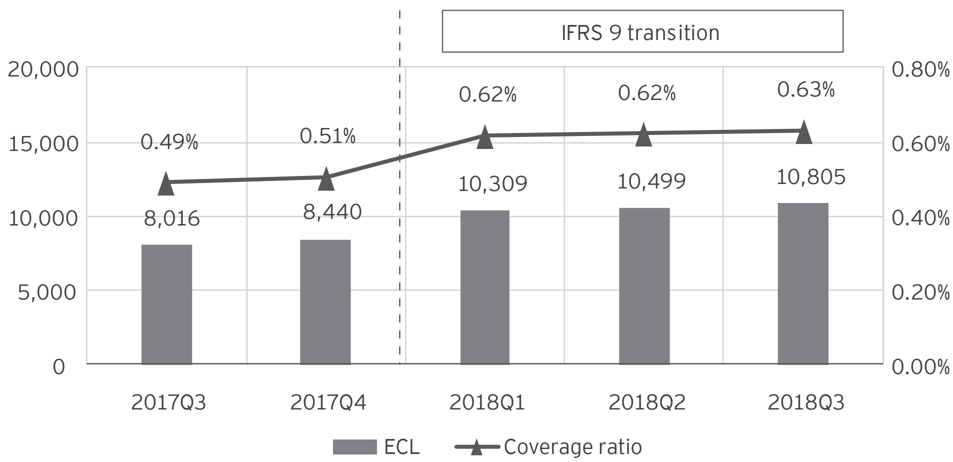
We can envision scenarios where these alternate sources of data, coupled with advanced analytics techniques, are integrated with end-to-end credit management workflow engines to help firms better manage, and make decisions on, their credit exposures.



IFRS 9 transition for Canadian banks: overall impact

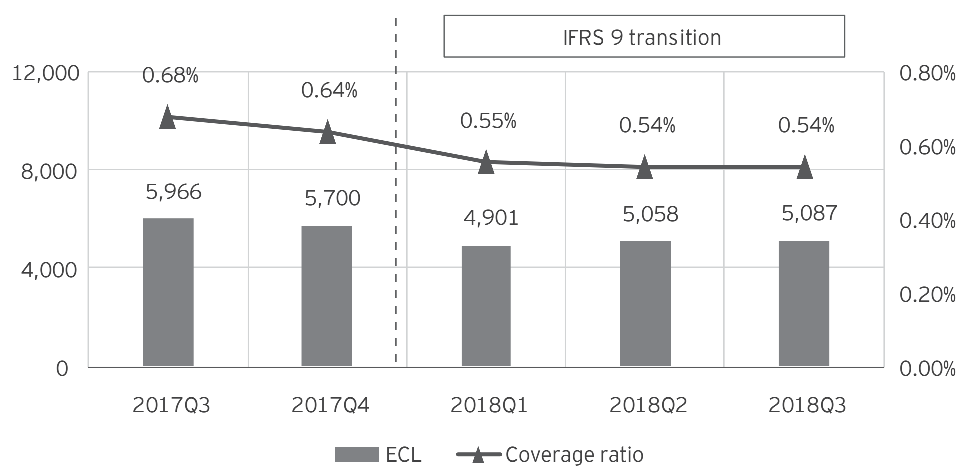
Allowance for credit losses ($m, CAD) and coverage ratios (%)**

Retail loans*



* Includes retail mortgages and HELOC

** Coverage ratio: the ratio of ECL provisions to the gross carrying amount



Source: Bank Investor Relations

- During Q1 2018, the top 6 Canadian banks adopted IFRS 9. The other two banks included in this report (LBC and CWB) will adopt IFRS 9 in Q1 2019
- The overall impact on expected credit loss (ECL) after IFRS 9 transition was less than expected. Canadian banks show a wide range of outcomes, from a 22% decrease to a 38% increase between Q4 2017 and Q1 2018. ECL and coverage ratios remained stable after IFRS 9 transition
- The dispersion in ECL distribution among the Big Six is significant. Staging criteria is responsible for large discrepancies between banks. Technical accounting interpretations and modeling of behavioral lifetime are also contributing to differences. The largest ECL discrepancies between banks are observed in the consumer portfolio
- On average, 93% of gross loans are classified as stage 1. The remainder is split 6.3% for stage 2 and 0.7% for stage 3. This applies to both retail and wholesale loans

IFRS 9 transition for Canadian banks: leveraging IFRS 9 processes for CECL

Canadian banks have worked extensively on building out the IFRS 9 credit impairment approach, which should be leveraged when planning for CECL. Banks are approaching their CECL implementation as an opportunity to go beyond compliance and focus on integration of multiple credit modeling requirements (e.g., regulatory stress testing, financial forecasting, financial reporting). Below are six key areas in our assessment where we would focus banks on potential integration opportunities.

Key considerations	Lesson learned/design consideration
Project governance and timeline	▸ Fully decompose the balance sheet early to understand all affected instruments and stakeholders ▸ If leveraging existing capital stress testing models for CECL and IFRS 9, it has been critical to include DFAST (Dodd-Frank Annual Stress Testing) or CCAR (Comprehensive Capital Analysis and Review) team members early in the project ▸ Full 12-month parallel run, which incorporates not only model runs but a full end-to-end financial statement process
Model harmonization approach	▸ Model harmonization plan should focus on integrating the models/processes with low business impact and high maintenance cost in the current state ▸ Determine predefined set of evaluation criteria, agreed upon with the stakeholders, that can be applied to assess the current state of model/model components objectively
Loss forecasting reporting/disclosures	▸ Identify a holistic set of reporting requirements beyond disclosures. The level of analytics required to support the loss allowance will increase in order to support management overlays and other reporting requirements ▸ Develop model outputs to map to reporting and disclosures requirements; however, it's important to note that enhanced capabilities will impact the technology tools selected
Loss forecasting business capabilities	▸ The key to integrating CECL requirements with existing loss forecasting, IFRS 9 and CCAR frameworks is to define current and target state model, technology, data, and process capabilities with the key stakeholders
Integrated technology architecture/data	▸ Multi-vendor platforms will require strong emphasis on integration points across vendors in the firm's ecosystem ▸ It is important to integrate across risk, finance, lines of business, and the existing reporting infrastructure while supporting it with a robust data quality and governance framework ▸ As observed across multiple banks, data availability and quality tend to be light; thus, clear communication and objectives (e.g., data asks) are critical
Loss forecasting process integration	▸ It is important to define the extent to which the processes should be integrated across CCAR, IFRS 9, CECL and BAU (business as usual). Technology integration without process and governance integration won't enhance cost savings

Regulatory snapshot

Executive summary

- Both the Board of Governors of the Federal Reserve System (FRB) and the Office of the Comptroller of the Currency (OCC) issued reports in the fourth quarter on the condition of the banking system. These reports highlight that the US economy and banking system remain strong. Capital, asset quality, earnings and liquidity are all at or near post-recession highs. Nevertheless, the regulators note continuing concern about growing risks in credit portfolios and signaled that credit quality is a supervisory priority for the coming year
- The regulators continue to work through a backlog of issuing new rules and updating supervisory guidance. This is a protracted process. Regulators intend to tailor new requirements to the size and complexity of the financial institutions and increase transparency of the requirements. During the fourth quarter, the regulators issued a Notice of Proposed Rulemaking for Appraisals, and the OCC updated a few of its credit handbooks
- Regulators issued a joint statement in December encouraging banks to use new technologies to help combat money laundering and terrorist financing. While aspects of this statement apply to credit analysis and due diligence, it is encouraging that the regulators are seeking ways to balance safety and soundness expectations with FinTech innovations

Credit in the regulatory crosshairs

While credit metrics, both contemporary and lagging, continue to report strong credit quality, banking regulators are raising concerns about growing risk in loan portfolios. The OCC reports in its **Semiannual Risk Perspective** for Fall 2018 that systemic credit risk is increasing due in part to years of loosening underwriting standards, layering risk and concentrating lending. Comptroller Joseph Otting notes that credit risk is his top concern. In a November 14 speech, he said the OCC sees the credit environment "influenced by aggressive competition, tighter spreads, and slowing loan growth. These factors are driving incremental easing in underwriting practices and increasing concentrations in select loan portfolios that present heightened risk should the economy weaken or markets tighten quickly."

The FRB notes similar concerns. FRB Governor Brainard notes in a December 7 speech that "… financial vulnerabilities associated with corporate debt are building against a backdrop of elevated risk appetite." Details are provided in the FRB's inaugural **Financial Stability Report** that shows the volume of new risky debt, i.e., high-yield bonds and leverage loans, rebounded recently, increasing 5% over the prior 12 months ending September 30, 2018. Risky loans now total over $2t in the US. Brainard cautions that "… this year has witnessed a deterioration in underwriting at the largest banks."

Against this backdrop, both the FRB and the OCC have listed wholesale credit underwriting as a supervisory priority in the coming year. The regulators will likely:

- Assess the impact of looser underwriting standards on the quality of loan portfolios
- Evaluate the adequacy of loan loss reserves
- Determine the adequacy of capital support

Bankers should be prepared to demonstrate the credit quality of these assets through a range of stress conditions. The OCC is specifically looking for any lender complacency and its impact on risk management and control. As we are in the advanced stages of the credit cycle, the regulators will be testing to verify that potential credit problems are well understood and controlled.

Proposals and guidance

Notice of proposed rulemaking on appraisals	Credit handbooks	Use of new technologies
The three primary US banking regulators published for comment a revision in the appraisal requirements. Consistent with the Economic Growth, Regulatory Relief and Consumer Protection Act, the regulators are proposing to raise the threshold from $250,000 to $400,000 before an appraisal is required for a residential property. The proposal still requires regulated institutions to obtain evaluations of properties that ensure safe and sound lending. The proposal also addresses the Dodd-Frank Act requirement for regulated institutions to review federally related transaction appraisals for compliance with the Uniform Standards of Professional Appraisal Practice.	The OCC continues to review and revise its library of credit handbooks. Recent updates include handbooks for agriculture, oil and gas exploration and production, and trade finance. The revisions are intended to clarify handbook content, including what is "required" by the regulator (e.g., a rule) vs. what is considered "prudent" risk management and not mandatory. In this context, key words to observe are the use of "must" and "should." The OCC is also clarifying the roles and responsibilities of the board of directors and management, as regulators have tended to blur the boundary over the past several years. This is a useful clarification.	On December 3, five agencies (FRB, OCC, FDIC, FinCEN, and NCUA) issued a statement encouraging the financial services industry to use innovative techniques to help combat money laundering and terrorist financing. The regulators see opportunities to use digital identity and other technologies to enhance compliance programs, more effectively perform due diligence, and to better know customers. The issuance states that the regulators will not criticize banks that maintain an effective Bank Secrecy Act/anti-money laundering (BSA/AML) program while pursuing new techniques. Beyond the BSA/AML context, these technologies can help identify credit opportunities to help serve non-banked and under-banked communities. They hold great promise to enhance risk management capabilities and provide more effective pricing and distribution of credit products. It is encouraging that the regulators are seeking to balance the need to remain safe and sound with leveraging the vast opportunities presented by new technologies.

Appendix

Bank composites used in this report

US bank composites			Canadian bank composite
Universal banks	**Super regional banks**	**Regional banks**	**Canadian banks**

US bank composites

Universal banks

- Includes **6** universal banks domiciled in the US
- Measurements made at holding company level; data includes global footprint
- Highest assets: $2.6 trillion
- Lowest assets: $850 billion
- Average assets: $1.8 trillion
- Minimum asset threshold for inclusion: $500 billion

Super regional banks

- Includes **16** large regional banks domiciled in the US
- Measurements made at holding company level
- Highest assets: $460 billion
- Lowest assets: $66 billion
- Average assets: $183 billion
- Minimum asset threshold for inclusion: $50 billion

Regional banks

- Includes **46** regional banks domiciled in the US
- Measurements made at holding company level
- Highest assets: $54 billion
- Lowest assets: $5 billion
- Average assets: $26 billion
- Minimum asset threshold for inclusion: $5 billion

Canadian bank composite

Canadian banks

- Includes **8** of the largest banks domiciled in Canada
- Measurements made at holding company level; data includes global footprint
- Highest assets: CA$1.3 trillion (US$1.0 trillion)
- Lowest assets: CA$28 billion (US$23 billion)
- Average assets: CA$638 billion (US$519 billion)
- Minimum asset threshold for inclusion: CA$20 billion

Notes

Notes

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