

CREDIT OPINION

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Update

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BOK Financial Corporation

Update to credit analysis

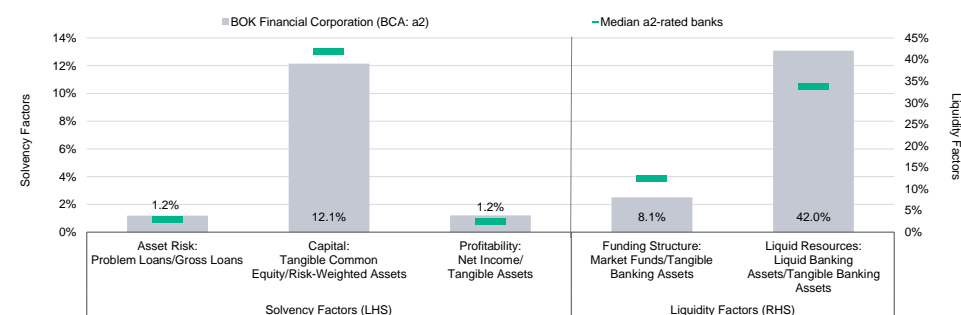
Summary

[BOKF, NA](#), the lead bank subsidiary of Oklahoma-based [BOK Financial Corporation](#), has an a2 standalone baseline credit assessment (BCA), which reflects the bank's sustainable regional banking franchise that is supported by its conservative risk culture, good asset quality management, adequate capitalization and good funding and liquidity. BOK's banking franchise results in some industry concentrations, notably energy, that exposes it to potential earnings and asset quality volatility. BOK's energy concentration is the highest among the rated US banks, at 0.7 times its tangible common equity (TCE) base as of 30 September 2021. BOK's stable outlook reflects our view that the risks from bank's energy concentration are sufficiently mitigated by its strong asset quality track record and good financial management, evidenced by its aforementioned capitalization and robust liquidity.

The bank's BCA is positioned four notches above our current global bank median BCA of baa3 and one notch above the current US bank median BCA of a3. The bank and holding company also have issuer ratings of A3 and the bank's long- and short-term deposit ratings are Aa3/Prime-1, reflecting the application of our advanced Loss Given Failure (LGF) analysis.

Exhibit 1

Rating Scorecard - Key Financial Ratios



All ratios and medians are as of 30 September 2021

Source: Moody's Investors Service

Credit strengths

- » Strong fee revenue base supports profitability in low interest rate environment
- » Sizeable holdings of liquid assets support a strong liquidity profile, protecting the firm against market shocks
- » Top deposit-taker in Oklahoma supporting core deposit base

Credit challenges

- » Sizeable energy concentration brings asset quality volatility
- » Improved capitalization has enhanced the bank's ability to absorb unexpected losses but limits upward rating pressure

Outlook

BOK's stable rating outlook reflects our view that the bank's strong asset quality performance, solid capitalization, and robust liquidity will persist over the next 12 - 18 months.

Factors that could lead to an upgrade

Given the relatively higher rating level compared to peers, rating upgrades are unlikely absent a sustained reduction in its asset concentrations, including energy and commercial real estate, coupled with higher capitalization.

Factors that could lead to a downgrade

BOK's ratings could be downgraded if the bank's asset quality performance deteriorates beyond our expectations or if the firm reduces its capitalization. The ratings could also be downgraded if BOK materially reduced its liquidity position while increasing its reliance on market funding.

Key indicators

Exhibit 2

BOK Financial Corporation (Consolidated Financials) [1]

	09-21 ²	12-20 ²	12-19 ²	12-18 ²	12-17 ²	CAGR/Avg. ³
Total Assets (USD Billion)	46.9	46.7	42.3	38.1	32.4	10.4 ⁴
Tangible Common Equity (USD Billion)	4.1	3.8	3.6	3.4	3.1	8.3 ⁴
Problem Loans / Gross Loans (%)	1.2	1.5	1.1	0.9	1.2	1.2 ⁵
Tangible Common Equity / Risk Weighted Assets (%)	12.1	11.7	11.5	11.1	12.0	11.7 ⁶
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	5.5	8.5	6.0	5.7	6.5	6.4 ⁵
Net Interest Margin (%)	2.6	2.7	3.0	3.1	2.8	2.8 ⁵
PPI / Average RWA (%)	2.2	2.5	2.1	2.1	2.1	2.2 ⁶
Net Income / Tangible Assets (%)	1.4	1.0	1.2	1.2	1.1	1.2 ⁵
Cost / Income Ratio (%)	60.2	58.6	61.9	63.2	65.5	61.9 ⁵
Market Funds / Tangible Banking Assets (%)	3.0	8.1	20.7	20.3	18.4	14.1 ⁵
Liquid Banking Assets / Tangible Banking Assets (%)	45.7	42.0	37.5	33.7	37.6	39.3 ⁵
Gross Loans / Due to Customers (%)	53.2	64.3	79.3	86.2	78.7	72.3 ⁵

[1] All figures and ratios are adjusted using Moody's standard adjustments. [2] Basel III - fully loaded or transitional phase-in; US GAAP. [3] May include rounding differences because of the scale of reported amounts. [4] Compound annual growth rate (%) based on the periods for the latest accounting regime. [5] Simple average of periods for the latest accounting regime. [6] Simple average of Basel III periods.

Sources: Moody's Investors Service and company filings

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Profile

BOK Financial Corporation is headquartered in Tulsa, Oklahoma with \$47 billion of total assets, \$20 billion of loans, \$39 billion of deposits and \$5.4 billion of shareholders' equity as of 30 September 2021. Its lead bank, BOKF, NA, primarily operates in seven states throughout the southwest. BOKF, NA, operates as Bank of Oklahoma throughout the state of Oklahoma, primarily in the Tulsa and Oklahoma City metropolitan areas and Bank of Texas throughout the state of Texas, primarily in the Dallas, Fort Worth and Houston metropolitan areas. BOK provides loans, deposits, cash management services, fiduciary services, mortgage banking, and brokerage services to its customers.

Detailed credit considerations

Energy concentration remains vulnerable to oil price volatility

BOK's energy concentration is the highest among the rated US banks, at 0.7 times its tangible common equity (TCE) base as of 30 September 2021. Although this has come down since oil prices dropped in March 2020, when it was 1.1 times TCE at year-end 2019, BOK remains committed to lending to the energy sector and as such, we expect the bank's concentration to persist. Indeed, this differs from other rated US banks, which have largely reduced their energy exposures following the 2015/17 energy downturn.

While we expect BOK's energy portfolio to remain vulnerable to energy price cycles, which have proven to be volatile, BOK's energy portfolio has performed well in past downturns. In our view, BOK's asset quality performance reflects the firm's long history of lending to the energy sector characterized by conservative underwriting practices that use in-house engineers as part of the underwriting process, primarily lend on proved producing oil and gas reserves with low loan-to-values, and revalues borrowing base (collateral) at least twice a year. Furthermore, the majority of BOK's energy portfolio is to the exploration and production (E&P) sector and it requires borrowers have some level of hedging in place.

Our [outlook](#) for the global energy industry is stable based on our expectation that the pace of improvement in fundamental conditions across the industry will ease over the next 12-18 months. We have recently increased our medium term oil price range to \$50-\$70/bbl to reflect our expectation that the full average cost of production of a marginal barrel of oil will keep increasing in step with oil demand. We expect oil prices to remain above the range in the near term. We think that natural gas prices in North America will remain above our medium term price range of \$2.00-\$3.00/MMBtu at the Henry Hub, with sustained support in 2022 from strong export demand amid substantial dislocation in global natural gas markets. High oil prices in 2022 will support robust industry cash flow, but producers will maintain capital discipline. This will support BOK's asset quality in its energy portfolio, which remains weaker than other segments of the bank's loan portfolio with the energy portfolio contributing 13% of total nonperforming assets. BOK's energy allowance for loan losses was 2.5% of its energy portfolio at 30 September 2021. Risks to our stable outlook include an interruption in the recovery in demand, a widespread recession, or other factors that contribute to oil prices declining to less than \$50/barrel (bbl).

In addition to reducing its energy concentration, BOK has reduced its modest commercial real estate (CRE) concentration. BOK's CRE concentration increased to 2.1 times its TCE base following its 2018 acquisition of CoBiz Financial, up from the previously stable 1.7 times TCE. Positively, BOK has since reduced its CRE concentration to a more modest 1.4 times its TCE at 30 September 2021. We expect BOK will not rebuild its CRE concentration.

We believe BOK's long history of good asset quality is evidence of its conservative risk culture and good underwriting practices. Nonetheless, BOK's primary credit challenge is the company's concentrations in energy, and to a lesser extent, CRE lending, which is reflected in a negative adjustment of the macro-adjusted score to our assigned Asset Risk score of a2 in our scorecard.

Improved capitalization supports the bank's ability to absorb unexpected losses

We view BOK's capitalization as adequate to its risk profile, particularly as the bank has rebuilt its capital ratios following its acquisition of CoBiz Financial in 2018. BOK's acquisition of CoBiz, a \$3.8 billion bank, reduced its capitalization largely because of its 75% stock and 25% cash financing and goodwill created from the purchase. It has since improved its Moody's-adjusted TCE as a percentage of risk-weighted assets to 12.1% as of September 2021, up from 11.1% at year-end 2018. We expect BOK will maintain its improved capitalization levels.

Strong fee revenue base supports profitability

BOK's core profitability remains relatively robust benefiting from good revenue diversity and a low-cost funding base. BOK's profitability benefits from healthy fee-based revenues, the latter historically accounting for roughly 35%-50% of net revenues in recent

years, which provides some level of resilience in BOK's earnings profile in a low interest rate environment. Furthermore, its fee revenue base is fairly diversified reducing reliance on any one fee business. During the first nine months of 2021, fee revenue contributed 40% of revenue supporting its return on assets.

Ample liquidity and good deposit base thanks to top deposit-taker position in Oklahoma protects the bank against market shocks

BOK's funding profile benefits from a stable core deposit base that is supported by its leading deposit market share in its home state of Oklahoma. According to FDIC data as of 30 June 2021, BOK had the largest deposit market share in Oklahoma of 14.7% nearly, one third larger in market share than the next bank. Oklahoma contributes roughly half of BOK's deposit base.

BOK's core deposits comfortably fund its total loan portfolio. In addition, BOK's strong liquidity profile is supported by its ample holdings of high-quality liquid assets, which accounted for 45.7% of tangible banking assets as of September 2021. This offsets its modest reliance on market funds, which largely consists of Federal Home Loan Bank borrowings. In the first nine months of 2021, BOK reduced its use of market funding amid very high levels of deposit inflows and muted loan growth. We expect over time BOK's balance sheet will normalize to its more historic levels of both market funds and liquid resources. This is reflected in our assigned Liquidity scores in BOK's scorecard.

BOK's BCA is supported by its Very Strong- Macro Profile

BOK benefits from operating in the US, which has a "[Very Strong-](#)" Macro Profile. The score reflects the US' very high degree of economic, institutional, and government financial strength with a low susceptibility to event risk. US banks' funding conditions benefit from the long-established Federal Home Loan Banking system. The US Macro Profile also incorporates the high level of consumer debt and periodic real estate asset bubbles. Additionally, the stability of the banking system is periodically undermined by aggressive underwriting as banks compete with a large, well-entrenched shadow banking system.

Environmental, social and governance (ESG) considerations

BOK's exposure to environmental risks and social risks is low and moderate, respectively, consistent with our general assessment for the global banking sector. See our [Environmental risks](#) and [Social risks](#) heat maps for further information.

Governance is highly relevant for BOK Financial, as it is to all players in the banking industry. Corporate governance weaknesses can lead to a deterioration in a bank's credit quality, while governance strengths can benefit a bank's credit quality. Governance risks are largely internal rather than externally driven, and for BOK we do not have any particular governance concerns. Nonetheless, corporate governance remains a key credit consideration and requires ongoing monitoring.

Support and structural considerations

Loss Given Failure analysis

We consider the US to have an Operational Resolution Regime. BOK, a regional US bank, is subject to Title I resolution. As such, we apply our advanced Loss Given Failure (LGF) analysis to BOK. For this analysis, we assume residual tangible common equity of 3% and losses post-failure of 13% of tangible banking assets. These assumptions are in line with our standard assumptions for US Title I banks.

We believe that BOK's deposits are likely to face very low Loss Given Failure, because of the loss absorption provided by more junior obligations and by the volume of deposits in BOK's liability structure; hence, the long-term deposits are rated Aa3, two notches above the BCA. Furthermore, because of the comparative thinness in its debt structure at the bank, we see possible loss severity in all of its debt classes to be potentially high; hence, its issuer rating at the bank is rated A3, one notch below the BCA, similar to the A3 issuer rating at the holding company.

Counterparty Risk (CR) Assessments

BOKF N.A.'s CR Assessment is positioned at A1(cr)/Prime-1(cr)

The CR Assessment, prior to government support, is positioned one notch above the Adjusted BCA based on our view that senior obligations represented by the CR Assessment will be more likely preserved than senior unsecured debt to minimize losses, avoid disruption of critical functions and limit contagion. Thus, in our view, these counterparty obligations should rank above senior unsecured debt at the same legal entity, but not above deposits, given the explicit depositor preference in US law.

Counterparty Risk Rating (CRR)

BOKF N.A.'s CRR is positioned at A2/Prime-1

The CRR is equal to its a2 adjusted BCA and one notch below the level of the CR Assessment. This reflects Moody's view that CRR liabilities are likely to benefit from a lower probability of default than other unsecured senior creditors because Moody's believes that the FDIC will consider the extent to which honoring the failed bank's operating obligations supports the value of the franchise in receivership. However, the CRR also reflects Moody's general expectation that CRR liabilities would face high loss severity in default, because Moody's expects the volume of this tranche of liabilities for such banks to be very small as failure or default approaches and the amount of more junior ranking liabilities would also be more limited.

About Moody's Bank Scorecard

Our Scorecard is designed to capture, express and explain in summary form our Rating Committee's judgment. When read in conjunction with our research, a fulsome presentation of our judgment is expressed. As a result, the output of our Scorecard may materially differ from that suggested by raw data alone (though it has been calibrated to avoid the frequent need for strong divergence). The Scorecard output and the individual scores are discussed in rating committees and may be adjusted up or down to reflect conditions specific to each rated entity.

Rating methodology and scorecard factors

Exhibit 3

BOK Financial Corporation

Macro Factors

Weighted Macro Profile		Very Strong -	100%				
Factor	Historic Ratio	Initial Score	Expected Trend	Assigned Score	Key driver #1	Key driver #2	
Solvency							
Asset Risk							
Problem Loans / Gross Loans	1.2%	aa2	↓	a2	Sector concentration	Long-run loss performance	
Capital							
Tangible Common Equity / Risk Weighted Assets (Basel III - fully loaded)	12.1%	a2	↔	baa1	Expected trend		
Profitability							
Net Income / Tangible Assets	1.2%	a2	↔	a2	Return on assets		
Combined Solvency Score		a1		a3			
Liquidity							
Funding Structure							
Market Funds / Tangible Banking Assets	8.1%	aa3	↓↓	a2	Expected trend		
Liquid Resources							
Liquid Banking Assets / Tangible Banking Assets	42.0%	aa2	↓	aa3	Quality of liquid assets		
Combined Liquidity Score		aa3		a1			
Financial Profile				a2			
Qualitative Adjustments				Adjustment			
Business Diversification				0			
Opacity and Complexity				0			
Corporate Behavior				0			
Total Qualitative Adjustments				0			
Sovereign or Affiliate constraint				Aaa			
BCA Scorecard-indicated Outcome - Range				a1 - a3			
Assigned BCA				a2			
Affiliate Support notching				0			
Adjusted BCA				a2			

Balance Sheet	in-scope (USD Million)	% in-scope	at-failure (USD Million)	% at-failure
Other liabilities	5,908	12.9%	9,764	21.3%
Deposits	38,559	84.1%	34,703	75.7%
Preferred deposits	38,559	84.1%	34,703	75.7%
Equity	1,375	3.0%	1,375	3.0%
Total Tangible Banking Assets	45,842	100.0%	45,842	100.0%

Debt Class	De Jure waterfall		De Facto waterfall		Notching		LGF	Assigned	Additional	Preliminary
	Instrument	Sub-	Instrument	Sub-	De Jure	De Facto	Notching	LGF	Notching	Rating
	volume +	ordination	volume +	ordination			Guidance	notching		Assessment
	subordination		subordination				vs.			
							Adjusted			
							BCA			
Counterparty Risk Rating	3.0%	3.0%	3.0%	3.0%	-1	-1	0	0	0	a2
Counterparty Risk Assessment	3.0%	3.0%	3.0%	3.0%	0	0	1	1	0	a1 (cr)
Deposits	78.7%	3.0%	78.7%	3.0%	2	2	2	2	0	aa3
Senior unsecured holding company debt	3.0%	3.0%	3.0%	3.0%	-1	-1	-1	-1	0	a3

Instrument Class	Loss Given		Additional	Preliminary Rating	Government		Local Currency	Foreign
	Failure	notching			Support	notching	Rating	Currency
				Assessment				Rating
Counterparty Risk Rating	0		0	a2	0		A2	A2
Counterparty Risk Assessment	1		0	a1 (cr)	0		A1(cr)	
Deposits	2		0	aa3	0		Aa3	
Senior unsecured holding company debt	-1		0	a3	0		A3	

[1] Where dashes are shown for a particular factor (or sub-factor), the score is based on non-public information.

Source: Moody's Investors Service

Ratings

Exhibit 4

Category	Moody's Rating
BOK FINANCIAL CORPORATION	
Outlook	Stable
Issuer Rating	A3
LEAD BANK: BOKF, NA	
Outlook	Stable
Counterparty Risk Rating	A2/P-1
Bank Deposits	Aa3/P-1
Baseline Credit Assessment	a2
Adjusted Baseline Credit Assessment	a2
Counterparty Risk Assessment	A1(cr)/P-1(cr)
Issuer Rating	A3

Source: Moody's Investors Service

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