MOODY'S INVESTORS SERVICE

CREDIT OPINION
7 March 2019

Update

Rate this Research

Contacts

Megan Fox +1.212.553.4986
AVP-Analyst
megan.fox@moodys.com

Norah Zhang +1.212.553.1895
Associate Analyst
norah.zhang@moodys.com

Andrea Usai +1.212.553.7857
Associate Managing Director
andrea.usai@moodys.com

M. Celina Vansetti +1.212.553.4845
MD-Banking
celina.vansetti-hutchins@moodys.com

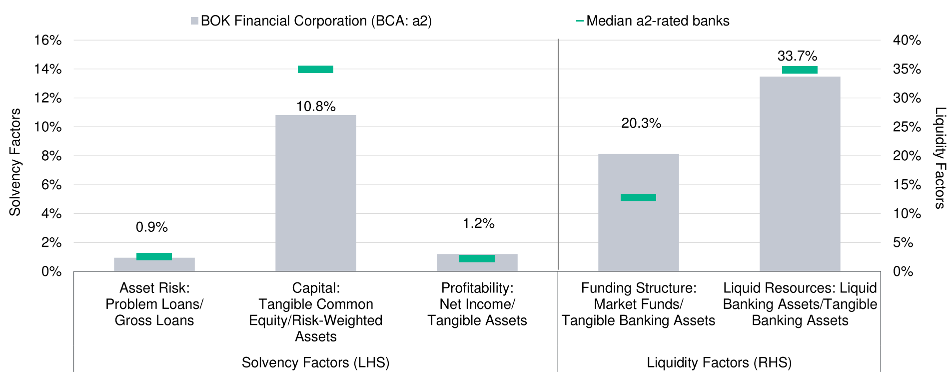
BOK Financial Corporation

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). This assessment reflects the firm's conservative risk culture, good core profitability, strong liquidity and core deposit funding. BOK's strong liquidity profile is supported by its ample holdings of high quality liquid assets. The bank's profitability benefits from good fee revenue supporting its return on assets in the low interest environment. BOK's primary credit challenge has been its sizeable energy exposure, the highest among rated US banks at 108% of tangible common equity (TCE) as of 31 December 2018, given the volatility in the sector. Nonetheless, BOK's asset quality performance, in both its energy and non-energy portfolios, has been good reflecting, in our view, the bank's conservative risk culture. Additionally, BOK's recent acquisition of CoBiz Financial Inc. resulted in a decline in its capitalization and a modest increase in its commercial real estate (CRE) concentration, which are credit challenges.

Exhibit 1
Rating Scorecard - Key Financial Ratios



Source: Moody's Financial Metrics

Credit strengths

» Good profitability supported by strong fee revenue base

» Sizeable holdings of liquid assets support a strong liquidity profile

» Top deposit-taker in Oklahoma supporting core deposit base

Credit challenges

» Energy and CRE concentrations weigh on the firm's asset risk profile

» Capitalization has declined following recent acquisition

Outlook

BOK's stable rating outlook reflects our view that the bank's favorable profitability and asset quality trends will persist and that its capitalization will improve.

Factors that could lead to an upgrade

Upward ratings movement would depend on substantial and sustained improvement in capitalization and reduced asset concentrations in energy and CRE.

Factors that could lead to a downgrade

Downward ratings movement could occur if our expected improvement in its capitalization and lower market funding did not materialize.

Key indicators

Exhibit 2

BOK Financial Corporation (Consolidated Financials) [1]

	12-18[2]	12-17[2]	12-16[2]	12-15[2]	12-14[3]	CAGR/Avg.[4]
Total Assets (USD billion)	38	32	33	31	29	7.0[5]
Tangible Common Equity (USD billion)	3.3	3.1	2.8	2.8	2.8	4.1[5]
Problem Loans / Gross Loans (%)	0.9	1.2	1.5	1.0	0.7	1.1[6]
Tangible Common Equity / Risk Weighted Assets (%)	10.8	12.0	11.0	11.9	13.3	11.4[7]
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	5.8	6.5	8.8	5.6	3.5	6.1[6]
Net Interest Margin (%)	3.1	2.8	2.5	2.5	2.5	2.7[6]
PPI / Average RWA (%)	2.1	2.1	1.6	2.1	2.1	2.0[7]
Net Income / Tangible Assets (%)	1.2	1.1	0.7	0.9	1.0	1.0[6]
Cost / Income Ratio (%)	63.2	65.5	71.6	65.3	66.1	66.3[6]
Market Funds / Tangible Banking Assets (%)	20.3	18.4	17.7	19.9	13.0	17.9[6]
Liquid Banking Assets / Tangible Banking Assets (%)	33.7	37.6	35.9	39.6	41.9	37.7[6]
Gross Loans / Due to Customers (%)	86.2	78.7	76.7	77.1	68.6	77.5[6]

[1] All figures and ratios are adjusted using Moody's standard adjustments. [2] Basel III - fully-loaded or transitional phase-in; US GAAP. [3] Basel I; US GAAP. [4] May include rounding differences due to scale of reported amounts. [5] Compound Annual Growth Rate (%) based on time period presented for the latest accounting regime. [6] Simple average of periods presented for the latest accounting regime. [7] Simple average of Basel III periods presented.
Source: Moody's Financial Metrics

Profile

BOK Financial Corporation is headquartered in Tulsa, Oklahoma with $38 billion of total assets, $25 billion of deposits and $4.4 billion of shareholders' equity as of 31 December 2018. Its lead bank, BOKF, NA, operates in eight 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

Conservative risk culture offsets energy and CRE risk concentrations

We believe BOK's long history of good asset quality is evidence of its conservative risk culture. Nonetheless, BOK's primary credit challenge is the company's concentrations in energy and CRE lending, which is reflected in our adjustment to the Asset Risk score in the scorecard to a2 from aa2. While relative stability in oil prices has helped the energy sector recover from the 2015-17 downturn, we believe the sector has proven to be volatile over the long term. Nevertheless, BOK's energy exposure is mitigated by its good track record during the last downturn with losses within our expectations. We attribute this strong performance to BOK's conservative underwriting practices. For example, the company uses in-house engineers as part of the underwriting process, it lends primarily on proved producing oil and gas reserves with low loan-to-values, and it revalues its borrowing base (collateral) at least twice a year. BOK's sizeable energy exposure mirrors the sector's importance to the local economies of Oklahoma and Texas, where the bank has significant operations. With regard to BOK's CRE lending, the CoBiz acquisition increased BOK's CRE concentration to 2.1 times its TCE up from the previously stable 1.7 times TCE. BOK's CRE concentration is above the median of its a2 BCA peers.

Capitalization is a credit challenge

BOK's Moody's TCE as a percentage of risk-weighted assets ratio (Moody's TCE ratio) declined materially following its recent acquisition and share repurchase activity to 10.8% at year-end 2018 from 12% at 30 September 2018. In October 2018, BOK closed the acquisition of CoBiz Financial, Inc., a $3.8 billion bank operating in the Denver and Phoenix markets. The acquisition reduced BOK's Moody's TCE ratio largely because of its 75% stock and 25% cash financing and goodwill created from the purchase. Similarly, in 2016, BOK's all-cash acquisition of MBT Bancshares (Mobank) of Kansas City, along with increased share repurchases, reduced the bank's Moody's TCE ratio to 11%, from 11.9% in the prior year.

Going forward, we expect BOK's capitalization to improve owing to retained earnings and more modest loan growth. As such, we adjust the Capital score upwards for BOK in our scorecard to a3. Should BOK's capital management posture be more aggressive and improvement not materialize, downward rating pressure would emerge absent improvements in other factors.

Profitability benefits from sizable fee-based revenue, rising interest rates and lower loan-loss provisions

BOK's profitability benefits from healthy fee-based revenues, the latter historically accounting for roughly 35%-50% of net revenues in recent years, which supported its profitability in the extended low interest rate environment. BOK's profitability metrics were hurt during 2015 and 2016 as a result of deterioration in the energy portfolio, which led to elevated loan loss provisions. Stabilization in the energy sector in 2017 supported BOK's improvement in profitability. Furthermore, BOK's NIM has benefited from rising interest rates thanks to its loan mix, which is skewed towards floating-rate commercial and industrial (C&I) loans that are tied to short-term rates.

Ample liquidity and good deposit base thanks to top deposit-taker in Oklahoma

BOK's enjoys a stable core funding base that is driven by its leading deposit market shares in its home state of Oklahoma. According to FDIC data as of June 30, 2018, BOK's deposit market share in Oklahoma was 13% of deposits, about twice that of the next bank, and accounting for 45% of its deposit base. BOK's core deposits comfortably fund its entire loan portfolio. In addition, the bank has sizeable holdings of liquid assets, which support its strong liquidity profile. Furthermore, its strong liquidity derives from the conservative composition of its securities portfolio. This offsets its modest reliance on market funds, which largely consists of FHLB borrowings.

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.

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, 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, due to 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

Regarding CR Assessments, they are opinions of how counterparty obligations are likely to be treated if a bank fails and are distinct from debt and deposit ratings in that they (1) consider only the risk of default rather than both the likelihood of default and the expected financial loss suffered in the event of default and (2) apply to counterparty obligations and contractual commitments rather than debt or deposit instruments. The CR Assessment is an opinion of the counterparty risk related to a bank's covered bonds, contractual performance obligations (servicing), derivatives (e.g., swaps), letters of credit, guarantees and liquidity facilities.

The 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 in order 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)

Moody's Counterparty Risk Ratings are opinions of the ability of entities to honor the uncollateralized portion of non-debt counterparty financial liabilities (CRR liabilities) and also reflect the expected financial losses in the event such liabilities are not honored. CRR liabilities typically relate to transactions with unrelated parties. Examples of CRR liabilities include the uncollateralized portion of payables arising from derivatives transactions and the uncollateralized portion of liabilities under sale and repurchase agreements. CRRs are not applicable to funding commitments or other obligations associated with covered bonds, letters of credit, guarantees, servicer and trustee obligations, and other similar obligations that arise from a bank performing its essential operating functions.

The CRR for BOKF N.A. is A2/P-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.

Data sources: Unless noted otherwise, data in this report is sourced from company reports or Moody's Banking Financial Metrics.

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						
TCE / RWA	10.8%	baa2	↑	a3	Expected trend	
Profitability						
Net Income / Tangible Assets	1.0%	baa1	←→	a2	Return on assets	
Combined Solvency Score		a2		a2		
Liquidity						
Funding Structure						
Market Funds / Tangible Banking Assets	20.3%	baa1	↑	a3	Expected trend	
Liquid Resources						
Liquid Banking Assets / Tangible Banking Assets	33.7%	a1	←→	a1	Quality of liquid assets	
Combined Liquidity Score		a3		a2		
Financial Profile				a2		
Business Diversification				0		
Opacity and Complexity				0		
Corporate Behavior				0		
Total Qualitative Adjustments				0		
Sovereign or Affiliate constraint:				Aaa		
Scorecard Calculated BCA 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	10,479	28.3%	13,008	35.1%
Deposits	25,286	68.3%	22,757	61.5%
Preferred deposits	25,286	68.3%	22,757	61.5%
Dated subordinated holding company debt	152	0.4%	152	0.4%
Equity	1,111	3.0%	1,111	3.0%
Total Tangible Banking Assets	37,028	100%	37,028	100%

Debt class	De Jure waterfall		De Facto waterfall		Notching		LGF Notching Guidance vs. Adjusted BCA	Assigned LGF notching	Additional notching	Preliminary Rating Assessment
	Instrument volume + subordination	Sub-ordination	Instrument volume + subordination	Sub-ordination	De Jure	De Facto				
Counterparty Risk Rating	3.4%	3.4%	3.4%	3.4%	-1	-1	0	0	0	a2
Counterparty Risk Assessment	3.4%	3.4%	3.4%	3.4%	0	0	1	1	0	a1 (cr)
Deposits	64.9%	3.4%	64.9%	3.4%	2	2	2	2	0	aa3
Dated subordinated holding company debt	3.4%	3.0%	3.4%	3.0%	-1	-1	-1	-1	0	a3

Instrument class	Loss Given Failure notching	Additional Notching	Preliminary Rating Assessment	Government Support notching	Local Currency Rating	Foreign Currency 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	--
Dated subordinated 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 Financial Metrics

Ratings

Exhibit 4

Category	Moody's Rating
BOK FINANCIAL CORPORATION	
Outlook	Stable
Issuer Rating	A3
Subordinate	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

REPORT NUMBER 1162425

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

Moody's INVESTORS SERVICE