BOK FINANCIAL CORP ET AL
Form 10-Q
April 27, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q
(Mark One)
ý QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended March 31, 2018
OR
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____________ to ______________

Commission File No. 0-19341

BOK FINANCIAL CORPORATION
(Exact name of registrant as specified in its charter)

Oklahoma	73-1373454
(State or other jurisdiction of Incorporation or Organization)	(IRS Employer Identification No.)

Bank of Oklahoma Tower Boston Avenue at Second Street Tulsa, Oklahoma	74192
(Address of Principal Executive Offices)	(Zip Code)

(918) 588-6000
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).Yes ý No ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ý Accelerated filer ¨
Non-accelerated filer ¨ (Do not check if a smaller reporting company) Smaller reporting company ¨

Emerging growth company ¨

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ¨ No ý

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: 65,459,505 shares of common stock ($.00006 par value) as of March 31, 2018.

BOK Financial Corporation
Form 10-Q
Quarter Ended March 31, 2018

Index

Part I. Financial Information
Management's Discussion and Analysis (Item 2) 1
Market Risk (Item 3) 41
Controls and Procedures (Item 4) 44
Consolidated Financial Statements – Unaudited (Item 1) 45
Quarterly Financial Summary – Unaudited (Item 2) 113
Quarterly Earnings Trend – Unaudited 117

Part II. Other Information
Item 1. Legal Proceedings 117
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds 117
Item 6. Exhibits 117
Signatures 118

Management’s Discussion and Analysis of Financial Condition and Results of Operations
Performance Summary

BOK Financial Corporation (“the Company”) reported net income of $105.6 million or $1.61 per diluted share for the first quarter of 2018, compared to $88.4 million or $1.35 per diluted share for the first quarter of 2017 and $72.5 million or $1.11 per diluted share for the fourth quarter of 2017. Lower federal corporate income tax rates decreased income tax expense for the first quarter of 2018 by approximately $13.8 million. Accounting for the Tax Cuts and Jobs Act increased income tax expense for the fourth quarter of 2017 by $11.7 million.

Highlights of the first quarter of 2018 included:

- Net interest revenue totaled $219.7 million, up from $201.2 million in the first quarter of 2017 and $216.9 million in the fourth quarter of 2017. The increase in net interest revenue over the prior year was driven by both improving yields and growth in average earning assets. Net interest margin was 2.99 percent for the first quarter of 2018. Net interest margin was 2.81 percent for the first quarter of 2017 and 2.97 percent for the fourth quarter of 2017. Average earning assets were $29.9 billion for the first quarter of 2018 compared to $29.6 billion for the first quarter of 2017.
- Fees and commissions revenue totaled $159.0 million. Adoption of the new revenue recognition accounting standard in the first quarter of 2018 resulted in $9.5 million of interchange fees we pay to issuing banks being netted against transaction card revenue. Previously these fees were included in data processing and communications expense. Excluding this impact, fees and commissions revenue increased $3.8 million over the first quarter of 2017. Growth in fiduciary and asset management revenue and transaction card revenue was partially offset by lower brokerage and trading revenue. Fees and commissions revenue was largely unchanged compared to the fourth quarter of 2017. Increased mortgage banking and transaction card revenues were offset by decreased brokerage and trading revenue.
- Other operating expense totaled $244.4 million, an $8.9 million or 4 percent increase over the first quarter of 2017 on a comparable basis. Personnel expense increased $3.5 million, primarily due to incentive compensation expense and standard annual merit increases. Non-personnel expense increased $5.4 million due largely to a write-down of certain repossessed oil and gas properties. Operating expense decreased $10.0 million compared to the fourth quarter of 2017 on a comparable basis. Personnel expense decreased $5.4 million, primarily due to decreased incentive compensation expense. Non-personnel expense decreased $4.7 million. Professional fees and services expense and mortgage banking expense were lower in the first quarter.
- Income tax expense was $30.9 million or 22.7 percent of net income before taxes for the first quarter of 2018 compared to $38.1 million or 30.1 percent for the first quarter of 2017 and $54.3 million or 42.9 percent for the fourth quarter of 2017. Beginning January 1, 2018, the Tax Cuts and Jobs Act ("the Act") decreased the corporate income tax rate from 35% to 21%. Accounting for the Act required us to revalue our deferred tax assets and liabilities in 2017. We anticipate our effective tax rate to be between 22 percent and 23 percent for 2018.
- The Company recorded a $5.0 million negative provision for credit losses in the first quarter of 2018, due to improved credit metric trends. A $7.0 million negative provision for credit losses was recorded in the fourth quarter of 2017. The company had net charge-offs of $1.3 million or 0.03 percent of average loans on an annualized basis in the first quarter of 2018 compared to net charge-offs of $11.7 million or 0.27 percent of average loans on an annualized basis for the fourth quarter of 2017.
- The combined allowance for credit losses totaled $228 million or 1.32 percent of outstanding loans at March 31, 2018 compared to $234 million or 1.37 percent of outstanding loans at December 31, 2017.
- Nonperforming assets that are not guaranteed by U.S. government agencies totaled $195 million or 1.13 percent of outstanding loans and repossessed assets at March 31, 2018 and $207 million or 1.22 percent of outstanding loans and repossessed assets at December 31, 2017. In addition, potential problem loans decreased $19 million to $222 million at March 31, 2018.
- Average loan balances grew by $80 million over the previous quarter, primarily due to growth in commercial loan balances. Period-end outstanding loan balances totaled $17.3 billion at March 31, 2018, a $184 million increase over December 31, 2017.

- 1 -

- Average deposits were largely unchanged compared to the previous quarter. Average demand deposit balances decreased $266 million, largely offset by a $202 million increase in interest-bearing transaction deposit balances. Period-end deposits were $22.2 billion at March 31, 2018, a $144 million increase over December 31, 2017.
- The common equity Tier 1 capital ratio at March 31, 2018 was 12.06 percent. Other regulatory capital ratios were Tier 1 capital ratio, 12.06 percent, total capital ratio, 13.49 percent, and leverage ratio, 9.40 percent. At December 31, 2017, the common equity Tier 1 capital ratio was 12.05 percent, the Tier 1 capital ratio was 12.05 percent, total capital ratio was 13.54 percent, and leverage ratio was 9.31 percent.
- The company paid a regular cash dividend of $29.3 million or $0.45 per common share during the first quarter of 2018. On April 24, 2018, the board of directors approved a quarterly cash dividend of $0.45 per common share payable on or about May 25, 2018 to shareholders of record as of May 11, 2018.
- The company repurchased 82,583 common shares at an average price of $91.83 per share during the first quarter of 2018. The company repurchased 80,000 common shares at an average price of $92.54 per share during the fourth quarter of 2017.

Results of Operations
Net Interest Revenue and Net Interest Margin

Net interest revenue is the interest earned on debt securities, loans and other interest-earning assets less interest paid for interest-bearing deposits and other borrowings. The net interest margin is calculated by dividing tax-equivalent net interest revenue by average interest-earning assets. Net interest spread is the difference between the average rate earned on interest-earning assets and the average rate paid on interest-bearing liabilities. Net interest margin is typically greater than net interest spread due to interest income earned on assets funded by non-interest bearing liabilities such as demand deposits and equity.

Net interest revenue totaled $219.7 million for the first quarter of 2018, up from $201.2 million in the first quarter of 2017 and $216.9 million in the fourth quarter of 2017. Net interest margin was 2.99 percent for the first quarter of 2018, 2.81 percent for the first quarter of 2017 and 2.97 percent for the fourth quarter of 2017. Net interest margin was 3 basis points lower in the first quarter of 2018 due to the impact of lower effective tax rates from the implementation of the Tax Cut and Jobs Act on the tax-equivalent yield of our tax-exempt loans and securities.

Tax-equivalent net interest revenue increased $16.1 million over the first quarter of 2017. Table 1 shows the effect on net interest revenue from changes in average balances and interest rates for various types of earning assets and interest-bearing liabilities. Changes in interest rates and yields increased net interest revenue by $13.2 million. The benefit of an increase in short-term interest rates on the floating-rate earning assets was partially offset by higher borrowing costs. Tax-equivalent net interest revenue increased $2.9 million due to growth in average assets. Growth in the average balances of trading securities, fair value option securities and loans was partially offset by decreases in available for sale securities and investment securities.

The tax-equivalent yield on earning assets was 3.61 percent, up 46 basis points over the first quarter of 2017, primarily due to increases in short-term interest rates resulting from three 25 basis point increases in the federal funds rate by the Federal Reserve. Loan yields increased 57 basis points to 4.45 percent. The yield on interest-bearing cash and cash equivalents increased 75 basis points. The available for sale securities portfolio yield was up 18 basis points to 2.23 percent. The yield on the fair value option securities portfolio increased 68 basis points primarily related to a change in the mix of securities and an increase in average rates. Funding costs were up 41 basis points over the first quarter of 2017. The cost of interest-bearing deposits increased 22 basis points and the cost of other borrowed funds increased 74 basis points. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities was 31 basis points for the first quarter of 2018, up 13 basis points over the first quarter of 2017.

Average earning assets for the first quarter of 2018 increased $277 million or 1 percent over the first quarter of 2017. Average loans, net of allowance for loan losses, increased $146 million, due primarily to growth in commercial loans partially offset by lower residential mortgage loan balances. The average balance of trading securities increased $354 million primarily due to expansion of U.S. agency residential mortgage-backed securities trading activities. Fair value option securities held as an economic hedge of our mortgage servicing rights increased $210 million. Available for sale securities decreased $330 million. Investment securities balances decreased $90 million.

Average deposits decreased $243 million compared to the first quarter of 2017. Interest-bearing transaction account balances decreased $223 million. Time deposit balances decreased $108 million. Demand deposit balances increased $50 million and savings account balances increased $39 million. Average borrowed funds increased $542 million over the first quarter of 2017, primarily due to the net impact of increased borrowings from the Federal Home Loan Banks and lower average repurchase agreement balances.

Net interest margin increased 2 basis points over the fourth quarter of 2017. The yield on average earning assets increased 12 basis points. The loan portfolio yield increased 16 basis points. The yield on the available for sale

securities portfolio increased 2 basis points. The yield on interest-bearing cash and cash equivalents increased 30 basis points. Funding costs were 0.93 percent, up 14 basis points over the prior quarter. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities increased 4 basis points over the prior quarter.

Average earning assets increased $120 million compared to the fourth quarter of 2017. Trading securities balances increased $373 million. Average interest-bearing cash and cash equivalents balances were up $83 million. Average loan balances grew by $80 million. Available for sale securities decreased $199 million and fair value option securities held as an economic hedge of our mortgage servicing rights decreased $166 million.

Average deposits decreased $34 million compared to the previous quarter. Demand deposit balances decreased $266 million, partially offset by a $202 million increase in interest-bearing transaction account balances. Time deposit and saving account balances also grew over the prior quarter. The average balance of borrowed funds increased $161 million over the fourth quarter of 2017, primarily due to increased borrowings from the Federal Home Loan Banks and funds purchased balances.

Our overall objective is to manage the Company’s balance sheet to be relatively neutral to changes in interest rates as is further described in the Market Risk section of this report. Approximately 81% of our commercial and commercial real estate loan portfolios are either variable rate or fixed rate that will reprice within one year. These loans are funded primarily by deposit accounts that are either non-interest bearing, or that reprice more slowly than the loans. The result is a balance sheet that would be asset sensitive, which means that assets generally reprice more quickly than liabilities. One of the strategies that we use to manage toward a relative rate-neutral position is to purchase fixed-rate residential mortgage-backed securities issued primarily by U.S. government agencies and fund them with market-rate-sensitive liabilities. The liability-sensitive nature of this strategy provides an offset to the asset-sensitive characteristics of our loan portfolio. We also may use derivative instruments to manage our interest rate risk. For the remainder of 2018, we expect low-to-mid single digit expansion in net interest margin for each 25 basis point increase in the federal funds rate.

The effectiveness of these strategies is reflected in the overall change in net interest revenue due to changes in interest rates as shown in Table 1 and in the interest rate sensitivity projections as shown in the Market Risk section of this report.

Table 1 -- Volume/Rate Analysis
(In thousands)

	Three Months Ended March 31, 2018 / 2017		
		Change Due To[1]	
	Change	Volume	Yield/Rate
Tax-equivalent interest revenue:			
Interest-bearing cash and cash equivalents	$3,738	$(134)	$ 3,872
Trading securities	2,440	3,327	(887)
Investment securities:			
Taxable securities	(57)	71	(128)
Tax-exempt securities	(685)	(558)	(127)
Total investment securities	(742)	(487)	(255)
Available for sale securities:			
Taxable securities	2,888	(1,302)	4,190
Tax-exempt securities	(535)	(330)	(205)
Total available for sale securities	2,353	(1,632)	3,985
Fair value option securities	2,439	1,529	910
Restricted equity securities	808	565	243
Residential mortgage loans held for sale	8	(183)	191
Loans	25,555	1,082	24,473
Total tax-equivalent interest revenue	36,599	4,067	32,532
Interest expense:			
Transaction deposits	6,280	(246)	6,526
Savings deposits	1	10	(9)
Time deposits	584	(312)	896
Funds purchased	251	105	146
Repurchase agreements	175	(34)	209
Other borrowings	13,194	1,645	11,549
Subordinated debentures	(22)	2	(24)
Total interest expense	20,463	1,170	19,293
Tax-equivalent net interest revenue	16,136	2,897	13,239
Change in tax-equivalent adjustment	(2,418)		
Net interest revenue	$18,554		

[1] Changes attributable to both volume and yield/rate are allocated to both volume and yield/rate on an equal basis.

Other Operating Revenue

Other operating revenue was $156.0 million for the first quarter of 2018, a $5.1 million decrease compared to the first quarter of 2017 and a $1.3 million decrease compared to the fourth quarter of 2017. Fees and commissions revenue increased $3.8 million compared to the first quarter of 2017 and was very consistent compared to the prior quarter.

Table 2 – Other Operating Revenue
(In thousands)

	Three Months Ended March 31,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Dec 31, 2017	Increase (Decrease)	% Increase (Decrease)
	2018	2017					
Brokerage and trading revenue	$30,648	$33,623	$(2,975)	(9)%	$33,045	$(2,397)	(7)%
Transaction card revenue[1]	20,990	18,177	2,813	15%	20,028	962	5%
Fiduciary and asset management revenue	41,832	38,631	3,201	8%	41,767	65	—%
Deposit service charges and fees	27,161	27,777	(616)	(2)%	27,685	(524)	(2)%
Mortgage banking revenue	26,025	25,191	834	3%	24,362	1,663	7%
Other revenue	12,330	11,752	578	5%	11,762	568	5%
Total fees and commissions revenue	158,986	155,151	3,835	2%	158,649	337	—%
Other gains (losses), net	(664)	3,627	(4,291)	N/A	552	(1,216)	N/A
Loss on derivatives, net	(5,685)	(450)	(5,235)	N/A	(3,045)	(2,640)	N/A
Loss on fair value option securities, net	(17,564)	(1,140)	(16,424)	N/A	(4,238)	(13,326)	N/A
Change in fair value of mortgage servicing rights	21,206	1,856	19,350	N/A	5,898	15,308	N/A
Gain (loss) on available for sale securities, net	(290)	2,049	(2,339)	N/A	(488)	198	N/A
Total other operating revenue	$155,989	$161,093	$(5,104)	(3)%	$157,328	$(1,339)	(1)%
Non-GAAP Reconciliation:[1]							
Transaction card revenue on income statement	$20,990	$27,380	N/A	N/A	$29,536	N/A	N/A
Netting adjustment	—	(9,203)	N/A	N/A	(9,508)	N/A	N/A
Transaction card revenue after netting adjustment	$20,990	$18,177	2,813	15%	$20,028	962	5%

[1] Non-GAAP measure to net interchange charges from prior quarters between transaction card revenue and data processing and communications expense. This measure has no effect on net income or earnings per share.

Certain percentage increases (decreases) in non-fees and commissions revenue are not meaningful for comparison purposes based on the nature of the item.

Fees and commissions revenue

Diversified sources of fees and commissions revenue are a significant part of our business strategy and represented 42 percent of total revenue for the first quarter of 2018, excluding provision for credit losses and gains and losses on other assets, securities and derivatives and the change in the fair value of mortgage servicing rights. We believe that a variety of fee revenue sources provides an offset to changes in interest rates, values in the equity markets, commodity

prices and consumer spending, all of which can be volatile. As an example of this strength, many of the economic factors such as rising interest rates resulting in growth in net interest revenue or fiduciary and asset management revenue, may also decrease mortgage production volumes. We expect growth in other operating revenue to come through offering new products and services and by further development of our presence in other markets. However, current and future economic conditions, regulatory constraints, increased competition and saturation in our existing markets could affect the rate of future increases.

Brokerage and trading revenue, which includes revenues from trading, customer hedging, retail brokerage and investment banking, decreased $3.0 million or 9 percent compared to the first quarter of 2017, primarily due to customer reaction to rising interest rates along with changes in regulation.

Revenue earned from retail brokerage transactions decreased $2.1 million or 31 percent compared to the first quarter of 2017 to $4.8 million. Retail brokerage revenue includes fees and commissions earned on sales of fixed income securities, annuities, mutual funds and other financial instruments to retail customers. Revenue is primarily based on the volume of customer transactions and applicable commission rate for each product type. The implementation of the new Department of Labor ("DOL") fiduciary rule in the second quarter of 2017 has negatively impacted retail brokerage revenue. New regulation issued by the DOL amended the definition of investment advice under the Employee Retirement Income Security Act ("ERISA"). The new rule is designed to provide better protection to plans, participants, beneficiaries and individual retirement account ("IRA") owners against conflicts of interest, imprudence and disloyalty.

Trading revenue includes net realized and unrealized gains primarily related to sales of U.S. government securities, residential mortgage-backed securities guaranteed by U.S. government agencies and municipal securities to institutional customers and related derivative instruments. Trading revenue was $10.4 million for the first quarter of 2018, a $650 thousand or 6 percent decrease compared to the first quarter of 2017.

Customer hedging revenue is based primarily on realized and unrealized changes in the fair value of derivative contracts held for customer risk management programs. As more fully discussed under Customer Derivative Programs in Note 3 of the Consolidated Financial Statements, we offer commodity, interest rate, foreign exchange and equity derivatives to our customers. Customer hedging revenue totaled $10.9 million for the first quarter of 2018, a $731 thousand or 6 percent decrease compared to the first quarter of 2017 .

Investment banking revenue, which includes fees earned upon completion of underwriting and financial advisory services and loan syndication fees, totaled $4.6 million for the first quarter of 2018, a $511 thousand or 13 percent increase over the first quarter of 2017. Investment banking revenue is primarily related to the timing and volume of completed transactions.

Brokerage and trading revenue decreased $2.4 million compared to the fourth quarter of 2017, largely driven by a decrease in investment banking revenue. Many municipal and public school district customers completed debt offerings in the fourth quarter in advance of tax law changes, which prohibit pre-funding of debt issuance.

Transaction card revenue depends largely on the volume and amount of transactions processed, the number of TransFund automated teller machine (“ATM”) locations and the number of merchants served. Transaction card revenue increased $2.8 million or 15 percent over the first quarter of 2017 primarily due to a $1.4 million early termination penalty in the first quarter of 2018. Excluding this termination penalty, TransFund electronic funds transfer ("EFT") network revenue increased $1.4 million or 9 percent over the first quarter of 2017.

Fiduciary and asset management revenue is earned through managing or holding of assets for customers and executing transactions or providing related services. Approximately 80 percent of fiduciary and asset management revenue is primarily based on the fair value of assets. Rates applied to asset values vary based on the nature of the relationship. Fiduciary relationships and managed asset relationships generally have higher fee rates than non-fiduciary and/or managed relationships.

Fiduciary and asset management revenue grew by $3.2 million or 8 percent over the first quarter of 2017, primarily due to growth in assets under management, improved pricing discipline and decreased fee waivers. Fiduciary and asset management revenue was consistent between the first quarter of 2018 and the fourth quarter of 2017 at $41.8

million.

A distribution of assets under management or administration and related fiduciary and asset management revenue follows:

Table 3 -- Assets Under Management or Administration

	Three Months Ended March 31,					
	2018			2017		
	Balance	Revenue[1]	Margin[2]	Balance	Revenue[1]	Margin[2]
Managed fiduciary assets:						
Personal	$7,577,717	$ 22,632	1.19 %	$7,371,857	$ 20,111	1.09 %
Institutional	13,322,472	5,469	0.16 %	12,444,816	5,295	0.17 %
Total managed fiduciary assets	20,900,189	28,101	0.54 %	19,816,673	25,406	0.51 %
Non-managed assets:						
Fiduciary	25,748,101	12,997	0.20 %	25,176,247	12,562	0.20 %
Non-fiduciary	16,321,458	734	0.02 %	16,352,841	663	0.02 %
Safekeeping and brokerage assets under administration	15,909,241	—	— %	16,073,195	—	— %
Total non-managed assets	57,978,800	13,731	0.09 %	57,602,283	13,225	0.09 %
Total assets under management or administration	$78,878,989	$ 41,832	0.21 %	$77,418,956	$ 38,631	0.20 %

[1] Fiduciary and asset management revenue includes asset-based and other fees associated with the assets.

[2] Annualized revenue divided by period-end balance.

A summary of changes in assets under management or administration for the three months ended March 31, 2018 and 2017 follows:

Table 4 -- Changes in Assets Under Management or Administration

	Three Months Ended March 31,	
	2018	2017
Beginning balance	$81,827,797	$75,407,863
Net inflows (outflows)	(3,434,649)	(357,986)
Net change in fair value	485,841	2,369,079
Ending balance	$78,878,989	$77,418,956

Deposit service charges and fees were $27.2 million for the first quarter of 2018, a decrease of $616 thousand or 2 percent compared to the first quarter of 2017. Commercial account service charge revenue totaled $11.9 million, an increase of $337 thousand or 3 percent. Overdraft fees were $8.6 million, a $1.1 million or 10.9 percent decrease compared to the first quarter of 2017. Service charges on deposit accounts with a standard monthly fee were $1.7 million, a decrease of $75 thousand or 4 percent. Deposit service charges and fees decreased $524 thousand compared to the prior quarter.

Mortgage banking revenue increased $834 thousand or 3 percent compared to the first quarter of 2017. Mortgage production revenue increased $909 thousand. Internal changes to better manage our loan production pipeline, improved values of originated servicing rights and an increase in delivery through the retail channel resulted in an increase of 18 basis points in gain on sale margin. Mortgage loan production volumes decreased $34 million. Production volumes decreased compared to the prior year as average primary mortgage interest rates were up 11 basis

points over the first quarter of 2017. Mortgage servicing revenue was relatively consistent compared to the first quarter of 2017. The outstanding principal balance of mortgage loans serviced for others totaled $22.0 billion, consistent with the first quarter of 2017.

Mortgage banking revenue increased $1.7 million compared to the fourth quarter of 2017. Revenue from mortgage loan production increased $1.7 million due to a 21 basis point increase in gain on sale margin and an increase in production volume.

Table 5 – Mortgage Banking Revenue
(In thousands)

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017	Increase (Decrease)	% Increase (Decrease)	Three Months Ended Dec. 31, 2017	Increase (Decrease)	% Increase (Decrease)
Mortgage production revenue	$9,452	$8,543	$909	11 %	$7,786	$1,666	21 %
Mortgage loans funded for sale	$664,958	$711,019			$840,080		
Add: Current period end outstanding commitments	298,318	381,732			222,919		
Less: Prior period end outstanding commitments	222,919	318,359			334,337		
Total mortgage production volume	$740,357	$774,392	$(34,035)	(4)%	$728,662	$11,695	2 %
Mortgage loan refinances to mortgage loans funded for sale	42 %	44 %	(200) bps		47 %	(500) bps	
Gains on sale margin	1.28 %	1.10 %	18 bps		1.07 %	21 bps	
Primary mortgage interest rates:							
Average	4.28 %	4.17 %	11 bps		3.92 %	36 bps	
Period end	4.44 %	4.14 %	30 bps		3.99 %	45 bps	
Mortgage servicing revenue	$16,573	$16,648	$(75)	— %	$16,576	$(3)	— %
Average outstanding principal balance of mortgage loans serviced for others	22,027,726	22,006,295	21,431	— %	22,054,877	(27,151)	— %
Average mortgage servicing revenue rates	0.31 %	0.31 %	—		0.30 %	1 bp	

[1] Actual interest earned on fair value option securities less internal transfer-priced cost of funds.

Primary rates disclosed in Table 5 above represent rates generally available to borrowers on 30 year conforming mortgage loans.

Net gains on other assets, securities and derivatives

Other net losses totaled $664 thousand in the first quarter of 2018 compared to net gains of $3.6 million in the first quarter of 2017. The first quarter of 2017 included the sale of certain merchant banking investments. Other net gains totaled $552 thousand in the fourth quarter of 2017.

As discussed in the Market Risk section following, the fair value of our mortgage servicing rights ("MSRs") changes in response to changes in primary mortgage loan rates and other assumptions. We attempt to mitigate the earnings volatility caused by changes in the fair value of MSRs by designating certain financial instruments as an economic hedge. Changes in the fair value of these instruments are generally expected to partially offset changes in the fair

value of MSRs.
The net economic cost of the changes in fair value of mortgage servicing rights and related economic hedges was $256 thousand in the first quarter of 2018, including a $21.2 million increase in the fair value of mortgage servicing rights, offset by a $23.3 million decrease in the fair value of securities and derivative contracts held as an economic hedge and $1.8 million of related net interest revenue.

The net economic benefit of changes in the fair value of mortgage servicing rights and related economic hedges was $1.5 million for the first quarter of 2017. The fair value of mortgage servicing rights increased $1.9 million. The fair value of securities and interest rate derivative contracts held as an economic hedge decreased $1.7 million. Net interest earned on securities held as an economic hedge was $1.3 million.
The net economic benefit of changes in the fair value of mortgage servicing rights and related economic hedges was $1.3 million for the fourth quarter of 2017. The fair value of mortgage servicing rights increased by $5.9 million. The fair value of securities and interest rate derivative contracts held as an economic hedge decreased by $7.3 million.

Table 6 - Gain (Loss) on Mortgage Servicing Rights
(In thousands)

	Three Months Ended		
	Mar. 31, 2018	Dec. 31, 2017	Mar. 31, 2017
Loss on mortgage hedge derivative contracts, net	$(5,698)	$(3,057)	$(528)
Loss on fair value option securities, net	(17,564)	(4,238)	(1,140)
Loss on economic hedge of mortgage servicing rights, net	(23,262)	(7,295)	(1,668)
Gain on change in fair value of mortgage servicing rights	21,206	5,898	1,856
Gain (loss) on changes in fair value of mortgage servicing rights, net of economic hedges included in other operating revenue	(2,056)	(1,397)	188
Net interest revenue on fair value option securities[1]	1,800	2,656	1,271
Total economic benefit (cost) of changes in the fair value of mortgage servicing rights, net of economic hedges	$(256)	$1,259	$1,459

[1] Actual interest earned on fair value option securities less internal transfer-priced cost of funds.

Other Operating Expense

Other operating expense for the first quarter of 2018 totaled $244.4 million, an increase of $8.9 million or 4 percent compared to the first quarter of 2017. Personnel expense increased $3.5 million or 3 percent. Non-personnel expense increased $5.4 million or 5 percent compared to the prior year.

Other operating expense decreased $10.0 million compared to the previous quarter. Personnel expense decreased $5.4 million or 4 percent and non-personnel expense decreased $4.7 million or 4 percent.

Table 7 – Other Operating Expense
(In thousands)

	Three Months Ended March 31,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Dec. 31, 2017	Increase (Decrease)	% Increase (Decrease)
	2018	2017					
Regular compensation	$ 84,991	$ 83,228	$ 1,763	2 %	$ 82,785	$ 2,206	3 %
Incentive compensation:							
Cash-based	29,549	28,836	713	2 %	35,531	(5,982)	(17)%
Share-based	2,902	1,603	1,299	81 %	6,212	(3,310)	(53)%
Deferred compensation	44	792	(748)	N/A	1,324	(1,280)	N/A
Total incentive compensation	32,495	31,231	1,264	4 %	43,067	(10,572)	(25)%
Employee benefits	22,461	21,966	495	2 %	19,477	2,984	15 %
Total personnel expense	139,947	136,425	3,522	3 %	145,329	(5,382)	(4)%
Business promotion	6,010	6,717	(707)	(11)%	7,317	(1,307)	(18)%
Charitable contributions to BOKF Foundation	—	—	—	N/A	2,000	(2,000)	N/A
Professional fees and services	10,200	11,417	(1,217)	(11)%	15,344	(5,144)	(34)%
Net occupancy and equipment	24,046	21,624	2,422	11 %	22,403	1,643	7 %
Insurance	6,593	6,404	189	3 %	6,555	38	1 %
Data processing and communications[1]	27,817	25,699	2,118	8 %	28,903	(1,086)	(4)%
Printing, postage and supplies	4,089	3,851	238	6 %	3,781	308	8 %
Net losses (gains) and operating expenses of repossessed assets	7,705	1,009	6,696	664 %	340	7,365	2,166 %
Amortization of intangible assets	1,300	1,802	(502)	(28)%	1,430	(130)	(9)%
Mortgage banking costs	10,149	13,003	(2,854)	(22)%	14,331	(4,182)	(29)%
Other expense	6,574	7,557	(983)	(13)%	6,746	(172)	(3)%
Total other operating expense	$ 244,430	$ 235,508	$ 8,922	4 %	$ 254,479	$ (10,049)	(4)%
Average number of employees (full-time equivalent)	4,899	4,910	(11)	— %	4,900	(1)	— %
Non-GAAP Reconciliation:[1]							
Data processing and communications expense on income statement	27,817	34,902	N/A	N/A	38,411	N/A	N/A
Netting adjustment	—	(9,203)	N/A	N/A	(9,508)	N/A	N/A
Data processing and communications expense after netting adjustment	27,817	25,699	N/A	N/A	28,903	N/A	N/A

[1] Non-GAAP measure to net interchange charges from prior quarters between transaction card revenue and data processing and communications expense. This measure has no effect on net income or earnings per share.

Certain percentage increases (decreases) are not meaningful for comparison purposes.

Personnel expense

Regular compensation, which consists of salaries and wages, overtime pay and temporary personnel costs, increased $1.8 million or 2 percent over the first quarter of 2017. The average number of employees was relatively unchanged compared to the prior year. Standard annual merit increases in regular compensation were effective for the majority of our staff on March 1.

Incentive compensation increased $1.3 million or 4 percent over the first quarter of 2017, primarily due to increased share-based compensation expense. Share-based compensation expense represents expense for equity awards based on grant-date fair value. Non-vested shares generally cliff vest in 3 years and are subject to a two year holding period after vesting. The number of shares that will ultimately vest is determined by BOKF's change in earnings per share relative to a defined group of peer banks. In addition, compensation costs related to certain shares is variable based on changes in the the fair value of BOK Financial common shares.

Cash-based incentive compensation plans are either intended to provide current rewards to employees who generate long-term business opportunities for the Company based on growth in loans, deposits, customer relationships and other measurable metrics or intended to compensate employees with commissions on completed transactions. Cash-based incentive compensation expense increased $713 thousand or 2 percent over the first quarter of 2017.

Employee benefits expense increased $495 thousand or 2 percent over the the first quarter of 2017.
Personnel expense decreased $5.4 million compared to the fourth quarter of 2017. Incentive compensation expense decreased $10.6 million primarily due to the impact of tax reform on our earnings per share performance relative to peers. Regular compensation expense increased $2.2 million as merit increases were effective for most staff during the first quarter. A $4.7 million seasonal increase in payroll tax expense was partially offset by a net decrease in employee healthcare costs. The Company is self-insured and these costs may be volatile.

Non-personnel operating expense

Non-personnel operating expense increased $5.4 million or 5 percent compared to the first quarter of 2017 .

Net losses and operating expenses of repossessed assets increased $6.7 million The first quarter of 2018 included a $5.0 million write-down on a set of repossessed oil and gas properties based on an updated analysis of production data.

Data processing and communications expense increased $2.1 million or 8 percent. Occupancy and equipment expense increased $2.4 million or 11 percent due partially to a $1.3 million charge to relocate our primary Oklahoma City location. Other increases in these expense categories were primarily due to information technology infrastructure and cybersecurity project costs and increased data processing transaction activity.

Professional fees and services expense decreased $1.2 million or 11 percent mainly due to the inclusion of Mobank conversion expenses in the first quarter of 2017. Mortgage banking costs decreased $2.9 million compared to the first quarter of 2017, primarily due to a $2.6 million decrease in accruals related to default servicing and loss mitigation costs on loans serviced for others.
Non-personnel expense decreased $4.7 million compared to the fourth quarter of 2017. Professional fees and services expense decreased $5.1 million mainly due to expenses related to projects completed in the fourth quarter of 2017. Mortgage banking costs decreased $4.2 million primarily due to a $3.5 million decrease in accruals related to default servicing and loss mitigation costs on loans serviced for others. The fourth quarter also included a $2.0 million contribution to the BOKF Foundation.

Net losses and operating expenses of repossessed assets increased $7.4 million, primarily due to a $5.0 million write-down on a set of repossessed oil and gas properties.

Income Taxes

The Company's income tax expense was $30.9 million or 22.7 percent of net income before taxes for the first quarter of 2018 compared to $38.1 million or 30.1 percent of net income before taxes for the first quarter of 2017 and $54.3 million or 42.9 percent of net income before taxes for the fourth quarter of 2017.

The Tax Cut and Jobs Act ("the Act") enacted on December 22, 2017 reduced the federal corporate tax rate from 35 percent to 21 percent beginning January 1, 2018. The Company continues to evaluate the impact the Act will have on its financial position and results of operations, including recognition and measurement of deferred tax assets and liabilities and the determination of effective current and deferred federal and state income tax rates. We recorded provisional adjustments of $9.5 million in the fourth quarter of 2017, including $6.4 million of net deferred tax assets resulting from a temporary difference recognized in Accumulated other comprehensive income on the Company's balance sheet. We also recorded a provisional adjustment of $2.2 million for deferred taxes resulting from executive compensation that may no longer be deductible. We recorded a $3.1 million increase in tax expense in the first quarter of 2018 related to information received related to the Act's impact on the proportional amortization of our investments in low-income housing tax credit projects. This additional expense was partially offset by a $1.2 million decrease to tax expense to adjust net deferred tax assets resulting from executive compensation. Provisional amounts recorded in 2017 may be adjusted based on our on-going evaluation, including subsequent guidance provided by federal and state taxing authorities and other information as it becomes available.

In addition to the impact of the Act, the excess benefit of vested share-based compensation decreased income tax expense by $1.6 million for the first quarter of 2018. Excluding the impact of adjustments for the Act and the excess benefit of share-based compensation, income tax expense would have been $30.7 million or 22.5% of net income before taxes for the first quarter of 2018 and $42.7 million or 33.7% of net income before taxes for the fourth quarter of 2017.

The Company's effective tax rate is affected by recurring items such as tax-exempt income, net amortization related to its investments in low-income housing tax credit investments and share-based compensation. The effective tax rate is also affected by items that may occur in any given period but are not consistent from period to period. Accordingly, the comparability of the effective tax rate from period to period may be impacted.

BOK Financial operates in numerous jurisdictions, which requires judgment regarding the allocation of income, expense and earnings under various laws and regulations of each of these taxing jurisdictions. Each jurisdiction may audit our tax returns and may take different positions with respect to these allocations. The reserve for uncertain tax positions was $20 million at March 31, 2018, $18 million at December 31, 2017 and $17 million at March 31, 2017.

Lines of Business

We operate three principal lines of business: Commercial Banking, Consumer Banking and Wealth Management. Commercial Banking includes lending, treasury and cash management services and customer risk management products for small businesses, middle market and larger commercial customers. Commercial Banking also includes the TransFund EFT network. Consumer Banking includes retail lending and deposit services, lending and deposit services to small business customers served through our consumer branch network and all mortgage banking activities. Wealth Management provides fiduciary services, private banking services and investment advisory services in all markets. Wealth Management also underwrites state and municipal securities and engages in brokerage and trading activities.

In addition to our lines of business, we have a Funds Management unit. The primary purpose of this unit is to manage our overall liquidity needs and interest rate risk. Each line of business borrows funds from and provides funds to the Funds Management unit as needed to support their operations. Operating results for Funds Management and other

include the effect of interest rate risk positions and risk management activities, securities gains and losses including impairment charges, the provision for credit losses in excess of net loans charged off, tax planning strategies and certain executive compensation costs that are not attributed to the lines of business.

We allocate resources and evaluate the performance of our lines of business using the net direct contribution, which includes the allocation of funds, actual net credit losses and capital costs. In addition, we measure the performance of our business lines after allocation of certain indirect expenses and taxes based on statutory rates.

The cost of funds borrowed from the Funds Management unit by the operating lines of business is transfer priced at rates that approximate market rates for funds with similar repricing and cash flow characteristics. Market rates are generally based on the applicable LIBOR or interest rate swap rates, adjusted for prepayment and liquidity risk. This method of transfer-pricing funds that supports assets of the operating lines of business tends to insulate them from interest rate risk.

The value of funds provided by the operating lines of business to the Funds Management unit is also based on rates that approximate wholesale market rates for funds with similar repricing and cash flow characteristics. Market rates are generally based on LIBOR or interest rate swap rates. The funds credit formula applied to deposit products with indeterminate maturities is established based on their repricing characteristics reflected in a combination of the short-term LIBOR rate and a moving average of an intermediate-term swap rate, with an appropriate spread applied to both. Shorter duration products are weighted towards the short-term LIBOR rate and longer duration products are weighted towards the intermediate-term swap rates. The expected duration ranges from 30 days for certain rate-sensitive deposits to five years.

Economic capital is assigned to the business units by a capital allocation model that reflects management's assessment of risk. This model assigns capital based upon credit, operating, interest rate and other market risk inherent in our business lines and recognizes the diversification benefits among the units. The level of assigned economic capital is a combination of the risk taken by each business line, based on its actual exposures and calibrated to its own loss history where possible. Average invested capital includes economic capital and amounts we have invested in the lines of business.

As shown in Table 8, net income attributable to our lines of business was up $22.4 million or 26.2% percent over the first quarter of 2017. Net interest revenue grew by $13.8 million over the prior year. Other operating revenue increased by $2.5 million and operating expense increased by $2.1 million. Income tax expense attributable to the lines of business was down $20.1 million due to tax reform.

Table 8 -- Net Income by Line of Business
(In thousands)

	Three Months Ended March 31,	
	2018	2017
Commercial Banking	$79,243	$68,409
Consumer Banking	9,406	3,246
Wealth Management	19,609	14,159
Subtotal	108,258	85,814
Funds Management and other	(2,696)	2,542
Total	$105,562	$88,356

Commercial Banking

Commercial Banking contributed $79.2 million to consolidated net income in the first quarter of 2018, an increase of $10.8 million or 16 percent over the first quarter of 2017. The increase in Commercial Banking's contribution was primarily due to lower corporate income tax rates in the first quarter, partially offset by increased losses on repossessed assets related to certain repossessed oil and gas properties and increased corporate expense allocations.

Table 9 -- Commercial Banking
(Dollars in thousands)

	Three Months Ended March 31,		Increase (Decrease)
	2018	2017	
Net interest revenue from external sources	$ 160,413	$ 147,376	$ 13,037
Net interest expense from internal sources	(28,343)	(18,115)	(10,228)
Total net interest revenue	132,070	129,261	2,809
Net loans charged off (recovered)	627	(1,463)	2,090
Net interest revenue after net loans charged off (recovered)	131,443	130,724	719
Fees and commissions revenue[1]	40,017	35,999	4,018
Other gains (losses), net	(341)	1,642	(1,983)
Other operating revenue	39,676	37,641	2,035
Personnel expense	28,921	27,362	1,559
Non-personnel expense[1]	17,548	16,340	1,208
Other operating expense	46,469	43,702	2,767
Net direct contribution	124,650	124,663	(13)
Gain on financial instruments, net	7	38	(31)
Loss on repossessed assets, net	(4,166)	(5)	(4,161)
Corporate expense allocations	12,507	8,719	3,788
Income before taxes	107,984	115,977	(7,993)
Federal and state income tax	28,741	47,568	(18,827)
Net income	$ 79,243	$ 68,409	$ 10,834
Average assets	$ 17,793,820	$ 17,640,973	$ 152,847
Average loans	14,426,750	14,203,784	222,966
Average deposits	8,664,452	8,679,269	(14,817)
Average invested capital	1,335,896	1,315,200	20,696

[1] Fees and commission revenue for 2017 has been adjusted on a comparable basis with 2018 (Non-GAAP measure) to net $9.2 million of interchange fees paid to issuing banks on card transactions processed by our TransFund merchant processing services. The discussion following is based on this comparable basis.

Net interest revenue increased $2.8 million or 2.2 percent over the prior year. Growth in net interest revenue was primarily due to increased yields on commercial loans due to rising short-term interest rates and a $223 million or 2 percent increase in average loan balances. Yields on deposits sold to the funds management unit also went up due to the increase in short-term interest rates from the Federal Reserve increases in the federal funds rate.

Fees and commissions revenue increased $4.0 million or 11 percent over the first quarter of 2017, primarily due to a $3.0 million increase in transaction card revenue primarily due to a $1.4 million early termination penalty. In addition,

loan syndication fees and commercial deposit service charges and fees were up over the prior year.

Operating expenses increased $2.8 million or 6 percent percent compared to the first quarter of 2017. Personnel expense increased $1.6 million or 6 percent, primarily due to incentive compensation expense and standard annual merit increases. Non-personnel expense increased $1.2 million or 7.4 percent.

Corporate expense allocations were up $3.8 million or 43 percent over the prior year, primarily due to enhancements of activity based costing drivers to better reflect services being utilized by the Commercial Banking line of business.

The average outstanding balance of loans attributed to Commercial Banking were up $223 million or 2 percent over the first quarter of 2017 to $14.4 billion. See the Loans section of Management’s Discussion and Analysis of Financial Condition following for additional discussion of changes in commercial and commercial real estate loans, which are primarily attributed to the Commercial Banking segment.

Average deposits attributed to Commercial Banking were $8.7 billion for the first quarter of 2018, largely unchanged compared to the first quarter of 2017. See Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital for further discussion of change.

Consumer Banking

Consumer Banking provides retail banking services through four primary distribution channels: traditional branches, the 24-hour ExpressBank call center, Internet banking and mobile banking. Consumer Banking also conducts mortgage banking activities through offices located outside of our consumer banking markets and through Home Direct Mortgage, an online origination channel.

Consumer Banking contributed $9.4 million to consolidated net income for the first quarter of 2018, up $6.2 million over the first quarter of 2017. Net interest revenue grew by $6.0 million and operating expense decreased $3.1 million.

Table 10 -- Consumer Banking
(Dollars in thousands)

	Three Months Ended March 31,		Increase (Decrease)
	2018	2017	
Net interest revenue from external sources	$21,755	$18,593	$3,162
Net interest revenue from internal sources	15,224	12,418	2,806
Total net interest revenue	36,979	31,011	5,968
Net loans charged off	1,301	1,273	28
Net interest revenue after net loans charged off	35,678	29,738	5,940
Fees and commissions revenue	44,964	45,193	(229)
Other gains (losses), net	(16)	(59)	43
Other operating revenue	44,948	45,134	(186)
Personnel expense	24,301	24,919	(618)
Non-personnel expense	25,512	27,947	(2,435)
Total other operating expense	49,813	52,866	(3,053)
Net direct contribution	30,813	22,006	8,807
Loss on financial instruments, net	(23,262)	(1,668)	(21,594)
Change in fair value of mortgage servicing rights	21,206	1,856	19,350
Loss on repossessed assets, net	(108)	(136)	28
Corporate expense allocations	16,029	16,746	(717)
Income before taxes	12,620	5,312	7,308
Federal and state income tax	3,214	2,066	1,148
Net income	$9,406	$3,246	$6,160
Average assets	$8,468,101	$8,277,304	$190,797
Average loans	1,746,136	1,740,617	5,519
Average deposits	6,538,096	6,533,901	4,195
Average invested capital	298,438	277,403	21,035

Net interest revenue from Consumer Banking activities grew by $6.0 million or 19 percent over the the first quarter of 2017, primarily due to increased rates received on deposit balances sold to the Funds Management unit.

Fees and commissions revenue decreased $229 thousand or 1 percent compared to the first quarter of 2017. Increased mortgage banking revenue from the increase in mortgage loan production volumes was offset by lower overdraft fees compared to the prior year.

- 17 -

Operating expenses decreased $3.1 million or 6 percent compared to the first quarter of 2017. Personnel expenses decreased $618 thousand or 2 percent. Non-personnel expenses decreased $2.4 million or 9 percent compared to the prior year. Mortgage banking costs were down $2.9 million, primarily due to a decrease in accruals related to default servicing and loss mitigation costs on loans serviced for others.

Changes in the fair value of our mortgage servicing rights, net of economic hedge, resulted in a $1.5 million decrease in Consumer Banking net income in the first quarter of 2018 compared to a $115 thousand increase in Consumer Banking net income in the first quarter of 2017.

Average consumer deposits were largely unchanged compared to the first quarter of 2017. Demand deposit balances grew by $123 million or 7 percent and savings deposit balances were up $42 million or 10 percent. Higher-costing time deposit balances decreased $109 million or 10 percent and interest-bearing transaction account balances decreased $53 million or 2 percent.

Wealth Management

Wealth Management contributed $19.6 million to consolidated net income in the first quarter of 2018, up $5.5 million or 38 percent over the first quarter of 2017, largely due to growth in net interest revenue.

Table 11 -- Wealth Management
(Dollars in thousands)

	Three Months Ended March 31,		Increase (Decrease)
	2018	2017	
Net interest revenue from external sources	$15,407	$11,485	$3,922
Net interest revenue from internal sources	9,932	8,856	1,076
Total net interest revenue	25,339	20,341	4,998
Net loans charged off (recovered)	(48)	39	(87)
Net interest revenue after net loans charged off (recovered)	25,387	20,302	5,085
Fees and commissions revenue	74,807	73,921	886
Other gains (losses), net	(41)	237	(278)
Other operating revenue	74,766	74,158	608
Personnel expense	46,947	44,787	2,160
Non-personnel expense	15,855	15,623	232
Other operating expense	62,802	60,410	2,392
Net direct contribution	37,351	34,050	3,301
Corporate expense allocations	10,955	10,672	283
Income before taxes	26,396	23,378	3,018
Federal and state income tax	6,787	9,219	(2,432)
Net income	$19,609	$14,159	$5,450
Average assets	$8,095,794	$7,160,849	$934,945
Average loans	1,389,926	1,266,579	123,347
Average deposits	5,662,470	5,582,554	79,916
Average invested capital	246,673	212,887	33,786

Net interest revenue increased $5.0 million or 25 percent over the first quarter of 2017, primarily due to loan growth and net interest expansion. Average deposit balances increased by $80 million or 1 percent over the first quarter of 2017, primarily due to a $56 million or 2 percent increase in interest-bearing transaction account balances and a $29 million or 4 percent increase time deposit balances.

Fees and commissions revenue increased $886 thousand or 1 percent over the first quarter of 2017. Fiduciary and asset management revenue grew by $3.2 million or 8 percent over the prior year, primarily due to growth in assets under management, improved pricing discipline and decreased fee waivers. Other revenue attributable to Wealth Management was also up $1.9 million. Brokerage and trading revenue decreased by $4.1 million or 14 percent compared to the prior year, primarily due to decreased activity related to our mortgage banking customers along with a decrease in brokerage fees due to the implementation of the DOL fiduciary rule in the second quarter of 2017.

Fees and commissions revenue above includes fees earned from state and municipal bond and corporate debt underwritings and financial advisory services, primarily in the Oklahoma and Texas markets. In the first quarter of 2018, the Wealth Management division participated in 45 state and municipal bond underwritings that totaled $626 million. As a participant, the Wealth Management division was responsible for facilitating the sale of approximately $189 million of these underwritings. The Wealth Management division also participated in 8 corporate debt underwritings that totaled $4.9 billion. Our interest in these underwritings was $131 million. In the first quarter of 2017, the Wealth Management division participated in 38 state and municipal bond underwritings that totaled approximately $1.6 billion. Our interest in these underwritings totaled approximately $316 million. The Wealth Management division also participated in 5 corporate debt underwritings that totaled $3.6 billion. Our interest in these underwritings was $111 million.

Operating expense increased $2.4 million or 4.0 percent over the first quarter of 2017. Personnel expense increased $2.2 million or 5 percent, primarily due to incentive compensation expense and standard annual merit increases. Non-personnel expense increased $232 thousand or 1 percent.

Financial Condition

Securities

We maintain a securities portfolio to enhance profitability, manage interest rate risk, provide liquidity and comply with regulatory requirements. Securities are classified as trading, held for investment, or available for sale. See Note 2 to the consolidated financial statements for the composition of the securities portfolio as of March 31, 2018, December 31, 2017 and March 31, 2017.

We hold an inventory of trading securities in support of sales to a variety of customers, including banks, corporations, insurance companies, money managers and others. Trading securities increased $830 million to $1.3 billion during the first quarter of 2018 in response to expanded relationships with mortgage loan originator clients. As discussed in the Market Risk section of this report, trading activities involve risk of loss from adverse price movement. We mitigate this risk within board-approved limits through the use of derivative contracts, short-sales and other techniques. These limits remain unchanged from levels set before our expanded trading activities.

At March 31, 2018, the carrying value of investment (held-to-maturity) securities was $417 million and the fair value was $429 million. Investment securities consist primarily of long-term, fixed rate Oklahoma and Texas municipal bonds, taxable Texas school construction bonds and residential mortgage-backed securities issued by U.S. government agencies. The investment security portfolio is diversified among issuers. The largest obligation of any single issuer is $30 million. Substantially all of these bonds are general obligations of the issuers. Approximately $92 million of the $199 million portfolio of Texas school construction bonds is also guaranteed by the Texas Permanent School Fund Guarantee Program supervised by the State Board of Education for the State of Texas.

Available for sale securities, which may be sold prior to maturity, are carried at fair value. Unrealized gains or losses, net of deferred taxes, are recorded as accumulated other comprehensive income in shareholders' equity. The amortized cost of available for sale securities totaled $8.4 billion at March 31, 2018, a $29 million increase compared to December 31, 2017. At March 31, 2018, the available for sale securities portfolio consisted primarily of U.S. government agency residential mortgage-backed securities and U.S. government agency commercial mortgage-backed

securities. Both residential and commercial mortgage-backed securities have credit risk from delinquency or default of the underlying loans. We mitigate this risk by primarily investing in securities issued by U.S. government agencies. Principal and interest payments on the underlying loans are fully guaranteed. Commercial mortgage-backed securities have prepayment penalties similar to commercial loans.

A primary risk of holding residential mortgage-backed securities comes from extension during periods of rising interest rates or prepayment during periods of falling interest rates. We evaluate this risk through extensive modeling of risk both before making

an investment and throughout the life of the security. Our best estimate of the duration of the combined residential mortgage-backed securities portfolio held in investment and available for sale securities at March 31, 2018 is 3.4 years. Management estimates the duration extends to 4.1 years assuming an immediate 200 basis point upward shock. The estimated duration contracts to 3.1 years assuming a 50 basis point decline in the current low rate environment.

The aggregate gross amount of unrealized losses on available for sale securities totaled $177 million at March 31, 2018, compared to $89 million at December 31, 2017. On a quarterly basis, we perform an evaluation on debt securities to determine if the unrealized losses are temporary as more fully described in Note 2 of the Consolidated Financial Statements. No other-than-temporary impairment charges were recognized in earnings during the first quarter of 2018.

BOK Financial is required to hold stock as members of the Federal Reserve system and the Federal Home Loan Banks ("FHLB"). These restricted equity securities are carried at cost as these securities do not have a readily determined fair value because the ownership of these shares is restricted and they lack a market. We are required to hold stock in the FHLB in proportion to our borrowings with the FHLB.

Loans

The aggregate loan portfolio before allowance for loan losses totaled $17.3 billion at March 31, 2018, up $184 million over December 31, 2017, primarily due to growth in commercial loan balances. Increased commercial real estate loans were offset by lower residential mortgage loan balances. Personal loan balances were largely unchanged compared to the prior quarter.

Table 12 -- Loans
(In thousands)

	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Commercial:					
Energy	$2,969,618	$2,930,156	$2,867,981	$2,847,240	$2,537,112
Services	2,928,294	2,986,949	2,967,513	2,958,827	3,013,375
Healthcare	2,359,928	2,314,753	2,239,451	2,221,518	2,265,604
Wholesale/retail	1,531,576	1,471,256	1,658,098	1,543,695	1,506,243
Manufacturing	559,695	496,774	519,446	546,137	543,430
Other commercial and industrial	570,556	534,087	543,445	520,538	461,346
Total commercial	10,919,667	10,733,975	10,795,934	10,637,955	10,327,110
Commercial real estate:					
Multifamily	1,008,903	980,017	999,009	952,380	922,991
Retail	750,396	691,532	725,865	722,805	745,046
Office	737,144	831,770	797,089	862,973	860,889
Industrial	613,608	573,014	591,080	693,635	871,463
Residential construction and land development	117,458	117,245	112,102	141,592	135,994
Other commercial real estate	279,273	286,409	292,997	315,207	334,680
Total commercial real estate	3,506,782	3,479,987	3,518,142	3,688,592	3,871,063
Residential mortgage:					
Permanent mortgage	1,047,785	1,043,435	1,013,965	989,040	977,743
Permanent mortgages guaranteed by U.S. government agencies	177,880	197,506	187,370	191,729	204,181

Home equity	720,104	732,745	744,415	758,429	764,350
Total residential mortgage	1,945,769	1,973,686	1,945,750	1,939,198	1,946,274
Personal	965,632	965,776	947,008	917,900	847,459
Total	$17,337,850	$17,153,424	$17,206,834	$17,183,645	$16,991,906

Commercial

Commercial loans represent loans for working capital, facilities acquisition or expansion, purchases of equipment and other needs of commercial customers primarily located within our geographical footprint. Commercial loans are underwritten individually and represent ongoing relationships based on a thorough knowledge of the customer, the customer's industry and market. While commercial loans are generally secured by the customer's assets including real property, inventory, accounts receivable, operating equipment, interests in mineral rights and other property and may also include personal guarantees of the owners and related parties, the primary source of repayment of the loans is the ongoing cash flow from operations of the customer's business. Inherent lending risks are centrally monitored on a continuous basis from underwriting throughout the life of the loan for compliance with commercial lending policies.

Commercial loans totaled $10.9 billion or 63 percent of the loan portfolio at March 31, 2018, an increase of $186 million over December 31, 2017. Manufacturing sector loan balances were up $63 million. Wholesale/retail sector loan balances grew by $60 million. Healthcare sector loan balances increased $45 million. Energy loan balances grew by $39 million. Unfunded energy loan commitments increased $97 million over December 31, 2017 to $3.0 billion at March 31, 2018. Other commercial and industrial loans increased by $36 million. This growth was partially offset by a $59 million decrease in service sector loan balances.

Table 13 presents the commercial sector of our loan portfolio distributed primarily by collateral location. Loans for which collateral location is less relevant, such as unsecured loans and reserve-based energy loans, are distributed by the borrower's primary operating location.

Table 13 -- Commercial Loans by Collateral Location
(In thousands)

	Oklahoma	Texas	New Mexico	Arkansas	Colorado	Arizona	Kansas/Missouri	Other	Total
Energy	$511,399	$1,584,188	$39,455	$3,087	$395,725	$7,171	$66,039	$362,554	$2,969,618
Services	695,043	826,626	156,522	5,777	335,914	238,088	291,582	378,742	2,928,294
Healthcare	251,766	354,012	116,386	94,696	152,477	117,829	260,423	1,012,339	2,359,928
Wholesale/retail	310,686	558,838	43,188	25,583	74,065	59,580	84,000	375,636	1,531,576
Manufacturing	90,797	201,659	113	3,701	60,182	36,936	91,496	74,811	559,695
Other commercial and industrial	83,396	174,278	2,609	67,917	26,479	18,343	72,945	124,589	570,556
Total commercial loans	$1,943,087	$3,699,601	$358,273	$200,761	$1,044,842	$477,947	$866,485	$2,328,671	$10,919,667

The majority of the collateral securing our commercial loan portfolio is located within our geographical footprint with 34 percent concentrated in the Texas market and 18 percent concentrated in the Oklahoma market. At March 31, 2018, the Other category is primarily composed of California - $279 million or 3 percent of the commercial loan portfolio, Florida - $227 million or 2 percent of the commercial loan portfolio, Louisiana - $170 million or 2 percent of the commercial loan portfolio, Ohio - $140 million or 1 percent of the commercial loan portfolio, Pennsylvania - $129 million or 1 percent of the commercial loan portfolio and Tennessee - $128 million or 1 percent of the commercial loan portfolio. All other states individually represent one percent or less of total commercial loans.

Supporting the energy industry with loans to producers and other energy-related entities has been a hallmark of the Company since its founding and represents a large portion of our commercial loan portfolio. In addition, energy production and related industries have a significant impact on the economy in our primary markets. Loans

collateralized by oil and gas properties are subject to a semi-annual engineering review by our internal staff of petroleum engineers. This review is utilized as the basis for developing the expected cash flows supporting the loan amount. The projected cash flows are discounted according to risk characteristics of the underlying oil and gas properties. Loans are evaluated to demonstrate with reasonable certainty that crude oil, natural gas and natural gas liquids can be recovered from known oil and gas reservoirs under existing economic and operating conditions at current pricing levels and with existing conventional equipment and operating methods and costs. As part of our evaluation of credit quality, we analyze rigorous stress tests over a range of commodity prices and take proactive steps to mitigate risk when appropriate.

Outstanding energy loans totaled $3.0 billion or 17 percent of total loans at March 31, 2018. Unfunded energy loan commitments were $3.0 billion at March 31, 2018, up $97 million over December 31, 2017. Approximately $2.5 billion of energy loans were to oil and gas producers, largely unchanged compared to December 31, 2017. The majority of this portfolio is first lien, senior secured, reserve-based lending, which we believe is the lowest risk form of energy lending. Approximately 56 percent of the committed production loans are secured by properties primarily producing oil and 44 percent of the committed production loans are secured by properties primarily producing natural gas. Loans to midstream oil and gas companies totaled $299 million at March 31, 2018, an increase of $38 million over December 31, 2017. Loans to borrowers that provide services to the energy industry totaled $113 million at March 31, 2018, down $17 million compared to the prior quarter. Loans to other energy borrowers, including those engaged in wholesale or retail energy sales, totaled $59 million, a $3 million decrease compared to the prior quarter.

The services sector of the loan portfolio totaled $2.9 billion or 17 percent of total loans and consists of a large number of loans to a variety of businesses, including governmental, educational services, commercial services, loans to entities providing services for real estate and construction and consumer services. Service sector loans decreased by $59 million compared to December 31, 2017. Loans to governmental entities totaled $548 million at March 31, 2018. Approximately $1.4 billion of the services category is made up of loans with individual balances of less than $10 million. Service sector loans are generally secured by the assets of the borrower with repayment coming from the cash flows of ongoing operations of the customer's business.

The healthcare sector of the loan portfolio totaled $2.4 billion or 14 percent of total loans and consists primarily of loans for the development and operation of senior housing and care facilities, including independent living, assisted living and skilled nursing. Healthcare also includes loans to hospitals and other medical service providers.

We participate in shared national credits when appropriate to obtain or maintain business relationships with local customers. Shared national credits are defined by banking regulators as credits of more than $100 million and with three or more non-affiliated banks as participants. At March 31, 2018, the outstanding principal balance of these loans totaled $3.6 billion. Substantially all of these loans are to borrowers with local market relationships. We serve as the agent lender in approximately 15 percent of our shared national credits, based on dollars committed. We hold shared credits to the same standard of analysis and perform the same level of review as internally originated credits. Our lending policies generally avoid loans in which we do not have the opportunity to maintain or achieve other business relationships with the customer. In addition to management's quarterly assessment of credit risk, banking regulators annually review a sample of shared national credits for proper risk grading.

Commercial Real Estate

Commercial real estate represents loans for the construction of buildings or other improvements to real estate and property held by borrowers for investment purposes generally within our geographical footprint, with larger concentrations in Texas and Oklahoma which represent 34% and 12% of the total commercial real estate portfolio at March 31, 2018, respectively. We require collateral values in excess of the loan amounts, demonstrated cash flows in excess of expected debt service requirements, equity investment in the project and a portion of the project already sold, leased or permanent financing already secured. The expected cash flows from all significant new or renewed income producing property commitments are stress tested to reflect the risks in varying interest rates, vacancy rates and rental rates. As with commercial loans, inherent lending risks are centrally monitored on a continuous basis from underwriting throughout the life of the loan for compliance with applicable lending policies.

Commercial real estate loans totaled $3.5 billion or 20% of the loan portfolio at March 31, 2018. The outstanding balance of commercial real estate loans increased $27 million during the first quarter of 2018. Loans secured by retail facilities were up $59 million. Loans secured by industrial properties grew by $41 million. Multifamily residential loans increased $29 million. This growth was partially offset by a $95 million decrease in loans secured by office

buildings. The commercial real estate loan balance as a percentage of our total loan portfolio has ranged from 19 percent to 23 percent over the past five years.

The commercial real estate sector of our loan portfolio distributed by collateral location follows in Table 14.

Table 14 -- Commercial Real Estate Loans by Collateral Location
(In thousands)

	Oklahoma	Texas	New Mexico	Arkansas	Colorado	Arizona	Kansas/Missouri	Other	Total
Retail	$61,706	$281,164	$114,127	$7,581	$45,364	$27,699	$ 15,756	$196,999	$750,396
Multifamily	120,768	455,048	23,457	26,333	71,230	60,596	119,997	131,474	1,008,903
Office	92,817	198,338	94,251	9,846	31,373	71,139	39,754	199,626	737,144
Industrial	66,660	186,358	22,517	110	9,208	8,205	44,153	276,397	613,608
Residential construction and land development	18,787	21,524	17,493	2,185	21,618	4,003	12,849	18,999	117,458
Other commercial real estate	53,303	36,103	12,709	3,604	11,277	21,051	28,080	113,146	279,273
Total commercial real estate loans	$414,041	$1,178,535	$284,554	$49,659	$190,070	$192,693	$ 260,589	$936,641	$3,506,782

The Other category is primarily composed of California - $150 million or 4 percent of the commercial real estate portfolio, Utah - $114 million or 3 percent of the commercial real estate portfolio and Florida - $106 million or 3 percent of the commercial real estate portfolio. All other states represent less than 3% individually.

While recent changes nationally in consumer purchasing trends from brick-and-mortar stores to online has created concern with regards to retail lending, our credit quality remains very good. The portfolio is highly diversified with no material exposure to a single borrower or tenant.

Residential Mortgage and Personal

Residential mortgage loans provide funds for our customers to purchase or refinance their primary residence or to borrow against the equity in their home. Residential mortgage loans are secured by a first or second-mortgage on the customer’s primary residence. Personal loans consist primarily of loans to wealth management clients secured by the cash surrender value of insurance policies and marketable securities. It also includes direct loans secured by and for the purchase of automobiles, recreational and marine equipment as well as unsecured loans. Residential mortgage and personal loans are made in accordance with underwriting policies we believe to be conservative and are fully documented. Loans may be individually underwritten or credit scored based on size and other criteria. Credit scoring is assessed based on significant credit characteristics including credit history, residential and employment stability.

Residential mortgage loans totaled $1.9 billion, a decrease of $27.9 million compared to December 31, 2017. In general, we sell the majority of our conforming fixed rate loan originations in the secondary market and retain the majority of our non-conforming and adjustable-rate mortgage loans. We have no concentration in sub-prime residential mortgage loans. Our mortgage loan portfolio does not include payment option adjustable rate mortgage loans or adjustable rate mortgage loans with initial rates that are below market. Collateral for 96% of our residential mortgage loan portfolio is located within our geographical footprint.

The majority of our permanent mortgage loan portfolio is composed of various non-conforming mortgage programs to support customer relationships including jumbo mortgage loans, non-builder construction loans and special loan programs for high net worth individuals or certain professionals. Jumbo loans may be fixed or variable rate and are fully amortizing. The size of jumbo loans exceeds maximums set under government sponsored entity standards, but otherwise generally conform to those standards. These loans generally require a minimum FICO score of 720 and a

maximum debt-to-income ratio (“DTI”) of 38 percent. Loan-to-value ratios (“LTV”) are tiered from 60 percent to 100 percent, depending on the market. Special mortgage programs include fixed and variable rate fully amortizing loans tailored to the needs of certain healthcare professionals. Variable rate loans are fully indexed at origination and may have fixed rates for three to ten years, then adjust annually thereafter.

At March 31, 2018, $178 million of permanent residential mortgage loans are guaranteed by U.S. government agencies. We have minimal credit exposure on loans guaranteed by the agencies. This amount includes residential mortgage loans previously sold into GNMA mortgage pools that the Company may repurchase when certain defined delinquency criteria are met. Because of this repurchase right, the Company is deemed to have regained effective control over these loans and must include them on the Consolidated Balance Sheet. Permanent residential mortgage loans guaranteed by U.S. government agencies decreased $20 million compared to December 31, 2017.

Home equity loans totaled $720 million at March 31, 2018, a $13 million decrease compared to December 31, 2017. Our home equity loan portfolio is primarily composed of first-lien, fully amortizing home equity loans. Home equity loans generally require a minimum FICO score of 700 and a maximum DTI of 50 percent. The maximum loan amount available for our home equity loan products is generally $400 thousand. Revolving loans have a 10 year revolving period followed by a 15 year term of amortizing repayment. Interest-only home equity loans have a 5 year revolving period followed by a 15 year term of amortizing repayments and may not be extended for any additional revolving time. All other home equity loans may be extended at management's discretion for an additional 5 year revolving term subject to an update of certain credit information. A summary of our home equity loan portfolio at March 31, 2018 by lien position and amortizing status follows in Table 15.

Table 15 -- Home Equity Loans
(In thousands)

	Revolving	Amortizing	Total
First lien	$ 71,539	$ 381,394	$ 452,933
Junior lien	143,758	123,413	267,171
Total home equity	$ 215,297	$ 504,807	$ 720,104

The distribution of residential mortgage and personal loans at March 31, 2018 is as follows in Table 16. Residential mortgage loans are distributed by collateral location. Personal loans are generally distributed by borrower location.

Table 16 -- Residential Mortgage and Personal Loans by Collateral Location
(In thousands)

	Oklahoma	Texas	New Mexico	Arkansas	Colorado	Arizona	Kansas/Missouri	Other	Total
Residential mortgage:									
Permanent mortgage	$ 175,730	$ 433,502	$ 49,914	$ 13,255	$ 177,017	$ 95,283	$ 60,109	$ 42,975	$ 1,047,785
Permanent mortgages guaranteed by U.S. government agencies	47,034	33,411	34,427	7,675	4,463	1,175	11,755	37,940	177,880
Home equity	379,874	132,276	88,581	5,871	38,787	9,716	62,370	2,629	720,104
Total residential mortgage	$ 602,638	$ 599,189	$ 172,922	$ 26,801	$ 220,267	$ 106,174	$ 134,234	$ 83,544	$ 1,945,769
Personal	$ 311,032	$ 390,469	$ 11,467	$ 9,916	$ 64,861	$ 52,123	$ 77,860	$ 47,904	$ 965,632

The Company secondarily evaluates loan portfolio performance based on the primary geographical market managing the loan. Loans attributed to a geographical market may not represent the location of the borrower or the collateral. All permanent mortgage loans serviced by our mortgage banking unit and held for investment by the Bank are centrally managed by the Bank of Oklahoma.

Table 17 -- Loans Managed by Primary Geographical Market
(In thousands)

	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June. 30, 2017	Mar. 31, 2017
Bank of Oklahoma:					
Commercial	$3,265,013	$3,238,720	$3,408,973	$3,369,967	$3,189,183
Commercial real estate	668,031	682,037	712,915	667,932	691,332
Residential mortgage	1,419,281	1,435,432	1,405,900	1,398,021	1,404,054
Personal	353,128	342,212	322,320	318,016	310,708
Total Bank of Oklahoma	5,705,453	5,698,401	5,850,108	5,753,936	5,595,277
Bank of Texas:					
Commercial	4,715,841	4,520,401	4,434,595	4,339,634	4,148,316
Commercial real estate	1,254,421	1,261,864	1,236,702	1,360,164	1,452,988
Residential mortgage	229,761	233,675	229,993	232,074	231,647
Personal	363,608	375,084	375,173	354,222	312,092
Total Bank of Texas	6,563,631	6,391,024	6,276,463	6,286,094	6,145,043
Bank of Albuquerque:					
Commercial	315,701	343,296	367,747	369,370	407,403
Commercial real estate	348,485	341,282	319,208	324,405	307,927
Residential mortgage	93,490	98,018	101,983	103,849	106,432
Personal	11,667	11,721	12,953	12,439	11,305
Total Bank of Albuquerque	769,343	794,317	801,891	810,063	833,067
Bank of Arkansas:					
Commercial	94,430	95,644	91,051	85,020	88,010
Commercial real estate	88,700	87,393	80,917	73,943	74,469
Residential mortgage	7,033	6,596	6,318	6,395	6,829
Personal	9,916	9,992	10,388	11,993	6,279
Total Bank of Arkansas	200,079	199,625	188,674	177,351	175,587
Colorado State Bank & Trust:					
Commercial	1,180,655	1,130,714	1,124,200	1,065,780	998,216
Commercial real estate	210,801	174,201	186,427	255,379	266,218
Residential mortgage	64,530	63,350	63,734	63,346	62,313
Personal	63,118	63,115	60,513	56,187	49,523
Total Colorado State Bank & Trust	1,519,104	1,431,380	1,434,874	1,440,692	1,376,270
Bank of Arizona:					
Commercial	624,106	687,792	634,809	617,759	643,222
Commercial real estate	672,319	660,094	706,188	705,858	737,088
Residential mortgage	39,227	41,771	40,730	37,034	36,737
Personal	57,023	57,140	55,050	55,528	51,386

Total Bank of Arizona	1,392,675	1,446,797	1,436,777	1,416,179	1,468,433
Mobank (Kansas City):					
Commercial	723,921	717,408	734,559	790,425	852,760
Commercial real estate	264,025	273,116	275,785	300,911	341,041
Residential mortgage	92,447	94,844	97,092	98,479	98,262
Personal	107,172	106,512	110,611	109,515	106,166
Total Mobank (Kansas City)	1,187,565	1,191,880	1,218,047	1,299,330	1,398,229
Total BOK Financial loans	$17,337,850	$17,153,424	$17,206,834	$17,183,645	$16,991,906

Loan Commitments

We enter into certain off-balance sheet arrangements in the normal course of business. These arrangements included unfunded loan commitments, which totaled $10.2 billion and standby letters of credit, which totaled $664 million at March 31, 2018. Loan commitments may be unconditional obligations to provide financing or conditional obligations that depend on the borrower's financial condition, collateral value or other factors. Standby letters of credit are unconditional commitments to guarantee the performance of our customer to a third party. Since some of these commitments are expected to expire before being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. Approximately $15 thousand of the outstanding standby letters of credit were issued on behalf of customers whose loans are nonperforming at March 31, 2018.

Table 18 – Off-Balance Sheet Credit Commitments
(In thousands)

	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Loan commitments	$10,249,729	$9,958,080	$9,693,489	$9,632,911	$9,403,641
Standby letters of credit	664,342	647,653	665,513	614,852	595,746
Mortgage loans sold with recourse	121,197	125,127	128,681	133,896	134,631

We have off-balance sheet commitments related to certain residential mortgage loans originated under community development loan programs that were sold to a U.S. government agency with full recourse. These mortgage loans were underwritten to standards approved by the agencies, including full documentation and originated under programs available only for owner-occupied properties. The Company no longer sells residential mortgage loans with recourse. We are obligated to repurchase these loans for the life of these loans in the event of foreclosure for the unpaid principal and interest at the time of foreclosure. Substantially all of these loans are to borrowers in our primary markets including $73 million to borrowers in Oklahoma, $13 million to borrowers in Arkansas and $12 million to borrowers in New Mexico. An accrual related to this off-balance sheet risk is included in Other liabilities in the consolidated balance sheets and totaled $3.7 million at March 31, 2018 and $3.7 million at December 31, 2017 and $3.9 million at March 31, 2017.

We also have an off-balance sheet obligation to repurchase residential mortgage loans sold to government sponsored entities through our mortgage banking activities due to standard representations and warranties made under contractual agreements and to service loans in accordance with investor guidelines. The Company has established accruals for losses related to these obligations that are included in Other liabilities in the Consolidated Balance Sheets and in Mortgage banking costs in the Consolidated Statements of Earnings.

For the period from 2010 through the first quarter of 2018 combined, approximately 17% of repurchase requests have currently resulted in actual repurchases or indemnification by the Company. The Company repurchased one loan from the agencies for $53 thousand during the first quarter of 2018. There was one indemnification on a loan paid during the first quarter of 2018. Losses recognized on repurchases were insignificant.

A summary of unresolved deficiency requests from the agencies follows (in thousands, except for number of unresolved deficiency requests):

	March 31,	
	2018	2017
Number of unresolved deficiency requests	181	185
Aggregate outstanding principal balance subject to unresolved deficiency requests	$8,160	$9,622
Unpaid principal balance subject to indemnification by the Company	4,512	5,249

The accrual for potential loan repurchases under representations and warranties totaled $1.2 million at March 31, 2018, $1.4 million at December 31, 2017, and $2.6 million at March 31, 2017.

Customer Derivative Programs

We offer programs that permit our customers to hedge various risks, including fluctuations in energy, cattle and other agricultural product prices, interest rates and foreign exchange rates. Each of these programs work essentially the same way. Derivative contracts are executed between the customers and the Company. Offsetting contracts are executed between the Company and selected counterparties to minimize market risk due to changes in commodity prices, interest rates or foreign exchange rates. The counterparty contracts are identical to the customer contracts, except for a fixed pricing spread or a fee paid to us as compensation for administrative costs, credit risk and profit.

The customer derivative programs create credit risk for potential amounts due to the Company from our customers and from the counterparties. Customer credit risk is monitored through existing credit policies and procedures. The effects of changes in commodity prices, interest rates or foreign exchange rates are evaluated across a range of possible scenarios to determine the maximum exposure we are willing to have individually to any customer. Customers may also be required to provide cash margin or other collateral in conjunction with our credit agreements to further limit our credit risk.

Counterparty credit risk is evaluated through existing policies and procedures. This evaluation considers the total relationship between BOK Financial and each of the counterparties. Individual limits are established by management, approved by Credit Administration and reviewed by the Asset/Liability Committee. Margin collateral is required if the exposure between the Company and any counterparty exceeds established limits. Based on declines in the counterparties' credit ratings, these limits may be reduced and additional margin collateral may be required.

A deterioration of the credit standing of one or more of the customers or counterparties to these contracts may result in BOK Financial recognizing a loss as the fair value of the affected contracts may no longer move in tandem with the offsetting contracts. This occurs if the credit standing of the customer or counterparty deteriorated such that either the fair value of underlying collateral no longer supported the contract or the customer or the counterparty's ability to provide margin collateral was impaired. Credit losses on customer derivatives reduce brokerage and trading revenue in the Consolidated Statements of Earnings.

Derivative contracts are carried at fair value. At March 31, 2018, the net fair values of derivative contracts, before consideration of cash margin, reported as assets under these programs totaled $292 million compared to $225 million at December 31, 2017. At March 31, 2018, the net fair value of our derivative contracts included $163 million for foreign exchange contracts, $76 million for energy contracts, $36 million for interest rate swaps and $13 million of to-be-announced residential mortgage-backed securities. The aggregate net fair value of derivative contracts, before consideration of cash margin, held under these programs reported as liabilities totaled $280 million at March 31, 2018 and $214 million at December 31, 2017.

At March 31, 2018, total derivative assets were reduced by $9.9 million of cash collateral received from counterparties and total derivative liabilities were reduced by $66 million of cash collateral paid to counterparties related to instruments executed with the same counterparty under a master netting agreement.

A table showing the notional and fair value of derivative assets and liabilities on both a gross and net basis is presented in Note 3 to the Consolidated Financial Statements.

The fair value of derivative contracts reported as assets under these programs, net of cash margin held by the Company, by category of debtor at March 31, 2018 follows in Table 19.

Table 19 -- Fair Value of Derivative Contracts
(In thousands)

Customers	$153,903
Banks and other financial institutions	110,152
Exchanges and clearing organizations	17,693
Fair value of customer risk management program asset derivative contracts, net	$281,748

At March 31, 2018, our largest derivative exposure was to an exchange for interest rate swap derivative contracts of $17 million.

Our customer derivative program also introduces liquidity and capital risk. We are required to provide cash margin to certain counterparties when the net negative fair value of the contracts exceeds established limits. Also, changes in commodity prices affect the amount of regulatory capital we are required to hold as support for the fair value of our derivative assets. These risks are modeled as part of the management of these programs. Based on current prices, a decrease in market prices equivalent to $32.95 per barrel of oil would decrease the fair value of derivative assets by $55 million. An increase in prices equivalent to $75.73 per barrel of oil would increase the fair value of derivative assets by $101 million as current prices move further away from the fixed prices embedded in our existing contracts. Liquidity requirements of this program may also be affected by our credit rating. At March 31, 2018, a decrease in our credit rating to below investment grade did not have a significant impact on our obligation to post cash margin on existing contracts. The fair value of our to-be-announced residential mortgage-backed securities and interest rate swap derivative contracts is affected by changes in interest rates. Based on our assessment as of March 31, 2018, changes in interest rates would not materially impact regulatory capital or liquidity needed to support this portion of our customer derivative program.

Summary of Loan Loss Experience

We maintain an allowance for loan losses and an accrual for off-balance sheet credit risk. At March 31, 2018, the combined allowance for loan losses and off-balance sheet credit losses totaled $228 million or 1.32% of outstanding loans and 133% of nonaccruing loans, excluding loans guaranteed by U.S. government agencies. The allowance for loan losses was $224 million and the accrual for off-balance sheet credit losses was $4.1 million. At December 31, 2017, the combined allowance for credit losses was $234 million or 1.37 percent of outstanding loans and 131 percent of nonaccruing loans, excluding loans guaranteed by U.S. government agencies. The allowance for loan losses was $231 million and the accrual for off-balance sheet credit losses was $3.7 million.

The provision for credit losses is the amount necessary to maintain the allowance for loan losses and an accrual for off-balance sheet credit risk at an amount determined by management to be appropriate based on its evaluation. The provision includes the combined charge to expense for both the allowance for loan losses and the accrual for off-balance sheet credit risk. All losses incurred from lending activities will ultimately be reflected in charge-offs against the allowance for loan losses following funds advanced against outstanding commitments. Based on an evaluation of all credit factors, including continued trend of improvement in nonaccruing and potential problem loans, and net charge-offs, the Company determined that a $5.0 million negative provision for credit losses was appropriate for the first quarter of 2018. The Company recorded a $7.0 million negative provision for the fourth quarter of 2017.

Table 20 -- Summary of Loan Loss Experience
(In thousands)

	Three Months Ended				
	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Allowance for loan losses:					
Beginning balance	$230,682	$247,703	$250,061	$248,710	$246,159
Loans charged off:					
Commercial	(1,563)	(13,254)	(4,429)	(1,703)	(424)
Commercial real estate	—	—	—	(76)	—
Residential mortgage	(100)	(205)	(168)	(40)	(236)
Personal	(1,227)	(1,290)	(1,228)	(1,053)	(1,493)
Total	(2,890)	(14,749)	(5,825)	(2,872)	(2,153)
Recoveries of loans previously charged off:					
Commercial	488	1,982	1,014	283	1,182
Commercial real estate	183	258	739	208	735
Residential mortgage	242	229	134	169	228
Personal	663	592	550	554	755
Total	1,576	3,061	2,437	1,214	2,900
Net loans recovered (charged off)	(1,314)	(11,688)	(3,388)	(1,658)	747
Provision for loan losses	(5,401)	(5,333)	1,030	3,009	1,804
Ending balance	$223,967	$230,682	$247,703	$250,061	$248,710
Accrual for off-balance sheet credit losses:					
Beginning balance	$3,734	$5,401	$6,431	$9,440	$11,244
Provision for off-balance sheet credit losses	401	(1,667)	(1,030)	(3,009)	(1,804)
Ending balance	$4,135	$3,734	$5,401	$6,431	$9,440
Total combined provision for credit losses	$(5,000)	$(7,000)	$—	$—	$—
Allowance for loan losses to loans outstanding at period-end	1.29 %	1.34 %	1.44 %	1.46 %	1.46 %
Net charge-offs (recoveries) (annualized) to average loans	0.03 %	0.27 %	0.08 %	0.04 %	(0.02)%
Total provision for credit losses (annualized) to average loans	(0.12)%	(0.16)%	— %	— %	— %
Recoveries to gross charge-offs	54.53 %	20.75 %	41.84 %	42.27 %	134.70 %
Accrual for off-balance sheet credit losses to off-balance sheet credit commitments	0.04 %	0.04 %	0.05 %	0.06 %	0.09 %
Combined allowance for credit losses to loans outstanding at period-end	1.32 %	1.37 %	1.47 %	1.49 %	1.52 %

Allowance for Loan Losses

The appropriateness of the allowance for loan losses is assessed by management based on an ongoing quarterly evaluation of the probable estimated losses inherent in the portfolio. The allowance consists of specific allowances attributed to certain impaired loans, general allowances based on estimated loss rates by loan class and non-specific allowances based on general economic conditions, concentration in loans with large balances and other relevant factors.

Loans are considered to be impaired when it is probable that we will not collect all amounts due according to the original contractual terms of the loan agreement. This includes all nonaccruing loans, all loans modified in troubled debt restructurings and all government guaranteed loans repurchased from GNMA pools. A specific allowance is

required when the outstanding principal balance of the loan is not supported by either the discounted cash flows expected to be received from the borrower or the fair value of collateral for collateral dependent loans. At March 31, 2018, impaired loans totaled $349 million, including $74 million with specific allowances of $13 million and $275 million with no specific allowances. At December 31, 2017, impaired loans totaled $376 million, including $51 million of impaired loans with specific allowances of $8.8 million and $325 million with no specific allowances.

General allowances for unimpaired loans are based on an estimated loss rate by loan class. Estimated loss rates for risk-graded loans are either increased or decreased based on changes in risk grading for each loan class. Estimated loss rates for both risk-graded and non-risk graded loans may be further adjusted for inherent risk identified for the given loan class which have not yet been captured in the loss rate.

The aggregate amount of general allowances for all unimpaired loans totaled $191 million at March 31, 2018. The general allowance for unimpaired loans decreased $9.0 million compared to December 31, 2017, primarily related to the commercial loan segment.

Nonspecific allowances are maintained for risks beyond factors specific to a particular portfolio segment or loan class. These factors include trends in the economy in our primary lending areas, concentrations in loans with large balances and other relevant factors. Nonspecific allowances totaled $20 million at March 31, 2018, a $2.2 million decrease compared to December 31, 2017. The nonspecific allowance decreased based on energy price environment stabilization. The nonspecific allowance also includes consideration of the estimated long-term impact of Hurricane Harvey in 2017 on the Houston, Texas market.

An allocation of the allowance for loan losses by portfolio segment is included in Note 4 to the Consolidated Financial Statements.

Our loan monitoring process also identified certain accruing substandard loans that possess more than the normal amount of risk due to deterioration in the financial condition of the borrower or the value of the collateral. Because the borrowers are still performing in accordance with the original terms of the loan agreements, and no loss of principal or interest is anticipated, these loans were not included in nonperforming assets. Known information does, however, cause management concern as to the borrowers' ability to comply with current repayment terms. These potential problem loans totaled $222 million at March 31, 2018 and were primarily composed of $124 million or 4 percent of energy loans, $31 million or 1 percent of service sector loans, $28 million or 1 percent of healthcare sector loans, $19 million or 1 percent of wholesale/retail sector loans and $10 million or 2 percent of other commercial and industrial loans. Potential problem loans totaled $241 million at December 31, 2017.

Based on regulatory guidelines, other loans especially mentioned are in compliance with the original terms of the agreement but may have a weakness that deserves management's close attention. Other loans especially mentioned totaled $78 million at March 31, 2018 and were composed primarily of $23 million or 1 percent of service sector loans, $22 million or 3 percent of commercial real estate loans secured by retail facilities and $11 million or less than 1 percent of outstanding energy loans. Other loans especially mentioned totaled $118 million at December 31, 2017.

We updated our semi-annual energy loan portfolio stress test at December 31, 2017 to estimate how the energy portfolio may respond in a prolonged low-price environment. Stress test assumptions applied the five year forward pricing curve to a starting price of $2.17 per million BTUs for natural gas and $45.88 per barrel of oil and then escalating 3 percent annually for years six through ten to a maximum of $2.67 and $47.26, respectively.

Net Loans Charged Off

Loans are charged off against the allowance for loan losses when the loan balance or a portion of the loan balance is no longer covered by the paying capacity of the borrower based on an evaluation of available cash resources and collateral value. Internally risk graded loans are evaluated quarterly and charge-offs are taken in the quarter in which the loss is identified. Non-risk graded loans are generally charged off when payments are between 60 days and 180 days past due, depending on loan class. In addition, non-risk graded loans are generally charged-down to collateral value within 60 days of being notified of a borrower's bankruptcy filing, regardless of payment status.

BOK Financial had net charge-offs of $1.3 million in the first quarter of 2018, compared to net charge-offs of $11.7 million in the fourth quarter of 2017 and a net recovery of $747 thousand in the first quarter of 2017. The ratio of net loans charged off to average loans on an annualized basis was 0.03 percent for the first quarter of 2018, compared with 0.27 percent for the fourth quarter of 2017 and (0.02) percent for the first quarter of 2017.

Net charge-offs of commercial loans were $1.1 million in the first quarter of 2018. Net commercial real estate loan recoveries were $183 thousand in the first quarter of 2018. Net charge-offs of residential mortgage loans were $142 thousand and net charge-offs of personal loans were $564 thousand for the first quarter. Personal loan net charge-offs include deposit account overdraft losses.

Nonperforming Assets

Table 21 -- Nonperforming Assets
(In thousands)

	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Nonaccruing loans:					
Commercial	$131,460	$137,303	$176,900	$197,157	$156,825
Commercial real estate	2,470	2,855	2,975	3,775	4,475
Residential mortgage	45,794	47,447	45,506	44,235	46,081
Personal	340	269	255	272	235
Total nonaccruing loans	180,064	187,874	225,636	245,439	207,616
Accruing renegotiated loans guaranteed by U.S. government agencies	74,418	73,994	69,440	80,624	83,577
Real estate and other repossessed assets	23,652	28,437	32,535	39,436	42,726
Total nonperforming assets	$278,134	$290,305	$327,611	$365,499	$333,919
Total nonperforming assets excluding those guaranteed by U.S. government agencies	$194,833	$207,132	$249,280	$275,823	$240,234
Nonaccruing loans by loan portfolio segment and class:					
Commercial:					
Energy	$89,942	$92,284	$110,683	$123,992	$110,425
Services	2,109	2,620	1,174	7,754	7,713
Healthcare	15,342	14,765	24,446	24,505	909
Wholesale/retail	2,564	2,574	1,893	10,620	11,090
Manufacturing	3,002	5,962	9,059	9,656	5,907
Other commercial and industrial	18,501	19,098	29,645	20,630	20,781
Total commercial	131,460	137,303	176,900	197,157	156,825
Commercial real estate:					
Multifamily	—	—	—	10	24
Retail	264	276	289	301	314
Office	275	275	275	396	413
Industrial	—	—	—	—	76
Residential construction and land development	1,613	1,832	1,924	2,051	2,616
Other commercial real estate	318	472	487	1,017	1,032
Total commercial real estate	2,470	2,855	2,975	3,775	4,475
Residential mortgage:					
Permanent mortgage	24,578	25,193	24,623	23,415	24,188
Permanent mortgage guaranteed by U.S. government agencies	8,883	9,179	8,891	9,052	10,108
Home equity	12,333	13,075	11,992	11,768	11,785
Total residential mortgage	45,794	47,447	45,506	44,235	46,081
Personal	340	269	255	272	235
Total nonaccruing loans	$180,064	$187,874	$225,636	$245,439	$207,616
Ratios:					
Allowance for loan losses to nonaccruing loans[1]	130.84 %	129.09 %	114.28 %	105.78 %	125.92 %

Accruing loans 90 days or more past due[1]	$90	$633	$253	$1,414	$95

[1] Excludes residential mortgages guaranteed by agencies of the U.S. Government.

Nonperforming assets totaled $278 million or 1.60 percent of outstanding loans and repossessed assets at March 31, 2018. Nonaccruing loans totaled $180 million, accruing renegotiated residential mortgage loans totaled $74 million and real estate and other repossessed assets totaled $24 million. All accruing renegotiated residential mortgage loans and $8.9 million of nonaccruing loans are guaranteed by U.S. government agencies. Excluding assets guaranteed by U.S. government agencies, nonperforming assets decreased $12 million compared to the first quarter, primarily due to a decrease in nonaccruing energy loans. The Company generally retains nonperforming assets to maximize potential recovery, which may cause future nonperforming assets to decrease more slowly.

Loans are generally classified as nonaccruing when it becomes probable that we will not collect the full contractual principal and interest. As more fully discussed in Note 4 to the Consolidated Financial Statements, we may modify loans in troubled debt restructurings. Modifications may include extension of payment terms and rate concessions. We generally do not forgive principal or accrued but unpaid interest. All loans modified in troubled debt restructurings, except for residential mortgage loans guaranteed by U.S. government agencies, are classified as nonaccruing. We may also renew matured nonaccruing loans. All nonaccruing loans, including those renewed or modified in troubled debt restructurings, are charged off when the loan balance is no longer covered by the paying capacity of the borrower based on a quarterly evaluation of available cash resources and collateral value. All nonaccruing loans generally remain on nonaccrual status until full collection of principal and interest in accordance with the original terms, including principal previously charged off, is probable. We generally do not voluntarily modify personal loans to troubled borrowers. Personal loans modified at the direction of bankruptcy court orders are identified as troubled debt restructurings and classified as nonaccruing.

Renegotiated loans consist solely of accruing residential mortgage loans guaranteed by U.S. government agencies that have been modified in troubled debt restructurings. See Note 4 to the Consolidated Financial Statements for additional discussion of troubled debt restructurings. Generally, we modify residential mortgage loans primarily by reducing interest rates and extending the number of payments in accordance with U.S. government agency guidelines. Generally, no unpaid principal or interest is forgiven. Interest continues to accrue based on the modified terms of the loan. Modified loans guaranteed by U.S. government agencies under residential mortgage loan programs may be sold once they become eligible according to U.S. government agency guidelines.

A rollforward of nonperforming assets for the three months ended March 31, 2018 follows in Table 22.

Table 22 -- Rollforward of Nonperforming Assets
(In thousands)

	Three Months Ended March 31, 2018			
	Nonaccruing Loans	Renegotiated Loans	Real Estate and Other Repossessed Assets	Total Nonperforming Assets
Balance, December 31, 2017	$187,874	$73,994	$28,437	$290,305
Additions	10,420	17,021	—	27,441
Payments	(12,439)	(668)	—	(13,107)
Charge-offs	(2,890)	—	—	(2,890)
Net gains, losses and write-downs	—	—	(4,186)	(4,186)
Foreclosure of nonperforming loans	(2,156)	—	2,156	—
Foreclosure of loans guaranteed by U.S. government agencies	(1,528)	(1,827)	—	(3,355)
Proceeds from sales	—	(13,723)	(2,447)	(16,170)
Net transfers to nonaccruing loans	783	(783)	—	—

Other, net	—	404	(308)	96
Balance, March 31, 2018	$180,064	$ 74,418	$ 23,652	$ 278,134

We foreclose on loans guaranteed by U.S. government agencies in accordance with agency guidelines. Generally these loans are not eligible for modification programs or have failed to comply with modified loan terms. Principal is guaranteed by agencies of the U.S. government, subject to limitations and credit risk is minimal. These properties will be conveyed to the agencies once applicable criteria have been met.

Commercial

Nonaccruing commercial loans totaled $131 million or 1.20 percent of total commercial loans at March 31, 2018 and $137 million or 1.28 percent of commercial loans at December 31, 2017. There were $5.0 million in newly identified nonaccruing commercial loans during the quarter, offset by $8.8 million in payments and $1.6 million of charge-offs and $459 thousand of foreclosures.

Nonaccruing commercial loans at March 31, 2018 were primarily composed of $90 million or 3.03 percent of total energy loans, $19 million or 3.24 percent of total other commercial and industrial sector loans and $15 million or 0.65 percent of total healthcare sector loans.

Commercial Real Estate

Nonaccruing commercial real estate loans totaled $2.5 million or 0.07 percent of outstanding commercial real estate loans at March 31, 2018, compared to $2.9 million or 0.08 percent of outstanding commercial real estate loans at December 31, 2017. Newly identified nonaccruing commercial real estate loans of $725 thousand were offset by $1.1 million of cash payments received. There were no charge-offs or foreclosures of nonaccruing commercial real estate loans during the first quarter.

Nonaccruing commercial real estate loans were primarily composed of $1.6 million or 1.37 percent of residential construction and land development loans.

Residential Mortgage and Personal

Nonaccruing residential mortgage loans totaled $46 million or 2.35 percent of outstanding residential mortgage loans at March 31, 2018, a $1.7 million decrease compared to December 31, 2017. Newly identified nonaccruing residential mortgage loans totaling $3.3 million were partially offset by $3.2 million of foreclosures, $2.4 million of payments and $100 thousand of loans charged off during the quarter.

Nonaccruing residential mortgage loans primarily consist of non-guaranteed permanent residential mortgage loans, which totaled $25 million or 2.35 percent of outstanding non-guaranteed permanent residential mortgage loans at March 31, 2018. Nonaccruing home equity loans totaled $12 million or 1.71 percent of total home equity loans.

Payments of accruing residential mortgage loans and personal loans may be delinquent. The composition of residential mortgage loans and personal loans past due but still accruing is included in the following Table 23. Substantially all non-guaranteed residential loans past due 90 days or more are nonaccruing. Residential mortgage loans 30 to 59 days past due decreased $1.9 million in the first quarter to $3.7 million at March 31, 2018. Residential mortgage loans 60 to 89 days past due decreased by $273 thousand. Personal loans past due 30 to 59 days increased by $113 thousand and personal loans 60 to 89 days decreased $177 thousand.

Table 23 -- Residential Mortgage and Personal Loans Past Due
(In thousands)

	March 31, 2018			December 31, 2017		
	90 Days or	60 to 89 Days	30 to 59 Days	90 Days or	60 to 89 Days	30 to 59 Days

	More			More		
Residential mortgage:						
Permanent mortgage[1]	$—	$—	$2,322	$—	$219	$3,435
Home equity	22	386	1,377	17	440	2,206
Total residential mortgage	$22	$386	$3,699	17	$659	$5,641
Personal	$62	$14	$794	$261	$191	$681

[1] Excludes past due residential mortgage loans guaranteed by agencies of the U.S. government.

Real Estate and Other Repossessed Assets

Real estate and other repossessed assets are assets acquired in partial or total forgiveness of loans. The assets are carried at the lower of cost as determined by fair value at the date of foreclosure or current fair value, less estimated selling costs.

Real estate and other repossessed assets totaled $24 million at March 31, 2018, composed primarily of $12 million of oil and gas properties, $6.2 million of 1-4 family residential properties and $4.6 million of undeveloped land primarily zoned for commercial development. Real estate and other repossessed assets totaled $28 million at December 31, 2017.

Liquidity and Capital

Based on the average balances for the first quarter of 2018, approximately 66 percent of our funding was provided by deposit accounts, 20 percent from borrowed funds, less than 1 percent is from long-term subordinated debt and 10 percent from equity. Our funding sources, which primarily include deposits and borrowings from the Federal Home Loan Banks and other banks, provide adequate liquidity to meet our operating needs.

Subsidiary Bank

Deposits and borrowed funds are the primary sources of liquidity for BOKF, NA, the wholly owned subsidiary bank of BOK Financial. We compete for retail and commercial deposits by offering a broad range of products and services and focusing on customer convenience. Retail deposit growth is supported through personal and small business checking, online bill paying services, mobile banking services, an extensive network of branch locations and ATMs and our Express Bank call center. Commercial deposit growth is supported by offering treasury management and lockbox services. We also acquire brokered deposits when the cost of funds is advantageous to other funding sources.

Average deposits for the first quarter of 2018 totaled $22.1 billion, largely unchanged compared to the fourth quarter of 2017. Demand deposit balances decreased $266 million, partially offset by a $202 million increase in interest-bearing transaction account balances. Both time deposits and savings account balances were also up over the fourth quarter of 2017.

Table 24 - Average Deposits by Line of Business
(In thousands)

	Three Months Ended				
	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Commercial Banking	$8,622,436	$8,756,437	$8,683,331	$8,652,811	$8,631,724
Consumer Banking	6,580,112	6,664,878	6,707,859	6,662,838	6,581,446
Wealth Management	5,662,470	5,457,566	5,495,250	5,531,091	5,582,554
Subtotal	20,865,018	20,878,881	20,886,440	20,846,740	20,795,724
Funds Management and other	1,261,877	1,282,179	1,232,881	1,245,591	1,573,698
Total	$22,126,895	$22,161,060	$22,119,321	$22,092,331	$22,369,422

Average Commercial Banking deposit balances decreased $134 million compared to the fourth quarter of 2017. Demand deposit balances decreased $183 million, partially offset by a $53 million increase in interest-bearing transaction account balances. Average deposit balances attributed to healthcare customers decreased by $68 million and average balances attributed to commercial real estate customers decreased $47 million. Balances attributed to small business customers were down $25 million. Balances attributed to treasury services customers grew by $11 million. Commercial customers continue to retain large cash reserves primarily due to a combination of factors including uncertainty about the economic environment and potential for growth, lack of preferable liquid alternatives and a desire to minimize deposit service charges through the earnings credit. The earnings credit is a non-cash method that enables commercial customers to offset deposit service charges based on account balances. Commercial deposit balances may decrease once the economic outlook improves and customers deploy cash or related earnings credit rates rise, reducing the amount of deposits required to offset service charges.

Average Consumer Banking deposit balances decreased by $85 million. Interest-bearing transaction balances also decreased $46 million. Time deposit balances decreased by $24 million. Demand deposit balances were down $24 million. Savings deposit balances were up $15 million over the prior quarter.

Average Wealth Management deposits increased $205 million over the fourth quarter of 2017. A $192 million increase in interest-bearing transaction account balances and a $51 million increase in time deposits was partially offset by a $38 million decrease in demand deposit balances.

Average deposits attributed to Funds Management and Other decreased $20 million.

Average time deposits for the first quarter of 2018 included $657 million of brokered deposits, an increase of $75 million over the fourth quarter of 2017. Average interest-bearing transaction accounts for the first quarter included $1.6 billion of brokered deposits, an increase of $158 million over the fourth quarter of 2017.

The distribution of our period end deposit account balances among principal markets follows in Table 25.

Table 25 -- Period End Deposits by Principal Market Area
(In thousands)

	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Bank of Oklahoma:					
Demand	$4,201,842	$3,885,008	$4,061,612	$4,353,421	$4,320,666
Interest-bearing:					
Transaction	6,051,302	5,901,293	5,909,259	5,998,787	6,114,288
Savings	289,351	265,870	265,023	263,664	265,014
Time	1,203,534	1,092,133	1,131,547	1,170,014	1,189,144
Total interest-bearing	7,544,187	7,259,296	7,305,829	7,432,465	7,568,446
Total Bank of Oklahoma	11,746,029	11,144,304	11,367,441	11,785,886	11,889,112
Bank of Texas:					
Demand	3,015,869	3,239,098	3,094,184	3,121,890	3,091,258
Interest-bearing:					
Transaction	2,208,480	2,397,071	2,272,987	2,272,185	2,317,576
Savings	98,852	93,620	93,400	91,491	89,640
Time	475,967	502,879	521,072	502,128	511,037
Total interest-bearing	2,783,299	2,993,570	2,887,459	2,865,804	2,918,253
Total Bank of Texas	5,799,168	6,232,668	5,981,643	5,987,694	6,009,511
Bank of Albuquerque:					
Demand	695,060	663,353	659,793	612,117	593,117
Interest-bearing:					
Transaction	555,414	552,393	551,884	558,523	623,677
Savings	60,596	55,647	53,532	54,136	53,683
Time	216,306	216,743	224,773	229,616	233,506
Total interest-bearing	832,316	824,783	830,189	842,275	910,866
Total Bank of Albuquerque	1,527,376	1,488,136	1,489,982	1,454,392	1,503,983
Bank of Arkansas:					
Demand	35,291	30,384	31,442	40,511	42,622
Interest-bearing:					
Transaction	94,206	85,095	126,746	129,848	106,804
Savings	1,960	1,881	1,876	2,135	2,304
Time	11,878	14,045	14,434	14,876	15,067
Total interest-bearing	108,044	101,021	143,056	146,859	124,175
Total Bank of Arkansas	143,335	131,405	174,498	187,370	166,797
Colorado State Bank & Trust:					
Demand	521,963	633,714	540,300	577,617	601,778
Interest-bearing:					
Transaction	687,785	657,629	628,807	626,343	610,510
Savings	37,232	35,223	34,776	35,651	37,801
Time	215,330	224,962	231,927	228,458	234,740
Total interest-bearing	940,347	917,814	895,510	890,452	883,051
Total Colorado State Bank & Trust	1,462,310	1,551,528	1,435,810	1,468,069	1,484,829

	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Bank of Arizona:					
Demand	330,196	334,701	335,740	366,866	342,854
Interest-bearing:					
Transaction	248,337	274,846	174,010	154,457	180,254
Savings	4,116	3,343	4,105	3,638	3,858
Time	21,009	20,394	20,831	19,911	26,112
Total interest-bearing	273,462	298,583	198,946	178,006	210,224
Total Bank of Arizona	603,658	633,284	534,686	544,872	553,078
Mobank (Kansas City):					
Demand	505,802	457,080	462,410	496,473	514,278
Interest-bearing:					
Transaction	381,447	382,066	361,391	346,996	406,105
Savings	13,845	13,574	12,513	13,603	13,424
Time	22,230	27,260	27,705	31,119	34,242
Total interest-bearing	417,522	422,900	401,609	391,718	453,771
Total Mobank (Kansas City)	923,324	879,980	864,019	888,191	968,049
Total BOK Financial deposits	$22,205,200	$22,061,305	$21,848,079	$22,316,474	$22,575,359

In addition to deposits, liquidity is provided primarily by federal funds purchased, securities repurchase agreements and Federal Home Loan Bank borrowings. Federal funds purchased consist primarily of unsecured, overnight funds acquired from other financial institutions. Funds are primarily purchased from bankers' banks and Federal Home Loan banks from across the country. The largest single source of wholesale federal funds purchased totaled $16 million at March 31, 2018. Securities repurchase agreements generally mature within 90 days and are secured by certain available for sale securities. Federal Home Loan Bank borrowings are generally short term and are secured by a blanket pledge of eligible collateral (generally unencumbered U.S. Treasury and agency mortgage-backed securities, 1-4 family residential mortgage loans, multifamily and other qualifying commercial real estate loans). Amounts borrowed from the Federal Home Loan Bank of Topeka averaged $6.3 billion during the quarter, up from $6.2 billion in the fourth quarter of 2017.

At March 31, 2018, the estimated unused credit available to BOKF, NA from collateralized sources was approximately $5.6 billion.

A summary of other borrowings for BOK Financial on a consolidated basis follows in Table 26.

Table 26 -- Borrowed Funds
(In thousands)

		Three Months Ended March 31, 2018				Three Months Ended December 31, 2017		
	Mar 31, 2018	Average Balance During the Quarter	Rate	Maximum Outstanding At Any Month End During the Quarter	Dec 31, 2017	Average Balance During the Quarter	Rate	Maximum Outstanding At Any Month End During the Quarter
Parent Company and Other Non-Bank Subsidiaries:								
Other borrowings	—	—	— %	$ —	—	1,012	11.33 %	1,012
Subordinated debentures	144,687	144,682	5.61 %	$ 144,687	144,677	144,673	5.55 %	144,677
Total parent company and other non-bank subsidiaries	144,687	144,682	5.61 %		144,677	145,685	5.58 %	
BOKF, NA:								
Funds purchased	130,561	106,362	1.20 %	160,087	58,628	63,713	0.90 %	80,967
Repurchase agreements	415,763	426,051	0.20 %	415,763	516,335	424,617	0.18 %	516,335
Other borrowings:								
Federal Home Loan Bank advances	5,700,000	6,295,556	1.58 %	5,700,000	5,100,000	6,170,652	1.34 %	5,600,000
GNMA repurchase liability	12,020	16,434	4.64 %	15,011	19,947	22,849	4.55 %	23,700
Other	15,005	14,977	2.33 %	15,005	14,950	15,390	2.37 %	15,506
Total other borrowings	5,727,025	6,326,967	1.60 %		5,134,897	6,208,891	1.36 %	
Total BOKF, NA	6,273,349	6,859,380	1.50 %		5,709,860	6,697,221	1.28 %	
Total other borrowed funds and subordinated debentures	$ 6,418,036	$ 7,004,062	1.59 %		$ 5,854,537	$ 6,842,906	1.37 %	

BOKF, NA also has a liability related to the repurchase of certain delinquent residential mortgage loans previously sold in GNMA mortgage pools. Interest is payable monthly at rates contractually due to investors.

Parent Company

At March 31, 2018, cash and interest-bearing cash and cash equivalents held by the parent company totaled $165 million. The primary sources of liquidity for BOK Financial are cash on hand and dividends from BOKF, NA. Dividends from the bank are limited by various banking regulations to net profits, as defined, for the year plus retained profits for the two preceding years. Dividends are further restricted by minimum capital requirements. At March 31, 2018, based upon the most restrictive limitations as well as management's internal capital policy, the bank could declare up to $366 million of dividends without regulatory approval. Dividend constraints may be alleviated through increases in retained earnings, capital issuances or changes in risk weighted assets. Future losses or increases in required regulatory capital at the bank could affect its ability to pay dividends to the parent company.

Our equity capital at March 31, 2018 was $3.5 billion, largely unchanged compared to December 31, 2017. Net income less cash dividends paid increased equity $76 million during the first quarter of 2018. Changes in interest rates resulted in an increase in the accumulated other comprehensive loss to $111 million at March 31, 2018, compared to

$36 million at December 31, 2017. The Company also repurchased $9.8 million of our common stock during the first quarter of 2018. Capital is managed to maximize long-term value to the shareholders. Factors considered in managing capital include projections of future earnings including expected benefits from lower federal income tax rates, asset growth and acquisition strategies, and regulatory and debt covenant requirements. Capital management may include subordinated debt or perpetual preferred stock issuance, share repurchase and stock and cash dividends.

On October 27, 2015, the board of directors authorized the Company to purchase up to five million common shares, subject to market conditions, securities law and other regulatory compliance limitations. As of March 31, 2018, a cumulative total of 3,041,826 shares have been repurchased under this authorization. The Company repurchased 82,583 shares in the first quarter of 2018 at an average of $91.83 per share. The Company repurchased 80,000 shares in the fourth quarter of 2017 at an average price of $92.54 per share.

BOK Financial and BOKF, NA are subject to various capital requirements administered by federal agencies. Failure to meet minimum capital requirements can result in certain mandatory and possibly additional discretionary actions by regulators that could have a material impact on operations. These capital requirements include quantitative measures of assets, liabilities and off-balance sheet items. The capital standards are also subject to qualitative judgments by the regulators.
Regulatory capital rules establish a 7 percent threshold for the common equity Tier 1 ratio consisting of a minimum level plus capital conservation buffer. The Company has elected to exclude unrealized gains and losses from available for sale securities from its calculation of Tier 1 capital. Components of the capital rules effective January 1, 2015 for the Company will phase in through January 1, 2019, with certain exceptions.

A summary of minimum capital requirements, including capital conservation buffer follows in Table 27. A bank which falls below these levels, including the capital conservation buffer, would be subject to regulatory restrictions on capital distributions (including but not limited to dividends and share repurchases) and executive bonus payments.

The capital ratios for BOK Financial on a consolidated basis are presented in Table 27.

Table 27 -- Capital Ratios

	Minimum Capital Requirement		Capital Conservation Buffer		Minimum Capital Requirement Including Capital Conservation Buffer		Mar. 31, 2018		Dec. 31, 2017		Mar. 31, 2017	
Risk-based capital:												
Common equity Tier 1	4.50	%	2.50	%	7.00	%	12.06	%	12.05	%	11.59	%
Tier 1 capital	6.00	%	2.50	%	8.50	%	12.06	%	12.05	%	11.59	%
Total capital	8.00	%	2.50	%	10.50	%	13.49	%	13.54	%	13.25	%
Tier 1 Leverage	4.00	%	N/A		4.00	%	9.40	%	9.31	%	8.89	%
Average total equity to average assets							10.31	%	10.51	%	10.10	%
Tangible common equity ratio							9.18	%	9.50	%	8.88	%

At March 31, 2018, the company exceeded the $1 billion regulatory capital rules threshold for trading assets plus liabilities. This subjects the company to the market risk rule, which will impose additional modeling, systems, oversight and reporting requirements effective in the second quarter of 2018. Risk weighted assets associated with trading will increase.

Capital resources of financial institutions are also regularly measured by the tangible common shareholders' equity ratio. Tangible common shareholders' equity is shareholders' equity as defined by generally accepted accounting principles in the United States of America ("GAAP") less intangible assets and equity which does not benefit common shareholders. Equity that does not benefit common shareholders includes preferred equity. This non-GAAP measure is a valuable indicator of a financial institution's capital strength since it eliminates intangible assets from shareholders'

equity and retains the effect of unrealized losses on securities and other components of accumulated other comprehensive income in shareholders' equity.

Table 28 provides a reconciliation of the non-GAAP measures with financial measures defined by GAAP.

Table 28 -- Non-GAAP Measure
(Dollars in thousands)

	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017
Tangible common equity ratio:					
Total shareholders' equity	$3,495,029	$3,495,367	$3,488,814	$3,422,469	$3,341,744
Less: Goodwill and intangible assets, net	477,088	476,088	485,710	487,452	488,294
Tangible common equity	3,017,941	3,019,279	3,003,104	2,935,017	2,853,450
Total assets	33,361,492	32,272,160	33,005,515	32,263,532	32,628,932
Less: Goodwill and intangible assets, net	477,088	476,088	485,710	487,452	488,294
Tangible assets	$32,884,404	$31,796,072	$32,519,805	$31,776,080	$32,140,638
Tangible common equity ratio	9.18 %	9.50 %	9.23 %	9.24 %	8.88 %

Off-Balance Sheet Arrangements

See Note 6 to the Consolidated Financial Statements for a discussion of the Company's significant off-balance sheet commitments.

Market Risk

Market risk is a broad term for the risk of economic loss due to adverse changes in the fair value of a financial instrument. These changes may be the result of various factors, including interest rates, foreign exchange rates, commodity prices or equity prices. Financial instruments that are subject to market risk can be classified either as held for trading or held for purposes other than trading. Market risk excludes changes in fair value due to credit of the individual issuers of financial instruments.

BOK Financial is subject to market risk primarily through the effect of changes in interest rates on both its assets held for purposes other than trading and trading assets. The effects of other changes, such as foreign exchange rates, commodity prices or equity prices do not pose significant market risk to BOK Financial. BOK Financial has no material investments in assets that are affected by changes in foreign exchange rates or equity prices. Energy and agricultural product derivative contracts, which are affected by changes in commodity prices, are matched against offsetting contracts as previously discussed.

The Asset/Liability Committee is responsible for managing market risk in accordance with policy limits established by the Board of Directors. The Committee monitors projected variation in net interest revenue, net income and economic value of equity due to specified changes in interest rates. These limits also set maximum levels for short-term borrowings, short-term assets, public funds and brokered deposits and establish minimum levels for un-pledged assets, among other things. Further, the Board approved market risk limits for fixed income trading, mortgage pipeline and mortgage servicing assets inclusive of economic hedge benefits. Exposure is measured daily and compliance is reviewed monthly. Deviations from the Board approved limits, which periodically occur throughout the reporting period, may require management to develop and execute plans to reduce exposure. These plans are subject to escalation to and approval by the Board.

The simulations used to manage market risk are based on numerous assumptions regarding the effects of changes in interest rates on the timing and extent of repricing characteristics, future cash flows and customer behavior. These assumptions are inherently uncertain and, as a result, models cannot precisely estimate or precisely predict the impact of higher or lower interest rates. Actual results will differ from simulated results due to timing, magnitude and frequency of interest rate changes, market conditions and management strategies, among other factors.

Interest Rate Risk – Other than Trading

As previously noted in the Net Interest Revenue section of this report, management has implemented strategies to manage the Company's balance sheet to have relatively limited exposure to changes in interest rates over a twelve-month period. The effectiveness of these strategies in managing the overall interest rate risk is evaluated through the use of an asset/liability model. BOK Financial performs a sensitivity analysis to identify more dynamic interest rate risk exposures, including embedded option positions, on net interest revenue. A simulation model is used to estimate the effect of changes in interest rates on our performance across multiple interest rate scenarios. Our current internal policy limit for net interest revenue variation due to a 200 basis point parallel change in market interest rates over twelve months is a maximum decline of 5%. The results of a 200 basis point decrease in interest rates in the current low-rate environment are not meaningful. Until such time as it becomes meaningful, we will instead report the effect of a 50 basis point decrease in interest rates.

The Company's primary interest rate exposures include the Federal Funds rate, which affects short-term borrowings, and the prime lending rate and LIBOR, which are the basis for much of the variable rate loan pricing. Additionally, residential mortgage rates directly affect the prepayment speeds for residential mortgage-backed securities and mortgage servicing rights. Derivative financial instruments and other financial instruments used for purposes other than trading are included in this simulation. In addition, the impact on the level and composition of demand deposit accounts and other core deposit balances resulting from a significant increase in short-term market interest rates and the overall interest rate environment is likely to be material. The simulation incorporates assumptions regarding the effects of such changes based on a combination of historical analysis and expected behavior. The impact of planned growth and new business activities is factored into the simulation model.

Table 29 -- Interest Rate Sensitivity
(Dollars in thousands)

	200 bp Increase		50 bp Decrease	
	March 31,		March 31,	
	2018	2017	2018	2017
Anticipated impact over the next twelve months on net interest revenue	$(1,846)	$(4,411)	$(17,889)	$(18,474)
	(0.20)%	(0.53)%	(1.89)%	(2.20)%

BOK Financial is also subjected to market risk through changes in the fair value of mortgage servicing rights. Changes in the fair value of mortgage servicing rights are highly dependent on changes in primary mortgage rates offered to borrowers, intermediate-term interest rates that affect the value of custodial funds, and assumptions about servicing revenues, servicing costs and discount rates. As primary mortgage rates increase, prepayment speeds slow and the value of our mortgage servicing rights increases. As primary mortgage rates fall, prepayment speeds increase and the value of our mortgage servicing rights decreases.

We maintain a portfolio of financial instruments, which may include debt securities issued by the U.S. government or its agencies and interest rate derivative contracts held as an economic hedge of the changes in the fair value of our mortgage servicing rights. Composition of this portfolio will change based on our assessment of market risk. Changes in the fair value of residential mortgage-backed securities are highly dependent on changes in secondary mortgage rates required by investors, and interest rate derivative contracts are highly dependent on changes in other market interest rates. While primary and secondary mortgage rates generally move in the same direction, the spread between them may widen and narrow due to market conditions and government intervention. Changes in the forward-looking spread between the primary and secondary rates can cause significant earnings volatility.

Management performs a stress test to measure market risk due to changes in interest rates inherent in its MSR portfolio and hedges. The stress test shocks applicable interest rates up and down 50 basis points and calculates an estimated change in fair value, net of economic hedging activity, that may result. The Board has approved a $20 million market risk limit for mortgage servicing rights, net of economic hedges.

Table 30 -- MSR Asset and Hedge Sensitivity Analysis
(Dollars in thousands)

	March 31, 2018		2017	
	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp
MSR Asset	$23,504	$(26,145)	$25,101	$(30,489)
MSR Hedge	(24,994)	22,132	(29,524)	25,984
Net Exposure	(1,490)	(4,013)	(4,423)	(4,505)

Trading Activities

The Company bears market risk by originating residential mortgages held for sale ("RMHFS"). RMHFS are generally outstanding for 60 to 90 days, which represents the typical period from commitment to originate a loan to sale of the closed loan to an investor. Primary mortgage interest rate changes during this period affect the value of RMHFS commitments and loans. We use forward sale contracts to mitigate market risk on all closed mortgage loans held for sale and on an estimate of mortgage loan commitments that are expected to result in closed loans.

A variety of methods are used to monitor market risk of mortgage origination activities. These methods include daily marking of all positions to market value, independent verification of inventory pricing, and revenue sensitivity limits.

Management performs a stress test to measure market risk due to changes in interest rates inherent in the mortgage production pipeline. The stress test shocks applicable interest rates up and down 50 basis points and calculates an estimated change in fair value, net of economic hedging activity that may result. The Board has approved a $7 million market risk limit for the mortgage production pipeline, net of forward sale contracts.

Table 31 -- Mortgage Pipeline Sensitivity Analysis
(Dollars in thousands)

	Three Months Ended March 31, 2018		2017	
	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp
Average[1]	$185	$(619)	$253	$(1,215)
Low[2]	942	699	991	(398)
High[3]	(1,015)	(1,504)	(456)	(1,787)
Period End	390	(1,201)	193	(1,656)

[1] Average represents the simple average of each daily value observed during the reporting period.

[2] Low represents least risk of loss in fair value measured as the smallest negative value or the largest positive value observed daily during the reporting period.

[3] High represents the greatest risk of loss in fair value measured as the largest negative value or the smallest positive value observed daily during the reporting period.

BOK Financial enters into trading activities both as an intermediary for customers and for its own account. As an intermediary, we take positions in securities, generally residential mortgage-backed securities, government agency securities and municipal bonds. These securities are purchased for resale to customers, which include individuals, corporations, foundations and financial institutions. On a limited basis, we may also take trading positions in U.S. Treasury securities, residential mortgage-backed securities, and municipal bonds to enhance returns on securities portfolios. Both of these activities involve interest rate, liquidity and price risk. BOK Financial has an insignificant

exposure to foreign exchange risk and does not take positions in commodity derivatives.

A variety of methods are used to monitor the interest rate risk of trading activities. These methods include daily marking of all positions to market value, independent verification of inventory pricing, and position limits for each trading activity. Economic hedges in either the futures or cash markets may be used to reduce the risk associated with some trading programs.

Management performs a stress test to measure market risk from changes in interest rates on its trading portfolio. The stress test shocks applicable interest rates up and down 50 basis points and calculates an estimated change in fair value, net of economic hedging activity that may result. The Board has approved an $8 million market risk limit for the trading portfolio, net of economic hedges.

Table 32 -- Trading Sensitivity Analysis
(Dollars in thousands)

Three
Months
Ended
March
31,