

Section 1: 10-Q (10-Q)

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

FORM 10-Q

(Mark One)

- QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2019

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 CORP ET AL
(Exact name of registrant as specified in its charter)

Oklahoma
(State or other jurisdiction
of Incorporation or Organization)

73-1373454
(IRS Employer
Identification No.)

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

74192
(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 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 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 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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: 71,193,770 shares of common stock (\$.00006 par value) as of June 30, 2019.

BOK Financial Corporation
Form 10-Q
Quarter Ended June 30, 2019

Index

Part I. Financial Information

Management's Discussion and Analysis (Item 2)	<u>1</u>
Market Risk (Item 3)	<u>37</u>
Controls and Procedures (Item 4)	<u>41</u>
Consolidated Financial Statements – Unaudited (Item 1)	<u>42</u>
Quarterly Financial Summary – Unaudited (Item 2)	<u>100</u>
Quarterly Earnings Trend – Unaudited	<u>103</u>

Part II. Other Information

Item 1. Legal Proceedings	<u>103</u>
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds	<u>103</u>
Item 6. Exhibits	<u>103</u>
Signatures	<u>104</u>

Management's Discussion and Analysis of Financial Condition and Results of Operations

Performance Summary

BOK Financial Corporation ("the Company") reported net income of \$137.6 million or \$1.93 per diluted share for the second quarter of 2019. Net income was \$114.4 million or \$1.75 per diluted share for the second quarter of 2018 and \$110.6 million or \$1.54 per diluted share for the first quarter of 2019.

On October 1, 2018, the Company acquired CoBiz Financial, Inc. ("CoBiz"). We incurred \$12.7 million of integration costs in the first quarter of 2019, resulting in a per share reduction of 13 cents. No meaningful integration costs were incurred in the second quarter. The fluctuation discussion in the highlights below excludes the impact of these items.

Highlights of the second quarter of 2019 included:

- Net interest revenue totaled \$285.4 million, up \$46.9 million over the second quarter of 2018. CoBiz added \$44.8 million to net interest revenue. The remaining increase in net interest revenue over the prior year was driven by both growth in average earning assets and improving yields. Net interest margin was 3.30 percent for the second quarter of 2019 compared to 3.17 percent for the second quarter of 2018. Average earning assets were \$35.4 billion for the second quarter of 2019 compared to \$30.3 billion for the second quarter of 2018. Net interest revenue increased \$7.3 million compared to the first quarter of 2019 largely due to a recovery of foregone interest and an increase in loan discount accretion. Net interest margin was consistent with the first quarter of 2019.
- Fees and commissions revenue totaled \$176.1 million, an increase of \$18.9 million over the second quarter of 2018. Brokerage and trading revenue increased \$14.0 million and mortgage banking revenue increased \$1.8 million as lower mortgage interest rates have increased mortgage production and related trading activity. Fiduciary and asset management revenue also increased \$3.3 million. Fees and commissions revenue increased \$15.6 million over the first quarter of 2019 led by increases in brokerage and trading and mortgage banking revenue.
- Other operating expense totaled \$277.1 million, a \$30.7 million increase over the second quarter of 2018. Expenses related to CoBiz operations added \$23.0 million in the second quarter of 2019. Excluding CoBiz operations, personnel expense increased \$7.1 million, primarily due to an increase in regular compensation. Non-personnel expense remained relatively consistent with the second quarter of 2018. Operating expense increased \$2.7 million over the first quarter of 2019. Personnel expense decreased \$5.6 million, as efficiencies are realized from the CoBiz acquisition. Non-personnel expense increased \$8.3 million led by increases in business promotion expense, professional fees and services, deposit insurance and mortgage banking costs.
- The Company recorded a provision for credit losses of \$5.0 million in the second quarter of 2019 and \$8.0 million in the first quarter of 2019. No provision was recorded in the second quarter of 2018. Nonperforming assets not guaranteed by U.S. government agencies increased \$31 million compared to March 31, 2019. Potential problem loans decreased \$7.8 million while other loans especially mentioned decreased \$54 million. Net charge-offs were \$7.7 million or 0.14 percent of average loans for the second quarter of 2019, compared to net charge-offs of \$10.1 million or 0.19 percent of average loans for the first quarter of 2019. The combined allowance for credit losses totaled \$204 million or 0.92 percent of outstanding loans at June 30, 2019 compared to \$207 million or 0.95 percent of outstanding loans at March 31, 2019.
- Period-end outstanding loan balances totaled \$22.3 billion at June 30, 2019, an increase of \$497 million over March 31, 2019. Average loan balances grew \$238 million to \$22.0 billion at June 30, 2019.
- Period-end deposits were \$25.3 billion at June 30, 2019, a \$27 million decrease compared to March 31, 2019. Interest-bearing transaction deposits increased \$375 million while demand deposit balances decreased \$429 million. Average deposits increased \$548 million including a \$581 million increase in interest-bearing deposits partially offset by a \$104 million decrease in demand deposits.
- The common equity Tier 1 capital ratio at June 30, 2019 was 10.84 percent. Other regulatory capital ratios were Tier 1 capital ratio, 10.84 percent, total capital ratio, 12.34 percent, and leverage ratio, 8.75 percent. At March 31, 2019, the common equity Tier 1 capital ratio was 10.71 percent, the Tier 1 capital ratio was 10.71 percent, total capital ratio was 12.24 percent, and leverage ratio was 8.76 percent.

- The Company repurchased 250,000 shares at an average price of \$80.50 per share during the second quarter of 2019 and 705,609 shares at an average price of \$85.85 in the first quarter of 2019.
- The company paid a regular cash dividend of \$35.6 million or \$0.50 per common share during the second quarter of 2019. On July 30, 2019, the board of directors approved a quarterly cash dividend of \$0.50 per common share payable on or about August 27, 2019 to shareholders of record as of August 12, 2019.

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.

Tax-equivalent net interest revenue totaled \$288.9 million for the second quarter of 2019, up from \$240.5 million in the second quarter of 2018. CoBiz added \$44.8 million to net interest revenue, including \$13.4 million of net purchase accounting discount accretion in the second quarter of 2019. Recoveries of forgone interest added \$3.4 million to net interest revenue in the second quarter of 2019 and \$5.3 million in the second quarter of 2018. 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.

Net interest margin was 3.30 percent for the second quarter of 2019, compared to 3.17 percent for the second quarter of 2018. Recoveries of forgone interest and loan discount accretion added 19 basis points to net interest margin in the second quarter of 2019. Recoveries of forgone interest added 7 basis points to net interest margin in the second quarter of 2018. Excluding these items, the tax-equivalent yield on earning assets was 4.31 percent, up 47 basis points over the second quarter of 2018. Loan yields increased 41 basis points to 5.09 percent primarily due to an increase in short-term interest rates. The yield on interest-bearing cash and cash equivalents increased 71 basis points to 2.57 percent. The available for sale securities portfolio yield increased 33 basis points to 2.63 percent and the yield on fair value option securities was up 18 basis points to 3.34 percent.

Funding costs were up 59 basis points over the second quarter of 2018. The cost of interest-bearing deposits increased 47 basis points and the cost of other borrowed funds increased 69 basis points. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities was 49 basis points for the second quarter of 2019, up 12 basis points over the second quarter of 2018.

Average earning assets for the second quarter of 2019 increased \$5.1 billion or 17 percent over the second quarter of 2018. Average loans, net of allowance for loan losses, increased \$4.3 billion, including acquired loans. The legacy BOKF portfolio grew \$1.6 billion mainly due to growth in commercial and commercial real estate loans. Available for sale securities increased \$1.3 billion and fair value option securities increased \$412 million. Trading securities increased \$275 million. Interest-bearing cash and cash equivalent balances decreased \$1.1 billion. The Company reduced excess cash balances held at the Federal Reserve, including cash used in our purchase of CoBiz.

Average deposits increased \$3.1 billion compared to the second quarter of 2018, including \$3.1 billion related to CoBiz. Excluding acquired deposits, interest bearing deposits increased \$891 million while demand deposit balances decreased \$903 million. Average borrowed funds increased \$2.2 billion over the second quarter of 2018, primarily due to funds purchased and repurchase agreement balances.

Tax-equivalent net interest revenue increased \$8.3 million over the first quarter of 2019. Recoveries of foregone interest on non-accruing loans added \$3.4 million to the second quarter of 2019. Recoveries were insignificant in the first quarter of 2019. The second quarter of 2019 included \$13.4 million of purchase accounting discount accretion while the first quarter of 2019 included \$7.8 million.

Net interest margin was 3.30 percent, consistent with the previous quarter. Excluding recoveries of forgone interest and increase in loan discount accretion noted above, the yield on average earning assets decreased 6 basis points while the yield on the loan portfolio decreased 2 basis points. The yield on the available for sale securities portfolio increased 6 basis points and the yield on the trading securities portfolio, which moves with long term interest rates because it turns over rapidly, was down 29 basis points.

Funding costs increased 4 basis points. The cost of interest-bearing deposits increased 9 basis points and the cost of other borrowed funds decreased 1 basis point to 2.53 percent. The benefit to net interest margin from assets funded by non-interest liabilities was relatively unchanged at 49 basis points.

Average earning assets increased \$933 million compared to the first quarter of 2019. Average available for sale securities increased \$553 million. Average loan balances were up \$238 million. Average fair value option securities balances increased \$304 million. Average trading securities balances decreased \$211 million. Average interest-bearing deposit balances increased \$652 million and average borrowed funds increased \$169 million compared to the first quarter of 2019.

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 78% 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. In the second quarter of 2019 we increased our portfolio of available for sale securities by \$1.4 billion as a measure to protect for a down rate environment.

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 June 30, 2019 / 2018			Six Months Ended June 30, 2019 / 2018		
	Change	Change Due To ¹		Change	Change Due To ¹	
		Volume	Yield/Rate		Volume	Yield/Rate
Tax-equivalent interest revenue:						
Interest-bearing cash and cash equivalents	\$ (4,308)	\$ (6,273)	\$ 1,965	\$ (8,893)	\$ (14,071)	\$ 5,178
Trading securities	2,525	2,672	(147)	13,506	11,878	1,628
Investment securities	(320)	(579)	259	(622)	(1,354)	732
Available for sale securities	12,425	5,058	7,367	23,298	7,905	15,393
Fair value option securities	3,576	3,258	318	3,994	2,678	1,316
Restricted equity securities	1,108	1,035	73	2,336	1,828	508
Residential mortgage loans held for sale	(579)	(256)	(323)	(760)	(795)	35
Loans	83,712	54,249	29,463	176,466	108,107	68,359
Total tax-equivalent interest revenue	98,139	59,164	38,975	209,325	116,176	93,149
Interest expense:						
Transaction deposits	18,547	4,642	13,905	34,757	7,332	27,425
Savings deposits	78	19	59	150	38	112
Time deposits	3,595	281	3,314	6,511	283	6,228
Funds purchased and repurchase agreements	9,922	4,788	5,134	19,756	9,377	10,379
Other borrowings	15,875	3,845	12,030	37,402	7,620	29,782
Subordinated debentures	1,754	1,830	(76)	3,495	3,641	(146)
Total interest expense	49,771	15,405	34,366	102,071	28,291	73,780
Tax-equivalent net interest revenue	48,368	43,759	4,609	107,254	87,885	19,369
Change in tax-equivalent adjustment	1,498			2,018		
Net interest revenue	\$ 46,870			\$ 105,236		

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 \$172.1 million for the second quarter of 2019, a \$15.7 million increase over the second quarter of 2018 and a \$14.8 million increase over the first quarter of 2019. Lower mortgage interest rates have positively affected both our brokerage and trading and mortgage banking revenue leading to increases of \$14.0 million and \$1.8 million over the second quarter of 2018, respectively, and \$8.9 million and \$4.3 million over the first quarter of 2019, respectively.

Table 2 – Other Operating Revenue

(In thousands)

	Three Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2019		Increase (Decrease)	% Increase (Decrease)
	2019	2018						
Brokerage and trading revenue	\$ 40,526	\$ 26,488	\$ 14,038	53 %	\$ 31,617	\$ 8,909	28 %	
Transaction card revenue	21,915	20,975	940	4 %	20,738	1,177	6 %	
Fiduciary and asset management revenue	45,025	41,692	3,333	8 %	43,358	1,667	4 %	
Deposit service charges and fees	28,074	27,834	240	1 %	28,243	(169)	(1)%	
Mortgage banking revenue	28,131	26,346	1,785	7 %	23,834	4,297	18 %	
Other revenue	12,437	13,923	(1,486)	(11)%	12,762	(325)	(3)%	
Total fees and commissions revenue	176,108	157,258	18,850	12 %	160,552	15,556	10 %	
Other gains (losses), net	3,480	4,578	(1,098)	N/A	2,976	504	N/A	
Gain (loss) on derivatives, net	11,150	(3,057)	14,207	N/A	4,667	6,483	N/A	
Gain (loss) on fair value option securities, net	9,853	(3,341)	13,194	N/A	9,665	188	N/A	
Change in fair value of mortgage servicing rights	(29,555)	1,723	(31,278)	N/A	(20,666)	(8,889)	N/A	
Gain (loss) on available for sale securities, net	1,029	(762)	1,791	N/A	76	953	N/A	
Total other operating revenue	\$ 172,065	\$ 156,399	\$ 15,666	10 %	\$ 157,270	\$ 14,795	9 %	

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 38 percent of total revenue for the second quarter of 2019, 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

Brokerage and trading revenue, which includes revenues from trading, customer hedging, retail brokerage and investment banking, increased \$14.0 million or 53 percent compared to the second quarter of 2018.

Trading revenue includes net realized and unrealized gains and losses primarily related to sales of U.S. government securities, residential mortgage-backed securities guaranteed by U.S. government agencies, municipal securities and asset-backed securities to institutional customers and related derivative instruments. Trading revenue was \$21.9 million for the second quarter of 2019, a \$15.5 million or 245 percent increase compared to the second quarter of 2018. Average trading securities increased \$275 million compared to the second quarter of 2018. Lower mortgage interest rates have led to increased trading activity in the second quarter of 2019.

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 \$5.3 million for the second quarter of 2019, a \$4.5 million or 45 percent decrease compared to the second quarter of 2018. The decrease is primarily due to a shift in the mix of our to-be-announced residential mortgage backed securities contracts from our customer hedging program to our U.S. government agency residential mortgage-backed trading program. The resulting increased activity remains within our established market risk limits as discussed further in Management's Discussion & Analysis – Market Risk section following.

Insurance brokerage fees increased \$3.6 million compared to the second quarter of 2018 due to the addition of CoBiz.

Brokerage and trading revenue increased \$8.9 million compared to the previous quarter, primarily due to increased trading activity as a result of lower mortgage interest rates.

Fiduciary and Asset Management Revenue

Fiduciary and asset management revenue is earned through managing or holding of assets for customers and executing transactions or providing related services. Approximately 90 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 increased \$3.3 million or 8 percent over the second quarter of 2018 largely due to asset increases and increased \$1.7 million or 4 percent over the first quarter of 2019, primarily due to seasonal tax fees collected in the second quarter.

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								
	June 30, 2019			June 30, 2018			March 31, 2019		
	Balance	Revenue ¹	Margin ²	Balance	Revenue ¹	Margin ²	Balance	Revenue ¹	Margin ²
Managed fiduciary assets:									
Personal	\$ 8,516,076	\$ 26,134	1.23%	\$ 7,791,094	\$ 23,307	1.20%	\$ 8,428,218	\$ 23,276	1.10%
Institutional	14,286,046	6,283	0.18%	13,448,068	5,596	0.17%	14,026,020	6,138	0.18%
Total managed fiduciary assets	22,802,122	32,417	0.57%	21,239,162	28,903	0.54%	22,454,238	29,414	0.52%
Non-managed assets:									
Fiduciary	26,494,774	12,275	0.19%	25,292,738	12,426	0.20%	23,946,911	13,528	0.23%
Non-fiduciary	15,894,874	333	0.01%	16,422,810	370	0.01%	16,215,999	416	0.01%
Safekeeping and brokerage assets under administration	16,582,832	—	—%	15,918,736	—	—%	16,235,136	—	—%
Total non-managed assets	58,972,480	12,608	0.09%	57,634,284	12,796	0.09%	56,398,046	13,944	0.10%
Total assets under management or administration	\$ 81,774,602	\$ 45,025	0.22%	\$ 78,873,446	\$ 41,699	0.21%	\$ 78,852,284	\$ 43,358	0.22%

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 June 30, 2019 and 2018 follows:

Table 4 -- Changes in Assets Under Management or Administration

	Three Months Ended June 30,	
	2019	2018
Beginning balance	\$ 78,852,284	\$ 78,878,989
Net inflows (outflows)	1,075,070	(746,477)
Net change in fair value	1,847,248	740,934
Ending balance	\$ 81,774,602	\$ 78,873,446

Mortgage Banking Revenue

Mortgage banking revenue increased \$1.8 million or 7 percent compared to the second quarter of 2018. Mortgage loan production volumes increased \$84 million or 12 percent as average primary mortgage interest rates have decreased.

Mortgage banking revenue increased \$4.3 million or 18 percent compared to the first quarter of 2019. Lower mortgage interest rates during the quarter led to an increase in mortgage production.

Table 5 – Mortgage Banking Revenue

(In thousands)

	Three Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2019	Increase (Decrease)	% Increase (Decrease)
	2019	2018					
Mortgage production revenue	\$ 11,869	\$ 9,915	\$ 1,954	20 %	\$ 7,868	\$ 4,001	51 %
Mortgage loans funded for sale	\$ 729,841	\$ 773,910			\$ 510,527		
Add: Current period end outstanding commitments	344,087	251,231			263,434		
Less: Prior period end outstanding commitments	263,434	298,318			160,848		
Total mortgage production volume	\$ 810,494	\$ 726,823	\$ 83,671	12 %	\$ 613,113	\$ 197,381	32 %
Mortgage loan refinances to mortgage loans funded for sale	31%	22%	900 bps		30%	100 bps	
Gains on sale margin	1.46%	1.36%	10 bps		1.28%	18 bps	
Primary mortgage interest rates:							
Average	4.01%	4.54%)		4.37%)	
Period end	3.73%	4.55%	(82bps)		4.06%	(33bps)	
Mortgage servicing revenue	\$ 16,262	\$ 16,431	\$ (169)	(1)%	\$ 15,966	\$ 296	2 %
Average outstanding principal balance of mortgage loans serviced for others	21,418,690	21,986,065	(567,375)	(3)%	21,581,835	(163,145)	(1)%
Average mortgage servicing revenue rates	0.30%	0.30%	—		0.30%	—	

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

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 increase in the total economic cost of changes in the fair value of mortgage servicing rights, net of economic hedges is due to the combination of unhedgeable factors and significant mortgage interest rate volatility during the year.

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

	Three Months Ended		
	June 30, 2019	Mar. 31, 2019	June 30, 2018
Gain (loss) on mortgage hedge derivative contracts, net	\$ 11,128	\$ 4,432	\$ (3,070)
Gain (loss) on fair value option securities, net	9,853	9,665	(3,341)
Gain (loss) on economic hedge of mortgage servicing rights, net	20,981	14,097	(6,411)
Gain (loss) on change in fair value of mortgage servicing rights	(29,555)	(20,666)	1,723
Gain (loss) on changes in fair value of mortgage servicing rights, net of economic hedges included in other operating revenue	(8,574)	(6,569)	(4,688)
Net interest revenue on fair value option securities ¹	1,296	1,129	1,203
Total economic benefit (cost) of changes in the fair value of mortgage servicing rights, net of economic hedges	\$ (7,278)	\$ (5,440)	\$ (3,485)

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

Other Operating Expense

Other operating expense for the second quarter of 2019 totaled \$277.1 million, up \$30.7 million compared to the second quarter of 2018. Operating expenses in the second quarter of 2019 included \$23.0 million of CoBiz operating expenses. CoBiz added \$12.7 million in integration costs and \$26.6 million in operating costs during the first quarter of 2019.

Table 7 – Other Operating Expense

(In thousands)

	Three Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2019		% Increase (Decrease)
	2019	2018			Increase (Decrease)	% Increase (Decrease)	
Regular compensation	\$ 98,247	\$ 86,231	\$ 12,016	14 %	\$ 100,650	\$ (2,403)	(2)%
Incentive compensation:							
Cash-based	33,155	31,933	1,222	4 %	32,137	1,018	3 %
Share-based	2,734	(1,361)	4,095	(301)%	5,162	(2,428)	47 %
Deferred compensation	1,534	900	634	N/A	3,911	(2,377)	N/A
Total incentive compensation	37,423	31,472	5,951	19 %	41,210	(3,787)	(9)%
Employee benefits	24,672	21,244	3,428	16 %	27,368	(2,696)	(10)%
Total personnel expense	160,342	138,947	21,395	15 %	169,228	(8,886)	(5)%
Business promotion	10,142	7,686	2,456	32 %	7,874	2,268	29 %
Charitable contributions to BOKF Foundation	1,000	—	1,000	N/A	—	1,000	N/A
Professional fees and services	13,002	14,978	(1,976)	(13)%	16,139	(3,137)	(19)%
Net occupancy and equipment	26,880	22,761	4,119	18 %	29,521	(2,641)	(9)%
Insurance	6,454	6,245	209	3 %	4,839	1,615	33 %
Data processing and communications	29,735	27,739	1,996	7 %	31,449	(1,714)	(5)%
Printing, postage and supplies	4,107	4,011	96	2 %	4,885	(778)	(16)%
Net losses and operating expenses of repossessed assets	580	2,722	(2,142)	(79)%	1,996	(1,416)	(71)%
Amortization of intangible assets	5,138	1,386	3,752	271 %	5,191	(53)	(1)%
Mortgage banking costs	11,545	12,890	(1,345)	(10)%	9,906	1,639	17 %
Other expense	8,212	7,111	1,101	15 %	6,129	2,083	34 %
Total other operating expense	\$ 277,137	\$ 246,476	\$ 30,661	12 %	\$ 287,157	\$ (10,020)	(3)%
Average number of employees (full-time equivalent)	5,123	4,875	248	5 %	5,291	(168)	(3)%

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

Personnel expense

Personnel expense increased \$21.4 million over the second quarter of 2018. CoBiz operating expenses added \$14.3 million to the second quarter of 2019. The remaining increase of \$7.1 million is largely attributed to standard annual merit increases in regular compensation and incentive compensation.

Personnel expense decreased \$8.9 million compared the first quarter of 2019. CoBiz integration costs added \$3.3 million to the first quarter of 2019. The remaining \$5.6 million decrease is primarily due to the realization of efficiencies related to the CoBiz acquisition.

Non-personnel operating expense

Non-personnel operating expense increased \$9.3 million over the second quarter of 2018. CoBiz operating expenses added \$8.6 million to the second quarter of 2019. Business promotion expense increased \$2.1 million as we increase our brand marketing in Arizona and Colorado. Data processing and communications expense increased \$1.7 million and occupancy and equipment expense increased \$1.3 million, primarily related to increased project costs and data processing transaction activity. Professional fees and services decreased \$2.1 million largely due to CoBiz acquisition costs in the second quarter of 2018. Net losses and expenses on repossessed assets decreased \$2.1 million due to decreased expenses on certain oil and gas properties. Mortgage banking costs decreased \$1.3 million, primarily due to reduced lead buying costs as we have exited the online lead buying business combined with a decrease in accruals related to default servicing and loss mitigation costs on loans serviced for others.

Non-personnel expense decreased \$1.1 million compared to the first quarter of 2019. CoBiz integration costs added \$9.4 million to the first quarter of 2019, which is excluded from the following fluctuations. Business promotion expense increased \$2.9 million largely due to brand recognition advertising in our Arizona and Colorado markets. Insurance expense is up \$1.9 million largely due to adjustments to deposit insurance expense related to CoBiz. Increases in professional fees and services of \$1.7 million and mortgage banking costs of \$1.6 million were partially offset by a decrease in net losses and expenses of repossessed assets of \$1.4 million. The second quarter of 2019 also included a \$1.0 million charitable donation to the BOKF Foundation.

Income Taxes

The effective tax rate was 21.4% for both the first and second quarter of 2019, down from 22.4% for the second quarter of 2018. Increased tax-exempt revenue from CoBiz was the primary driver of the decrease.

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.

The operations of CoBiz were allocated to the operating segments in the second quarter of 2019. Prior to April 1, 2019, CoBiz operations were included in Funds Management and other.

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. During 2018 the funds transfer pricing rates for non-maturity deposits became inverted due to the flattening of the yield curve. Short term rates continued to increase while long term rates remained relatively flat. In order to appropriately reflect the organizational value of these deposits to the lines of business, effective January 1, 2019, we made adjustments that push more deposit credit value to the business lines, with the offset to Funds Management and other.

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 \$35.3 million or 31 percent over the second quarter of 2018. Net interest revenue grew by \$52.0 million over the prior year, primarily due to the CoBiz acquisition combined with growth in average loan balances. Net charge-offs decreased \$2.6 million. Other operating revenue increased by \$16.4 million and operating expense increased by \$18.1 million compared to the second quarter of 2018.

Table 8 -- Net Income by Line of Business

(In thousands)

	Three Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2019		Increase (Decrease)	% Increase (Decrease)
	2019	2018			2019	2018		
Commercial Banking	\$ 106,932	\$ 87,577	\$ 19,355	22%	\$ 86,143	\$ 20,789	24%	
Consumer Banking	16,344	5,793	10,551	182%	15,337	1,007	7%	
Wealth Management	25,545	20,119	5,426	27%	23,719	1,826	8%	
Subtotal	148,821	113,489	35,332	31%	125,199	23,622	19%	
Funds Management and other	(11,258)	883	(12,141)	N/A	(14,587)	3,329	N/A	
Total	\$ 137,563	\$ 114,372	\$ 23,191	20%	\$ 110,612	\$ 26,951	24%	

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

Commercial Banking

Commercial Banking contributed \$106.9 million to consolidated net income in the second quarter of 2019, an increase of \$19.4 million or 22 percent over the second quarter of 2018. Growth in net interest revenue was partially offset by decreased operating revenue and increased operating expense.

Table 9 -- Commercial Banking
(Dollars in thousands)

	Three Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2019		Increase (Decrease)	% Increase (Decrease)
	2019	2018			2019	2018		
Net interest revenue from external sources	\$ 251,080	\$ 182,127	\$ 68,953	38 %	\$ 204,209	\$ 46,871	23 %	
Net interest expense from internal sources	(65,470)	(37,102)	(28,368)	76 %	(52,562)	(12,908)	25 %	
Total net interest revenue	185,610	145,025	40,585	28 %	151,647	33,963	22 %	
Net loans charged off	6,823	10,108	(3,285)	(32)%	11,245	(4,422)	(39)%	
Net interest revenue after net loans charged off	178,787	134,917	43,870	33 %	140,402	38,385	27 %	
Fees and commissions revenue	41,105	42,874	(1,769)	(4)%	38,046	3,059	8 %	
Other gains, net	506	173	333	N/A	(434)	940	N/A	
Other operating revenue	41,611	43,047	(1,436)	(3)%	37,612	3,999	11 %	
Personnel expense	42,268	29,584	12,684	43 %	31,217	11,051	35 %	
Non-personnel expense	20,679	19,802	877	4 %	18,960	1,719	9 %	
Other operating expense	62,947	49,386	13,561	27 %	50,177	12,770	25 %	
Net direct contribution	157,451	128,578	28,873	22 %	127,837	29,614	23 %	
Gain on financial instruments, net	20	9	11	N/A	18	2	N/A	
Loss on repossessed assets, net	—	(67)	67	N/A	(346)	346	N/A	
Corporate expense allocations	11,384	9,366	2,018	22 %	10,148	1,236	12 %	
Income before taxes	146,087	119,154	26,933	23 %	117,361	28,726	24 %	
Federal and state income tax	39,155	31,577	7,578	24 %	31,218	7,937	25 %	
Net income	\$ 106,932	\$ 87,577	\$ 19,355	22 %	\$ 86,143	\$ 20,789	24 %	
Average assets	\$ 22,910,071	\$ 18,072,155	\$ 4,837,916	27 %	\$ 19,936,895	\$ 2,973,176	15 %	
Average loans	18,812,800	14,900,918	3,911,882	26 %	15,988,843	2,823,957	18 %	
Average deposits	10,724,206	8,379,584	2,344,622	28 %	8,261,543	2,462,663	30 %	
Average invested capital	2,222,032	1,352,679	869,353	64 %	2,121,699	100,333	5 %	

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

Net interest revenue increased \$40.6 million or 28 percent over the prior year, primarily due to the allocation of CoBiz to the business lines. Additional growth in net interest revenue was due to increased yields and an 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. Net loans charged-off decreased \$3.3 million.

Fees and commissions revenue decreased \$1.8 million or 4 percent primarily due to a decrease in revenue earned on certain repossessed assets compared to the prior year while operating expense increased \$13.6 million or 27 percent compared to the second quarter of 2018. Personnel expense increased \$12.7 million primarily due to the incorporation of CoBiz employees combined with standard annual merit increases. Corporate expense allocations increased \$2.0 million or 22 percent compared to the prior year.

The average outstanding balance of loans attributed to Commercial Banking were up \$3.9 billion or 26 percent over the second quarter of 2018 to \$18.8 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 \$10.7 billion for the second quarter of 2019, a 28 percent increase compared to the second quarter of 2018. See Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital for further discussion of change.

Net interest revenue increased \$34.0 million or 22 percent over the first quarter of 2019 largely as a result of the allocation of acquired loans to the business line. Fees and commissions revenue increased \$3.1 million, primarily due to an increase in loan syndication fees based on the timing of completed transactions and increased transaction card revenues related to a seasonal increase in transaction volume. Operating expense increased \$12.8 million or 25 percent compared to the first quarter of 2019 primarily due to an \$11.1 million increase in personnel expense largely due to the addition of CoBiz employees.

Average loan balances increased \$2.8 billion or 18 percent and average customer deposits increased \$2.5 billion or 30 percent, both largely impacted by acquired loans and deposits.

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. In the first quarter of 2019, the strategic decision was made to exit our online lead buying business, HomeDirect, to focus more on our high margin, core competency of developing complete, long-term relationships with our clients through our traditional mortgage origination channel.

Consumer Banking contributed \$16.3 million to consolidated net income for the second quarter of 2019, an increase of \$10.6 million over the second quarter of 2018. Improved performance by Consumer Banking was largely due to the effect of changes in pricing of funds sold to the Funds Management unit, partially offset by net changes in the fair value of mortgage servicing rights. The addition of CoBiz operations in the second quarter of 2019 did not significantly affect net income the Consumer Banking segment.

Table 10 -- Consumer Banking
(Dollars in thousands)

	Three Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2019		% Increase (Decrease)
	2019	2018			Increase (Decrease)	% Increase (Decrease)	
Net interest revenue from external sources	\$ 24,203	\$ 21,747	\$ 2,456	11 %	\$ 21,595	\$ 2,608	12 %
Net interest revenue from internal sources	28,514	17,548	10,966	62 %	29,507	(993)	(3)%
Total net interest revenue	52,717	39,295	13,422	34 %	51,102	1,615	3 %
Net loans charged off	1,728	1,140	588	52 %	1,085	643	59 %
Net interest revenue after net loans charged off	50,989	38,155	12,834	34 %	50,017	972	2 %
Fees and commissions revenue	48,830	46,332	2,498	5 %	42,821	6,009	14 %
Other losses, net	(19)	(12)	(7)	N/A	(73)	54	N/A
Other operating revenue	48,811	46,320	2,491	5 %	42,748	6,063	14 %
Personnel expense	24,377	25,203	(826)	(3)%	24,336	41	— %
Non-personnel expense	33,317	35,943	(2,626)	(7)%	29,485	3,832	13 %
Total other operating expense	57,694	61,146	(3,452)	(6)%	53,821	3,873	7 %
Net direct contribution	42,106	23,329	18,777	80 %	38,944	3,162	8 %
Gain (loss) on financial instruments, net	20,981	(6,411)	27,392	N/A	14,097	6,884	N/A
Change in fair value of mortgage servicing rights	(29,555)	1,723	(31,278)	N/A	(20,666)	(8,889)	N/A
Gain on repossessed assets, net	92	174	(82)	N/A	103	(11)	N/A
Corporate expense allocations	11,695	11,042	653	6 %	11,900	(205)	(2)%
Income before taxes	21,929	7,773	14,156	182 %	20,578	1,351	7 %
Federal and state income tax	5,585	1,980	3,605	182 %	5,241	344	7 %
Net income	\$ 16,344	\$ 5,793	\$ 10,551	182 %	\$ 15,337	\$ 1,007	7 %
Average assets	\$9,212,667	\$8,353,558	\$ 859,109	10 %	\$ 8,371,683	\$ 840,984	10 %
Average loans	1,796,823	1,716,259	80,564	5 %	1,750,642	46,181	3 %
Average deposits	6,998,677	6,579,635	419,042	6 %	6,544,665	454,012	7 %
Average invested capital	304,990	284,798	20,192	7 %	291,846	13,144	5 %

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

Net interest revenue from Consumer Banking activities grew by \$13.4 million or 34 percent over the the second quarter of 2018, primarily due to increased rates received on deposit balances sold to the Funds Management unit. Average consumer deposits grew \$419 million over the second quarter of 2018 with demand deposit balances up by \$371 million or 20 percent, largely due to the allocation of acquired deposits.

Fees and commissions revenue increased \$2.5 million or 5 percent compared to the second quarter of 2018. Lower mortgage interest rates increased mortgage loan origination volumes. Operating expense decreased by \$3.5 million. Occupancy and equipment expense decreased \$1.8 million. Mortgage banking costs decreased \$1.3 million primarily due to a decrease in lead costs driven by the strategic decision to exit the lead buying space in the first quarter of 2019. Corporate expense allocations were \$653 thousand or 6 percent higher than the prior year.

Changes in the fair value of mortgage servicing rights, net of economic hedges, decreased pre-tax net income for the second quarter of 2019 by \$8.6 million compared to a \$4.7 million decrease in pre-tax net income in the second quarter of 2018.

Net interest revenue from Consumer Banking activities increased \$1.6 million or 3 percent over the first quarter of 2019, primarily due to an increase in interest earned on the fair value option portfolio combined with increased deposits sold to our Funds Management unit.

Revenues from mortgage banking activities increased \$4.3 million over the prior quarter due to lower interest rates. Mortgage production volume increased \$197 million or 32 percent and gain on sale margins climbed to 1.46 percent from 1.28 percent. Deposit service charges also increased \$1.1 million due to two more days in the quarter compared to the previous quarter.

Operating expenses increased \$3.9 million, nearly all related to non-personnel expenses. Mortgage banking costs increased \$1.6 million related to increased payoffs as mortgage interest rates declined during the quarter. Business promotion expense increased \$1.6 million primarily due to additional brand marketing.

Average consumer loans increased \$46 million or 3 percent. Average deposits increased \$454 million or 7 percent primarily due to the allocation of acquired deposits.

Wealth Management

Wealth Management contributed \$25.5 million to consolidated net income in the second quarter of 2019, up \$5.4 million or 27 percent over the second quarter of 2018, primarily due to increased brokerage and trading revenue, partially offset by decreased net interest revenue and increased operating expense. The addition of CoBiz operations in the second quarter of 2019 did not significantly affect net income the Wealth Management segment.

Table 11 -- Wealth Management

(Dollars in thousands)

	Three Months Ended June 30,		Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2019		Increase (Decrease)	% Increase (Decrease)
	2019	2018			2019	2018		
Net interest revenue from external sources	\$ 17,224	\$ 18,754	\$ (1,530)	(8)%	\$ 21,486	\$ (4,262)	(20)%	
Net interest revenue from internal sources	9,719	10,232	(513)	(5)%	6,770	2,949	44 %	
Total net interest revenue	26,943	28,986	(2,043)	(7)%	28,256	(1,313)	(5)%	
Net loans charged off (recovered)	(48)	(105)	57	(54)%	(119)	71	(60)%	
Net interest revenue after net loans charged off (recovered)	26,991	29,091	(2,100)	(7)%	28,375	(1,384)	(5)%	
Fees and commissions revenue	85,925	70,489	15,436	22 %	73,256	12,669	17 %	
Other gains (losses), net	92	153	(61)	N/A	158	(66)	N/A	
Other operating revenue	86,017	70,642	15,375	22 %	73,414	12,603	17 %	
Personnel expense	50,080	45,653	4,427	10 %	43,991	6,089	14 %	
Non-personnel expense	19,372	15,838	3,534	22 %	17,516	1,856	11 %	
Other operating expense	69,452	61,491	7,961	13 %	61,507	7,945	13 %	
Net direct contribution	43,556	38,242	5,314	14 %	40,282	3,274	8 %	
Corporate expense allocations	9,168	11,142	(1,974)	(18)%	8,360	808	10 %	
Income before taxes	34,388	27,100	7,288	27 %	31,922	2,466	8 %	
Federal and state income tax	8,843	6,981	1,862	27 %	8,203	640	8 %	
Net income	\$ 25,545	\$ 20,119	\$ 5,426	27 %	\$ 23,719	\$ 1,826	8 %	
Average assets	\$ 9,849,396	\$ 8,495,557	\$ 1,353,839	16 %	\$ 9,328,986	\$ 520,410	6 %	
Average loans	1,647,680	1,413,170	234,510	17 %	1,448,718	198,962	14 %	
Average deposits	6,220,848	5,834,669	386,179	7 %	5,659,771	561,077	10 %	
Average invested capital	274,050	249,827	24,223	10 %	255,948	18,102	7 %	

Net interest revenue decreased \$2.0 million or 7 percent compared the second quarter of 2018. Average loans attributed to the Wealth Management segment increased \$235 million or 17 percent and average deposits increased \$386 million or 7 percent largely due to the allocation of acquired loans. Growth in interest-bearing transaction account balances of \$511 million was offset by an \$89 million decrease in demand deposit balances and \$43 million decrease in time deposit balances.

Fees and commissions revenue increased \$15.4 million or 22 percent over the second quarter of 2018 primarily due to a \$12.6 million increase in brokerage and trading revenue. Lower mortgage interest rates have led to an increase in related trading activity boosting brokerage and trading revenue. Operating expense increased \$8.0 million or 13 percent compared to the second quarter of 2018. Personnel expense increased \$4.4 million primarily due to standard annual merit increases. Non-personnel expense increased \$3.5 million or 22 percent compared to the second quarter of 2018 largely related to occupancy and equipment expense. Corporate expense allocations decreased \$2.0 million or 18 percent compared to the prior year.

Net income for Wealth Management increased \$1.8 million or 8 percent compared to the first quarter of 2019. An increase in brokerage and trading revenue was partially offset by a decrease in net interest revenue and an increase in operating expenses. Brokerage and trading revenue increased \$8.4 million due to an increase in trading activity and volumes due to favorable interest rate changes. This increase was partially offset by a decrease in interest received on trading securities and an increase in funding costs. Fiduciary and asset management revenue increased \$3.4 million largely due to a seasonal increase related to tax fees collected in the second quarter as well as increased assets under management. Operating expenses increased \$7.9 million, including \$6.1 million related to personnel expenses and \$1.9 million related to other operating expenses.

Average loans increased \$199 million or 14 percent to \$1.6 billion and average deposits increased \$561 million or 10 percent to \$6.2 billion, primarily due to the allocation of CoBiz operations to the business lines.

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 June 30, 2019 and December 31, 2018.

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 decreased \$240 million to \$1.9 billion during the second quarter of 2019. 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 June 30, 2019, the carrying value of investment (held-to-maturity) securities was \$328 million and the fair value was \$347 million. Investment securities consist primarily of residential mortgage-backed securities issued by U.S. government agencies, long-term, fixed rate Oklahoma and Texas municipal bonds, and taxable Texas school construction bonds.

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 \$10.4 billion at June 30, 2019, a \$1.4 billion increase compared to March 31, 2019 as a measure to protect for a down rate environment. At June 30, 2019, 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 June 30, 2019 is 3.1 years. Management estimates the duration extends to 3.9 years assuming an immediate 200 basis point upward shock. The estimated duration contracts to 2.5 years assuming a 100 basis point decline in the current low rate environment.

The aggregate gross amount of unrealized losses on available for sale securities totaled \$19 million at June 30, 2019, compared to \$69 million at March 31, 2019. 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 second quarter of 2019.

Loans

The aggregate loan portfolio before allowance for loan losses totaled \$22.3 billion at June 30, 2019, up \$497 million over March 31, 2019, primarily due to growth in commercial and commercial real estate loans.

Table 12 -- Loans
(In thousands)

	<u>June 30, 2019</u>	<u>Mar. 31, 2019</u>	<u>Dec. 31, 2018</u>	<u>Sept. 30, 2018</u>	<u>June 30, 2018</u>
Commercial:					
Energy	\$ 3,921,353	\$ 3,705,099	\$ 3,590,333	\$ 3,294,867	\$ 3,147,219
Services	3,309,458	3,287,563	3,258,192	2,603,862	2,516,676
Healthcare	2,926,510	2,915,885	2,799,277	2,437,323	2,353,722
Wholesale/retail	1,793,118	1,706,900	1,621,158	1,650,729	1,699,554
Public finance	795,659	803,083	804,550	418,578	433,408
Manufacturing	761,357	742,374	730,521	660,582	647,816
Other commercial and industrial	829,453	801,071	832,047	510,160	550,644
Total commercial	14,336,908	13,961,975	13,636,078	11,576,101	11,349,039
Commercial real estate:					
Multifamily	1,300,372	1,210,358	1,288,065	1,120,166	1,056,984
Office	1,056,306	1,033,158	1,072,920	824,829	820,127
Industrial	828,569	767,757	778,106	696,774	653,384
Retail	825,399	890,685	919,082	759,423	768,024
Residential construction and land development	141,509	149,686	148,584	101,872	118,999
Other commercial real estate	557,878	549,007	558,056	301,611	294,702
Total commercial real estate	4,710,033	4,600,651	4,764,813	3,804,675	3,712,220
Residential mortgage:					
Permanent mortgage	1,088,370	1,098,481	1,122,610	1,094,926	1,068,412
Permanent mortgages guaranteed by U.S. government agencies	195,373	193,308	190,866	180,718	169,653
Home equity	887,079	900,831	916,557	696,098	704,185
Total residential mortgage	2,170,822	2,192,620	2,230,033	1,971,742	1,942,250
Personal	1,037,889	1,003,734	1,025,806	996,941	1,000,187
Total	\$ 22,255,652	\$ 21,758,980	\$ 21,656,730	\$ 18,349,459	\$ 18,003,696

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 \$14.3 billion or 64 percent of the loan portfolio at June 30, 2019, an increase of \$375 million over March 31, 2019. Energy loan balances grew by \$216 million. Wholesale/retail sector loans increased \$86 million. Other commercial and industrial loans increased \$28 million and services sector loans were up \$22 million. Manufacturing and healthcare sector loans also increased over March 31.

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	\$ 819,979	\$2,105,298	\$ 57,153	\$ 122	\$ 483,286	\$ 548	\$ 100,035	\$ 354,932	\$ 3,921,353
Services	633,245	779,445	173,946	16,513	622,318	448,033	261,699	374,259	3,309,458
Healthcare	235,561	390,596	136,658	84,456	328,166	227,487	242,652	1,280,934	2,926,510
Wholesale/retail	309,597	663,003	38,280	31,792	179,169	109,027	64,481	397,769	1,793,118
Public finance	73,892	167,025	40,973	—	169,482	120,198	—	224,089	795,659
Manufacturing	88,827	191,733	575	5,693	187,014	148,551	63,605	75,359	761,357
Other commercial and industrial	157,211	165,549	3,150	48,630	117,124	40,547	63,914	233,328	829,453
Total commercial loans	\$2,318,312	\$4,462,649	\$450,735	\$187,206	\$2,086,559	\$1,094,391	\$ 796,386	\$2,940,670	\$14,336,908

The majority of the collateral securing our commercial loan portfolio is located within our geographical footprint with 31 percent concentrated in the Texas market, 16 percent concentrated in the Oklahoma market and 15 percent in the Colorado market. At June 30, 2019, the Other category is primarily composed of California - \$587 million or 4 percent of the commercial loan portfolio, Florida - \$269 million or 2 percent of the commercial loan portfolio, Louisiana - \$168 million or 1 percent of the commercial loan portfolio, Pennsylvania - \$164 million or 1 percent of the commercial loan portfolio and Ohio - \$163 million or 1 percent of the commercial loan portfolio. All other states individually represent less than one percent 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 \$3.9 billion or 18 percent of total loans at June 30, 2019. Unfunded energy loan commitments were \$3.2 billion at June 30, 2019, a \$222 million decrease compared to March 31, 2019 primarily due to increased utilization in the second quarter. Approximately \$3.1 billion of energy loans were to oil and gas producers, growing \$107 million over March 31, 2019. 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 59 percent of the committed production loans are secured by properties primarily producing oil and 41 percent of the committed production loans are secured by properties primarily producing natural gas. Loans to midstream oil and gas companies totaled \$569 million at June 30, 2019, up \$106 million over March 31, 2019. Loans to borrowers that provide services to the energy industry totaled \$183 million at June 30, 2019, an increase of \$10 million. Loans to other energy borrowers, including those engaged in wholesale or retail energy sales, totaled \$53 million, a \$7.4 million decrease compared to the prior quarter.

The services sector of the loan portfolio totaled \$3.3 billion or 15 percent of total loans and consists of a large number of loans to a variety of businesses, including commercial services, Native American tribal governments, financial services, entertainment & recreation and consumer services. Services sector loans increased by \$22 million over March 31, 2019. Approximately \$1.6 billion of the services category is made up of loans with individual balances of less than \$10 million. Services 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 \$2.9 billion or 13 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 June 30, 2019, the outstanding principal balance of these loans totaled \$4.6 billion. Substantially all of these loans are to borrowers with local market relationships. We serve as the agent lender in approximately 18 percent of our shared national credits, based on dollars committed. We hold shared national 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. Our larger concentrations are in Texas, Colorado and Oklahoma representing 26 percent, 12 percent and 11 percent of the total commercial real estate portfolio at June 30, 2019, 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 \$4.7 billion or 21 percent of the loan portfolio at June 30, 2019. The outstanding balance of commercial real estate loans increased \$109 million compared to March 31, 2019. Loans secured by multifamily residential properties increased \$90 million. Loans secured by industrial facilities grew by \$61 million. Loans secured by office buildings increased \$23 million. Loans secured by retail facilities decreased \$65 million. The commercial real estate loan balance as a percentage of our total loan portfolio has ranged from 19 percent to 22 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
Multifamily	\$ 176,285	\$ 435,006	\$ 34,799	\$ 42,256	\$ 67,954	\$ 145,652	\$ 182,302	\$ 216,118	\$1,300,372
Office	109,007	261,076	97,769	17,419	117,713	72,103	35,118	346,101	1,056,306
Industrial	113,000	204,789	17,684	87	84,471	37,315	42,672	328,551	828,569
Retail	54,396	270,837	146,366	5,362	102,345	62,012	7,356	176,725	825,399
Residential construction and land development	6,616	15,800	12,985	246	54,304	14,122	9,855	27,581	141,509
Other commercial real estate	48,151	38,572	10,387	2,328	148,659	80,421	47,299	182,061	557,878
Total commercial real estate loans	\$ 507,455	\$1,226,080	\$319,990	\$ 67,698	\$575,446	\$ 411,625	\$ 324,602	\$1,277,137	\$4,710,033

The Other category is primarily composed of California - \$275 million or 6 percent of the commercial real estate portfolio, Utah - \$165 million or 4 percent of the commercial real estate portfolio, Nevada - \$119 million or 3 percent of the commercial real estate portfolio, Georgia - \$101 million or 2 percent of the commercial real estate portfolio and Virginia - \$95 million or 2 percent of the commercial real estate portfolio. All other states represent less than 2% 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 \$2.2 billion, a decrease of \$22 million compared to March 31, 2019. 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 92% 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 June 30, 2019, \$195 million of permanent residential mortgage loans are guaranteed by U.S. government agencies. We have limited 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 increased \$2.1 million over March 31, 2019.

Home equity loans totaled \$887 million at June 30, 2019, a \$14 million decrease compared to March 31, 2019. 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 June 30, 2019 by lien position and amortizing status follows in Table 15.

Table 15 -- Home Equity Loans
(In thousands)

	Revolving	Amortizing	Total
First lien	\$ 89,399	\$ 495,512	\$ 584,911
Junior lien	187,872	114,296	302,168
Total home equity	\$ 277,271	\$ 609,808	\$ 887,079

The distribution of residential mortgage and personal loans at June 30, 2019 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)

	<u>Oklahoma</u>	<u>Texas</u>	<u>New Mexico</u>	<u>Arkansas</u>	<u>Colorado</u>	<u>Arizona</u>	<u>Kansas/Missouri</u>	<u>Other</u>	<u>Total</u>
Residential mortgage:									
Permanent mortgage	\$ 166,762	\$428,793	\$ 63,403	\$ 13,039	\$201,900	\$103,739	\$ 59,363	\$ 51,371	\$1,088,370
Permanent mortgages guaranteed by U.S. government agencies	47,020	31,317	32,239	10,070	5,320	1,332	16,036	52,039	195,373
Home equity	355,348	139,910	78,037	7,408	152,769	38,751	51,545	63,311	887,079
Total residential mortgage	\$ 569,130	\$600,020	\$173,679	\$ 30,517	\$359,989	\$143,822	\$ 126,944	\$166,721	\$2,170,822
Personal	\$ 321,274	\$416,424	\$ 11,443	\$ 11,352	\$ 79,045	\$ 69,464	\$ 56,074	\$ 72,813	\$1,037,889

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 Company are centrally managed by the Bank of Oklahoma.

Table 17 -- Loans Managed by Primary Geographical Market

(In thousands)

	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Oklahoma:					
Commercial	\$ 3,762,234	\$ 3,551,054	\$ 3,491,117	\$ 3,609,109	\$ 3,465,407
Commercial real estate	717,970	665,190	700,756	651,315	662,665
Residential mortgage	1,403,398	1,417,381	1,440,566	1,429,843	1,403,658
Personal	382,764	374,807	375,543	376,201	362,846
Total Oklahoma	6,266,366	6,008,432	6,007,982	6,066,468	5,894,576
Texas:					
Commercial	5,877,265	5,754,018	5,438,133	5,115,646	4,922,451
Commercial real estate	1,341,609	1,344,810	1,341,783	1,354,679	1,336,101
Residential mortgage	272,878	265,927	266,805	253,265	243,400
Personal	400,585	396,794	394,743	381,452	394,021
Total Texas	7,892,337	7,761,549	7,441,464	7,105,042	6,895,973
New Mexico:					
Commercial	350,520	342,915	340,489	325,048	305,167
Commercial real estate	385,058	371,416	383,670	392,494	386,878
Residential mortgage	82,390	85,326	87,346	88,110	90,581
Personal	10,236	11,065	10,662	11,659	11,107
Total New Mexico	828,204	810,722	822,167	817,311	793,733
Arkansas:					
Commercial	87,896	79,286	111,338	102,237	93,217
Commercial real estate	149,300	142,551	141,898	106,701	90,807
Residential mortgage	7,463	7,731	7,537	7,278	6,927
Personal	11,208	11,550	11,955	12,126	12,331
Total Arkansas	255,867	241,118	272,728	228,342	203,282
Colorado:					
Commercial	2,325,742	2,231,703	2,275,069	1,132,500	1,165,721
Commercial real estate	1,023,410	957,348	963,575	354,543	267,065
Residential mortgage	241,780	241,722	251,849	68,694	64,839
Personal	72,537	65,812	72,916	56,999	60,504
Total Colorado	3,663,469	3,496,585	3,563,409	1,612,736	1,558,129
Arizona:					
Commercial	1,330,415	1,335,140	1,320,139	621,658	681,852
Commercial real estate	761,243	791,466	889,903	666,562	710,784
Residential mortgage	91,684	98,973	97,959	44,659	47,010
Personal	76,335	61,875	68,546	67,280	65,541
Total Arizona	2,259,677	2,287,454	2,376,547	1,400,159	1,505,187
Kansas/Missouri:					
Commercial	602,836	667,859	659,793	669,903	715,224
Commercial real estate	331,443	327,870	343,228	278,381	257,920
Residential mortgage	71,229	75,560	77,971	79,893	85,835
Personal	84,224	81,831	91,441	91,224	93,837

Total Kansas/Missouri	1,089,732	1,153,120	1,172,433	1,119,401	1,152,816
Total BOK Financial loans	\$ 22,255,652	\$ 21,758,980	\$ 21,656,730	\$ 18,349,459	\$ 18,003,696

Loan Commitments

We enter into certain off-balance sheet arrangements in the normal course of business as shown in Table 18. 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.

Table 18 – Off-Balance Sheet Credit Commitments

(In thousands)

	<u>June 30, 2019</u>	<u>Mar. 31, 2019</u>	<u>Dec. 31, 2018</u>	<u>Sept. 30, 2018</u>	<u>June 30, 2018</u>
Loan commitments	\$ 11,411,819	\$ 12,243,886	\$ 11,944,524	\$ 10,715,964	\$ 10,294,211
Standby letters of credit	698,527	720,451	582,196	671,844	659,867
Mortgage loans sold with recourse	93,606	94,938	98,623	101,512	116,269

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 June 30, 2019, the net fair values of derivative contracts, before consideration of cash margin, reported as assets under these programs totaled \$389 million compared to \$354 million at March 31, 2019. At June 30, 2019, the net fair value of our derivative contracts included \$251 million for foreign exchange contracts, \$77 million for energy contracts, \$49 million for interest rate swaps and \$8.4 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 \$369 million at June 30, 2019 and \$343 million at March 31, 2019.

At June 30, 2019, total derivative assets were reduced by \$34 million of cash collateral received from counterparties and total derivative liabilities were reduced by \$54 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 June 30, 2019 follows in Table 19.

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

Customers	\$ 172,485
Banks and other financial institutions	156,279
Exchanges and clearing organizations	25,525
Fair value of customer risk management program asset derivative contracts, net	\$ 354,289

At June 30, 2019, our largest derivative exposure was to an exchange for energy contracts, net of cash margin, of \$26 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 \$28.87 per barrel of oil would not be great enough to create a scenario in which we are owed by our customers. An increase in prices equivalent to \$71.81 per barrel of oil would increase the fair value of derivative assets by \$113 million. Further increases in price to the equivalent of \$88.03 per barrel of oil would increase the fair value of our derivative assets by \$330 million with lending customers comprising the bulk of the assets. Liquidity requirements of this program may also be affected by our credit rating. At June 30, 2019, a decrease in our credit rating to below investment grade would increase our obligation to post cash margin on existing contracts by approximately \$10 million. 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 June 30, 2019, 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 June 30, 2019, the combined allowance for loan losses and off-balance sheet credit losses totaled \$204 million or 0.92 percent of outstanding loans and 115 percent of nonaccruing loans, excluding loans guaranteed by U.S. government agencies. Excluding acquired loans measured at acquisition date fair value, the combined allowance for loan losses was 1.03 percent of outstanding loans and 126 percent of nonaccruing loans. The allowance for loan losses was \$203 million and the accrual for off-balance sheet credit losses was \$1.9 million. At March 31, 2019, the combined allowance for credit losses was \$207 million or 0.95 percent of outstanding loans and 142 percent of nonaccruing loans, excluding loans guaranteed by U.S. government agencies. Excluding acquired loans measured at acquisition date fair value, the combined allowance for loan losses was 1.09 percent of outstanding loans and 159 percent of nonaccruing loans. The allowance for loan losses was \$205 million and the accrual for off-balance sheet credit losses was \$1.8 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 overall loan growth, the trends in nonaccruing loans, potential problem loans and net charge-offs, the Company determined that \$5.0 million provision for credit losses was appropriate for the second quarter of 2019. The Company recorded \$8.0 million provision for credit losses in the first quarter of 2019.

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

	Three Months Ended				
	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Allowance for loan losses:					
Beginning balance	\$ 205,340	\$ 207,457	\$ 210,569	\$ 215,142	\$ 223,967
Loans charged off:					
Commercial	(11,385)	(10,468)	(12,940)	(9,602)	(13,775)
Commercial real estate	(118)	—	—	—	—
Residential mortgage	(94)	(42)	(52)	(91)	(135)
Personal	(1,630)	(1,265)	(1,523)	(1,380)	(1,195)
Total	(13,227)	(11,775)	(14,515)	(11,073)	(15,105)
Recoveries of loans previously charged off:					
Commercial	434	711	1,267	1,263	298
Commercial real estate	4,345	112	232	40	3,097
Residential mortgage	149	154	71	229	505
Personal	575	712	598	560	678
Total	5,503	1,689	2,168	2,092	4,578
Net loans recovered (charged off)	(7,724)	(10,086)	(12,347)	(8,981)	(10,527)
Provision for loan losses	4,918	7,969	9,235	4,408	1,702
Ending balance	\$ 202,534	\$ 205,340	\$ 207,457	\$ 210,569	\$ 215,142
Accrual for off-balance sheet credit losses:					
Beginning balance	\$ 1,821	\$ 1,790	\$ 2,025	\$ 2,433	\$ 4,135
Provision for off-balance sheet credit losses	82	31	(235)	(408)	(1,702)
Ending balance	\$ 1,903	\$ 1,821	\$ 1,790	\$ 2,025	\$ 2,433
Total combined provision for credit losses					
	\$ 5,000	\$ 8,000	\$ 9,000	\$ 4,000	\$ —
Allowance for loan losses to loans outstanding at period-end	0.91%	0.94%	0.96%	1.15%	1.19%
Net charge-offs (recoveries) (annualized) to average loans	0.14%	0.19%	0.23%	0.20%	0.24%
Total provision for credit losses (annualized) to average loans	0.09%	0.15%	0.17%	0.09%	—%
Recoveries to gross charge-offs	41.60%	14.34%	14.94%	18.89%	30.31%
Accrual for off-balance sheet credit losses to off-balance sheet credit commitments	0.02%	0.01%	0.01%	0.02%	0.02%
Combined allowance for credit losses to loans outstanding at period-end	0.92%	0.95%	0.97%	1.16%	1.21%

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 June 30, 2019, impaired loans totaled \$372 million, including \$9.3 million with specific allowances of \$4.0 million and \$363 million with no specific allowances. At March 31, 2019, impaired loans totaled \$339

million, including \$8.0 million of impaired loans with specific allowances of \$3.5 million and \$331 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 \$182 million at June 30, 2019, largely unchanged compared to March 31, 2019. A decrease in general allowances related to commercial real estate loans was largely offset by an increase in general allowances 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 \$17 million at June 30, 2019, a \$2.3 million decrease compared to March 31, 2019.

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 \$161 million at June 30, 2019 and were primarily composed of \$62 million or 1.58 percent of energy loans, \$27 million or less than 1 percent of service sector loans, \$20 million or 2.47 percent of other commercial and industrial loans, \$14 million or 1.87 percent of manufacturing sector loans, \$13 million or less than 1 percent of healthcare sector loans and \$12 million or less than 1 percent of wholesale/retail sector loans. Potential problem loans totaled \$169 million at March 31, 2019.

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 \$141 million at June 30, 2019 and were composed primarily of \$51 million or 1.53 percent of service sector loans, \$29 million or 3.82 percent of manufacturing sector loans, \$15 million or 0.52 percent healthcare sector loans, \$13 million or 0.73 percent of wholesale/retail sector loans and \$13 million or 0.33 percent of energy sector loans. Other loans especially mentioned totaled \$196 million at March 31, 2019.

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 \$7.7 million in the second quarter of 2019, compared to net charge-offs of \$10.1 million in the first quarter of 2019 and net charge-offs of \$10.5 million in the second quarter of 2018. The ratio of net loans charged off to average loans on an annualized basis was 0.14 percent for the second quarter of 2019, compared with 0.19 percent for the first quarter of 2019 and 0.24 percent for the second quarter of 2018.

Net charge-offs of commercial loans were \$11.0 million in the second quarter of 2019, primarily related to two energy production borrowers and a single healthcare sector borrower. Net commercial real estate loan recoveries were \$4.2 million in the second quarter of 2019. Net recoveries of residential mortgage loans were \$55 thousand and net charge-offs of personal loans were \$1.1 million for the second quarter. Personal loan net charge-offs include deposit account overdraft losses.

Nonperforming Assets

Table 21 -- Nonperforming Assets
(In thousands)

	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Nonaccruing loans:					
Commercial	\$ 123,395	\$ 90,358	\$ 99,841	\$ 109,490	\$ 120,978
Commercial real estate	21,670	21,508	21,621	1,316	1,996
Residential mortgage	38,477	40,409	41,555	41,917	42,343
Personal	237	302	230	269	340
Total nonaccruing loans	183,779	152,577	163,247	152,992	165,657
Accruing renegotiated loans guaranteed by U.S. government agencies	95,989	91,787	86,428	83,347	75,374
Real estate and other repossessed assets	16,940	17,139	17,487	24,515	27,891
Total nonperforming assets	\$ 296,708	\$ 261,503	\$ 267,162	\$ 260,854	\$ 268,922
Total nonperforming assets excluding those guaranteed by U.S. government agencies	\$ 193,976	\$ 162,770	\$ 173,602	\$ 169,717	\$ 185,981
Nonaccruing loans by loan portfolio segment and class:					
Commercial:					
Energy	\$ 71,632	\$ 35,332	\$ 47,494	\$ 54,033	\$ 65,597
Healthcare	16,148	18,768	16,538	15,704	16,125
Manufacturing	8,613	9,548	8,919	9,202	2,991
Services	10,087	9,555	8,567	4,097	4,377
Wholesale/retail	1,390	1,425	1,316	9,249	14,095
Public finance	—	—	—	—	—
Other commercial and industrial	15,525	15,730	17,007	17,205	17,793
Total commercial	123,395	90,358	99,841	109,490	120,978
Commercial real estate:					
Retail	20,057	20,159	20,279	777	1,068
Residential construction and land development	350	350	350	350	350
Multifamily	275	—	301	—	—
Office	855	855	—	—	275
Industrial	—	—	—	—	—
Other commercial real estate	133	144	691	189	303
Total commercial real estate	21,670	21,508	21,621	1,316	1,996
Residential mortgage:					
Permanent mortgage	21,803	22,937	23,951	22,855	23,105
Permanent mortgage guaranteed by U.S. government agencies	6,743	6,946	7,132	7,790	7,567
Home equity	9,931	10,526	10,472	11,272	11,671
Total residential mortgage	38,477	40,409	41,555	41,917	42,343
Personal	237	302	230	269	340
Total nonaccruing loans	\$ 183,779	\$ 152,577	\$ 163,247	\$ 152,992	\$ 165,657
Allowance for loan losses to nonaccruing loans ¹					
	114.40%	141.00%	132.89%	145.02%	136.09%
Accruing loans 90 days or more past due ¹					
	\$ 2,698	\$ 610	\$ 1,338	\$ 518	\$ 879

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

Nonperforming assets totaled \$297 million or 1.33 percent of outstanding loans and repossessed assets at June 30, 2019. Nonaccruing loans totaled \$184 million, accruing renegotiated residential mortgage loans totaled \$96 million and real estate and other repossessed assets totaled \$17 million. All accruing renegotiated residential mortgage loans and \$6.7 million of nonaccruing loans are guaranteed by U.S. government agencies. Excluding assets guaranteed by U.S. government agencies, nonperforming assets increased \$31 million over the first quarter of 2019, primarily due to an increase in nonaccruing energy loans, partially offset by a decrease in nonaccruing healthcare sector 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. Generally loans modified in troubled debt restructurings, except for residential mortgage loans guaranteed by U.S. government agencies, are currently 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. 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.

Accruing renegotiated loan guaranteed by U.S. government agencies represent residential mortgage loans 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 and six months ended June 30, 2019 follows in Table 22.

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

	Three Months Ended			Total Nonperforming Assets
	June 30, 2019			
	Nonaccruing Loans	Renegotiated Loans	Real Estate and Other Repossessed Assets	
Balance, March 31, 2019	\$ 152,577	\$ 91,787	\$ 17,139	\$ 261,503
Additions	53,941	12,495	—	66,436
Payments	(7,128)	(573)	—	(7,701)
Charge-offs	(13,227)	—	—	(13,227)
Net gains (losses) and write-downs	—	—	82	82
Foreclosure of nonperforming loans	(1,574)	—	1,574	—
Foreclosure of loans guaranteed by U.S. government agencies	(810)	(2,894)	—	(3,704)
Proceeds from sales	—	(5,169)	(1,855)	(7,024)
Return to accrual status	—	—	—	—
Other, net	—	343	—	343
Balance, June 30, 2019	\$ 183,779	\$ 95,989	\$ 16,940	\$ 296,708

Six Months Ended

June 30, 2019

	Nonaccruing Loans	Renegotiated Loans	Real Estate and Other Reposessed Assets	Total Nonperforming Assets
Balance, December 31, 2018	\$ 163,247	\$ 86,428	\$ 17,487	\$ 267,162
Additions	80,809	26,811	—	107,620
Payments	(29,303)	(1,206)	—	(30,509)
Charge-offs	(25,002)	—	—	(25,002)
Net gains (losses) and write-downs	—	—	(163)	(163)
Foreclosure of nonperforming loans	(2,606)	—	2,606	—
Foreclosure of loans guaranteed by U.S. government agencies	(1,490)	(5,418)	—	(6,908)
Proceeds from sales	—	(11,223)	(2,990)	(14,213)
Return to accrual status	(1,876)	—	—	(1,876)
Other, net	—	597	—	597
Balance, June 30, 2019	\$ 183,779	\$ 95,989	\$ 16,940	\$ 296,708

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 limited. These properties will be conveyed to the agencies once applicable criteria have been met.

Commercial

Nonaccruing commercial loans totaled \$123 million or 0.86 percent of total commercial loans at June 30, 2019 compared to \$90 million or 0.65 percent of commercial loans at March 31, 2019. There were \$49 million in newly identified nonaccruing commercial loans during the quarter, offset by \$4.6 million in payments and \$11 million of charge-offs of nonaccruing commercial loans during the second quarter.

Nonaccruing commercial loans at June 30, 2019 were primarily composed of \$72 million or 1.83 percent of total energy loans, \$16 million or 0.55 percent of total healthcare sector loans, \$16 million or 1.87 percent of total other commercial and industrial sector loans and \$10 million or 0.30 percent of other commercial and industrial loans.

Commercial Real Estate

Nonaccruing commercial real estate loans totaled \$22 million or 0.46 percent of outstanding commercial real estate loans at June 30, 2019, largely unchanged compared to March 31, 2019 of \$22 million or 0.47 percent of outstanding commercial real estate loans.

Nonaccruing commercial real estate loans were primarily composed of \$20 million or 2.43 percent of loans secured by retail facilities.

Residential Mortgage and Personal

Nonaccruing residential mortgage loans totaled \$38 million or 1.77 percent of outstanding residential mortgage loans at June 30, 2019, a \$1.9 million decrease compared to March 31, 2019. Newly identified nonaccruing residential mortgage loans totaling \$2.9 million were offset by \$2.8 million of payments and \$1.2 million of foreclosures.

Nonaccruing residential mortgage loans primarily consist of non-guaranteed permanent residential mortgage loans, which totaled \$22 million or 2.00 percent of outstanding non-guaranteed permanent residential mortgage loans at June 30, 2019. Nonaccruing home equity loans totaled \$9.9 million or 1.12 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 \$4.5 million in the second quarter to \$5.0 million at June 30, 2019. Residential mortgage loans 60 to 89 days past due increased by \$385 thousand. Personal loans past due 30 to 59 days increased by \$2.2 million and personal loans 60 to 89 days increased \$72 thousand.

Table 23 -- Residential Mortgage and Personal Loans Past Due

(In thousands)

	June 30, 2019			March 31, 2019		
	90 Days or More	60 to 89 Days	30 to 59 Days	90 Days or More	60 to 89 Days	30 to 59 Days
Residential mortgage:						
Permanent mortgage ¹	\$ 37	\$ —	\$ 3,641	\$ —	\$ —	\$ 5,394
Home equity	—	553	1,380	—	168	4,118
Total residential mortgage	\$ 37	\$ 553	\$ 5,021	—	\$ 168	\$ 9,512
Personal	\$ 10	\$ 88	\$ 2,509	\$ —	\$ 16	\$ 347

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 \$17 million at June 30, 2019, composed primarily of \$6.0 million of oil and gas properties, \$4.1 million of 1-4 family residential properties, \$3.3 million of developed commercial real estate and \$2.9 million of undeveloped land primarily zoned for commercial development. Real estate and other repossessed assets totaled \$17 million at March 31, 2019.

Liquidity and Capital

Based on the average balances for the second quarter of 2019, approximately 62 percent of our funding was provided by deposit accounts, 23 percent from borrowed funds, less than 1 percent from long-term subordinated debt and 11 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 ExpressBank 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 second quarter of 2019 totaled \$25.2 billion, a \$548 million increase over the first quarter of 2019. Interest-bearing transaction account balances increased \$581 million and time deposits increased \$54 million. Demand deposits decreased \$104 million compared to the first quarter of 2019.

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

	Three Months Ended				
	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Commercial Banking	\$ 10,724,206	\$ 8,261,543	\$ 8,393,016	\$ 8,633,204	\$ 8,379,584
Consumer Banking	6,998,677	6,544,665	6,542,188	6,580,395	6,579,635
Wealth Management	6,220,848	5,659,771	5,483,455	5,492,048	5,834,669
Subtotal	23,943,731	20,465,979	20,418,659	20,705,647	20,793,888
Funds Management and other	1,218,645	4,148,500	4,676,736	1,230,648	1,261,344
Total	\$ 25,162,376	\$ 24,614,479	\$ 25,095,395	\$ 21,936,295	\$ 22,055,232

Acquired deposits were allocated to the lines of business from funds management and other in the second quarter of 2019. The fluctuations following include those deposits. Average Commercial Banking deposit balances increased \$2.5 billion compared to first quarter of 2019. Demand deposit balances increased \$992 million and interest-bearing transaction account balances increased \$1.4 billion. Despite the series of federal funds rate increases from the Federal Reserve, as well as modest increases in our earnings credit, 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 as the economic outlook continues to improve and if short-term rates continue to move higher, enhancing their investment alternatives. As short-term rates move higher, related increases to the earnings credit rate may be appropriate, which will reduce the amount of deposits required to offset service charges.

Average Consumer Banking deposit balances increased \$454 million over the prior quarter. Demand deposit balances increased \$322 million and interest-bearing transaction deposit balances increased \$75 million. Time deposit balances increased \$32 million.

Average Wealth Management deposits increased \$561 million over the first quarter of 2019. Interest-bearing transaction account balances were up \$483 million. Demand deposit balances increased \$38 million, and time deposits balances were up \$36 million.

Average time deposits for the second quarter of 2019 included \$254 million of brokered deposits, a \$16 million decrease compared to the first quarter of 2019. Average interest-bearing transaction accounts for the second quarter included \$1.1 billion of brokered deposits, a \$214 million increase over the first quarter of 2019.

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)

	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Oklahoma:					
Demand	\$ 3,279,359	\$ 3,432,239	\$ 3,610,593	\$ 3,564,307	\$ 3,867,934
Interest-bearing:					
Transaction	7,020,484	6,542,548	6,445,831	6,010,972	5,968,459
Savings	307,785	309,875	288,210	288,080	289,202
Time	1,253,804	1,217,371	1,118,643	1,128,810	1,207,471
Total interest-bearing	8,582,073	8,069,794	7,852,684	7,427,862	7,465,132
Total Oklahoma	11,861,432	11,502,033	11,463,277	10,992,169	11,333,066
Texas:					
Demand	2,974,005	2,966,743	3,291,433	3,357,669	3,321,980
Interest-bearing:					
Transaction	2,453,619	2,385,305	2,295,169	2,182,114	2,169,155
Savings	103,125	101,849	99,624	97,909	97,809
Time	425,253	419,269	423,880	453,119	445,500
Total interest-bearing	2,981,997	2,906,423	2,818,673	2,733,142	2,712,464
Total Texas	5,956,002	5,873,166	6,110,106	6,090,811	6,034,444
New Mexico:					
Demand	630,861	662,362	691,692	722,188	770,974
Interest-bearing:					
Transaction	557,881	573,203	571,347	593,760	586,593
Savings	62,636	61,497	58,194	57,794	59,415
Time	232,569	228,212	224,515	221,513	212,689
Total interest-bearing	853,086	862,912	854,056	873,067	858,697
Total New Mexico	1,483,947	1,525,274	1,545,748	1,595,255	1,629,671
Arkansas:					
Demand	29,176	31,624	36,800	36,579	39,896
Interest-bearing:					
Transaction	148,485	147,964	91,593	128,001	143,298
Savings	1,783	1,785	1,632	1,826	1,885
Time	7,810	8,321	8,726	10,214	10,771
Total interest-bearing	158,078	158,070	101,951	140,041	155,954
Total Arkansas	187,254	189,694	138,751	176,620	195,850

	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Colorado:					
Demand	1,621,820	1,897,547	1,658,473	593,442	529,912
Interest-bearing:					
Transaction	1,800,271	1,844,632	1,899,203	622,520	701,362
Savings	57,263	58,919	57,289	40,308	38,176
Time	246,198	261,235	274,877	217,628	208,049
Total interest-bearing	2,103,732	2,164,786	2,231,369	880,456	947,587
Total Colorado	3,725,552	4,062,333	3,889,842	1,473,898	1,477,499
Arizona:					
Demand	700,480	695,238	707,402	365,878	383,627
Interest-bearing:					
Transaction	560,429	621,735	575,567	130,105	193,687
Savings	11,966	12,144	10,545	3,559	3,935
Time	43,099	44,004	43,051	23,927	22,447
Total interest-bearing	615,494	677,883	629,163	157,591	220,069
Total Arizona	1,315,974	1,373,121	1,336,565	523,469	603,696
Kansas/Missouri:					
Demand	431,856	410,799	418,199	423,560	459,636
Interest-bearing:					
Transaction	310,774	361,590	327,866	322,747	401,545
Savings	13,125	13,815	13,721	13,125	13,052
Time	19,205	19,977	19,688	20,635	20,805
Total interest-bearing	343,104	395,382	361,275	356,507	435,402
Total Kansas/Missouri	774,960	806,181	779,474	780,067	895,038
Total BOK Financial deposits	\$ 25,305,121	\$ 25,331,802	\$ 25,263,763	\$ 21,632,289	\$ 22,169,264

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 \$575 million at June 30, 2019. 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 \$7.2 billion during the quarter, compared to \$7.0 billion in the first quarter of 2019.

At June 30, 2019, the estimated unused credit available to BOKF, NA from collateralized sources was approximately \$7.8 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 June 30, 2019				Three Months Ended March 31, 2019			
	June 30, 2019	Average Balance During the Quarter	Rate	Maximum Outstanding At Any Month End During the Quarter	Mar. 31, 2019	Average Balance During the Quarter	Rate	Maximum Outstanding At Any Month End During the Quarter
Parent Company and Other Non-Bank Subsidiaries:								
Other borrowings	5,578	6,593	3.22%	\$ 6,593	25,946	5,877	1.25%	25,946
Subordinated debentures	275,892	275,887	5.53%	\$ 275,893	275,880	275,882	5.51%	275,880
Total parent company and other non-bank subsidiaries	281,470	282,480	5.47%		301,826	281,759	5.43%	
BOKF, NA:								
Funds purchased	1,975,086	1,650,046	2.46%	1,975,086	1,018,117	1,622,580	2.47%	1,862,316
Repurchase agreements	356,861	416,904	0.56%	388,760	421,556	410,456	0.46%	421,556
Other borrowings:								
Federal Home Loan Bank advances	7,800,000	7,153,846	2.65%	7,800,000	7,300,000	7,013,333	2.67%	7,300,000
GNMA repurchase liability	14,499	10,755	4.44%	14,499	11,466	17,413	4.51%	19,581
Other	3,732	4,423	4.62%	3,732	3,681	3,656	5.55%	3,681
Total other borrowings	7,818,231	7,169,024	2.67%		7,315,147	7,034,402	2.67%	
Total BOKF, NA	10,150,178	9,235,974	2.53%		8,754,820	9,067,438	2.54%	
Total other borrowed funds and subordinated debentures	\$ 10,431,648	\$ 9,518,454	2.62%		\$ 9,056,646	\$ 9,349,197	2.63%	

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 June 30, 2019, cash and interest-bearing cash and cash equivalents held by the parent company totaled \$149 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 June 30, 2019, based upon the most restrictive limitations as well as management's internal capital policy, BOKF, NA could declare up to \$125 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 June 30, 2019 was \$4.7 billion, an \$187 million increase over March 31, 2019. Net income less cash dividends paid increased equity \$102 million during the second quarter of 2019. Changes in interest rates resulted in an accumulated other comprehensive gain of \$99 million at June 30, 2019, compared to an accumulated other comprehensive loss of \$3.5 million at March 31, 2019. 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 June 16, 2016, the FASB issued FASB Accounting Standards Update No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Assets Measured at Amortized Cost ("ASU 2016-13" or "CECL")* to provide more-timely recording of credit losses on loans and other financial assets measured at amortized cost, effective for the Company's annual reporting periods beginning after December 15, 2019, including interim periods within those fiscal years. The Company will adopt the standard on January 1, 2020 through a cumulative-effect adjustment to retained earnings. The ASU broadens the scope of the allowance for credit losses to include acquired loans and certain serviced loans, among others. Specifically, CECL requires recognition of an allowance for credit losses on acquired loans that were initially recognized at fair value, which included an estimate of expected credit losses. This requirement will result in duplicate recognition of an allowance for expected credit losses on approximately \$2.5 billion of acquired loans. The principles of CECL also apply to expected credit losses on residential mortgage loans the company has transferred into mortgage-backed securities, primarily expected losses on approximately \$3.5 billion of residential mortgage loans that exceed amounts guaranteed by the U.S. Department of Veterans Affairs. We do not expect a significant change in our existing allowance for credit losses due primarily to our loan portfolio's relatively short average life. Currently, we do not expect that the cumulative-effect adjustment to retained earnings from adoption of the CECL accounting standard will materially affect the company's regulatory capital or liquidity. The ultimate impact will depend on the composition of our portfolio of assets measured at amortized cost as well as economic conditions and forecasts at adoption.

On April 30, 2019, 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. The Company repurchased 250,000 shares during the second quarter of 2019 under this new authorization at an average price of \$80.50 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.

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	June 30, 2019	Mar. 31, 2019	June 30, 2018
Risk-based capital:						
Common equity Tier 1	4.50%	2.50%	7.00%	10.84%	10.71%	11.92%
Tier 1 capital	6.00%	2.50%	8.50%	10.84%	10.71%	11.92%
Total capital	8.00%	2.50%	10.50%	12.34%	12.24%	13.26%
Tier 1 Leverage	4.00%	N/A	4.00%	8.75%	8.76%	9.57%
Average total equity to average assets				11.26%	11.29%	10.36%
Tangible common equity ratio				8.69%	8.64%	9.21%

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)

	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Tangible common equity ratio:					
Total shareholders' equity	\$ 4,709,438	\$ 4,522,873	\$ 4,432,109	\$ 3,615,032	\$ 3,553,431
Less: Goodwill and intangible assets, net	1,172,564	1,177,573	1,184,112	480,800	481,366
Tangible common equity	3,536,874	3,345,300	3,247,997	3,134,232	3,072,065
Total assets	41,893,073	39,882,962	38,020,504	33,289,864	33,833,107
Less: Goodwill and intangible assets, net	1,172,564	1,177,573	1,184,112	480,800	481,366
Tangible assets	\$ 40,720,509	\$ 38,705,389	\$ 36,836,392	\$ 32,809,064	\$ 33,351,741
Tangible common equity ratio	8.69%	8.64%	8.82%	9.55%	9.21%

Off-Balance Sheet Arrangements

See Note 7 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 100 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		100 bp Decrease ¹	
	June 30,		June 30,	
	2019	2018	2019	2018
Anticipated impact over the next twelve months on net interest revenue	\$ (15,527)	\$ 1,118	\$ (32,930)	\$ (35,335)
	(1.38)%	0.11%	(2.93)%	(3.59)%

¹ The results of a 200 basis point decrease in interest rates in the low-rate environment are not meaningful, therefore we will instead report the effect of a 100 basis point decrease in interest rates.

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)

	June 30,			
	2019		2018	
	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp
MSR Asset	\$ 32,153	\$ (41,160)	\$ 22,858	\$ (25,967)
MSR Hedge	(36,192)	33,383	(23,730)	21,281
Net Exposure	(4,039)	(7,777)	(872)	(4,686)

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 June 30,				Six Months Ended June 30,			
	2019		2018		2019		2018	
	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp
Average ¹	\$ (229)	\$ (190)	\$ 663	\$ (1,240)	\$ (104)	\$ (490)	\$ 422	\$ (932)
Low ²	189	330	2,077	(567)	436	330	2,077	699
High ³	(664)	(1,163)	(374)	(2,447)	(664)	(1,343)	(1,015)	(2,447)
Period End	(278)	(169)	216	(678)	(278)	(169)	216	(678)

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 engages in trading activities both as an intermediary for customers and for its own account. As an intermediary, we take positions in securities, generally U.S. government agency 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 June 30,				Six Months Ended June 30,			
	2019		2018		2019		2018	
	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp
Average ¹	\$ (2,436)	\$ 2,503	\$ (1,566)	\$ 1,405	\$ (2,080)	\$ 2,051	\$ (1,062)	\$ 874
Low ²	(202)	5,378	1,518	4,333	857	5,378	1,518	4,333
High ³	(5,153)	267	(4,242)	(2,472)	(5,153)	(729)	(4,242)	(2,472)
Period End	(629)	936	(2,602)	2,719	(629)	936	(2,602)	2,719

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.

We have a significant number of loans, derivative contracts, borrowings and other financial instruments with attributes that are either directly or indirectly dependent on LIBOR. In 2017, the U.K. Financial Conduct Authority announced that it would no longer persuade or compel banks to submit to LIBOR after 2021. U.S. regulatory authorities have voiced similar support for phasing out LIBOR. The Federal Reserve Bank of New York's Alternative Reference Rate Committee has recommended the Secured Overnight Financing Rate ("SOFR") as an alternative for LIBOR. However, for two key reasons, SOFR is a secured rate while LIBOR is an unsecured rate and SOFR is an overnight rate while LIBOR is published for different maturities. SOFR is not the economic equivalent of LIBOR. The impact of SOFR or other alternatives to LIBOR on the valuations, pricing and operation of our financial instruments is not yet known.

Management has established a LIBOR Transition Working Group (the "Group") whose purpose is to guide the overall transition process for the company. The Group is an internal, cross-functional team with representatives from all business lines, support and control functions and legal counsel. Key loan provisions have been modified to ensure that new and renewed loans include appropriate LIBOR fallback language to ensure the smoothest possible transition from LIBOR to the new benchmark when such transition occurs. All existing financial contracts, primarily focusing on loans that mature after 2021, are being assessed for direct exposure to LIBOR. Remediation will begin once this assessment is completed. The Group is also preparing for a risk assessment for indirect LIBOR exposures such as financial risk models. The results of this assessment will drive development and prioritization of actions.

Controls and Procedures

As required by Rule 13a-15(b), BOK Financial's management, including the Chief Executive Officer and Chief Financial Officer, conducted an evaluation as of the end of the period covered by their report, of the effectiveness of the Company's disclosure controls and procedures as defined in Exchange Act Rule 13a-15(e). Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures were effective as of the end of the period covered by this report. As required by Rule 13a-15(d), BOK Financial's management, including the Chief Executive Officer and Chief Financial Officer, also conducted an evaluation of the Company's internal controls over financial reporting to determine whether any changes occurred during the quarter covered by this report that have materially affected, or are reasonably likely to materially affect, the Company's internal controls over financial reporting. Based on that evaluation, there has been no such change during the quarter covered by this report.

Forward-Looking Statements

This report contains forward-looking statements that are based on management's beliefs, assumptions, current expectations, estimates and projections about BOK Financial, the financial services industry and the economy generally. Words such as "anticipates," "believes," "estimates," "expects," "forecasts," "plans," "projects," "will," "intends," variations of such words and similar expressions are intended to identify such forward-looking statements. Management judgments relating to and discussion of the provision and allowance for credit losses, allowance for uncertain tax positions, accruals for loss contingencies and valuation of mortgage servicing rights involve judgments as to expected events and are inherently forward-looking statements. Assessments that BOK Financial's acquisitions, including its latest acquisition of CoBiz Financial, Inc., and other growth endeavors will be profitable are necessary statements of belief as to the outcome of future events based in part on information provided by others which BOK Financial has not independently verified. These statements are not guarantees of future performance and involve certain risks, uncertainties, and assumptions which are difficult to predict with regard to timing, extent, likelihood and degree of occurrence. Therefore, actual results and outcomes may materially differ from what is expected, implied or forecasted in such forward-looking statements. Internal and external factors that might cause such a difference include, but are not limited to changes in commodity prices, interest rates and interest rate relationships, inflation, demand for products and services, the degree of competition by traditional and nontraditional competitors, changes in banking regulations, tax laws, prices, levies and assessments, the impact of technological advances, and trends in customer behavior as well as their ability to repay loans. There may also be difficulties and delays in integrating CoBiz Financial Inc.'s business or fully realizing cost savings and other benefits including, but not limited to, business disruption and customer acceptance of BOK Financial Corporation's products and services. BOK Financial and its affiliates undertake no obligation to update, amend or clarify forward-looking statements, whether as a result of new information, future events, or otherwise.

Annualized, pro forma, projected and estimated numbers are used for illustrative purpose only, are not forecasts and may not reflect actual results.

In this report we may sometimes use non-GAAP Financial information. Please note that although non-GAAP financial measures provide useful insight to analysts, investors and regulators, they should not be considered in isolation or relied upon as a substitute for analysis using GAAP measures. If applicable, we provide GAAP reconciliations for non-GAAP financial measures.

Consolidated Statements of Earnings (Unaudited)

(In thousands, except share and per share data)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Interest revenue				
Loans	\$ 293,332	\$ 210,694	\$ 573,204	\$ 398,785
Residential mortgage loans held for sale	1,754	2,333	3,417	4,177
Trading securities	15,498	12,988	34,193	20,726
Investment securities	2,905	3,663	6,939	7,520
Available for sale securities	59,880	47,427	116,711	93,386
Fair value option securities	7,503	3,927	12,740	8,746
Restricted equity securities	6,516	5,408	12,861	10,525
Interest-bearing cash and cash equivalents	3,432	7,740	6,829	15,722
Total interest revenue	390,820	294,180	766,894	559,587
Interest expense				
Deposits	43,183	20,963	80,600	39,182
Borrowed funds	58,404	32,607	115,214	58,056
Subordinated debentures	3,801	2,048	7,546	4,051
Total interest expense	105,388	55,618	203,360	101,289
Net interest revenue	285,432	238,562	563,534	458,298
Provision for credit losses	5,000	—	13,000	(5,000)
Net interest revenue after provision for credit losses	280,432	238,562	550,534	463,298
Other operating revenue				
Brokerage and trading revenue	40,526	26,488	72,143	57,136
Transaction card revenue	21,915	20,975	42,653	41,965
Fiduciary and asset management revenue	45,025	41,692	88,383	83,524
Deposit service charges and fees	28,074	27,834	56,317	54,994
Mortgage banking revenue	28,131	26,346	51,965	52,371
Other revenue	12,437	13,923	25,199	26,882
Total fees and commissions	176,108	157,258	336,660	316,872
Other gains (losses), net	3,480	4,578	6,456	3,286
Gain (loss) on derivatives, net	11,150	(3,057)	15,817	(8,742)
Gain (loss) on fair value option securities, net	9,853	(3,341)	19,518	(20,905)
Change in fair value of mortgage servicing rights	(29,555)	1,723	(50,221)	22,929
Gain (loss) on available for sale securities, net	1,029	(762)	1,105	(1,052)
Total other operating revenue	172,065	156,399	329,335	312,388
Other operating expense				
Personnel	160,342	138,947	329,570	278,894
Business promotion	10,142	7,686	18,016	13,696
Charitable contributions to BOKF Foundation	1,000	—	1,000	—
Professional fees and services	13,002	14,978	29,141	25,178
Net occupancy and equipment	26,880	22,761	56,401	46,807
Insurance	6,454	6,245	11,293	12,838
Data processing and communications	29,735	27,739	61,184	55,556
Printing, postage and supplies	4,107	4,011	8,992	8,100
Net losses and operating expenses of repossessed assets	580	2,722	2,576	10,427
Amortization of intangible assets	5,138	1,386	10,329	2,686
Mortgage banking costs	11,545	12,890	21,451	23,039
Other expense	8,212	7,111	14,341	13,685
Total other operating expense	277,137	246,476	564,294	490,906
Net income before taxes	175,360	148,485	315,575	284,780
Federal and state income taxes	37,580	33,330	67,530	64,278

Net income	137,780	115,155	248,045	220,502
Net income attributable to non-controlling interests	217	783	(130)	568
Net income attributable to BOK Financial Corporation shareholders	\$ 137,563	\$ 114,372	\$ 248,175	\$ 219,934
Earnings per share:				
Basic	\$ 1.93	\$ 1.75	\$ 3.47	\$ 3.36
Diluted	\$ 1.93	\$ 1.75	\$ 3.46	\$ 3.36
Average shares used in computation:				
Basic	70,887,063	64,901,975	71,135,414	64,874,567
Diluted	70,902,033	64,937,226	71,151,558	64,912,552
Dividends declared per share	\$ 0.50	\$ 0.45	\$ 1.00	\$ 0.90

See accompanying notes to consolidated financial statements.

Consolidated Statements of Comprehensive Income (Unaudited)

(In thousands, except share and per share data)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Net income	\$ 137,780	\$ 115,155	\$ 248,045	\$ 220,502
Other comprehensive income (loss) before income taxes:				
Net change in unrealized gain (loss)	135,417	(33,117)	228,156	(130,523)
Reclassification adjustments included in earnings:				
Loss (gain) on available for sale securities, net	(1,029)	762	(1,105)	1,052
Other comprehensive income (loss) before income taxes	134,388	(32,355)	227,051	(129,471)
Federal and state income taxes	32,288	(8,241)	55,897	(33,049)
Other comprehensive income (loss), net of income taxes	102,100	(24,114)	171,154	(96,422)
Comprehensive income	239,880	91,041	419,199	124,080
Comprehensive income attributable to non-controlling interests	217	783	(130)	568
Comprehensive income attributable to BOK Financial Corp. shareholders	\$ 239,663	\$ 90,258	\$ 419,329	\$ 123,512

See accompanying notes to consolidated financial statements.

Consolidated Balance Sheets

(In thousands, except share data)

	June 30, 2019	Dec. 31, 2018
	(Unaudited)	(Footnote 1)
Assets		
Cash and due from banks	\$ 739,109	\$ 741,749
Interest-bearing cash and cash equivalents	596,382	401,675
Trading securities	1,900,395	1,956,923
Investment securities (fair value: June 30, 2019 – \$347,015 ; December 31, 2018 – \$367,298)	327,677	355,187
Available for sale securities	10,514,414	8,857,120
Fair value option securities	1,138,819	283,235
Restricted equity securities	461,017	344,447
Residential mortgage loans held for sale	193,570	149,221
Loans	22,255,652	21,656,730
Allowance for loan losses	(202,534)	(207,457)
Loans, net of allowance	22,053,118	21,449,273
Premises and equipment, net	468,368	330,033
Receivables	213,608	204,960
Goodwill	1,048,091	1,049,263
Intangible assets, net	124,473	134,849
Mortgage servicing rights	208,308	259,254
Real estate and other repossessed assets, net of allowance (June 30, 2019 – \$12,499 ; December 31, 2018 – \$13,665)	16,940	17,487
Derivative contracts, net	415,221	320,929
Cash surrender value of bank-owned life insurance	384,193	381,608
Receivable on unsettled securities sales	583,421	336,400
Other assets	505,949	446,891
Total assets	\$ 41,893,073	\$ 38,020,504
Liabilities and Equity		
Liabilities:		
Noninterest-bearing demand deposits	\$ 9,667,557	\$ 10,414,592
Interest-bearing deposits:		
Transaction	12,851,943	12,206,576
Savings	557,683	529,215
Time	2,227,938	2,113,380
Total deposits	25,305,121	25,263,763
Funds purchased and repurchase agreements	2,331,947	1,018,411
Other borrowings	7,823,809	6,124,390
Subordinated debentures	275,892	275,913
Accrued interest, taxes and expense	181,413	192,826
Derivative contracts, net	381,454	362,306
Due on unsettled securities purchases	565,268	156,370
Other liabilities	309,694	183,480
Total liabilities	37,174,598	33,577,459
Shareholders' equity:		
Common stock (\$.00006 par value; 2,500,000,000 shares authorized; shares issued and outstanding: June 30, 2019 – 75,756,056 ; December 31, 2018 – 75,711,492)	5	5
Capital surplus	1,343,082	1,334,030
Retained earnings	3,548,907	3,369,654
Treasury stock (shares at cost: June 30, 2019 – 4,562,286 ; December 31, 2018 – 3,588,560)	(281,125)	(198,995)
Accumulated other comprehensive gain (loss)	98,569	(72,585)
Total shareholders' equity	4,709,438	4,432,109

Non-controlling interests	9,037	10,936
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Total equity	4,718,475	4,443,045
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Total liabilities and equity	\$ 41,893,073	\$ 38,020,504
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See accompanying notes to consolidated financial statements.

Consolidated Statements of Changes in Equity (Unaudited)

(In thousands)

	Common Stock		Capital Surplus	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity	Non-Controlling Interests	Total Equity
	Shares	Amount			Shares	Amount				
Balance, March 31, 2019	75,762	\$ 5	\$ 1,340,323	\$ 3,447,076	4,312	\$ (261,000)	\$ (3,531)	\$ 4,522,873	\$ 8,836	\$ 4,531,709
Net income	—	—	—	137,563	—	—	—	137,563	217	137,780
Other comprehensive income	—	—	—	—	—	—	102,100	102,100	—	102,100
Repurchase of common stock	—	—	—	—	250	(20,125)	—	(20,125)	—	(20,125)
Share-based compensation plans:										
Stock options exercised	—	—	24	—	—	—	—	24	—	24
Non-vested shares awarded, net	(6)	—	—	—	—	—	—	—	—	—
Vesting of non-vested shares	—	—	—	—	—	—	—	—	—	—
Share-based compensation	—	—	2,735	—	—	—	—	2,735	—	2,735
Cash dividends on common stock	—	—	—	(35,732)	—	—	—	(35,732)	—	(35,732)
Capital calls and distributions, net	—	—	—	—	—	—	—	—	(16)	(16)
Balance, June 30, 2019	75,756	\$ 5	\$ 1,343,082	\$ 3,548,907	4,562	\$ (281,125)	\$ 98,569	\$ 4,709,438	\$ 9,037	\$ 4,718,475
Balance, December 31, 2018	75,711	\$ 5	\$ 1,334,030	\$ 3,369,654	3,589	\$ (198,995)	\$ (72,585)	\$ 4,432,109	\$ 10,936	\$ 4,443,045
Transition adjustment - Leasing standard	—	—	—	2,862	—	—	—	2,862	—	2,862
Balance, January 1, 2019, Adjusted	75,711	5	1,334,030	3,372,516	3,589	(198,995)	(72,585)	4,434,971	10,936	4,445,907
Net income (loss)	—	—	—	248,175	—	—	—	248,175	(130)	248,045
Other comprehensive income	—	—	—	—	—	—	171,154	171,154	—	171,154
Repurchase of common stock	—	—	—	—	955	(80,702)	—	(80,702)	—	(80,702)
Share-based compensation plans:										
Stock options exercised	18	—	903	—	—	—	—	903	—	903
Non-vested shares awarded, net	27	—	—	—	—	—	—	—	—	—
Vesting of non-vested shares	—	—	—	—	18	(1,428)	—	(1,428)	—	(1,428)
Share-based compensation	—	—	8,149	—	—	—	—	8,149	—	8,149
Cash dividends on common stock	—	—	—	(71,784)	—	—	—	(71,784)	—	(71,784)
Capital calls and distributions, net	—	—	—	—	—	—	—	—	(1,769)	(1,769)
Balance, June 30, 2019	75,756	\$ 5	\$ 1,343,082	\$ 3,548,907	4,562	\$ (281,125)	\$ 98,569	\$ 4,709,438	\$ 9,037	\$ 4,718,475

Consolidated Statements of Changes in Equity (Unaudited)

(In thousands)

	Common Stock		Capital Surplus	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity	Non-Controlling Interests	Total Equity
	Shares	Amount			Shares	Amount				
Balance, March 31, 2018	75,318	\$ 4	\$1,041,242	\$3,127,575	9,859	\$(562,601)	\$ (111,191)	\$ 3,495,029	\$ 22,313	\$ 3,517,342
Net income	—	—	—	114,372	—	—	—	114,372	783	115,155
Other comprehensive loss	—	—	—	—	—	—	(24,114)	(24,114)	—	(24,114)
Repurchase of common stock	—	—	—	—	7	(824)	—	(824)	—	(824)
Share-based compensation plans:										
Stock options exercised	3	—	152	—	—	—	—	152	—	152
Non-vested shares awarded, net	(7)	—	—	—	—	—	—	—	—	—
Vesting of non-vested shares	—	—	—	—	8	(698)	—	(698)	—	(698)
Share-based compensation	—	—	(1,192)	—	—	—	—	(1,192)	—	(1,192)
Cash dividends on common stock	—	—	—	(29,294)	—	—	—	(29,294)	—	(29,294)
Capital calls and distributions, net	—	—	—	—	—	—	—	—	(482)	(482)
Balance, June 30, 2018	75,314	\$ 4	\$1,040,202	\$3,212,653	9,874	\$(564,123)	\$ (135,305)	\$ 3,553,431	\$ 22,614	\$ 3,576,045
Balance, December 31, 2017	75,148	\$ 4	\$1,035,895	\$3,048,487	9,753	\$(552,845)	\$ (36,174)	\$ 3,495,367	\$ 22,967	\$ 3,518,334
Transition adjustment of net unrealized gains on equity securities	—	—	—	2,709	—	—	(2,709)	—	—	—
Balance, December 31, 2017, Adjusted	75,148	4	1,035,895	3,051,196	9,753	(552,845)	(38,883)	3,495,367	22,967	3,518,334
Net income	—	—	—	219,934	—	—	—	219,934	568	220,502
Other comprehensive loss	—	—	—	—	—	—	(96,422)	(96,422)	—	(96,422)
Repurchase of common stock	—	—	—	—	90	(8,408)	—	(8,408)	—	(8,408)
Share-based compensation plans:										
Stock options exercised	46	—	2,426	—	—	—	—	2,426	—	2,426
Non-vested shares awarded, net	120	—	—	—	—	—	—	—	—	—
Vesting of non-vested shares	—	—	—	—	31	(2,870)	—	(2,870)	—	(2,870)
Share-based compensation	—	—	1,881	—	—	—	—	1,881	—	1,881
Cash dividends on common stock	—	—	—	(58,477)	—	—	—	(58,477)	—	(58,477)
Capital calls and distributions, net	—	—	—	—	—	—	—	—	(921)	(921)
Balance, June 30, 2018	75,314	\$ 4	\$1,040,202	\$3,212,653	9,874	\$(564,123)	\$ (135,305)	\$ 3,553,431	\$ 22,614	\$ 3,576,045

See accompanying notes to consolidated financial statements.

Consolidated Statements of Cash Flows (Unaudited)

(in thousands)

	Six Months Ended	
	June 30,	
	2019	2018
Cash Flows From Operating Activities:		
Net income	\$ 248,045	\$ 220,502
Adjustments to reconcile net income to net cash used in operating activities:		
Provision for credit losses	13,000	(5,000)
Change in fair value of mortgage servicing rights due to market changes	50,221	(22,929)
Change in the fair value of mortgage servicing rights due to principal payments	15,664	16,797
Net unrealized losses (gains) from derivative contracts	(17,095)	6,674
Share-based compensation	8,149	1,881
Depreciation and amortization	45,926	27,459
Net amortization of discounts and premiums	(10,913)	12,855
Net losses (gains) on financial instruments and other losses (gains), net	564	4,530
Net gain on mortgage loans held for sale	(16,735)	(19,314)
Mortgage loans originated for sale	(1,240,368)	(1,438,868)
Proceeds from sale of mortgage loans held for sale	1,215,756	1,456,312
Capitalized mortgage servicing rights	(14,939)	(19,720)
Change in trading and fair value option securities	(799,241)	(1,174,526)
Change in receivables	(228,973)	(335,369)
Change in other assets	(4,965)	1,737
Change in accrued interest, taxes and expense	(41,866)	(4,327)
Change in other liabilities	100,731	334,765
Net cash used in operating activities	(677,039)	(936,541)
Cash Flows From Investing Activities:		
Proceeds from maturities or redemptions of investment securities	26,513	71,722
Proceeds from maturities or redemptions of available for sale securities	704,542	819,596
Purchases of investment securities	—	(3,968)
Purchases of available for sale securities	(2,510,271)	(1,020,018)
Proceeds from sales of available for sale securities	367,357	187,533
Change in amount receivable on unsettled available for sale securities transactions	(28,580)	38,075
Loans originated, net of principal collected	(569,075)	(847,351)
Net payments on derivative asset contracts	(10,838)	(70,987)
Acquisitions, net of cash acquired	—	(13,870)
Proceeds from disposition of assets	116,163	97,027
Purchases of assets	(250,911)	(121,889)
Net cash used in investing activities	(2,155,100)	(864,130)
Cash Flows From Financing Activities:		
Net change in demand deposits, transaction deposits and savings accounts	(73,200)	78,643
Net change in time deposits	114,377	29,316
Net change in other borrowed funds	2,968,697	1,057,118
Net proceeds on derivative liability contracts	6,140	64,144
Net change in derivative margin accounts	(152,533)	(118,628)
Change in amount due on unsettled available for sale securities transactions	313,736	(100,847)
Issuance of common and treasury stock, net	(525)	(444)
Repurchase of common stock	(80,702)	(8,408)
Dividends paid	(71,784)	(58,477)
Net cash provided by financing activities	3,024,206	942,417
Net increase (decrease) in cash and cash equivalents	192,067	(858,254)

Cash and cash equivalents at beginning of period	1,143,424	2,317,054
Cash and cash equivalents at end of period	\$ 1,335,491	\$ 1,458,800

Supplemental Cash Flow Information:

Cash paid for interest	\$ 203,513	\$ 100,532
Cash paid for taxes	\$ 54,722	\$ 29,623
Net loans and bank premises transferred to repossessed real estate and other assets	\$ 2,606	\$ 3,886
Residential mortgage loans guaranteed by U.S. government agencies that became eligible for repurchase during the period	\$ 44,258	\$ 42,493
Conveyance of other real estate owned guaranteed by U.S. government agencies	\$ 15,484	\$ 23,845
Right-of-use assets obtained in exchange for operating lease liabilities	\$ 12,754	\$ —

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements (Unaudited)

(1) Significant Accounting Policies

Basis of Presentation

The accompanying unaudited consolidated financial statements of BOK Financial Corporation (“BOK Financial” or “the Company”) have been prepared in accordance with accounting principles for interim financial information generally accepted in the United States and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments (consisting of normal recurring accruals) considered necessary for a fair presentation have been included.

The unaudited consolidated financial statements include accounts of BOK Financial and its subsidiaries, principally BOKF, NA (“the Bank”), BOK Financial Securities, Inc., and BOK Financial Private Wealth, Inc. Operating divisions of the Bank include Bank of Albuquerque, Bank of Arkansas, Bank of Oklahoma, Bank of Texas, BOK Financial in Colorado and Arizona, Mobank, BOK Financial Mortgage and the TransFund electronic funds network.

Certain reclassifications have been made to conform to the current period presentation.

The financial information should be read in conjunction with BOK Financial’s 2018 Form 10-K filed with the Securities and Exchange Commission, which contains audited financial statements. Amounts presented as of December 31, 2018 have been derived from the audited financial statements included in BOK Financial’s 2018 Form 10-K but do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. Operating results for the six-month period ended June 30, 2019 are not necessarily indicative of the results that may be expected for the year ending December 31, 2019.

Newly Adopted and Pending Accounting Policies

Financial Accounting Standards Board (“FASB”)

FASB Accounting Standards Update No. 2016-02, *Leases (Topic 842)* (“ASU 2016-02”)

On February 25, 2016, the FASB issued ASU 2016-02 to increase transparency and comparability by recognizing lease assets and liabilities on the balance sheet and disclosing key information about leasing arrangements. Lessees are required to recognize an obligation for future lease payments measured on a discounted basis and a right-of-use asset. The Company adopted the new standard January 1, 2019 through a cumulative effect adjustment to retained earnings. Prior periods were not restated. BOKF elected to apply all practical expedients other than the lessee’s practical expedient to combine lease and non-lease components which would further gross up lease liability and the related right-of-use asset. The implementation of ASU 2016-02 increased the reported right-of-use asset and lease liability by \$137 million. The effect on retained earnings was immaterial.

FASB Accounting Standards Update No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Assets Measured at Amortized Cost* (“ASU 2016-13” or “CECL”)

On June 16, 2016, the FASB issued ASU 2016-13 to provide more timely recording of credit losses on loans and other financial assets measured at amortized cost, effective for the Company’s annual reporting periods beginning after December 15, 2019, including interim periods within those fiscal years.

The company has established a CECL implementation team to evaluate the impact to the Company’s financial statements. The CECL implementation team, overseen by the Chief Credit Officer, Chief Financial Officer and Chief Risk Officer, has developed a project plan that incorporates input from various departments within the bank including Credit, Financial Reporting, Risk and Information Technology among others. The Audit Committee and Credit Committee of the Board of Directors is periodically updated on project progress. Key implementation activities for 2019 include model validation and quarterly parallel runs with development of governance, control, and disclosure frameworks. The company will adopt the standard on January 1, 2020 through a cumulative-effect adjustment to retained earnings.

FASB Accounting Standards Update No. 2019-01, *Leases (Topic 842): Codification Improvements ("ASU 2019-01")*

On March 5, 2019, the FASB issued ASU 2019-01 which amends certain aspects of leasing standard ASU 2016-02. ASU 2019-01 provides guidance for determining fair value of the underlying asset by lessors that are not manufacturers or dealers. The ASU also requires depository and lending lessors within the scope of ASC 942 to classify principal payments received from sales-type and direct financing leases within "investing activities" on the statement of cash flows. For the two issues above, the ASU is effective for the Company for fiscal years beginning after December 15, 2019, and interim periods therein; however early adoption is permitted. Additionally, ASU 2019-01 also clarifies interim disclosure requirements during transition and is effective with the original transition requirements in Topic 842. Adoption of ASU 2019-01 is not expected to have a material impact on the Company's financial statements.

FASB Accounting Standards Update No. 2019-04, *Codification Improvements to Topic 326, Financial Instruments-Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments ("ASU 2019-04")*

On April 25, 2019, the FASB issued ASU 2019-04 which clarifies certain aspects of the accounting for credit losses, hedging activities, and financial instruments addressed by ASUs 2016-13, 2017-12, and 2016-01, respectively. Significant amendments made to the provisions of ASU 2016-13 by ASU 2019-04 include providing certain alternatives for the measurement of the allowance for credit losses on accrued interest receivable and clarifying steps entities should take when recording the transfer of loans or debt securities between measurement classification or categories. ASU 2019-04 further clarifies the expectation that entities include recoveries of financial assets in the calculation of the current expected credit losses allowance for both pools of financial assets and individual financial assets. Significant amendments made to the provisions of ASU 2017-12 by ASU 2019-04 include clarification on partial-term fair value hedges of interest rate risk, amortization of fair value hedge basis adjustments and disclosure of fair value hedge basis adjustments. Significant amendments made to provisions of ASU 2016-01 include clarification of the measurement alternative practice for equity securities and remeasurement of equity securities at historical exchange rates. ASU 2019-04 includes other amendments which clarify various provisions within the codification. ASU 2019-04 is effective for the Company for fiscal years beginning after December 15, 2019 and interim periods therein. Adoption of ASU 2019-04 is not expected to have a material impact on the Company's financial statements.

FASB Accounting Standards Update No. 2019-05, *Financial Instruments-Credit Losses (Topic 326): Targeted Transition Relief ("ASU 2019-05")*

On May 15, 2019, the FASB issued ASU 2019-05 which provides transition relief for entities adopting the Board's credit losses standard, ASU 2016-13. ASU 2019-05 amends ASU 2016-13 to allow companies to irrevocably elect, upon adoption of ASU 2016-13, the fair value option for financial instruments that meet specific requirements and is effective for the Company for annual reporting periods beginning after December 15, 2019. Adoption of ASU 2019-05 is not expected to have a material impact on the Company's financial statements.

(2) Securities

Trading Securities

The fair value and net unrealized gain (loss) included in trading securities are as follows (in thousands):

	June 30, 2019		December 31, 2018	
	Fair Value	Net Unrealized Gain (Loss)	Fair Value	Net Unrealized Gain (Loss)
U.S. government agency debentures	\$ 83,148	\$ 127	\$ 63,765	\$ 254
U.S. government agency residential mortgage-backed securities	1,620,613	7,558	1,791,584	9,966
Municipal and other tax-exempt securities	49,718	191	34,507	(1)
Asset-backed securities	93,546	548	42,656	685
Other trading securities	53,370	202	24,411	65
Total trading securities	\$ 1,900,395	\$ 8,626	\$ 1,956,923	\$ 10,969

Investment Securities

The amortized cost and fair values of investment securities are as follows (in thousands):

	June 30, 2019			
	Amortized Cost	Fair Value	Gross Unrealized	
			Gain	Loss
Municipal and other tax-exempt	\$ 124,822	\$ 128,009	\$ 3,221	\$ (34)
U.S. government agency residential mortgage-backed securities	11,599	12,099	500	—
Other debt securities	191,256	206,907	16,312	(661)
Total investment securities	\$ 327,677	\$ 347,015	\$ 20,033	\$ (695)

	December 31, 2018			
	Amortized Cost	Fair Value	Gross Unrealized	
			Gain	Loss
Municipal and other tax-exempt	\$ 137,296	\$ 138,562	\$ 1,858	\$ (592)
U.S. government agency residential mortgage-backed securities	12,612	12,770	293	(135)
Other debt securities	205,279	215,966	12,257	(1,570)
Total investment securities	\$ 355,187	\$ 367,298	\$ 14,408	\$ (2,297)

The amortized cost and fair values of investment securities at June 30, 2019, by contractual maturity, are as shown in the following table (dollars in thousands):

	<u>Less than One Year</u>	<u>One to Five Years</u>	<u>Six to Ten Years</u>	<u>Over Ten Years</u>	<u>Total</u>	<u>Weighted Average Maturity¹</u>
Fixed maturity debt securities:						
Amortized cost	\$ 51,600	\$ 104,247	\$ 144,405	\$ 15,826	\$ 316,078	5.03
Fair value	51,791	108,001	159,416	15,708	334,916	
Residential mortgage-backed securities:						
Amortized cost					\$ 11,599	²
Fair value					12,099	
Total investment securities:						
Amortized cost					\$ 327,677	
Fair value					347,015	

¹ Expected maturities may differ from contractual maturities, because borrowers may have the right to call or prepay obligations with or without penalty.

² The average expected lives of residential mortgage-backed securities were 4.6 years based upon current prepayment assumptions.

Temporarily Impaired Investment Securities

(in thousands):

	June 30, 2019						
	Number of Securities	Less Than 12 Months		12 Months or Longer		Total	
		Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Investment:							
Municipal and other tax-exempt	25	\$ —	\$ —	\$ 16,433	\$ 34	\$ 16,433	\$ 34
Other debt securities	24	25	1	13,607	660	13,632	661
Total investment securities	49	\$ 25	\$ 1	\$ 30,040	\$ 694	\$ 30,065	\$ 695

	December 31, 2018						
	Number of Securities	Less Than 12 Months		12 Months or Longer		Total	
		Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Investment:							
Municipal and other tax-exempt	72	\$ 18,255	\$ 69	\$ 66,141	\$ 523	\$ 84,396	\$ 592
U.S. government agency residential mortgage-backed securities	2	—	—	5,633	135	5,633	135
Other debt securities	72	13,372	64	23,028	1,506	36,400	1,570
Total investment securities	146	\$ 31,627	\$ 133	\$ 94,802	\$ 2,164	\$ 126,429	\$ 2,297

Available for Sale Securities

The amortized cost and fair value of available for sale securities are as follows (in thousands):

	June 30, 2019			
	Amortized	Fair	Gross Unrealized	
	Cost	Value	Gain	Loss
U.S. Treasury	\$ 1,887	\$ 1,889	\$ 3	\$ (1)
Municipal and other tax-exempt	2,386	2,470	84	—
Mortgage-backed securities:				
Residential agency	7,280,092	7,354,741	90,111	(15,462)
Residential non-agency	31,327	47,057	15,730	—
Commercial agency	3,066,442	3,107,785	44,783	(3,440)
Other debt securities	500	472	—	(28)
Total available for sale securities	\$ 10,382,634	\$ 10,514,414	\$ 150,711	\$ (18,931)

	December 31, 2018			
	Amortized	Fair	Gross Unrealized	
	Cost	Value	Gain	Loss
U.S. Treasury	\$ 496	\$ 493	\$ —	\$ (3)
Municipal and other tax-exempt	2,782	2,864	82	—
Mortgage-backed securities:				
Residential agency	5,886,323	5,804,708	16,149	(97,764)
Residential non-agency	40,948	59,736	18,788	—
Commercial agency	2,986,297	2,953,889	7,955	(40,363)
Other debt securities	35,545	35,430	12	(127)
Total available for sale securities	\$ 8,952,391	\$ 8,857,120	\$ 42,986	\$ (138,257)

The amortized cost and fair values of available for sale securities at June 30, 2019, by contractual maturity, are as shown in the following table (dollars in thousands):

	Less than One Year	One to Five Years	Six to Ten Years	Over Ten Years	Total	Weighted Average Maturity ¹
Fixed maturity debt securities:						
Amortized cost	\$ 90,708	\$ 968,503	\$ 1,571,395	\$ 440,609	\$ 3,071,215	7.35
Fair value	90,536	974,073	1,600,106	447,901	3,112,616	
Residential mortgage-backed securities:						
Amortized cost					\$ 7,311,419	²
Fair value					7,401,798	
Total available-for-sale securities:						
Amortized cost					\$ 10,382,634	
Fair value					10,514,414	

¹ Expected maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without penalty.

² The average expected lives of residential mortgage-backed securities were 4.0 years based upon current prepayment assumptions.

Sales of available for sale securities resulted in gains and losses as follows (in thousands):

	Three Months Ended		Six Months Ended June 30,	
	June 30,			
	2019	2018	2019	2018
Proceeds	\$ 122,098	\$ 142,743	\$ 367,357	\$ 187,533
Gross realized gains	1,029	257	6,327	450
Gross realized losses	—	(1,019)	(5,222)	(1,502)
Related federal and state income tax expense (benefit)	262	(194)	281	(268)

The fair value of debt securities pledged as collateral for repurchase agreements, public trust funds on deposit and for other purposes, as required by law was \$10.3 billion at June 30, 2019 and \$9.1 billion at December 31, 2018. The secured parties do not have the right to sell or repledge these securities.

Temporarily Impaired Available for Sale Securities
(in thousands)

	June 30, 2019						
	Number of Securities	Less Than 12 Months		12 Months or Longer		Total	
		Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Available for sale:							
U.S. Treasury	1	\$ —	\$ —	\$ 498	\$ 1	\$ 498	\$ 1
Mortgage-backed securities:							
Residential agency	125	267,481	898	1,317,121	14,564	1,584,602	15,462
Commercial agency	78	440,095	895	595,351	2,545	1,035,446	3,440
Other debt securities	1	—	—	472	28	472	28
Total available for sale securities	205	\$ 707,576	\$ 1,793	\$ 1,913,442	\$ 17,138	\$ 2,621,018	\$ 18,931

	December 31, 2018						
	Number of Securities	Less Than 12 Months		12 Months or Longer		Total	
		Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Available for sale:							
U.S. Treasury	1	\$ —	\$ —	\$ 493	\$ 3	\$ 493	\$ 3
Mortgage-backed securities:							
Residential agency	289	510,824	1,158	3,641,370	96,606	4,152,194	97,764
Commercial agency	197	179,258	394	1,969,504	39,969	2,148,762	40,363
Other debt securities	3	9,982	63	20,436	64	30,418	127
Total available for sale securities	490	\$ 700,064	\$ 1,615	\$ 5,631,803	\$ 136,642	\$ 6,331,867	\$ 138,257

Based on evaluations of impaired securities as of June 30, 2019, the Company does not intend to sell any impaired available for sale debt securities before fair value recovers to the current amortized cost and it is more-likely-than-not that the Company will not be required to sell impaired securities before fair value recovers, which may be maturity.

(3) Derivatives

Derivative instruments may be used by the Company as part of its internal risk management programs or may be offered to customers. All derivative instruments are carried at fair value and changes in fair value are reported in earnings as they occur. Credit risk is also considered in determining fair value. Deterioration in the credit rating of customer or other counterparties reduced the fair value of asset contracts. Deterioration of our credit rating could decrease the fair value of our derivative liabilities.

When bilateral netting agreements or similar arrangements exist between the Company and its counterparties that create a single legal claim or obligation to pay or receive the net amount in settlement of the individual derivative contracts, the Company reports derivative assets and liabilities on a net by derivative contract type by counterparty basis.

Derivative contracts may require the Company to provide or receive cash margin as collateral for derivative assets and liabilities. Derivative assets and liabilities are reported net of cash margin when certain conditions are met. In addition, derivative contracts executed with customers under Customer Risk Management Programs may be secured by non-cash collateral in conjunction with a credit agreement with that customer. Access to collateral in the event of default is reasonably assured.

None of these derivative contracts have been designated as hedging instruments for accounting purposes.

Customer Risk Management Programs

BOK Financial offers programs to permit its customers to manage various risks, including fluctuations in energy, cattle and other agricultural products, interest rates and foreign exchange rates with derivative contracts. Customers may also manage interest rate risk through interest rate swaps used by borrowers to modify interest rate terms of their loans or to-be-announced securities used by mortgage banking customers to hedge their loan production. Derivative contracts are executed between the customers and BOK Financial. Offsetting contracts are executed between BOK Financial and other selected counterparties to minimize the risk of changes in commodity prices, interest rates or foreign exchange rates. The counterparty contracts are identical to customer contracts, except for a fixed pricing spread or fee paid to BOK Financial as profit and compensation for administrative costs and credit risk which is recognized over the life of the contracts and included in Other operating revenue – Brokerage and trading revenue in the Consolidated Statements of Earnings.

Internal Risk Management Programs

BOK Financial may use derivative contracts in managing its interest rate sensitivity, as part of its economic hedge of the change in the fair value of mortgage servicing rights and to mitigate the market risk of holding trading securities. Changes in the fair value of derivative instruments used in managing interest rate sensitivity and as part of the economic hedge of changes in the fair value of mortgage servicing rights are included in Other operating revenue – Gain (loss) on derivatives, net in the Consolidated Statements of Earnings. Changes in the fair value of derivative instruments used to mitigate the market risk of holding trading securities are included in Other operating revenue – Brokerage and trading revenue.

As discussed in Note 6, certain derivative contracts not designated as hedging instruments related to mortgage loan commitments and forward sales contracts are included in Residential mortgage loans held for sale on the Consolidated Balance Sheets. See Note 6 for additional discussion of notional, fair value and impact on earnings of these contracts.

The following table summarizes the fair values of derivative contracts recorded as “derivative contracts” assets and liabilities in the balance sheet at June 30, 2019 (in thousands):

	Assets					
	Notional ¹	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	\$ 1,303,659	\$ 11,707	\$ (3,352)	\$ 8,355	\$ —	\$ 8,355
Interest rate swaps	2,254,122	51,177	(2,168)	49,009	(42)	48,967
Energy contracts	1,849,474	153,514	(76,562)	76,952	(33,847)	43,105
Agricultural contracts	16,662	788	(103)	685	—	685
Foreign exchange contracts	252,272	250,527	—	250,527	(384)	250,143
Equity option contracts	86,124	3,034	—	3,034	—	3,034
Total customer risk management programs	5,762,313	470,747	(82,185)	388,562	(34,273)	354,289
Internal risk management programs	52,977,229	352,808	(291,876)	60,932	—	60,932
Total derivative contracts	\$ 58,739,542	\$ 823,555	\$ (374,061)	\$ 449,494	\$ (34,273)	\$ 415,221

	Liabilities					
	Notional ¹	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	\$ 1,298,129	\$ 11,596	\$ (3,352)	\$ 8,244	\$ (8,232)	\$ 12
Interest rate swaps	2,254,122	51,271	(2,168)	49,103	(43,288)	5,815
Energy contracts	1,794,912	145,442	(76,562)	68,880	(1,836)	67,044
Agricultural contracts	16,678	776	(103)	673	(629)	44
Foreign exchange contracts	240,406	238,625	—	238,625	(309)	238,316
Equity option contracts	86,124	3,034	—	3,034	—	3,034
Total customer risk management programs	5,690,371	450,744	(82,185)	368,559	(54,294)	314,265
Internal risk management programs	54,628,959	359,065	(291,876)	67,189	—	67,189
Total derivative contracts	\$ 60,319,330	\$ 809,809	\$ (374,061)	\$ 435,748	\$ (54,294)	\$ 381,454

¹ Notional amounts for commodity contracts are converted into dollar-equivalent amounts based on dollar prices at the inception of the contract.

The following table summarizes the fair values of derivative contracts recorded as “derivative contracts” assets and liabilities in the balance sheet at December 31, 2018 (in thousands):

Assets						
	Notional ¹	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	\$ 10,671,151	\$ 92,231	\$ (26,787)	\$ 65,444	\$ —	\$ 65,444
Interest rate swaps	1,924,131	36,112	(6,688)	29,424	(7,934)	21,490
Energy contracts	1,472,209	206,418	(60,983)	145,435	(106,752)	38,683
Agricultural contracts	21,210	842	(201)	641	—	641
Foreign exchange contracts	184,990	183,759	—	183,759	—	183,759
Equity option contracts	89,085	2,021	—	2,021	(648)	1,373
Total customer risk management programs	14,362,776	521,383	(94,659)	426,724	(115,334)	311,390
Internal risk management programs	15,909,988	50,410	(40,871)	9,539	—	9,539
Total derivative contracts	\$ 30,272,764	\$ 571,793	\$ (135,530)	\$ 436,263	\$ (115,334)	\$ 320,929

Liabilities						
	Notional ¹	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	\$ 10,558,151	\$ 90,388	\$ (26,787)	\$ 63,601	\$ (63,596)	\$ 5
Interest rate swaps	1,924,131	36,288	(6,688)	29,600	(4,110)	25,490
Energy contracts	1,434,247	202,494	(60,983)	141,511	(1,490)	140,021
Agricultural contracts	21,214	812	(201)	611	—	611
Foreign exchange contracts	177,423	175,922	—	175,922	—	175,922
Equity option contracts	89,085	2,021	—	2,021	—	2,021
Total customer risk management programs	14,204,251	507,925	(94,659)	413,266	(69,196)	344,070
Internal risk management programs	19,634,642	66,422	(40,871)	25,551	(7,315)	18,236
Total derivative contracts	\$ 33,838,893	\$ 574,347	\$ (135,530)	\$ 438,817	\$ (76,511)	\$ 362,306

¹ Notional amounts for commodity contracts are converted into dollar-equivalent amounts based on dollar prices at the inception of the contract.

The following summarizes the pre-tax net gains (losses) on derivative instruments and where they are recorded in the income statement (in thousands):

	Three Months Ended			
	June 30, 2019		June 30, 2018	
	Brokerage and Trading Revenue	Gain (Loss) on Derivatives, Net	Brokerage and Trading Revenue	Gain (Loss) on Derivatives, Net
Customer risk management programs:				
Interest rate contracts				
To-be-announced residential mortgage-backed securities	\$ 2,212	\$ —	\$ 7,586	\$ —
Interest rate swaps	942	—	683	—
Energy contracts	2,086	—	1,416	—
Agricultural contracts	4	—	15	—
Foreign exchange contracts	100	—	96	—
Equity option contracts	—	—	—	—
Total customer risk management programs	5,344	—	9,796	—
Internal risk management programs	8,030	11,150	(981)	(3,057)
Total derivative contracts	\$ 13,374	\$ 11,150	\$ 8,815	\$ (3,057)

	Six Months Ended			
	June 30, 2019		June 30, 2018	
	Brokerage and Trading Revenue	Gain (Loss) on Derivatives, Net	Brokerage and Trading Revenue	Gain (Loss) on Derivatives, Net
Customer risk management programs:				
Interest rate contracts				
To-be-announced residential mortgage-backed securities	\$ 7,912	\$ —	\$ 14,405	\$ —
Interest rate swaps	1,535	—	1,439	—
Energy contracts	2,312	—	4,556	—
Agricultural contracts	8	—	30	—
Foreign exchange contracts	254	—	272	—
Equity option contracts	—	—	—	—
Total customer risk management programs	12,021	—	20,702	—
Internal risk management programs	735	15,817	(2,864)	(8,742)
Total derivative contracts	\$ 12,756	\$ 15,817	\$ 17,838	\$ (8,742)

(4) Loans and Allowances for Credit Losses

Loans

Loans are either secured or unsecured based on the type of loan and the financial condition of the borrower. Repayment is generally expected from cash flow or proceeds from the sale of selected assets of the borrower. BOK Financial is exposed to risk of loss on loans due to the borrower's difficulties, which may arise from any number of factors, including problems within the respective industry or local economic conditions. Access to collateral, in the event of borrower default, is reasonably assured through adherence to applicable lending laws and through sound lending standards and credit review procedures. Accounting policies for all loans, excluding residential mortgage loans guaranteed by U.S. government agencies, are as follows.

Interest is accrued at the applicable interest rate on the principal amount outstanding. Loans are placed on nonaccruing status when, in the opinion of management, full collection of principal or interest is uncertain. Internally risk graded loans are individually evaluated for nonaccruing status quarterly. Non-risk graded loans are generally placed on nonaccruing status when more than 90 days past due or within 60 days of being notified of the borrower's bankruptcy filing. Interest previously accrued but not collected is charged against interest income when the loan is placed on nonaccruing status. Payments on nonaccruing loans are applied to principal or recognized as interest income, according to management's judgment as to the collectability of principal. Loans may be returned to accruing status when, in the opinion of management, full collection of principal and interest, including principal previously charged off, is probable based on improvements in the borrower's financial condition or a sustained period of performance.

Loans to borrowers experiencing financial difficulties may be modified in troubled debt restructurings ("TDRs"). Primarily all TDRs are classified as nonaccruing, excluding loans guaranteed by U.S. government agencies. Modifications generally consist of extension of payment terms or interest rate concessions and may result either voluntarily through negotiations with the borrower or involuntarily through court order. Generally, principal and accrued but unpaid interest is not voluntarily forgiven.

Performing loans may be renewed under the current collateral value, debt service ratio and other underwriting standards. Nonaccruing loans may be renewed and will remain classified as nonaccruing.

Occasionally, loans, other than residential mortgage loans, may be held for sale in order to manage credit concentration. These loans are carried at the lower of cost or fair value with gains or losses recognized in other gains (losses), net in the Statements of Earnings.

All loans are charged off when the loan balance or a portion of the loan balance is no longer supported by the paying capacity of the borrower or when the required cash flow is reduced in a TDR. The charge-off amount is determined through a quarterly evaluation of available cash resources and collateral value and charge-offs are taken in the quarter in which the loss is identified. Non-risk graded loans that are past due between 60 days and 180 days, based on the loan product type, are charged off. Loans to borrowers whose personal obligation has been discharged through Chapter 7 bankruptcy proceedings are charged off within 60 days of notice of the bankruptcy filing, regardless of payment status.

Loan origination and commitment fees and direct loan acquisition and origination costs are deferred and amortized as an adjustment to yield over the life of the loan or over the commitment period, as applicable. Amortization does not anticipate loan prepayments. Net unamortized fees are recognized in full at time of payoff.

Qualifying residential mortgage loans guaranteed by U.S. government agencies have been sold into GNMA pools. Under certain performance conditions specified in government programs, the Company may have the right, but not the obligation to repurchase loans from GNMA pools. These loans no longer qualify for sale accounting and are recognized in the Consolidated Balance Sheets. Guaranteed loans are considered impaired because we do not expect to receive all principal and interest based on the loan's contractual terms. The original principal guarantee remains; however, interest accrues at a curtailed rate as specified in the programs. The carrying value of these loans is reduced based on an estimate of the expected cash flows discounted at the original note rate plus a liquidity spread. Guaranteed loans may be modified in TDRs in accordance with U.S. government agency guidelines. Interest continues to accrue based on the modified rate. Guaranteed loans may either be resold into GNMA pools after a performance period specified by the programs or foreclosed and conveyed to the guarantors.

Loans are disaggregated into portfolio segments and further disaggregated into classes. The portfolio segment is the level at which the Company develops and documents a systematic method for determining its allowance for credit losses. Classes are a further disaggregation of portfolio segments based on the risk characteristics of the loans and the Company's method for monitoring and assessing credit risk.

Portfolio segments of the loan portfolio are as follows (in thousands):

	June 30, 2019				December 31, 2018			
	Fixed Rate	Variable Rate	Non-accrual	Total	Fixed Rate	Variable Rate	Non-accrual	Total
Commercial	\$ 3,264,990	\$ 10,948,523	\$ 123,395	\$ 14,336,908	\$ 2,251,188	\$ 11,285,049	\$ 99,841	\$ 13,636,078
Commercial real estate	1,008,236	3,680,127	21,670	4,710,033	1,477,274	3,265,918	21,621	4,764,813
Residential mortgage	1,751,803	380,542	38,477	2,170,822	1,830,224	358,254	41,555	2,230,033
Personal	181,855	855,797	237	1,037,889	190,687	834,889	230	1,025,806
Total	\$ 6,206,884	\$ 15,864,989	\$ 183,779	\$ 22,255,652	\$ 5,749,373	\$ 15,744,110	\$ 163,247	\$ 21,656,730
Accruing loans past due (90 days) ¹				\$ 2,698				\$ 1,338

¹ Excludes residential mortgage loans guaranteed by agencies of the U.S. government

Credit Commitments

Commitments to extend credit are agreements to lend to a customer as long as there is no violation of conditions established in the contract. Commitments generally have fixed expiration dates or other termination clauses and may require payment of a fee. At June 30, 2019, outstanding commitments totaled \$11 billion. Because some commitments are expected to expire before being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. BOK Financial uses the same credit policies in making commitments as it does loans.

The amount of collateral obtained, if deemed necessary, is based upon management's credit evaluation of the borrower.

Standby letters of credit are conditional commitments issued to guarantee the performance of a customer to a third party. Because the credit risk involved in issuing standby letters of credit is essentially the same as that involved in extending loan commitments, BOK Financial uses the same credit policies in evaluating the creditworthiness of the customer. Additionally, BOK Financial uses the same evaluation process in obtaining collateral on standby letters of credit as it does for loan commitments. The term of these standby letters of credit is defined in each commitment and typically corresponds with the underlying loan commitment. At June 30, 2019, outstanding standby letters of credit totaled \$699 million.

Allowances for Credit Losses

BOK Financial maintains an allowance for loan losses and an accrual for off-balance sheet credit risk. The accrual for off-balance sheet credit risk is maintained at a level that is appropriate to cover estimated losses associated with credit instruments that are not currently recognized as assets such as loan commitments, standby letters of credit or guarantees. As discussed in greater detail in Note 6, the Company also has separate accruals for off-balance sheet credit risk related to residential mortgage loans previously sold with full or partial recourse and for residential mortgage loans sold to government sponsored agencies under standard representations and warranties.

The appropriateness of the allowance for loan losses and accrual for off-balance sheet credit losses (collectively "allowance for credit losses") is assessed by management based on an ongoing quarterly evaluation of the probable estimated losses inherent in the portfolio, including probable losses on both outstanding loans and unused commitments.

The allowance for loan losses consists of specific allowances attributed to impaired loans that have not yet been charged down to amounts we expect to recover, general allowances for unimpaired loans based on estimated loss rates by loan class and nonspecific allowances based on general economic conditions, risk concentration and related factors. There have been no material changes in the approach or techniques utilized in developing the allowance for loan losses and the accrual for off-balance sheet credit losses for the three and six months ended June 30, 2019.

Loans are considered to be impaired when it becomes probable that BOK Financial will be unable to collect all amounts due according to the contractual terms of the loan agreements. Internally risk graded loans are evaluated individually for impairment. Substantially all commercial and commercial real estate loans and certain residential mortgage and consumer loans are risk graded based on evaluation of the borrowers' ability to repay. Certain commercial loans and most residential mortgage and consumer loans are small balance, homogeneous pools of loans that are not risk graded. Non-risk graded loans are identified as impaired based on performance status. Generally, non-risk graded loans 90 days or more past due or modified in a TDR or in bankruptcy are considered to be impaired.

Specific allowances for impaired loans are measured by an evaluation of estimated future cash flows discounted at the loans' initial effective interest rate or the fair value of collateral for certain collateral dependent loans. Collateral value of real property is generally based on third party appraisals that conform to Uniform Standards of Professional Appraisal Practice, less estimated selling costs. Appraised values are on an "as-is" basis and are generally not adjusted by the Company. Updated appraisals are obtained at least annually or more frequently if market conditions indicate collateral values have declined. Collateral value of mineral rights is generally determined by our internal staff of engineers based on projected cash flows under current market conditions. Collateral values and available cash resources that support impaired loans are evaluated quarterly. Historical statistics may be used as a practical way to estimate impairment in limited situations, such as when a collateral dependent loan is identified as impaired at the end of a reporting period, until an updated appraisal of collateral value is received or a full assessment of future cash flows is completed. Estimates of future cash flows and collateral values require significant judgments and may be volatile.

General allowances for unimpaired loans are based on estimated loss rates by loan class. The gross loss rate for each loan class is determined by the greater of the current gross loss rate based on the most recent twelve months or a ten-year gross loss rate. Recoveries are not directly considered in the estimation of loss rates. Recoveries generally do not follow predictable patterns and are not received until well after the charge-off date as a result of protracted legal actions. For risk graded loans, gross loss rates are adjusted for changes in risk grading. For each loan class, the current weighted average risk grade is compared to the long-term average risk grade. This comparison determines whether credit risk in each loan class is increasing or decreasing. Loss rates are adjusted upward or downward in proportion to changes in average risk grading. General allowances for unimpaired loans also consider inherent risks identified for each loan class. Inherent risks consider loss rates that most appropriately represent the current credit cycle and other factors attributable to specific loan classes which have not yet been represented in the gross loss rates or risk grading. These factors include changes in commodity prices or engineering imprecision, which may affect the value of reserves that secure our energy loan portfolio, construction risk that may affect commercial real estate loans, changes in regulations and public policy that may disproportionately impact health care loans and changes in loan products.

Nonspecific allowances are maintained for risks beyond factors specific to a particular loan or loan class. These factors include trends in the economy of our primary lending areas, concentrations in large balance loans and other relevant factors.

An accrual for off-balance sheet credit losses is included in Other liabilities in the Consolidated Balance Sheets. The appropriateness of this accrual is determined in the same manner as the allowance for loan losses.

A provision for credit losses is charged against or credited to earnings in amounts necessary to maintain an appropriate allowance for credit losses. Recoveries of loans previously charged off are added to the allowance when received.

The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the three months ended June 30, 2019 is summarized as follows (in thousands):

	Commercial	Commercial Real Estate	Residential Mortgage	Personal	Nonspecific Allowance	Total
Allowance for loan losses:						
Beginning balance	\$ 103,577	\$ 58,134	\$ 15,668	\$ 8,783	\$ 19,178	\$ 205,340
Provision for loan losses	13,771	(8,173)	1	1,660	(2,341)	4,918
Loans charged off	(11,385)	(118)	(94)	(1,630)	—	(13,227)
Recoveries	434	4,345	149	575	—	5,503
Ending balance	\$ 106,397	\$ 54,188	\$ 15,724	\$ 9,388	\$ 16,837	\$ 202,534
Allowance for off-balance sheet credit losses:						
Beginning balance	\$ 1,725	\$ 48	\$ 47	\$ 1	\$ —	\$ 1,821
Provision for off-balance sheet credit losses	17	68	(3)	—	—	82
Ending balance	\$ 1,742	\$ 116	\$ 44	\$ 1	\$ —	\$ 1,903
Total provision for credit losses	\$ 13,788	\$ (8,105)	\$ (2)	\$ 1,660	\$ (2,341)	\$ 5,000

The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the six months ended June 30, 2019 is summarized as follows (in thousands):

	Commercial	Commercial Real Estate	Residential Mortgage	Personal	Nonspecific Allowance	Total
Allowance for loan losses:						
Beginning balance	\$ 102,226	\$ 60,026	\$ 17,964	\$ 9,473	\$ 17,768	\$ 207,457
Provision for loan losses	24,879	(10,177)	(2,407)	1,523	(931)	12,887
Loans charged off	(21,853)	(118)	(136)	(2,895)	—	(25,002)
Recoveries	1,145	4,457	303	1,287	—	7,192
Ending balance	\$ 106,397	\$ 54,188	\$ 15,724	\$ 9,388	\$ 16,837	\$ 202,534
Allowance for off-balance sheet credit losses:						
Beginning balance	\$ 1,655	\$ 52	\$ 52	\$ 31	\$ —	\$ 1,790
Provision for off-balance sheet credit losses	87	64	(8)	(30)	—	113
Ending balance	\$ 1,742	\$ 116	\$ 44	\$ 1	\$ —	\$ 1,903
Total provision for credit losses	\$ 24,966	\$ (10,113)	\$ (2,415)	\$ 1,493	\$ (931)	\$ 13,000

The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the three months ended June 30, 2018 is summarized as follows (in thousands):

	Commercial	Commercial Real Estate	Residential Mortgage	Personal	Nonspecific Allowance	Total
Allowance for loan losses:						
Beginning balance	\$ 120,083	\$ 57,070	\$ 18,431	\$ 8,408	\$ 19,975	\$ 223,967
Provision for loan losses	7,116	(1,409)	(257)	755	(4,503)	1,702
Loans charged off	(13,775)	—	(135)	(1,195)	—	(15,105)
Recoveries	298	3,097	505	678	—	4,578
Ending balance	\$ 113,722	\$ 58,758	\$ 18,544	\$ 8,646	\$ 15,472	\$ 215,142
Allowance for off-balance sheet credit losses:						
Beginning balance	4,027	44	62	2	—	\$ 4,135
Provision for off-balance sheet credit losses	(1,666)	(27)	(9)	—	—	(1,702)
Ending balance	\$ 2,361	\$ 17	\$ 53	\$ 2	\$ —	\$ 2,433
Total provision for credit losses	\$ 5,450	\$ (1,436)	\$ (266)	\$ 755	\$ (4,503)	\$ —

The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the six months ended June 30, 2018 is summarized as follows (in thousands):

	Commercial	Commercial Real Estate	Residential Mortgage	Personal	Nonspecific Allowance	Total
Allowance for loan losses:						
Beginning balance	\$ 124,269	\$ 56,621	\$ 18,451	\$ 9,124	\$ 22,217	\$ 230,682
Provision for loan losses	4,005	(1,143)	(419)	603	(6,745)	(3,699)
Loans charged off	(15,338)	—	(235)	(2,422)	—	(17,995)
Recoveries	786	3,280	747	1,341	—	6,154
Ending balance	\$ 113,722	\$ 58,758	\$ 18,544	\$ 8,646	\$ 15,472	\$ 215,142
Allowance for off-balance sheet credit losses:						
Beginning balance	\$ 3,644	\$ 45	\$ 43	\$ 2	\$ —	\$ 3,734
Provision for off-balance sheet credit losses	(1,283)	(28)	10	—	—	(1,301)
Ending balance	\$ 2,361	\$ 17	\$ 53	\$ 2	\$ —	\$ 2,433
Total provision for credit losses	\$ 2,722	\$ (1,171)	\$ (409)	\$ 603	\$ (6,745)	\$ (5,000)

The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at June 30, 2019 is as follows (in thousands):

	Collectively Measured for Impairment		Individually Measured for Impairment		Total	
	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance
Commercial	\$ 14,213,513	\$ 102,359	\$ 123,395	\$ 4,038	\$ 14,336,908	\$ 106,397
Commercial real estate	4,688,363	54,188	21,670	—	4,710,033	54,188
Residential mortgage	2,132,345	15,724	38,477	—	2,170,822	15,724
Personal	1,037,652	9,388	237	—	1,037,889	9,388
Total	22,071,873	181,659	183,779	4,038	22,255,652	185,697
Nonspecific allowance	—	—	—	—	—	16,837
Total	\$ 22,071,873	\$ 181,659	\$ 183,779	\$ 4,038	\$ 22,255,652	\$ 202,534

The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at December 31, 2018 is as follows (in thousands):

	Collectively Measured for Impairment		Individually Measured for Impairment		Total	
	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance
Commercial	\$ 13,536,237	\$ 93,494	\$ 99,841	\$ 8,732	\$ 13,636,078	\$ 102,226
Commercial real estate	4,743,192	60,026	21,621	—	4,764,813	60,026
Residential mortgage	2,188,478	17,964	41,555	—	2,230,033	17,964
Personal	1,025,576	9,473	230	—	1,025,806	9,473
Total	21,493,483	180,957	163,247	8,732	21,656,730	189,689
Nonspecific allowance	—	—	—	—	—	17,768
Total	\$ 21,493,483	\$ 180,957	\$ 163,247	\$ 8,732	\$ 21,656,730	\$ 207,457

Credit Quality Indicators

The Company utilizes loan class and risk grading as primary credit quality indicators. Substantially all commercial and commercial real estate loans and certain residential mortgage and consumer loans are risk graded based on a quarterly evaluation of the borrowers' ability to repay the loans. Certain commercial loans and most residential mortgage and consumer loans are small, homogeneous pools that are not risk graded.

The allowance for loan losses and recorded investment of the related loans by portfolio segment for risk graded and non-risk graded loans at June 30, 2019 is as follows (in thousands):

	Internally Risk Graded		Non-Graded		Total	
	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance
Commercial	\$ 14,307,867	\$ 105,435	\$ 29,041	\$ 962	\$ 14,336,908	\$ 106,397
Commercial real estate	4,710,033	54,188	—	—	4,710,033	54,188
Residential mortgage	279,905	3,318	1,890,917	12,406	2,170,822	15,724
Personal	949,413	7,074	88,476	2,314	1,037,889	9,388
Total	20,247,218	170,015	2,008,434	15,682	22,255,652	185,697
Nonspecific allowance	—	—	—	—	—	16,837
Total	\$ 20,247,218	\$ 170,015	\$ 2,008,434	\$ 15,682	\$ 22,255,652	\$ 202,534

The allowance for loan losses and recorded investment of the related loans by portfolio segment for risk graded and non-risk graded loans at December 31, 2018 is as follows (in thousands):

	Internally Risk Graded		Non-Graded		Total	
	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance
Commercial	\$ 13,586,654	\$ 101,303	\$ 49,424	\$ 923	\$ 13,636,078	\$ 102,226
Commercial real estate	4,764,813	60,026	—	—	4,764,813	60,026
Residential mortgage	505,046	3,310	1,724,987	14,654	2,230,033	17,964
Personal	948,890	6,633	76,916	2,840	1,025,806	9,473
Total	19,805,403	171,272	1,851,327	18,417	21,656,730	189,689
Nonspecific allowance	—	—	—	—	—	17,768
Total	\$ 19,805,403	\$ 171,272	\$ 1,851,327	\$ 18,417	\$ 21,656,730	\$ 207,457

Loans are considered to be performing if they are in compliance with the original terms of the agreement and currently exhibit no factors that cause management to have doubts about the borrowers' ability to remain in compliance with the original terms of the agreement, which is consistent with the regulatory guideline of "pass." Performing loans also include past due residential mortgages that are guaranteed by agencies of the U.S. government that continue to accrue interest based on criteria of the guarantors' programs. Other loans especially mentioned are currently performing in compliance with the original terms of the agreement but may have a potential weakness that deserves management's close attention, consistent with regulatory guidelines.

The risk grading process identified certain loans that have a well-defined weakness (e.g. inadequate debt service coverage or liquidity or marginal capitalization; repayment may depend on collateral or other risk mitigation) that may jeopardize liquidation of the debt and represent a greater risk due to deterioration in the financial condition of the borrower. This is consistent with the regulatory guideline for "substandard." Because the borrowers are still performing in accordance with the original terms of the loan agreements, these loans were not placed in nonaccruing status.

Nonaccruing loans represent loans for which full collection of principal and interest is uncertain. This is substantially the same criteria used to determine whether a loan is impaired and includes certain loans considered “substandard” and all loans considered “doubtful” by regulatory guidelines.

The following table summarizes the Company’s loan portfolio at June 30, 2019 by the risk grade categories (in thousands):

	Internally Risk Graded				Non-Graded		Total
	Performing				Performing	Nonaccrual	
	Pass	Other Loans Especially Mentioned	Accruing Substandard	Nonaccrual			
Commercial:							
Energy	\$ 3,774,846	\$ 12,871	\$ 62,004	\$ 71,632	\$ —	\$ —	\$ 3,921,353
Services	3,221,580	50,662	27,129	10,087	—	—	3,309,458
Wholesale/retail	1,767,002	13,080	11,646	1,390	—	—	1,793,118
Manufacturing	709,460	29,056	14,228	8,613	—	—	761,357
Healthcare	2,882,190	15,089	13,083	16,148	—	—	2,926,510
Public finance	795,659	—	—	—	—	—	795,659
Other commercial and industrial	761,650	2,831	20,488	15,443	28,959	82	829,453
Total commercial	13,912,387	123,589	148,578	123,313	28,959	82	14,336,908
Commercial real estate:							
Residential construction and land development	141,159	—	—	350	—	—	141,509
Retail	792,406	11,664	1,272	20,057	—	—	825,399
Office	1,048,029	4,197	3,225	855	—	—	1,056,306
Multifamily	1,293,248	1,200	5,649	275	—	—	1,300,372
Industrial	828,569	—	—	—	—	—	828,569
Other commercial real estate	557,038	547	160	133	—	—	557,878
Total commercial real estate	4,660,449	17,608	10,306	21,670	—	—	4,710,033
Residential mortgage:							
Permanent mortgage	276,782	115	2,206	803	787,464	21,000	1,088,370
Permanent mortgages guaranteed by U.S. government agencies	—	—	—	—	188,630	6,743	195,373
Home equity	—	—	—	—	877,148	9,931	887,079
Total residential mortgage	276,782	115	2,206	803	1,853,242	37,674	2,170,822
Personal	949,258	46	33	76	88,315	161	1,037,889
Total	\$ 19,798,876	\$ 141,358	\$ 161,123	\$ 145,862	\$ 1,970,516	\$ 37,917	\$ 22,255,652

The following table summarizes the Company's loan portfolio at December 31, 2018 by the risk grade categories (in thousands):

	Internally Risk Graded				Non-Graded		
	Performing				Performing	Nonaccrual	Total
	Pass	Other Loans Especially Mentioned	Accruing Substandard	Nonaccrual			
Commercial:							
Energy	\$ 3,414,039	\$ 42,176	\$ 86,624	\$ 47,494	\$ —	\$ —	\$ 3,590,333
Services	3,167,203	49,761	32,661	8,567	—	—	3,258,192
Wholesale/retail	1,593,902	18,809	7,131	1,316	—	—	1,621,158
Manufacturing	668,438	30,934	22,230	8,919	—	—	730,521
Healthcare	2,730,121	14,920	37,698	16,538	—	—	2,799,277
Public finance	804,550	—	—	—	—	—	804,550
Other commercial and industrial	756,815	1,266	7,588	16,954	49,371	53	832,047
Total commercial	13,135,068	157,866	193,932	99,788	49,371	53	13,636,078
Commercial real estate:							
Residential construction and land development	148,234	—	—	350	—	—	148,584
Retail	885,588	11,926	1,289	20,279	—	—	919,082
Office	1,059,334	10,532	3,054	—	—	—	1,072,920
Multifamily	1,287,471	281	12	301	—	—	1,288,065
Industrial	776,898	—	1,208	—	—	—	778,106
Other commercial real estate	555,301	1,188	876	691	—	—	558,056
Total commercial real estate	4,712,826	23,927	6,439	21,621	—	—	4,764,813
Residential mortgage:							
Permanent mortgage	269,678	52	9,730	1,991	819,199	21,960	1,122,610
Permanent mortgages guaranteed by U.S. government agencies	—	—	—	—	183,734	7,132	190,866
Home equity	223,298	—	296	—	682,491	10,472	916,557
Total residential mortgage	492,976	52	10,026	1,991	1,685,424	39,564	2,230,033
Personal	944,256	115	4,443	76	76,762	154	1,025,806
Total	\$ 19,285,126	\$ 181,960	\$ 214,840	\$ 123,476	\$ 1,811,557	\$ 39,771	\$ 21,656,730

Impaired Loans

Loans are considered to be impaired when it is probable that the Company will not be able to collect all amounts due according to the contractual terms of the loan agreement. This generally includes all nonaccruing loans, all loans modified in a TDR and all loans repurchased from GNMA pools.

A summary of impaired loans at June 30, 2019 follows (in thousands):

	As of					For the		For the	
	June 30, 2019					Three Months Ended		Six Months Ended	
	Unpaid Principal Balance	Recorded Investment			Related Allowance	June 30, 2019		June 30, 2019	
Total		With No Allowance	With Allowance	Average Recorded Investment		Interest Income Recognized	Average Recorded Investment	Interest Income Recognized	
Commercial:									
Energy	\$ 118,959	\$ 71,632	\$ 64,066	\$ 7,566	\$ 1,175	\$ 58,185	\$ —	\$ 59,074	\$ —
Services	13,343	10,087	10,061	26	26	10,309	—	7,156	—
Wholesale/retail	1,600	1,390	1,126	264	101	1,407	—	1,030	—
Manufacturing ¹	8,896	8,613	8,383	230	236	9,080	—	8,384	—
Healthcare	30,255	16,148	14,972	1,176	2,500	17,441	—	13,632	—
Public finance	—	—	—	—	—	—	—	—	—
Other commercial and industrial	25,838	15,525	15,525	—	—	15,627	—	16,113	—
Total commercial	198,891	123,395	114,133	9,262	4,038	112,049	—	105,389	—
Commercial real estate:									
Residential construction and land development	1,306	350	350	—	—	350	—	350	—
Retail	20,380	20,057	20,057	—	—	20,108	—	20,168	—
Office	855	855	855	—	—	855	—	427	—
Multifamily	275	275	275	—	—	138	—	288	—
Industrial	—	—	—	—	—	—	—	—	—
Other commercial real estate	293	133	133	—	—	139	—	412	—
Total commercial real estate	23,109	21,670	21,670	—	—	21,590	—	21,645	—
Residential mortgage:									
Permanent mortgage	26,434	21,803	21,803	—	—	22,370	316	22,877	614
Permanent mortgage guaranteed by U.S. government agencies ²	201,217	195,373	195,373	—	—	191,537	1,938	193,958	3,843
Home equity	11,728	9,931	9,931	—	—	10,228	—	10,202	—
Total residential mortgage	239,379	227,107	227,107	—	—	224,135	2,254	227,037	4,457
Personal	289	237	237	—	—	269	—	234	—
Total	\$ 461,668	\$ 372,409	\$ 363,147	\$ 9,262	\$ 4,038	\$ 358,043	\$ 2,254	\$ 354,305	\$ 4,457

¹ Impaired manufacturing sector loans included \$4.7 million of loans from an affiliated entity, with no allowance as the fair value of the collateral exceeded the outstanding principal balance at June 30, 2019.

² All permanent mortgage loans guaranteed by U.S. government agencies are considered impaired as we do not expect full collection of contractual principal and interest. At June 30, 2019, the majority were accruing based on the guarantee by U.S. government agencies.

Generally, no interest income is recognized on impaired loans until all principal balances, including amounts charged-off, are recovered.

A summary of impaired loans at December 31, 2018 follows (in thousands):

	Unpaid Principal Balance	Recorded Investment			
		Total	With No Allowance	With Allowance	Related Allowance
Commercial:					
Energy	\$ 79,675	\$ 47,494	\$ 18,639	\$ 28,855	\$ 5,362
Services	13,437	8,567	8,489	78	74
Wholesale/retail	1,722	1,316	1,015	301	101
Manufacturing	10,055	8,919	8,673	246	246
Healthcare	24,319	16,538	10,563	5,975	2,949
Public finance	—	—	—	—	—
Other commercial and industrial	26,955	17,007	17,007	—	—
Total commercial	156,163	99,841	64,386	35,455	8,732
Commercial real estate:					
Residential construction and land development	1,306	350	350	—	—
Retail	27,680	20,279	20,279	—	—
Office	—	—	—	—	—
Multifamily	301	301	301	—	—
Industrial	—	—	—	—	—
Other commercial real estate	851	691	691	—	—
Total commercial real estate	30,138	21,621	21,621	—	—
Residential mortgage:					
Permanent mortgage	28,716	23,951	23,951	—	—
Permanent mortgage guaranteed by U.S. government agencies ¹	196,296	190,866	190,866	—	—
Home equity	12,196	10,472	10,472	—	—
Total residential mortgage	237,208	225,289	225,289	—	—
Personal	278	230	230	—	—
Total	\$ 423,787	\$ 346,981	\$ 311,526	\$ 35,455	\$ 8,732

¹ All permanent mortgage loans guaranteed by U.S. government agencies are considered impaired as we do not expect full collection of contractual principal and interest. At December 31, 2018, the majority were accruing based on the guarantee by U.S. government agencies.

Troubled Debt Restructurings

At June 30, 2019 the Company had \$169 million in troubled debt restructurings (TDRs), of which \$96 million were accruing residential mortgage loans guaranteed by U.S. government agencies. Approximately \$70 million of TDRs were performing in accordance with the modified terms.

At December 31, 2018, the Company had \$166 million in TDRs, of which \$86 million were accruing residential mortgage loans guaranteed by U.S. government agencies. Approximately \$71 million of TDRs were performing in accordance with the modified terms.

TDRs generally consist of interest rate concessions, payment stream concessions or a combination of concessions to distressed borrowers. During the three and six months ended June 30, 2019, \$21 million and \$38 million of loans were restructured. During the three and six months ended June 30, 2018, \$19 million and \$32 million of loans were restructured.

Nonaccrual & Past Due Loans

Past due status for all loan classes is based on the actual number of days since the last payment was due according to the contractual terms of the loans.

A summary of loans currently performing, loans past due and accruing and nonaccrual loans as of June 30, 2019 is as follows (in thousands):

	Current	Past Due			Nonaccrual	Total
		30 to 59 Days	60 to 89 Days	90 Days or More		
Commercial:						
Energy	\$ 3,849,711	\$ 10	\$ —	\$ —	\$ 71,632	\$ 3,921,353
Services	3,297,119	1,045	759	448	10,087	3,309,458
Wholesale/retail	1,787,095	2,954	189	1,490	1,390	1,793,118
Manufacturing	750,517	197	2,030	—	8,613	761,357
Healthcare	2,909,249	383	609	121	16,148	2,926,510
Public finance	795,659	—	—	—	—	795,659
Other commercial and industrial	811,129	2,037	762	—	15,525	829,453
Total commercial	14,200,479	6,626	4,349	2,059	123,395	14,336,908
Commercial real estate:						
Residential construction and land development	140,555	604	—	—	350	141,509
Retail	805,342	—	—	—	20,057	825,399
Office	1,055,034	—	353	64	855	1,056,306
Multifamily	1,299,665	131	301	—	275	1,300,372
Industrial	827,660	—	909	—	—	828,569
Other commercial real estate	556,562	111	544	528	133	557,878
Total commercial real estate	4,684,818	846	2,107	592	21,670	4,710,033
Residential mortgage:						
Permanent mortgage	1,062,889	3,641	—	37	21,803	1,088,370
Permanent mortgages guaranteed by U.S. government agencies	49,015	23,742	21,619	94,254	6,743	195,373
Home equity	875,215	1,380	553	—	9,931	887,079
Total residential mortgage	1,987,119	28,763	22,172	94,291	38,477	2,170,822
Personal	1,035,045	2,509	88	10	237	1,037,889
Total	\$ 21,907,461	\$ 38,744	\$ 28,716	\$ 96,952	\$ 183,779	\$ 22,255,652

A summary of loans currently performing, loans past due and accruing and nonaccrual loans as of December 31, 2018 is as follows (in thousands):

	Current	Past Due			Nonaccrual	Total
		30 to 59 Days	60 to 89 Days	90 Days or More		
Commercial:						
Energy	\$ 3,542,839	\$ —	\$ —	\$ —	\$ 47,494	\$ 3,590,333
Services	3,237,578	6,009	6,038	—	8,567	3,258,192
Wholesale/retail	1,619,290	515	37	—	1,316	1,621,158
Manufacturing	721,204	392	6	—	8,919	730,521
Healthcare	2,781,944	241	—	554	16,538	2,799,277
Public finance	804,550	—	—	—	—	804,550
Other commercial and industrial	814,489	518	25	8	17,007	832,047
Total commercial	13,521,894	7,675	6,106	562	99,841	13,636,078
Commercial real estate:						
Residential construction and land development	147,705	249	280	—	350	148,584
Retail	884,424	14,379	—	—	20,279	919,082
Office	1,072,920	—	—	—	—	1,072,920
Multifamily	1,287,483	281	—	—	301	1,288,065
Industrial	776,898	1,208	—	—	—	778,106
Other commercial real estate	556,239	412	—	714	691	558,056
Total commercial real estate	4,725,669	16,529	280	714	21,621	4,764,813
Residential mortgage:						
Permanent mortgage	1,095,097	3,196	366	—	23,951	1,122,610
Permanent mortgages guaranteed by U.S. government agencies	37,459	24,369	16,345	105,561	7,132	190,866
Home equity	904,572	1,102	352	59	10,472	916,557
Total residential mortgage	2,037,128	28,667	17,063	105,620	41,555	2,230,033
Personal	1,024,298	479	796	3	230	1,025,806
Total	\$ 21,308,989	\$ 53,350	\$ 24,245	\$ 106,899	\$ 163,247	\$ 21,656,730

(5) Leasing

Effective January 1, 2019, premises and equipment included right-of-use assets for leased office space and facilities. Leases are at market rates at inception and may contain escalations based on consumer price index or similar benchmarks and options to renew at then market rates. Renewal options, variable lease payments and residual value guarantees are included in the measurement of right-of-use assets when certain conditions are met. Lease component cash flows are discounted at the applicable FHLB advance rate.

At June 30, 2019, right-of-use assets were \$139 million, the weighted-average remaining lease term was 10.0 years and the weighted average discount rate on operating leases was 3.50%. Operating lease costs recognized as occupancy and equipment expense were \$5.7 million and \$12.1 million for the three and six months ended June 30, 2019. Operating cash flows from operating leases were \$5.5 million and \$11.4 million for the three and six months ended June 30, 2019.

At June 30, 2019, un-discounted operating lease liabilities are scheduled to mature as follows: \$17.7 million in 2019, \$28.9 million in 2020, \$26.1 million in 2021, \$18.9 million in 2022, \$16.5 million in 2023 and \$104.2 million thereafter. Operating expense and short term lease costs total \$3.7 million and \$6.1 million for the three and six months ended June 30, 2019.

The Company may lease owned properties or sublease unoccupied leased facilities. Income on these leases is immaterial.

(6) Mortgage Banking Activities

Residential Mortgage Loan Production

The Company originates, markets and services conventional and government-sponsored residential mortgage loans. Generally, conforming fixed rate residential mortgage loans are held for sale in the secondary market and non-conforming and adjustable-rate residential mortgage loans are retained for investment. Residential mortgage loans originated for sale by the Company are carried at fair value based on sales commitments and market quotes. Changes in the fair value of mortgage loans held for sale are included in Other operating revenue – Mortgage banking revenue. Residential mortgage loans held for sale also includes the fair value of residential mortgage loan commitments and forward sales commitments, which are considered derivative contracts that have not been designated as hedging instruments for accounting purposes. The volume of mortgage loans originated for sale and secondary market prices are the primary drivers of originating and marketing revenue.

Residential mortgage loan commitments are generally outstanding for 60 to 90 days, which represents the typical period from commitment to originate a residential mortgage loan to when the closed loan is sold to an investor. Residential mortgage loan commitments are subject to both credit and interest rate risk. Credit risk is managed through underwriting policies and procedures, including collateral requirements, which are generally accepted by the secondary loan markets. Exposure to interest rate fluctuations is partially managed through forward sales of residential mortgage-backed securities and forward sales contracts. These latter contracts set the price for loans that will be delivered in the next 60 to 90 days.

The unpaid principal balance of residential mortgage loans held for sale, notional amounts of derivative contracts related to residential mortgage loan commitments and forward contract sales and their related fair values included in Mortgage loans held for sale on the Consolidated Balance Sheets were (in thousands):

	June 30, 2019		December 31, 2018	
	Unpaid Principal Balance/Notional	Fair Value	Unpaid Principal Balance/Notional	Fair Value
Residential mortgage loans held for sale	\$ 185,536	\$ 188,318	\$ 145,057	\$ 146,971
Residential mortgage loan commitments	344,087	9,597	160,848	5,378
Forward sales contracts	492,216	(4,345)	274,000	(3,128)
		\$ 193,570		\$ 149,221

No residential mortgage loans held for sale were 90 days or more past due or considered impaired as of June 30, 2019 or December 31, 2018. No credit losses were recognized on residential mortgage loans held for sale for the six month period ended June 30, 2019 and 2018.

Mortgage banking revenue was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Production revenue:				
Net realized gains on sale of mortgage loans	\$ 10,174	\$ 10,718	\$ 15,867	\$ 19,636
Net change in unrealized gain on mortgage loans held for sale	921	1,047	868	(322)
Net change in the fair value of mortgage loan commitments	1,506	(1,124)	4,219	950
Net change in the fair value of forward sales contracts	(732)	(726)	(1,217)	(897)
Total production revenue	11,869	9,915	19,737	19,367
Servicing revenue	16,262	16,431	32,228	33,004
Total mortgage banking revenue	\$ 28,131	\$ 26,346	\$ 51,965	\$ 52,371

Production revenue includes gain (loss) on residential mortgage loans held for sale and changes in the fair value of derivative contracts not designated as hedging instruments for accounting purposes related to residential mortgage loan commitments and forward sales contracts. Servicing revenue includes servicing fee income and late charges on loans serviced for others.

Residential Mortgage Servicing

Mortgage servicing rights may be originated or purchased. Both originated and purchased mortgage servicing rights are initially recognized at fair value. The Company has elected to carry all mortgage servicing rights at fair value. Changes in the fair value are recognized in earnings as they occur. The unpaid principal balance of loans serviced for others is the primary driver of servicing revenue.

The following represents a summary of mortgage servicing rights (dollars in thousands):

	June 30, 2019	December 31, 2018
Number of residential mortgage loans serviced for others	130,270	132,463
Outstanding principal balance of residential mortgage loans serviced for others	\$ 21,349,914	\$ 21,658,335
Weighted average interest rate	4.01%	3.99%
Remaining term (in months)	291	293

The following represents activity in capitalized mortgage servicing rights (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Beginning Balance	\$ 238,193	\$ 274,978	\$ 259,254	\$ 252,867
Additions, net	8,751	10,820	14,939	19,720
Change in fair value due to principal payments	(9,081)	(8,802)	(15,664)	(16,797)
Change in fair value due to market assumption changes	(29,555)	1,723	(50,221)	22,929
Ending Balance	\$ 208,308	\$ 278,719	\$ 208,308	\$ 278,719

Changes in the fair value of mortgage servicing rights due to market assumption changes are included in Other operating revenue in the Consolidated Statements of Earnings. Changes in fair value due to principal payments are included in Mortgage banking costs.

Mortgage servicing rights are not traded in active markets. Fair value is determined by discounting the projected net cash flows. Significant market assumptions used to determine fair value based on significant unobservable inputs were as follows:

	June 30, 2019	December 31, 2018
Discount rate – risk-free rate plus a market premium	9.82%	9.90%
Prepayment rate - based upon loan interest rate, original term and loan type	8.28% - 17.32%	8.05% - 15.74%
Loan servicing costs – annually per loan based upon loan type:		
Performing loans	\$68 - \$94	\$67 - \$93
Delinquent loans	\$150 - \$500	\$150 - \$500
Loans in foreclosure	\$1,000 - \$4,000	\$1,000 - \$4,000
Escrow earnings rate – indexed to rates paid on deposit accounts with comparable average life	1.75%	2.57%
Primary/secondary mortgage rate spread	109 bps	105 bps

Changes in primary residential mortgage interest rates directly affect the prepayment speeds used in valuing our mortgage servicing rights. A separate third party model is used to estimate prepayment speeds based on interest rates, housing turnover rates, estimated loan curtailment, anticipated defaults and other relevant factors. The prepayment model is updated periodically for changes in market conditions and adjusted to better correlate with actual performance of BOK Financial's servicing portfolio.

(7) Commitments and Contingent Liabilities

Litigation Contingencies

On June 24, 2015, BOKF, NA received a complaint alleging that an employee had colluded with a bond issuer and an individual in misusing revenues pledged to municipal bonds for which BOKF, NA served as trustee under the bond indenture. The Company conducted an investigation and concluded that employees in one of its Corporate Trust offices had, with respect to a single group of affiliated bond issuances, violated Company policies and procedures by waiving financial covenants, granting forbearances and accepting without disclosure to the bondholders, debt service payments from sources other than pledged revenues. The relationship manager was terminated. The Company reported the circumstances to, and cooperated with an investigation by, the Securities and Exchange Commission ("SEC").

On December 28, 2015, in an action brought by the SEC, the United States District Court for the District of New Jersey entered a judgment against the principals involved in issuing the bonds, precluding the principals from denying the alleged violations of the federal securities laws and requiring the principals to pay all outstanding principal, accrued interest, and other amounts required under the bond documents, less the value of the facilities securing repayment of the bonds), subject to oversight by a court appointed monitor.

On September 7, 2016, BOKF, NA agreed, and the SEC entered, a consent order finding that BOKF, NA had violated Section 17(a) of the Securities Act of 1933 and Section 10(b) of the Securities Exchange Act and requiring BOKF, NA to disgorge \$1,067,721 of fees and pay a civil penalty of \$600,000. BOKF, NA disgorged the fees and paid the penalty.

On August 26, 2016, BOKF, NA was sued in the United States District Court for New Jersey by two bondholders in a putative class action on behalf of all holders of the bonds alleging BOKF, NA participated in the fraudulent sale of securities by the principals. On September 14, 2016, BOKF, NA was sued in the District Court of Tulsa County, Oklahoma by 19 bondholders alleging BOKF, NA participated in the fraudulent sale of securities by the principals. The New Jersey Federal District Action and the Tulsa County District Court Action have been stayed by the respective courts while the principals liquidate the facilities pledged to secure payment of the bonds. Four separate small groups of bondholders filed arbitration complaints with the Financial Institutions Regulatory Association respecting the bonds and other bonds for which BOKF, NA served as indenture trustee. BOKF, NA challenged the FINRA proceedings in the United States District Court of Nevada. On appeal, the United States Court of Appeals for the Ninth Circuit held BOKF, NA was not subject to FINRA jurisdiction. The four FINRA complaints were then dismissed.

On July 9, 2019, the New Jersey Federal District Court, upon motion of the SEC, entered an order terminating the plan for repayment of the bonds by the principals on July 31, 2019 unless the SEC and the principals consent to otherwise extend the plan before July 29, 2019. The SEC announced its intention to seek judgment against the principal individual and his wife for the amount remaining on the bonds. As a result of these actions, management is no longer able to conclude that the repayment plan will be successful in full. Management has been advised by counsel that BOKF, NA has valid defenses to claims of bondholders and that no loss to the company is probable. No provision for losses has been made at this time. BOKF, NA estimates that upon sale of all facilities securing payment of the bonds, including those currently under contract and those not currently under contract, approximately \$20 million will remain outstanding. BOKF, NA is unable at this time to assess whether the individual principal and his wife will have the financial capacity to pay in full the balance due on the bonds. If the individual principal and his wife do not have the financial ability to pay the bonds in full, a bondholder loss could become probable. Under all circumstances, the obligation of the principals to repay the bonds continues as an obligation not dischargeable in bankruptcy. A reasonable estimate cannot be made of the amount of any bondholder loss, though the amount of bondholder loss could be material to the company in the event a loss to the company becomes probable.

On March 5, 2018, BOKF, NA was sued in the Fulton, Georgia County District Court by the administratrix of a deceased resident who had sued for and obtained a judgment for wrongful death against one of the operators of a nursing home financed by one of the bonds which are the subject of the litigation discussed above. The judgment is alleged to total approximately \$8 million in principal and interest at this time. Plaintiff alleges that BOKF, in its capacity as indenture trustee for the bonds, colluded with the borrower and others to defraud creditors of the nursing home by misleading the public about the solvency of the nursing home. Plaintiff alleges that this conduct has prevented her from collecting on her judgment. BOKF, NA is advised by counsel that BOKF, NA has valid defenses to the plaintiffs' claims and no loss is probable.

On March 14, 2017, BOKF, NA was sued in the United States District Court for the Northern District of Oklahoma by bondholders in a second putative class action representing a different set of municipal securities. The bondholders in this second action allege two individuals purchased facilities from the principals who are the subject of the SEC New Jersey proceedings by means of the fraudulent sale of \$60 million of municipal securities for which BOKF, NA also served as indenture trustee. The bondholders allege BOKF, NA failed to disclose that the seller of the purchased facilities had engaged in the conduct complained of in the New Jersey action. BOKF, NA properly performed all duties as indenture trustee of this second set of municipal securities, timely commenced proceedings against the issuer of the securities when default occurred, is cooperating with the SEC in actions against the two principals, is not a target of the SEC proceedings, and has been advised by counsel that BOKF, NA has valid defenses to the claims of these bondholders. Management is advised by counsel that a loss is not probable and that the loss, if any, cannot be reasonably estimated.

On March 7, 2017, a plaintiff filed a putative class action in the United States District Court for the Northern District of Texas alleging an extended overdraft fee charged by BOKF, NA is interest and exceeds permitted rates. This action makes the same allegations as a putative class action that was dismissed by the United States District Court for the Northern District of Oklahoma on October 19, 2015. On August 22, 2018, a plaintiff filed a second putative class action in the United States District Court for New Mexico making the same allegations as the Texas action. On September 18, 2018, the District Court dismissed the Texas action. Management is advised by counsel that a loss is not probable in the New Mexico action or the Texas action and that the loss, if any, cannot be reasonably estimated.

On July 6, 2018, a plaintiff served a petition in a putative class action in the Oklahoma District Court for Tulsa County Oklahoma alleging BOKF NA breached its Demand Deposit Agreements by charging overdraft and not sufficient funds fees to deposit accounts on the day of the transaction triggering the fee and by the bank's debit hold process causing overdraft fees. Management is advised by counsel that a loss is not probable and that the loss, if any, cannot be reasonably estimated.

In the ordinary course of business, BOK Financial and its subsidiaries are subject to legal actions and complaints. Management believes, based upon the opinion of counsel, that the actions and liability or loss, if any, resulting from the final outcomes of the proceedings, will not have a material effect on the Company's financial condition, results of operations or cash flows.

Alternative Investment Commitments

The Company sponsors two private equity funds and invests in several tax credit entities and other funds as permitted by banking regulations. Consolidation of these investments is based on the variable interest model.

At June 30, 2019, the Company has \$234 million in interests in various alternative investments generally consisting of unconsolidated limited partnership interests in entities for which investment return is in the form of low income housing tax credits or other investments in merchant banking activities. This investment balance also includes \$57 million of unfunded commitments included in Other liabilities on the Consolidated Balance Sheets.

(8) Shareholders' Equity

On July 30, 2019, the Company declared a quarterly cash dividend of \$0.50 per common share payable on or about August 27, 2019 to shareholders of record as of August 12, 2019.

Dividends declared were \$0.50 and \$1.00 per share during the three and six months ended June 30, 2019 and \$0.45 and \$0.90 per share during the three and six months ended June 30, 2018.

Accumulated Other Comprehensive Income (Loss)

AOCI includes unrealized gains and losses on available for sale ("AFS") securities and non-credit related unrealized losses on AFS securities for which an other-than-temporary impairment has been recorded in earnings. Unrealized losses on employee benefit plans will be reclassified into income as pension plan costs are recognized over the remaining service period of plan participants. Gains and losses in AOCI are net of deferred income taxes.

A rollforward of the components of accumulated other comprehensive income (loss) is included as follows (in thousands):

	Unrealized Gain (Loss) on		
	Available for Sale Securities	Employee Benefit Plans	Total
Balance, December 31, 2017	\$ (35,385)	\$ (789)	\$ (36,174)
Transition adjustment for net unrealized gains on equity securities	(2,709)	—	(2,709)
Net change in unrealized gain (loss)	(130,523)	—	(130,523)
Reclassification adjustments included in earnings:			
Loss on available for sale securities, net	1,052	—	1,052
Other comprehensive income (loss), before income taxes	(129,471)	—	(129,471)
Federal and state income taxes ¹	(33,049)	—	(33,049)
Other comprehensive income (loss), net of income taxes	(96,422)	—	(96,422)
Balance, June 30, 2018	\$ (134,516)	\$ (789)	\$ (135,305)
Balance, December 31, 2018	\$ (70,999)	\$ (1,586)	\$ (72,585)
Net change in unrealized gain (loss)	228,156	—	228,156
Reclassification adjustments included in earnings:			
Gain on available for sale securities, net	(1,105)	—	(1,105)
Other comprehensive income (loss), before income taxes	227,051	—	227,051
Federal and state income taxes ¹	55,897	—	55,897
Other comprehensive income (loss), net of income taxes	171,154	—	171,154
Balance, June 30, 2019	\$ 100,155	\$ (1,586)	\$ 98,569

¹ Calculated using a 25 percent blended federal and state statutory tax rate.

(9) Earnings Per Share

(In thousands, except share and per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Numerator:				
Net income attributable to BOK Financial Corp. shareholders	\$ 137,563	\$ 114,372	\$ 248,175	\$ 219,934
Less: Earnings allocated to participating securities	850	956	1,678	1,978
Numerator for basic earnings per share – income available to common shareholders	136,713	113,416	246,497	217,956
Effect of reallocating undistributed earnings of participating securities	—	1	—	1
Numerator for diluted earnings per share – income available to common shareholders	\$ 136,713	\$ 113,417	\$ 246,497	\$ 217,957
Denominator:				
Weighted average shares outstanding	71,327,928	65,448,035	71,625,332	65,463,671
Less: Participating securities included in weighted average shares outstanding	440,865	546,060	489,918	589,104
Denominator for basic earnings per common share	70,887,063	64,901,975	71,135,414	64,874,567
Dilutive effect of employee stock compensation plans ¹	14,970	35,251	16,144	37,985
Denominator for diluted earnings per common share	70,902,033	64,937,226	71,151,558	64,912,552
Basic earnings per share	\$ 1.93	\$ 1.75	\$ 3.47	\$ 3.36
Diluted earnings per share	\$ 1.93	\$ 1.75	\$ 3.46	\$ 3.36
¹ Excludes employee stock options with exercise prices greater than current market price.	—	—	—	—

(10) Reportable Segments

Reportable segments reconciliation to the Consolidated Financial Statements for the three months ended June 30, 2019 is as follows (in thousands):

	Commercial	Consumer	Wealth Management	Funds Management and Other ¹	BOK Financial Consolidated
Net interest revenue from external sources	\$ 251,080	\$ 24,203	\$ 17,224	\$ (7,075)	\$ 285,432
Net interest revenue (expense) from internal sources	(65,470)	28,514	9,719	27,237	—
Net interest revenue	185,610	52,717	26,943	20,162	285,432
Provision for credit losses	6,823	1,728	(48)	(3,503)	5,000
Net interest revenue after provision for credit losses	178,787	50,989	26,991	23,665	280,432
Other operating revenue	41,611	48,811	86,017	(4,374)	172,065
Other operating expense	62,947	57,694	69,452	87,044	277,137
Net direct contribution	157,451	42,106	43,556	(67,753)	175,360
Gain (loss) on financial instruments, net	20	20,981	—	(21,001)	—
Change in fair value of mortgage servicing rights	—	(29,555)	—	29,555	—
Gain (loss) on repossessed assets, net	—	92	—	(92)	—
Corporate expense allocations	11,384	11,695	9,168	(32,247)	—
Net income before taxes	146,087	21,929	34,388	(27,044)	175,360
Federal and state income taxes	39,155	5,585	8,843	(16,003)	37,580
Net income	106,932	16,344	25,545	(11,041)	137,780
Net income attributable to non-controlling interests	—	—	—	217	217
Net income attributable to BOK Financial Corp. shareholders	\$ 106,932	\$ 16,344	\$ 25,545	\$ (11,258)	\$ 137,563

Average assets \$ 22,910,071 \$ 9,212,667 \$ 9,849,396 \$ (1,127,357) \$ 40,844,777

¹ CoBiz operations were allocated to the respective segments in the second quarter of 2019.

Reportable segments reconciliation to the Consolidated Financial Statements for the six months ended June 30, 2019 is as follows (in thousands):

	Commercial	Consumer	Wealth Management	Funds Management and Other ¹	BOK Financial Consolidated
Net interest revenue from external sources	\$ 455,289	\$ 45,798	\$ 38,710	\$ 23,737	\$ 563,534
Net interest revenue (expense) from internal sources	(118,031)	58,021	16,489	43,521	—
Net interest revenue	337,258	103,819	55,199	67,258	563,534
Provision for credit losses	18,069	2,813	(167)	(7,715)	13,000
Net interest revenue after provision for credit losses	319,189	101,006	55,366	74,973	550,534
Other operating revenue	79,223	91,559	159,431	(878)	329,335
Other operating expense	113,124	111,515	130,959	208,696	564,294
Net direct contribution	285,288	81,050	83,838	(134,601)	315,575
Gain on financial instruments, net	38	35,078	—	(35,116)	—
Change in fair value of mortgage servicing rights	—	(50,221)	—	50,221	—
Gain (loss) on repossessed assets, net	(346)	195	—	151	—
Corporate expense allocations	21,532	23,595	17,528	(62,655)	—
Net income before taxes	263,448	42,507	66,310	(56,690)	315,575
Federal and state income taxes	70,373	10,826	17,046	(30,715)	67,530
Net income	193,075	31,681	49,264	(25,975)	248,045
Net income attributable to non-controlling interests	—	—	—	(130)	(130)
Net income attributable to BOK Financial Corp. shareholders	\$ 193,075	\$ 31,681	\$ 49,264	\$ (25,845)	\$ 248,175

Average assets \$ 21,431,696 \$ 8,794,498 \$ 9,590,629 \$ 445,144 \$ 40,261,967

¹ CoBiz operations are included in Funds Management and Other for the first quarter of 2019 and subsequently allocated to the respective segments in the second quarter of 2019.

Reportable segments reconciliation to the Consolidated Financial Statements for the three months ended June 30, 2018 is as follows (in thousands):

	<u>Commercial</u>	<u>Consumer</u>	<u>Wealth Management</u>	<u>Funds Management and Other</u>	<u>BOK Financial Consolidated</u>
Net interest revenue from external sources	\$ 182,127	\$ 21,747	\$ 18,754	\$ 15,934	\$ 238,562
Net interest revenue (expense) from internal sources	(37,102)	17,548	10,232	9,322	—
Net interest revenue	145,025	39,295	28,986	25,256	238,562
Provision for credit losses	10,108	1,140	(105)	(11,143)	—
Net interest revenue after provision for credit losses	134,917	38,155	29,091	36,399	238,562
Other operating revenue	43,047	46,320	70,642	(3,610)	156,399
Other operating expense	49,386	61,146	61,491	74,453	246,476
Net direct contribution	128,578	23,329	38,242	(41,664)	148,485
Gain (loss) on financial instruments, net	9	(6,411)	—	6,402	—
Change in fair value of mortgage servicing rights	—	1,723	—	(1,723)	—
Gain (loss) on repossessed assets, net	(67)	174	—	(107)	—
Corporate expense allocations	9,366	11,042	11,142	(31,550)	—
Net income before taxes	119,154	7,773	27,100	(5,542)	148,485
Federal and state income taxes	31,577	1,980	6,981	(7,208)	33,330
Net income	87,577	5,793	20,119	1,666	115,155
Net income attributable to non-controlling interests	—	—	—	783	783
Net income (loss) attributable to BOK Financial Corp. shareholders	\$ 87,577	\$ 5,793	\$ 20,119	\$ 883	\$ 114,372
Average assets	\$ 18,072,155	\$ 8,353,558	\$ 8,495,557	\$ (1,015,235)	\$ 33,906,035

Reportable segments reconciliation to the Consolidated Financial Statements for the six months ended June 30, 2018 is as follows (in thousands):

	<u>Commercial</u>	<u>Consumer</u>	<u>Wealth Management</u>	<u>Funds Management and Other</u>	<u>BOK Financial Consolidated</u>
Net interest revenue from external sources	\$ 342,541	\$ 43,500	\$ 34,161	\$ 38,096	\$ 458,298
Net interest revenue (expense) from internal sources	(65,445)	32,772	20,164	12,509	—
Net interest revenue	277,096	76,272	54,325	50,605	458,298
Provision for credit losses	10,735	2,441	(153)	(18,023)	(5,000)
Net interest revenue after provision for credit losses	266,361	73,831	54,478	68,628	463,298
Other operating revenue	82,722	91,267	145,409	(7,010)	312,388
Other operating expense	97,756	116,246	124,295	152,609	490,906
Net direct contribution	251,327	48,852	75,592	(90,991)	284,780
Gain (loss) on financial instruments, net	16	(29,672)	—	29,656	—
Change in fair value of mortgage servicing rights	—	22,929	—	(22,929)	—
Gain (loss) on repossessed assets, net	(4,232)	66	—	4,166	—
Corporate expense allocations	19,969	22,246	22,097	(64,312)	—
Net income before taxes	227,142	19,929	53,495	(15,786)	284,780
Federal and state income taxes	60,319	5,076	13,767	(14,884)	64,278
Net income	166,823	14,853	39,728	(902)	220,502
Net income attributable to non-controlling interests	—	—	—	568	568
Net income attributable to BOK Financial Corp. shareholders	\$ 166,823	\$ 14,853	\$ 39,728	\$ (1,470)	\$ 219,934
Average assets	\$ 17,933,756	\$ 8,410,513	\$ 8,296,780	\$ (825,055)	\$ 33,815,994

(11) Fees and Commissions Revenue

Fees and commissions revenue is generated through the sales of products, consisting primarily of financial instruments, and the performance of services for customers under contractual obligations. Revenue from providing services for customers is recognized at the time services are provided in an amount that reflects the consideration we expect to be entitled to for those services. Revenue is recognized based on the application of five steps:

- Identify the contract with a customer
- Identify the performance obligations in the contract
- Determine the transaction price
- Allocate the transaction price to the performance obligations in the contract
- Recognize revenue when (or as) the Company satisfies a performance obligation

For contracts with multiple performance obligations, individual performance obligations are accounted for separately if the customer can benefit from the good or service on its own or with other resources readily available to the customer and the promise to transfer goods and services to the customer is separately identifiable in the contract. The transaction price is allocated to the performance obligations based on relative standalone selling prices.

Revenue is recognized on a gross basis whenever we have primary responsibility and risk in providing the services or products to our customers and have discretion in establishing the price for the services or products. Revenue is recognized on a net basis whenever we act as an agent for products or services of others.

Brokerage and trading revenue includes revenues from trading, customer hedging, retail brokerage and investment banking. Trading revenue includes net realized and unrealized gains primarily related to sales of securities to institutional customers and related derivative contracts. Customer hedging revenue includes realized and unrealized changes in the fair value of derivative contracts held for customer risk management programs including credit valuation adjustments, as necessary. We offer commodity, interest rate, foreign exchange and equity derivatives to our customers. These customer contracts are offset with contracts with selected counterparties and exchanges to minimize changes in market risk from changes in commodity prices, interest rates or foreign exchange rates. Retail brokerage revenue represents fees and commissions earned on sales of fixed income securities, annuities, mutual funds and other financial instruments to retail customers. Investment banking revenue includes fees earned upon completion of underwriting and financial advisory services. Investment banking revenue also includes fees earned in conjunction with loan syndications. Insurance brokerage revenues represents fees and commissions earned on placement of insurance products with carriers for property and casualty and health coverage.

Transaction card revenue includes merchant discount fees and electronic funds transfer network fees, net of interchange fees paid to card issuers and assessments paid to card networks. Merchant discount fees represent fees paid by customers for account management and electronic processing of card transactions. Merchant discount fees are recognized at the time the customer's transactions are processed or other services are performed. The Company also maintains the TransFund electronic funds transfer network for the benefit of its members, which includes the Bank. Electronic funds transfer fees are recognized as electronic transactions processed on behalf of its members.

Fiduciary and asset management revenue includes fees from asset management, custody, recordkeeping, investment advisory and administration services. Revenue is recognized on an accrual basis at the time the services are performed and may be based on either the fair value of the account or the service provided.

Deposit service charges and fees include commercial account service charges, overdraft fees, check card fee revenue and automated service charge and other deposit service fees. Fees are recognized at least quarterly in accordance with published deposit account agreements and disclosure statements for retail accounts or contractual agreements for commercial accounts. Item charges for overdraft or non-sufficient funds items are recognized as items are presented for payment. Account balance charges and activity fees are accrued monthly and collected in arrears. Commercial account activity fees may be offset by an earnings credit based on account balances. Check card fees represent interchange fees paid by a merchant bank for transactions processed from cards issued by the Company. Check card fees are recognized when transactions are processed.

Mortgage banking revenue includes revenues recognized in conjunction with the origination, marketing and servicing of conventional and government-sponsored residential mortgage loans. Mortgage production revenue includes net realized gains (losses) on sales of residential mortgage loans in the secondary market and the net change in unrealized gains (losses) on residential mortgage loans held for sale. Mortgage production revenue also includes changes in the fair value of derivative contracts not designated as hedging instruments related to residential mortgage loan commitments and forward sales contracts. Mortgage servicing revenue includes servicing fee income and late charges on loans serviced for others.

Fees and commissions revenue by reportable segment and primary service line is as follows for the three months ended June 30, 2019.

	Commercial	Consumer	Wealth Management	Funds Management & Other ³	Consolidated	Out of Scope ¹	In Scope ²
Trading revenue	\$ —	\$ —	\$ 21,879	\$ —	\$ 21,879	\$ 21,879	\$ —
Customer hedging revenue	2,385	—	1,906	1,054	5,345	5,345	—
Retail brokerage revenue	—	—	3,914	(13)	3,901	—	3,901
Insurance brokerage revenue	—	—	3,309	513	3,822	—	3,822
Investment banking revenue	2,548	—	3,032	(1)	5,579	2,198	3,381
Brokerage and trading revenue	4,933	—	34,040	1,553	40,526	29,422	11,104
TransFund EFT network revenue	18,504	997	(20)	—	19,481	—	19,481
Merchant services revenue	2,223	15	—	(1)	2,237	—	2,237
Corporate card revenue	190	—	5	2	197	—	197
Transaction card revenue	20,917	1,012	(15)	1	21,915	—	21,915
Personal trust revenue	—	—	21,215	1	21,216	—	21,216
Corporate trust revenue	—	—	6,331	(1)	6,330	—	6,330
Institutional trust & retirement plan services revenue	—	—	11,072	—	11,072	—	11,072
Investment management services and other revenue	—	—	6,449	(42)	6,407	—	6,407
Fiduciary and asset management revenue	—	—	45,067	(42)	45,025	—	45,025
Commercial account service charge revenue	10,625	429	538	—	11,592	—	11,592
Overdraft fee revenue	93	8,973	36	2	9,104	—	9,104
Check card revenue	—	5,586	—	1	5,587	—	5,587
Automated service charge and other deposit fee revenue	214	1,578	(2)	1	1,791	—	1,791
Deposit service charges and fees	10,932	16,566	572	4	28,074	—	28,074
Mortgage production revenue	—	11,871	—	(2)	11,869	11,869	—
Mortgage servicing revenue	—	16,741	—	(479)	16,262	16,262	—
Mortgage banking revenue	—	28,612	—	(481)	28,131	28,131	—
Other revenue	4,323	2,640	6,261	(787)	12,437	8,123	4,314
Total fees and commissions revenue	\$ 41,105	\$ 48,830	\$ 85,925	\$ 248	\$ 176,108	\$ 65,676	\$ 110,432

¹ Out of scope revenue generally relates to financial instruments or contractual rights and obligations within the scope of other applicable accounting guidance.

² In scope revenue represents revenue subject to FASB ASC Topic 606, *Revenue from Contracts with Customers*.

³ CoBiz operations are included in Funds Management and Other for the first quarter of 2019.

Fees and commissions revenue by reportable segment and primary service line is as follows for the six months ended June 30, 2019.

	Commercial	Consumer	Wealth Management	Funds Management & Other ³	Consolidated	Out of Scope ¹	In Scope ²
Trading revenue	\$ —	\$ —	\$ 34,799	\$ —	\$ 34,799	\$ 34,799	\$ —
Customer hedging revenue	3,960	—	7,634	428	12,022	12,022	—
Retail brokerage revenue	—	—	7,988	(65)	7,923	—	7,923
Insurance brokerage revenue	—	—	3,688	4,242	7,930	—	7,930
Investment banking revenue	3,937	—	5,533	(1)	9,469	3,427	6,042
Brokerage and trading revenue	7,897	—	59,642	4,604	72,143	50,248	21,895
TransFund EFT network revenue	36,158	1,955	(37)	1	38,077	—	38,077
Merchant services revenue	4,148	29	—	122	4,299	—	4,299
Corporate card revenue	270	—	5	2	277	—	277
Transaction card revenue	40,576	1,984	(32)	125	42,653	—	42,653
Personal trust revenue	—	—	40,789	1	40,790	—	40,790
Corporate trust revenue	—	—	12,532	(1)	12,531	—	12,531
Institutional trust & retirement plan services revenue	—	—	22,179	—	22,179	—	22,179
Investment management services and other revenue	—	—	11,250	1,633	12,883	—	12,883
Fiduciary and asset management revenue	—	—	86,750	1,633	88,383	—	88,383
Commercial account service charge revenue	20,687	816	1,065	1,807	24,375	—	24,375
Overdraft fee revenue	167	17,368	63	(234)	17,364	—	17,364
Check card revenue	—	10,578	—	165	10,743	—	10,743
Automated service charge and other deposit fee revenue	372	3,243	175	45	3,835	—	3,835
Deposit service charges and fees	21,226	32,005	1,303	1,783	56,317	—	56,317
Mortgage production revenue	—	19,739	—	(2)	19,737	19,737	—
Mortgage servicing revenue	—	33,186	—	(958)	32,228	32,228	—
Mortgage banking revenue	—	52,925	—	(960)	51,965	51,965	—
Other revenue	9,452	4,737	11,518	(508)	25,199	16,843	8,356
Total fees and commissions revenue	\$ 79,151	\$ 91,651	\$ 159,181	\$ 6,677	\$ 336,660	\$ 119,056	\$ 217,604

¹ Out of scope revenue generally relates to financial instruments or contractual rights and obligations within the scope of other applicable accounting guidance.

² In scope revenue represents revenue subject to FASB ASC Topic 606, *Revenue from Contracts with Customers*.

³ CoBiz operations are included in Funds Management and Other for the first quarter of 2019.

Fees and commissions revenue by reportable segment and primary service line is as follows for the three months ended June 30, 2018.

	Commercial	Consumer	Wealth Management	Funds Management & Other	Consolidated	Out of Scope ¹	In Scope ²
Trading revenue	\$ —	\$ —	\$ 6,338	\$ —	\$ 6,338	\$ 6,338	\$ —
Customer hedging revenue	2,892	—	7,611	(708)	9,795	9,795	—
Retail brokerage revenue	—	—	4,657	(75)	4,582	—	4,582
Insurance brokerage revenue	—	—	229	—	229	—	229
Investment banking revenue	2,903	—	2,641	—	5,544	2,300	3,244
Brokerage and trading revenue	5,795	—	21,476	(783)	26,488	18,433	8,055
TransFund EFT network revenue	18,048	1,009	(21)	2	19,038	—	19,038
Merchant services revenue	1,921	16	—	—	1,937	—	1,937
Corporate card revenue	—	—	—	—	—	—	—
Transaction card revenue	19,969	1,025	(21)	2	20,975	—	20,975
Personal trust revenue	—	—	20,558	—	20,558	—	20,558
Corporate trust revenue	—	—	4,935	—	4,935	—	4,935
Institutional trust & retirement plan services revenue	—	—	11,039	—	11,039	—	11,039
Investment management services and other revenue	—	—	5,217	(57)	5,160	—	5,160
Fiduciary and asset management revenue	—	—	41,749	(57)	41,692	—	41,692
Commercial account service charge revenue	10,912	362	610	—	11,884	—	11,884
Overdraft fee revenue	98	8,768	32	7	8,905	—	8,905
Check card revenue	—	5,343	—	—	5,343	—	5,343
Automated service charge and other deposit fee revenue	38	1,633	24	7	1,702	—	1,702
Deposit service charges and fees	11,048	16,106	666	14	27,834	—	27,834
Mortgage production revenue	—	9,915	—	—	9,915	9,915	—
Mortgage servicing revenue	—	16,902	—	(471)	16,431	16,431	—
Mortgage banking revenue	—	26,817	—	(471)	26,346	26,346	—
Other revenue	6,062	2,384	6,619	(1,142)	13,923	9,766	4,157
Total fees and commissions revenue	\$ 42,874	\$ 46,332	\$ 70,489	\$ (2,437)	\$ 157,258	\$ 54,545	\$ 102,713

¹ Out of scope revenue generally relates to financial instruments or contractual rights and obligations within the scope of other applicable accounting guidance.

² In scope revenue represents revenue subject to FASB ASC Topic 606, *Revenue from Contracts with Customers*.

Fees and commissions revenue by reportable segment and primary service line is as follows for the six months ended June 30, 2018.

	Commercial	Consumer	Wealth Management	Funds Management & Other	Consolidated	Out of Scope ¹	In Scope ²
Trading revenue	\$ —	\$ —	\$ 16,732	\$ —	\$ 16,732	\$ 16,732	\$ —
Customer hedging revenue	4,914	—	14,576	1,212	20,702	20,702	—
Retail brokerage revenue	—	—	9,353	(173)	9,180	—	9,180
Insurance brokerage revenue	—	—	385	—	385	—	385
Investment banking revenue	3,964	—	6,173	—	10,137	3,361	6,776
Brokerage and trading revenue	8,878	—	47,219	1,039	57,136	40,795	16,341
TransFund EFT network revenue	36,250	1,996	(40)	3	38,209	—	38,209
Merchant services revenue	3,725	31	—	—	3,756	—	3,756
Corporate card revenue	—	—	—	—	—	—	—
Transaction card revenue	39,975	2,027	(40)	3	41,965	—	41,965
Personal trust revenue	—	—	40,658	—	40,658	—	40,658
Corporate trust revenue	—	—	10,576	—	10,576	—	10,576
Institutional trust & retirement plan services revenue	—	—	22,489	—	22,489	—	22,489
Investment management services and other revenue	—	—	9,906	(105)	9,801	—	9,801
Fiduciary and asset management revenue	—	—	83,629	(105)	83,524	—	83,524
Commercial account service charge revenue	21,856	721	1,215	—	23,792	—	23,792
Overdraft fee revenue	188	17,252	66	10	17,516	—	17,516
Check card revenue	—	10,261	—	—	10,261	—	10,261
Automated service charge and other deposit fee revenue	75	3,292	50	8	3,425	—	3,425
Deposit service charges and fees	22,119	31,526	1,331	18	54,994	—	54,994
Mortgage production revenue	—	19,367	—	—	19,367	19,367	—
Mortgage servicing revenue	—	33,929	—	(925)	33,004	33,004	—
Mortgage banking revenue	—	53,296	—	(925)	52,371	52,371	—
Other revenue	11,919	4,447	13,157	(2,641)	26,882	18,751	8,131
Total fees and commissions revenue	\$ 82,891	\$ 91,296	\$ 145,296	\$ (2,611)	\$ 316,872	\$ 111,917	\$ 204,955

¹ Out of scope revenue generally relates to financial instruments or contractual rights and obligations within the scope of other applicable accounting guidance.

² In scope revenue represents revenue subject to FASB ASC Topic 606, *Revenue from Contracts with Customers*.

(12) Fair Value Measurements

Fair value is defined by applicable accounting guidance as the price to sell an asset or transfer a liability in an orderly transaction between market participants in the principal market for the given asset or liability at the measurement date based on market conditions at that date. An orderly transaction assumes exposure to the market for a customary period for marketing activities prior to the measurement date and not a forced liquidation or distressed sale. Certain assets and liabilities are recorded in the Company's financial statements at fair value. Some are recorded on a recurring basis and some on a non-recurring basis.

For some assets and liabilities, observable market transactions and market information might be available. For other assets and liabilities, observable market transactions and market information might not be available. A hierarchy for fair value has been established which categorizes into three levels the inputs to valuation techniques used to measure fair value. The three levels are as follows:

Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1) - Fair value is based on unadjusted quoted prices in active markets for identical assets or liabilities.

Significant Other Observable Inputs (Level 2) - Fair value is based on significant other observable inputs which are generally determined based on a single price for each financial instrument provided to us by an applicable third-party pricing service and is based on one or more of the following:

- Quoted prices for similar, but not identical, assets or liabilities in active markets;
- Quoted prices for identical or similar assets or liabilities in inactive markets;
- Inputs other than quoted prices that are observable, such as interest rate and yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates;
- Other inputs derived from or corroborated by observable market inputs.

Significant Unobservable Inputs (Level 3) - Fair value is based upon model-based valuation techniques for which at least one significant assumption is not observable in the market.

Transfers between levels are recognized as of the end of the reporting period. There were no transfers in or out of quoted prices in active markets for identical instruments to significant other observable inputs or significant unobservable inputs during the three and six months ended June 30, 2019 and 2018, respectively. Transfers between significant other observable inputs and significant unobservable inputs during the three and six months ended June 30, 2019 and 2018 are included in the summary of changes in recurring fair values measured using unobservable inputs.

The underlying methods used by the third-party pricing services are considered in determining the primary inputs used to determine fair values. Management has evaluated the methodologies employed by the third-party pricing services by comparing the price provided by the pricing service with other sources, including brokers' quotes, sales or purchases of similar instruments and discounted cash flows to establish a basis for reliance on the pricing service values. Significant differences between the pricing service provided value and other sources are discussed with the pricing service to understand the basis for their values. Based on all observable inputs, management may adjust prices obtained from third-party pricing services to more appropriately reflect the prices that would be received to sell assets or paid to transfer liabilities in orderly transactions in the current market. No significant adjustments were made to prices provided by third-party pricing services at June 30, 2019 or December 31, 2018.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The fair value of financial assets and liabilities measured on a recurring basis was as follows as of June 30, 2019 (in thousands):

	Total	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Trading securities:				
U.S. government agency debentures	\$ 83,148	\$ —	\$ 83,148	\$ —
U.S. government agency residential mortgage-backed securities	1,620,613	—	1,620,613	—
Municipal and other tax-exempt securities	49,718	—	49,718	—
Asset-backed securities	93,546	—	93,546	—
Other trading securities	53,370	—	53,370	—
Total trading securities	1,900,395	—	1,900,395	—
Available for sale securities:				
U.S. Treasury	1,889	1,889	—	—
Municipal and other tax-exempt securities	2,470	—	2,470	—
Residential agency mortgage-backed securities	7,354,741	—	7,354,741	—
Residential non-agency mortgage-backed securities	47,057	—	47,057	—
Commercial agency mortgage-backed securities	3,107,785	—	3,107,785	—
Other debt securities	472	—	—	472
Total available for sale securities	10,514,414	1,889	10,512,053	472
Fair value option securities – U.S. government agency residential mortgage-backed securities	1,138,820	—	1,138,820	—
Residential mortgage loans held for sale	193,570	—	177,497	16,073
Mortgage servicing rights ¹	208,308	—	—	208,308
Derivative contracts, net of cash collateral ²	415,221	29,352	385,869	—
Liabilities:				
Derivative contracts, net of cash collateral ²	381,454	—	381,454	—

¹ A reconciliation of the beginning and ending fair value of mortgage servicing rights and disclosures of significant assumptions used to determine fair value are presented in Note 6, Mortgage Banking Activities.

² See Note 3 for detail of fair value of derivative contracts by contract type. Derivative contracts in asset positions that were valued based on quoted prices in active markets for identical instruments (Level 1) are primarily exchange-traded energy and interest rate derivative contracts, net of cash margin. Derivative contracts in liability positions that were valued using quoted prices in active markets for identical instruments are exchange-traded interest rate and agricultural derivative contracts, fully offset by cash margin.

The fair value of financial assets and liabilities measured on a recurring basis was as follows as of December 31, 2018 (in thousands):

	Total	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Trading securities:				
U.S. government agency debentures	\$ 63,765	\$ —	\$ 63,765	\$ —
U.S. government agency residential mortgage-backed securities	1,791,584	—	1,791,584	—
Municipal and other tax-exempt securities	34,507	—	34,507	—
Asset-backed securities	42,656	—	42,656	—
Other trading securities	24,411	—	24,411	—
Total trading securities	1,956,923	—	1,956,923	—
Available for sale securities:				
U.S. Treasury	493	493	—	—
Municipal and other tax-exempt securities	2,864	—	2,864	—
Residential agency mortgage-backed securities	5,804,708	—	5,804,708	—
Residential non-agency mortgage-backed securities	59,736	—	59,736	—
Commercial agency mortgage-backed securities	2,953,889	—	2,953,889	—
Other debt securities	35,430	—	34,958	472
Total available for sale securities	8,857,120	493	8,856,155	472
Fair value option securities – U.S. government agency residential mortgage-backed securities	283,235	—	283,235	—
Residential mortgage loans held for sale	149,221	—	134,014	15,207
Mortgage servicing rights ¹	259,254	—	—	259,254
Derivative contracts, net of cash collateral ²	320,929	44,074	276,855	—
Liabilities:				
Derivative contracts, net of cash collateral ²	362,306	—	362,306	—

¹ A reconciliation of the beginning and ending fair value of mortgage servicing rights and disclosures of significant assumptions used to determine fair value are presented in Note 6, Mortgage Banking Activities.

² See Note 3 for detail of fair value of derivative contracts by contract type. Derivative contracts based on quoted prices in active markets for identical instruments (Level 1) are exchange-traded interest rate, energy and agricultural derivative contracts, net of cash margin. Derivative contracts in liability positions that were valued using quoted prices in active markets for identical instruments (Level 1) are exchange-traded interest rate contracts, fully offset by cash margin.

Following is a description of the Company's valuation methodologies used for assets and liabilities measured on a recurring basis:

Securities

The fair values of trading, available for sale and fair value option securities are based on quoted prices for identical instruments in active markets, when available. If quoted prices for identical instruments are not available, fair values are based on significant other observable inputs such as quoted prices of comparable instruments or interest rates and credit spreads, yield curves, volatilities, prepayment speeds and loss severities. The Company has elected to carry all residential mortgage-backed securities guaranteed by U.S. government agencies held as economic hedges against changes in the fair value of mortgage servicing rights at fair value with changes in the fair value recognized in earnings.

The fair value of certain available for sale municipal and other debt securities may be based on significant unobservable inputs. These significant unobservable inputs include limited observed trades, projected cash flows, current credit rating of the issuers and, when applicable, the insurers of the debt and observed trades of similar debt. Discount rates are primarily based on references to interest rate spreads on comparable securities of similar duration and credit rating as determined by the nationally-recognized rating agencies adjusted for a lack of trading volume. Significant unobservable inputs are developed by investment securities professionals involved in the active trading of similar securities. A summary of significant inputs used to value these securities follows. A management committee composed of senior members from the Company's Capital Markets, Risk Management and Finance departments assesses the appropriateness of these inputs quarterly.

Derivatives

All derivative instruments are carried on the balance sheet at fair value. Fair values for exchange-traded contracts are based on quoted prices. Fair values for over-the-counter interest rate, commodity and foreign exchange contracts are based on valuations provided either by third-party dealers in the contracts, quotes provided by independent pricing services, or a third-party provided pricing model that uses significant other observable market inputs.

Credit risk is considered in determining the fair value of derivative instruments. Management determines fair value adjustments based on various risk factors including but not limited to current fair value, probability of default and loss given default.

We also consider our own credit risk in determining the fair value of derivative contracts. Changes in our credit rating would affect the fair value of our derivative liabilities. In the event of a credit downgrade, the fair value of our derivative liabilities would increase.

Residential Mortgage Loans Held for Sale

Residential mortgage loans held for sale are carried on the balance sheet at fair value. The Company has elected to carry all residential mortgage loans originated for sale at fair value. Changes in the fair value of these financial instruments are recognized in earnings. The fair values of residential mortgage loans held for sale are based upon quoted market prices of such loans sold in securitization transactions, including related unfunded loan commitments and forward sales contracts. The fair value of mortgage loans that were unable to be sold to U.S. government agencies were determined using quoted prices of loans that are sold in securitization transactions with a liquidity discount applied.

The following represents the changes for the three and six months ended June 30, 2019 related to assets measured at fair value on a recurring basis using significant unobservable inputs (in thousands):

	Available for Sale Securities		
	Municipal and other tax- exempt securities	Other debt securities	Residential mortgage loans held for sale
Balance, March 31, 2019	\$ —	\$ 472	\$ 15,776
Transfer to Level 3 from Level 2 ¹	—	—	907
Purchases	—	—	—
Proceeds from sales	—	—	(998)
Redemptions and distributions	—	—	—
Gain (loss) recognized in earnings:			
Mortgage banking revenue	—	—	388
Other comprehensive income (loss):			
Net change in unrealized gain (loss)	—	—	—
Balance, June 30, 2019	\$ —	\$ 472	\$ 16,073

¹ Recurring transfers to Level 3 from Level 2 consist of residential mortgage loans intended for sale to U.S. government agencies that fail to meet conforming standards.

	Available for Sale Securities		
	Municipal and other tax- exempt securities	Other debt securities	Residential mortgage loans held for sale
Balance, December 31, 2018	\$ —	\$ 472	\$ 15,207
Transfer to Level 3 from Level 2 ¹	—	—	1,889
Purchases	—	—	—
Proceeds from sales	—	—	(1,379)
Redemptions and distributions	—	—	—
Gain (loss) recognized in earnings:			
Mortgage banking revenue	—	—	356
Other comprehensive income (loss):			
Net change in unrealized gain (loss)	—	—	—
Balance, June 30, 2019	\$ —	\$ 472	\$ 16,073

¹ Recurring transfers to Level 3 from Level 2 consist of residential mortgage loans intended for sale to U.S. government agencies that fail to meet conforming standards.

The following represents the changes for the three and six months ended June 30, 2018 related to assets measured at fair value on a recurring basis using significant unobservable inputs (in thousands):

	Available for Sale Securities		
	Municipal and other tax-exempt securities	Other debt securities	Residential mortgage loans held for sale
Balance, March 31, 2018	\$ 1,891	\$ 472	\$ 13,871
Transfer to Level 3 from Level 2 ¹	—	—	687
Purchases	—	—	—
Proceeds from sales	—	—	(488)
Redemptions and distributions	—	—	—
Gain (loss) recognized in earnings:			
Mortgage banking revenue	—	—	173
Other comprehensive income (loss):			
Net change in unrealized gain (loss)	139	(1)	—
Balance, June 30, 2018	\$ 2,030	\$ 471	\$ 14,243

¹ Recurring transfers to Level 3 from Level 2 consist of residential mortgage loans intended for sale to U.S. government agencies that fail to meet conforming standards.

	Available for Sale Securities		
	Municipal and other tax-exempt securities	Other debt securities	Residential mortgage loans held for sale
Balance, December 31, 2017	\$ 4,802	\$ 472	\$ 12,299
Transfer to Level 3 from Level 2 ¹	—	—	2,843
Purchases	—	—	—
Proceeds from sales	—	—	(812)
Redemptions and distributions	(3,045)	—	—
Gain (loss) recognized in earnings:			
Mortgage banking revenue	—	—	(87)
Other comprehensive income (loss):			
Net change in unrealized gain (loss)	273	(1)	—
Balance, June 30, 2018	\$ 2,030	\$ 471	\$ 14,243

¹ Recurring transfers to Level 3 from Level 2 consist of residential mortgage loans intended for sale to U.S. government agencies that fail to meet conforming standards.

A summary of quantitative information about assets measured at fair value on a recurring basis using Significant Unobservable Inputs (Level 3) as of June 30, 2019 follows (in thousands):

	Fair Value	Valuation Technique(s)	Unobservable Input	Range (Weighted Average)
Available for sale securities – Other debt securities	472	Discounted cash flows	Interest rate spread	7.26%-7.26% (7.26%) ³
Residential mortgage loans held for sale	16,073	Quoted prices of loans sold in securitization transactions, with a liquidity discount applied	Liquidity discount applied to the market value of mortgage loans qualifying for sale to U.S. government agencies.	94.41%-94.41% (94.41%) ²

¹ Discounted cash flows developed using discount rates primarily based on reference to interest rate spreads for comparable securities of similar duration and credit rating as determined by the nationally-recognized rating agencies, adjusted for lack of trading volume.

² Represents fair value as a percentage of par value.

³ Interest rate yields used to value investment grade taxable securities based on comparable short-term taxable securities which are generally yielding approximately 3 percent.

A summary of quantitative information about assets measured at fair value on a recurring basis using Significant Unobservable Inputs (Level 3) as of December 31, 2018 follows (in thousands):

	Fair Value	Valuation Technique(s)	Unobservable Input	Range (Weighted Average)
Available for sale securities – Other debt securities	472	Discounted cash flows	Interest rate spread	7.88%-7.88% (7.88%) ³
Residential mortgage loans held for sale	15,207	Quoted prices of loans sold in securitization transactions, with a liquidity discount applied	Liquidity discount applied to the market value of mortgage loans qualifying for sale to U.S. government agencies.	94.44%-94.44% (94.44%) ²

¹ Discounted cash flows developed using discount rates primarily based on reference to interest rate spreads for comparable securities of similar duration and credit rating as determined by the nationally-recognized rating agencies, adjusted for lack of trading volume.

² Represents fair value as a percentage of par value.

³ Interest rate yields used to value investment grade taxable securities based on comparable short-term taxable securities which are generally yielding less than 3percent.

Fair Value of Assets and Liabilities Measured on a Non-Recurring Basis

Assets measured at fair value on a non-recurring basis include collateral for certain impaired loans and real property and other assets acquired to satisfy loans, which are based primarily on comparisons to completed sales of similar assets.

The following represents the carrying value of assets measured at fair value on a non-recurring basis (and related losses) during the period. The carrying value represents only those assets with a balance at June 30, 2019 for which the fair value was adjusted during the six months ended June 30, 2019:

	Carrying Value at June 30, 2019			Fair Value Adjustments for the			
				Three Months Ended June 30, 2019 Recognized in:		Six Months Ended June 30, 2019 Recognized in:	
	Quoted Prices in Active Markets for Identical Instruments	Significant Other Observable Inputs	Significant Unobservable Inputs	Gross charge- offs against allowance for loan losses	Net losses and expenses of repossessed assets, net	Gross charge- offs against allowance for loan losses	Net losses and expenses of repossessed assets, net
Impaired loans	\$ —	\$ —	\$ 29,187	\$ 11,335	\$ —	\$ 20,917	\$ —
Real estate and other repossessed assets	—	2,642	427	—	86	—	512

The following represents the carrying value of assets measured at fair value on a non-recurring basis (and related losses) during the period. The carrying value represents only those assets with a balance at June 30, 2018 for which the fair value was adjusted during the six months ended June 30, 2018:

	Carrying Value at June 30, 2018			Fair Value Adjustments for the			
				Three Months Ended June 30, 2018 Recognized in:		Six Months Ended June 30, 2018 Recognized in:	
	Quoted Prices in Active Markets for Identical Instruments	Significant Other Observable Inputs	Significant Unobservable Inputs	Gross charge- offs against allowance for loan losses	Net losses and expenses of repossessed assets, net	Gross charge- offs against allowance for loan losses	Net losses and expenses of repossessed assets, net
Impaired loans	\$ —	\$ 1,045	\$ 11,763	\$ 6,701	\$ —	\$ 7,198	\$ —
Real estate and other repossessed assets	—	1,996	6,838	—	118	—	5,242

The fair value of collateral-dependent impaired loans secured by real estate and real estate and other repossessed assets and the related fair value adjustments are generally based on unadjusted third-party appraisals. Our appraisal review policies require appraised values to be supported by observed inputs derived principally from or corroborated by observable market data. Appraisals that are not based on observable inputs or that require significant adjustments or fair value measurements that are not based on third-party appraisals are considered to be based on significant unobservable inputs. Non-recurring fair value measurements of collateral-dependent impaired loans and real estate and other repossessed assets based on significant unobservable inputs are generally due to estimates of current fair values between appraisal dates. Significant unobservable inputs include listing prices for the same or comparable assets, uncorroborated expert opinions or management's knowledge of the collateral or industry. Non-recurring fair value measurements of collateral dependent loans secured by mineral rights are generally determined by our internal staff of engineers on projected cash flows under current market conditions and are based on significant unobservable inputs. Projected cash flows are discounted according to risk characteristics of the underlying oil and gas properties. Assets 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 prices with existing conventional equipment, operating methods and costs. Significant unobservable inputs are developed by asset management and workout professionals and approved by senior Credit Administration executives.

A summary of quantitative information about Non-recurring Fair Value Measurements based on Significant Unobservable Inputs (Level 3) as of June 30, 2019 follows (in thousands):

	Fair Value	Valuation Technique(s)	Unobservable Input	Range (Weighted Average)
Impaired loans	\$ 29,187	Discounted cash flows	Management knowledge of industry and non-real estate collateral including but not limited to recoverable oil and gas reserves, forward-looking commodity prices, estimated operating costs	12% - 76% (47%) ¹
Real estate and other repossessed assets	427	Appraised value, as adjusted	Marketability adjustments off appraised value ²	75% - 89% (88%)

¹ Represents fair value as a percentage of the unpaid principal balance.

² Marketability adjustments include consideration of estimated costs to sell which is approximately 10% of the fair value.

A summary of quantitative information about Non-recurring Fair Value Measurements based on Significant Unobservable Inputs (Level 3) as of December 31, 2018 follows (in thousands):

	Fair Value	Valuation Technique(s)	Unobservable Input	Range (Weighted Average)
Impaired loans	\$ 17,401	Discounted cash flows	Management knowledge of industry and non-real estate collateral including but not limited to recoverable oil and gas reserves, forward-looking commodity prices, estimated operating costs	35% - 80% (50%) ¹
Real estate and other repossessed assets	6,366	Discounted cash flows	Recoverable oil and gas reserves, forward-looking commodity prices, estimated operating costs	N/A

¹ Represents fair value as a percentage of the unpaid principal balance.

Fair Value of Financial Instruments

The following table presents the carrying values and estimated fair values of all financial instruments, including those financial assets and liabilities that are not measured and reported at fair value on a recurring basis or non-recurring basis as of June 30, 2019(dollars in thousands):

	Carrying Value	Estimated Fair Value	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and due from banks	\$ 739,109	\$ 739,109	\$ 739,109	\$ —	\$ —
Interest-bearing cash and cash equivalents	596,382	596,382	596,382	—	—
Trading securities:					
U.S. government agency debentures	83,148	83,148	—	83,148	—
U.S. government agency residential mortgage-backed securities	1,620,613	1,620,613	—	1,620,613	—
Municipal and other tax-exempt securities	49,718	49,718	—	49,718	—
Asset-backed securities	93,546	93,546	—	93,546	—
Other trading securities	53,370	53,370	—	53,370	—
Total trading securities	1,900,395	1,900,395	—	1,900,395	—
Investment securities:					
Municipal and other tax-exempt securities	124,822	128,009	—	128,009	—
U.S. government agency residential mortgage-backed securities	11,599	12,099	—	12,099	—
Other debt securities	191,256	206,907	—	8,197	198,710
Total investment securities	327,677	347,015	—	148,305	198,710
Available for sale securities:					
U.S. Treasury	1,889	1,889	1,889	—	—
Municipal and other tax-exempt securities	2,470	2,470	—	2,470	—
Residential agency mortgage-backed securities	7,354,741	7,354,741	—	7,354,741	—
Residential non-agency mortgage-backed securities	47,057	47,057	—	47,057	—
Commercial agency mortgage-backed securities	3,107,785	3,107,785	—	3,107,785	—
Other debt securities	472	472	—	—	472
Total available for sale securities	10,514,414	10,514,414	1,889	10,512,053	472
Fair value option securities – U.S. government agency residential mortgage-backed securities	1,138,820	1,138,820	—	1,138,820	—
Residential mortgage loans held for sale	193,570	193,570	—	177,497	16,073
Loans:					
Commercial	14,336,908	14,282,197	—	—	14,282,197
Commercial real estate	4,710,033	4,703,587	—	—	4,703,587
Residential mortgage	2,170,822	2,190,665	—	—	2,190,665
Personal	1,037,889	1,028,526	—	—	1,028,526
Total loans	22,255,652	22,204,975	—	—	22,204,975
Allowance for loan losses	(202,534)	—	—	—	—
Loans, net of allowance	22,053,118	22,204,975	—	—	22,204,975
Mortgage servicing rights	208,308	208,308	—	—	208,308
Derivative instruments with positive fair value, net of cash collateral	415,221	415,221	29,352	385,869	—
Deposits with no stated maturity	23,077,183	23,077,183	—	—	23,077,183
Time deposits	2,227,938	2,220,527	—	—	2,220,527
Other borrowed funds	10,155,756	10,115,711	—	—	10,115,711
Subordinated debentures	275,892	274,697	—	274,697	—
Derivative instruments with negative fair value, net of cash collateral	381,454	381,454	—	381,454	—

The following table presents the carrying values and estimated fair values of all financial instruments, including those financial assets and liabilities that are not measured and reported at fair value on a recurring basis or non-recurring basis as of December 31, 2018 (dollars in thousands):

	Carrying Value	Estimated Fair Value	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and due from banks	\$ 741,749	\$ 741,749	\$ 741,749	\$ —	\$ —
Interest-bearing cash and cash equivalents	401,675	401,675	401,675	—	—
Trading securities:					
U.S. government agency debentures	63,765	63,765	—	63,765	—
U.S. government agency residential mortgage-backed securities	1,791,584	1,791,584	—	1,791,584	—
Municipal and other tax-exempt securities	34,507	34,507	—	34,507	—
Asset-backed securities	42,656	42,656	—	42,656	—
Other trading securities	24,411	24,411	—	24,411	—
Total trading securities	1,956,923	1,956,923	—	1,956,923	—
Investment securities:					
Municipal and other tax-exempt securities	137,296	138,562	—	138,562	—
U.S. government agency residential mortgage-backed securities	12,612	12,770	—	12,770	—
Other debt securities	205,279	215,966	—	7,905	208,061
Total investment securities	355,187	367,298	—	159,237	208,061
Available for sale securities:					
U.S. Treasury	493	493	493	—	—
Municipal and other tax-exempt securities	2,864	2,864	—	2,864	—
Residential agency mortgage-backed securities	5,804,708	5,804,708	—	5,804,708	—
Residential non-agency mortgage-backed securities	59,736	59,736	—	59,736	—
Commercial agency mortgage-backed securities	2,953,889	2,953,889	—	2,953,889	—
Other debt securities	35,430	35,430	—	34,958	472
Total available for sale securities	8,857,120	8,857,120	493	8,856,155	472
Fair value option securities – U.S. government agency residential mortgage-backed securities	283,235	283,235	—	283,235	—
Residential mortgage loans held for sale	149,221	149,221	—	134,014	15,207
Loans:					
Commercial	13,636,078	13,526,162	—	—	13,526,162
Commercial real estate	4,764,813	4,713,747	—	—	4,713,747
Residential mortgage	2,230,033	2,213,951	—	—	2,213,951
Personal	1,025,806	1,024,368	—	—	1,024,368
Total loans	21,656,730	21,478,228	—	—	21,478,228
Allowance for loan losses	(207,457)	—	—	—	—
Loans, net of allowance	21,449,273	21,478,228	—	—	21,478,228
Mortgage servicing rights	259,254	259,254	—	—	259,254
Derivative instruments with positive fair value, net of cash collateral	320,929	320,929	44,074	276,855	—
Deposits with no stated maturity	23,150,383	23,150,383	—	—	23,150,383
Time deposits	2,113,380	2,073,538	—	—	2,073,538
Other borrowed funds	8,161,211	7,071,953	—	—	7,071,953
Subordinated debentures	275,913	261,977	—	261,977	—
Derivative instruments with negative fair value, net of cash collateral	362,306	362,306	—	362,306	—

Because no market exists for certain of these financial instruments and management does not intend to sell these financial instruments, the fair values shown in the tables above may not represent values at which the respective financial instruments could be sold individually or in the aggregate at the given reporting date.

(13) Subsequent Events

The Company evaluated events from the date of the consolidated financial statements on June 30, 2019 through the issuance of those consolidated financial statements included in this Quarterly Report on Form 10-Q. No events were identified requiring recognition in and/or disclosure in the consolidated financial statements.

Six-Month Financial Summary – Unaudited
Consolidated Daily Average Balances, Average Yields and Rates

(In Thousands, Except Per Share Data)

	Six Months Ended					
	June 30, 2019			June 30, 2018		
	Average Balance	Revenue/ Expense	Yield/ Rate	Average Balance	Revenue/ Expense	Yield/ Rate
Assets						
Interest-bearing cash and cash equivalents	\$ 536,690	\$ 6,829	2.57%	\$ 1,865,385	\$ 15,722	1.70%
Trading securities	1,862,284	34,399	3.74%	1,209,369	20,893	3.53%
Investment securities	335,841	7,483	4.46%	420,032	8,105	3.86%
Available for sale securities	9,160,887	116,769	2.60%	8,199,837	93,471	2.26%
Fair value option securities	747,401	12,740	3.45%	556,337	8,746	3.05%
Restricted equity securities	404,673	12,861	6.36%	349,134	10,525	6.03%
Residential mortgage loans held for sale	168,702	3,417	4.05%	209,043	4,177	4.01%
Loans	21,885,894	578,406	5.33%	17,507,714	401,940	4.63%
Allowance for loan losses	(205,811)			(225,909)		
Loans, net of allowance	21,680,083	578,406	5.38%	17,281,805	401,940	4.69%
Total earning assets	34,896,561	772,904	4.48%	30,090,942	563,579	3.76%
Receivable on unsettled securities sales	1,331,669			807,470		
Cash and other assets	4,033,737			2,917,582		
Total assets	\$ 40,261,967			\$ 33,815,994		
Liabilities and equity						
Interest-bearing deposits:						
Transaction	\$ 12,223,515	\$ 60,244	0.99%	\$ 10,266,484	\$ 25,487	0.50%
Savings	550,204	333	0.12%	491,955	183	0.08%
Time	2,180,483	20,023	1.85%	2,144,928	13,512	1.27%
Total interest-bearing deposits	14,954,202	80,600	1.09%	12,903,367	39,182	0.61%
Funds purchased and repurchase agreements	2,050,087	21,060	2.07%	562,999	1,304	0.47%
Other borrowings	7,107,961	94,154	2.67%	6,412,463	56,752	1.78%
Subordinated debentures	276,245	7,546	5.51%	144,687	4,051	5.65%
Total interest-bearing liabilities	24,388,495	203,360	1.68%	20,023,516	101,289	1.02%
Non-interest bearing demand deposits	9,935,739			9,187,499		
Due on unsettled securities purchases	638,829			543,265		
Other liabilities	759,808			566,248		
Total equity	4,539,096			3,495,466		
Total liabilities and equity	\$ 40,261,967			\$ 33,815,994		
Tax-equivalent Net Interest Revenue		\$ 569,544	2.80%		\$ 462,290	2.74%
Tax-equivalent Net Interest Revenue to Earning Assets			3.30%			3.08%
Less tax-equivalent adjustment		6,010			3,992	
Net Interest Revenue		563,534			458,298	
Provision for credit losses		13,000			(5,000)	
Other operating revenue		329,335			312,388	
Other operating expense		564,294			490,906	
Income before taxes		315,575			284,780	
Federal and state income taxes		67,530			64,278	
Net income		248,045			220,502	
Net income (loss) attributable to non-controlling interests		(130)			568	
Net income attributable to BOK Financial Corp. shareholders		\$ 248,175			\$ 219,934	
Earnings Per Average Common Share Equivalent:						
Net income:						
Basic		\$ 3.47			\$ 3.36	

Diluted

\$ 3.46

\$ 3.36

Yield calculations are shown on a tax equivalent at the statutory federal and state rates for the periods presented. The yield calculations exclude security trades that have been recorded on trade date with no corresponding interest income and the unrealized gains and losses. The yield calculation also includes average loan balances for which the accrual of interest has been discontinued and are net of unearned income. Yield / rate calculations are generally based on the conventions that determine how interest income and expense is accrued.

Quarterly Financial Summary – Unaudited
Consolidated Daily Average Balances, Average Yields and Rates

(In Thousands, Except Per Share Data)

	Three Months Ended					
	June 30, 2019			March 31, 2019		
	Average Balance	Revenue/Expense	Yield/Rate	Average Balance	Revenue/Expense	Yield/Rate
Assets						
Interest-bearing cash and cash equivalents	\$ 535,491	\$ 3,432	2.57%	\$ 537,903	\$ 3,397	2.56%
Trading securities	1,757,335	15,609	3.59%	1,968,399	18,790	3.88%
Investment securities	328,482	3,621	4.41%	343,282	3,862	4.50%
Available for sale securities	9,435,668	59,888	2.63%	8,883,054	56,881	2.57%
Fair value option securities	898,772	7,503	3.34%	594,349	5,237	3.62%
Restricted equity securities	413,812	6,516	6.30%	395,432	6,345	6.42%
Residential mortgage loans held for sale	192,102	1,754	3.65%	145,040	1,663	4.58%
Loans	22,004,405	295,978	5.39%	21,766,065	282,428	5.26%
Allowance for loan losses	(205,532)			(206,092)		
Loans, net of allowance	21,798,873	295,978	5.45%	21,559,973	282,428	5.31%
Total earning assets	35,360,535	394,301	4.51%	34,427,432	378,603	4.46%
Receivable on unsettled securities sales	1,437,462			1,224,700		
Cash and other assets	4,046,780			4,020,549		
Total assets	\$ 40,844,777			\$ 39,672,681		
Liabilities and equity						
Interest-bearing deposits:						
Transaction	\$ 12,512,282	\$ 32,540	1.04%	\$ 11,931,539	\$ 27,704	0.94%
Savings	558,738	173	0.12%	541,575	160	0.12%
Time	2,207,391	10,470	1.90%	2,153,277	9,553	1.80%
Total interest-bearing deposits	15,278,411	43,183	1.13%	14,626,391	37,417	1.04%
Funds purchased and repurchase agreements	2,066,950	10,704	2.08%	2,033,036	10,356	2.07%
Other borrowings	7,175,617	47,700	2.67%	7,040,279	46,454	2.68%
Subordinated debentures	275,887	3,801	5.53%	275,882	3,745	5.51%
Total interest-bearing liabilities	24,796,865	105,388	1.70%	23,975,588	97,972	1.66%
Non-interest bearing demand deposits	9,883,965			9,988,088		
Due on unsettled securities purchases	821,688			453,937		
Other liabilities	744,216			775,574		
Total equity	4,598,043			4,479,494		
Total liabilities and equity	\$ 40,844,777			\$ 39,672,681		
Tax-equivalent Net Interest Revenue		\$ 288,913	2.81%		\$ 280,631	2.80%
Tax-equivalent Net Interest Revenue to Earning Assets			3.30%			3.30%
Less tax-equivalent adjustment		3,481			2,529	
Net Interest Revenue		285,432			278,102	
Provision for credit losses		5,000			8,000	
Other operating revenue		172,065			157,270	
Other operating expense		277,137			287,157	
Income before taxes		175,360			140,215	
Federal and state income taxes		37,580			29,950	
Net income		137,780			110,265	
Net income (loss) attributable to non-controlling interests		217			(347)	
Net income attributable to BOK Financial Corp. shareholders		\$ 137,563			\$ 110,612	
Earnings Per Average Common Share Equivalent:						
Basic		\$ 1.93			\$ 1.54	
Diluted		\$ 1.93			\$ 1.54	

Yield calculations are shown on a tax equivalent at the statutory federal and state rates for the periods presented. The yield calculations exclude security trades that have been recorded on trade date with no corresponding interest income and the unrealized gains and losses. The yield calculation also includes average loan balances for which the accrual of interest has been discontinued and are net of unearned income. Yield / rate calculations are generally based on the conventions that determine how interest income and expense is accrued.

Three Months Ended

December 31, 2018			September 30, 2018			June 30, 2018		
Average Balance	Revenue /Expense	Yield / Rate	Average Balance	Revenue / Expense	Yield / Rate	Average Balance	Revenue / Expense	Yield / Rate
\$ 563,132	\$ 3,170	2.23%	\$ 688,872	\$ 3,441	1.98%	\$ 1,673,387	\$ 7,740	1.86%
1,929,601	19,636	4.10%	1,762,794	17,419	3.98%	1,482,302	13,084	3.63%
364,737	3,887	4.26%	379,566	3,856	4.06%	399,088	3,941	3.95%
8,704,963	55,085	2.51%	8,129,214	48,916	2.37%	8,163,142	47,463	2.30%
277,575	2,578	3.56%	469,398	3,881	3.25%	487,192	3,927	3.16%
362,729	5,798	6.39%	328,842	5,232	6.36%	348,546	5,408	6.21%
179,553	1,795	4.00%	207,488	2,151	4.27%	218,600	2,333	4.28%
21,579,331	276,711	5.09%	18,203,785	220,245	4.80%	17,751,242	212,266	4.80%
(209,613)			(214,160)			(222,856)		
21,369,718	276,711	5.14%	17,989,625	220,245	4.86%	17,528,386	212,266	4.86%
33,752,008	368,660	4.33%	29,955,799	305,141	4.04%	30,301,191	296,162	3.91%
799,548			768,785			618,240		
3,834,187			2,971,233			2,986,604		
\$ 38,385,743			\$ 33,695,817			\$ 33,906,035		
\$ 11,773,651	\$ 23,343	0.79%	\$ 10,010,031	\$ 17,029	0.67%	\$ 10,189,354	\$ 13,993	0.55%
526,275	148	0.11%	503,821	108	0.09%	503,671	95	0.08%
2,146,786	8,309	1.54%	2,097,441	7,398	1.40%	2,138,880	6,875	1.29%
14,446,712	31,800	0.87%	12,611,293	24,535	0.77%	12,831,905	20,963	0.66%
1,205,568	4,135	1.36%	1,193,583	3,768	1.25%	593,250	782	0.53%
6,361,141	40,220	2.51%	5,765,440	32,036	2.20%	6,497,020	31,825	1.96%
276,378	3,752	5.38%	144,702	2,025	5.55%	144,692	2,047	5.67%
22,289,799	79,907	1.42%	19,715,018	62,364	1.25%	20,066,867	55,617	1.11%
10,648,683			9,325,002			9,223,327		
493,887			544,263			527,804		
610,286			496,634			575,865		
4,343,088			3,614,900			3,512,172		
\$ 38,385,743			\$ 33,695,817			\$ 33,906,035		
	\$ 288,753	2.91%		\$ 242,777	2.79%		\$ 240,545	2.80%
		3.40%			3.21%			3.17%
	3,067			1,894			1,983	
	285,686			240,883			238,562	
	9,000			4,000			—	
	136,455			167,941			156,399	
	284,643			252,617			246,476	
	128,498			152,207			148,485	
	20,121			34,662			33,330	
	108,377			117,545			115,155	
	(79)			289			783	
	\$ 108,456			\$ 117,256			\$ 114,372	
	\$ 1.50			\$ 1.79			\$ 1.75	
	\$ 1.50			\$ 1.79			\$ 1.75	

Quarterly Earnings Trends – Unaudited

(In thousands, except share and per share data)

	Three Months Ended				
	June 30, 2019	Mar. 31, 2019	Dec. 31, 2018	Sept. 30, 2018	June 30, 2018
Interest revenue	\$ 390,820	\$ 376,074	\$ 365,592	\$ 303,247	\$ 294,180
Interest expense	105,388	97,972	79,906	62,364	55,618
Net interest revenue	285,432	278,102	285,686	240,883	238,562
Provision for credit losses	5,000	8,000	9,000	4,000	—
Net interest revenue after provision for credit losses	280,432	270,102	276,686	236,883	238,562
Other operating revenue					
Brokerage and trading revenue	40,526	31,617	28,101	23,086	26,488
Transaction card revenue	21,915	20,738	20,664	21,396	20,975
Fiduciary and asset management revenue	45,025	43,358	43,665	57,514	41,692
Deposit service charges and fees	28,074	28,243	29,393	27,765	27,834
Mortgage banking revenue	28,131	23,834	21,880	23,536	26,346
Other revenue	12,437	12,762	16,404	12,900	13,923
Total fees and commissions	176,108	160,552	160,107	166,197	157,258
Other gains (losses), net	3,480	2,976	(8,305)	2,754	4,578
Gain (loss) on derivatives, net	11,150	4,667	11,167	(2,847)	(3,057)
Gain (loss) on fair value option securities, net	9,853	9,665	(282)	(4,385)	(3,341)
Change in fair value of mortgage servicing rights	(29,555)	(20,666)	(24,233)	5,972	1,723
Gain (loss) on available for sale securities, net	1,029	76	(1,999)	250	(762)
Total other operating revenue	172,065	157,270	136,455	167,941	156,399
Other operating expense					
Personnel	160,342	169,228	160,706	143,531	138,947
Business promotion	10,142	7,874	9,207	7,620	7,686
Charitable contributions to BOKF Foundation	1,000	—	2,846	—	—
Professional fees and services	13,002	16,139	20,712	13,209	14,978
Net occupancy and equipment	26,880	29,521	27,780	23,394	22,761
Insurance	6,454	4,839	4,248	6,232	6,245
Data processing and communications	29,735	31,449	27,575	31,665	27,739
Printing, postage and supplies	4,107	4,885	5,232	3,837	4,011
Net losses (gains) and operating expenses of repossessed assets	580	1,996	2,581	4,044	2,722
Amortization of intangible assets	5,138	5,191	5,331	1,603	1,386
Mortgage banking costs	11,545	9,906	11,518	11,741	12,890
Other expense	8,212	6,129	6,907	5,741	7,111
Total other operating expense	277,137	287,157	284,643	252,617	246,476
Net income before taxes	175,360	140,215	128,498	152,207	148,485
Federal and state income taxes	37,580	29,950	20,121	34,662	33,330
Net income	137,780	110,265	108,377	117,545	115,155
Net income (loss) attributable to non-controlling interests	217	(347)	(79)	289	783
Net income attributable to BOK Financial Corporation shareholders	\$ 137,563	\$ 110,612	\$ 108,456	\$ 117,256	\$ 114,372
Earnings per share:					
Basic	\$1.93	\$1.54	\$1.50	\$1.79	\$1.75
Diluted	\$1.93	\$1.54	\$1.50	\$1.79	\$1.75
Average shares used in computation:					
Basic	70,887,063	71,387,070	71,808,029	64,901,095	64,901,975
Diluted	70,902,033	71,404,388	71,833,334	64,934,351	64,937,226

PART II. Other Information

Item 1. Legal Proceedings

See discussion of legal proceedings at Note 7 to the Consolidated Financial Statements.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

The following table provides information with respect to purchases made by or on behalf of the Company or any “affiliated purchaser” (as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934), of the Company’s common stock during the three months ended June 30, 2019.

Period	Total Number of Shares Purchased ²	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs ¹	Maximum Number of Shares that May Yet Be Purchased Under the Plans
April 1 to April 30, 2019	—	\$ —	—	5,000,000
May 1 to May 31, 2019	250,000	\$ 80.50	250,000	4,750,000
June 1 to June 30, 2019	—	\$ —	—	4,750,000
Total	250,000		250,000	

¹ On April 30, 2019, the Company’s board of directors authorized the Company to repurchase up to five million shares of the Company’s common stock. As of June 30, 2019, the Company had repurchased 250,000 shares under this plan. Future repurchases of the Company’s common stock will vary based on market conditions, regulatory limitations and other factors.

² The Company may repurchase mature shares from employees to cover the exercise price and taxes in connection with employee equity compensation.

Item 6. Exhibits

- 31.1 [Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002](#)
- 31.2 [Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002](#)
- 32 [Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002](#)
- 101 Interactive data files pursuant to Rule 405 of Regulation S-T: (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Earnings, (iii) the Consolidated Statements of Changes in Equity, (iv) the Consolidated Statement of Cash Flows and (v) the Notes to Consolidated Financial Statements. The XBRL instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.

Items 1A, 3, 4 and 5 are not applicable and have been omitted.

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

BOK FINANCIAL CORPORATION

(Registrant)

Date: August 9, 2019

/s/ Steven E. Nell

Steven E. Nell

Executive Vice President and
Chief Financial Officer

/s/ John C. Morrow

John C. Morrow

Senior Vice President and
Chief Accounting Officer

- 104 -

[\(Back To Top\)](#)

Section 2: EX-31.1 (EXHIBIT 31.1)

Exhibit 31.1

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002 FOR THE CHIEF EXECUTIVE OFFICER

I, Steven G. Bradshaw, President and Chief Executive Officer of BOK Financial Corporation ("BOK Financial"), certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of BOK Financial;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated

subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

- b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
- a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 9, 2019

/s/ Steven G. Bradshaw

Steven G. Bradshaw

President

Chief Executive Officer

BOK Financial Corporation

[\(Back To Top\)](#)

Section 3: EX-31.2 (EXHIBIT 31.2)

Exhibit 31.2

**CERTIFICATION PURSUANT TO
SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002
FOR THE CHIEF FINANCIAL OFFICER**

I, Steven E. Nell, Chief Financial Officer of BOK Financial Corporation ("BOK Financial"), certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of BOK Financial;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 9, 2019

/s/ Steven E. Nell

Steven E. Nell
Executive Vice President
Chief Financial Officer
BOK Financial Corporation

[\(Back To Top\)](#)

Section 4: EX-32 (EXHIBIT 32)

Exhibit 32

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of BOK Financial Corporation ("BOK Financial") on Form 10-Q for the fiscal year ending June 30, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Steven G. Bradshaw and Steven E. Nell, Chief Executive Officer and Chief Financial Officer, respectively, of BOK Financial, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to our knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of BOK Financial as of, and for, the periods presented.

August 9, 2019

/s/ Steven G. Bradshaw

Steven G. Bradshaw

President

Chief Executive Officer

BOK Financial Corporation

/s/ Steven E. Nell

Steven E. Nell

Executive Vice President

Chief Financial Officer

BOK Financial Corporation

[\(Back To Top\)](#)