

BOK FINANCIAL CORP ET AL
Form 10-Q
October 31, 2017

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 September 30, 2017

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

For the transition period from _____ to _____

Commission File No. 0-19341

BOK FINANCIAL CORPORATION

(Exact name of registrant as specified in its charter)

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

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

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes 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: 65,456,786 shares of common stock (\$.00006 par value) as of September 30, 2017.

BOK Financial Corporation
Form 10-Q
Quarter Ended September 30, 2017

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

BOK Financial Corporation ("the Company") reported net income of \$85.6 million or \$1.31 per diluted share for the third quarter of 2017, compared to \$74.3 million or \$1.13 per diluted share for the third quarter of 2016 and \$88.1 million or \$1.35 per diluted share for the second quarter of 2017.

Highlights of the third quarter of 2017 included:

Net interest revenue totaled \$218.5 million, up from \$187.8 million in the third quarter of 2016 and \$205.2 million in the second quarter of 2017. The increase in net interest revenue over the prior year was driven by both improving yields and growth in average earning assets. Net interest margin was 3.01 percent for the third quarter of 2017.

Recoveries of foregone interest primarily related to nonaccruing energy loans added 6 basis points to the net interest margin for the third quarter. Net interest margin was 2.64 percent for the third quarter of 2016 and 2.89 percent for the second quarter of 2017. Average earning assets were \$29.6 billion for the third quarter of 2017 compared to \$29.1 billion for the third quarter of 2016.

Fees and commissions revenue totaled \$173.5 million, a \$7.8 million decrease compared to the third quarter of 2016, primarily due to a \$13.6 million decrease in mortgage banking revenue. This decrease was partially offset by growth in fiduciary and asset management revenue. Fees and commissions revenue decreased \$4.0 million compared to the second quarter of 2017, primarily due to mortgage banking revenue. Increased transaction card revenue and brokerage and trading revenue was partially offset by lower fiduciary and asset management revenue and other revenue.

Other operating expense totaled \$265.9 million, up \$7.8 million over the third quarter of 2016. Personnel expense increased \$8.7 million, primarily due to \$5.9 million of equity compensation charges caused by changes in the probability that certain performance-based equity awards will vest and growth in BOKF's stock price. Other operating expense increased \$15.0 million over the previous quarter. Personnel expense was up \$4.2 million. Non-personnel expense increased \$10.9 million. Deposit insurance expense for the second quarter of 2017 included \$5.1 million in credits related to the revision of certain inputs to the assessment calculation filed in previous periods. Net losses and operating expenses of repossessed assets was up \$3.8 million over the prior quarter primarily due to a \$4.7 million write-down of one set of repossessed oil and gas properties.

No provision for credit losses was recorded in the third quarter of 2017 or the second quarter of 2017. A \$10.0 million provision for credit losses was recorded in the third quarter of 2016. Gross charge-offs were \$5.8 million in the third quarter of 2017, \$8.1 million in the third quarter of 2016 and \$2.9 million in the second quarter of 2017. Recoveries were \$2.4 million in the third quarter of 2017, compared to \$2.0 million in the third quarter of 2016 and \$1.2 million in the second quarter of 2017.

The combined allowance for credit losses totaled \$253 million or 1.47 percent of outstanding loans at

September 30, 2017, compared to \$256 million or 1.49 percent of outstanding loans at June 30, 2017.

Nonperforming assets that are not guaranteed by U.S. government agencies totaled \$249 million or 1.46 percent of outstanding loans and repossessed assets at September 30, 2017 and \$276 million or 1.62 percent of outstanding loans and repossessed assets at June 30, 2017. The decrease in nonperforming assets was primarily due to nonaccruing energy loans.

Average loans were largely unchanged compared to the previous quarter. Period-end outstanding loan balances were \$17.2 billion at September 30, 2017, an increase of \$23 million over June 30, 2017.

Average deposits were largely unchanged compared to the previous quarter. Growth in demand deposit balances was offset by decreased time deposit balances. Period-end deposits were \$21.8 billion at September 30, 2017, a \$468 million decrease compared to June 30, 2017.

The Company's common equity Tier 1 ratio was 11.90% at September 30, 2017. In addition, the Company's Tier 1 capital ratio was 11.90%, total capital ratio was 13.47% and leverage ratio was 9.30% at September 30, 2017. The Company's common equity Tier 1 ratio was 11.76% at June 30, 2017. In addition, the Company's Tier 1 capital ratio was 11.76%, total capital ratio was 13.36% and leverage ratio was 9.27% at June 30, 2017.

The Company paid a regular quarterly cash dividend of \$29 million or \$0.44 per common share during the third quarter of 2017. On October 31, 2017, the board of directors approved an increase in the regular quarterly cash dividend to \$0.45 per common share payable on or about November 27, 2017 to shareholders of record as of November 13, 2017.

Results of Operations

Net Interest Revenue and Net Interest Margin

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

Net interest revenue totaled \$218.5 million for the third quarter of 2017, up from \$187.8 million in the third quarter of 2016 and \$205.2 million in the second quarter of 2017. Net interest margin was 3.01 percent for the third quarter of 2017, 2.64 percent for the third quarter of 2016 and 2.89 percent for the second quarter of 2017. Approximately \$4.7 million of foregone interest recoveries primarily related to nonaccruing energy loans added 6 basis points to the net interest margin for the third quarter of 2017. Interest recoveries from nonaccruing loans were not significant for the third quarter of 2016 and second quarter of 2017. This impact is excluded from the discussion following.

Tax-equivalent net interest revenue increased \$30.5 million over the third quarter of 2016. Table 1 shows the effect on net interest revenue from changes in average balances and interest rates for various types of earning assets and interest-bearing liabilities. Changes in interest rates and yields increased net interest revenue by \$19.1 million. The benefit of an increase in short-term interest rates on the floating-rate earning assets was partially offset by higher borrowing costs. Tax-equivalent net interest revenue increased \$11.3 million. Growth in the average balances of loans, fair value option securities and trading securities was partially offset by decreases in available for sale securities and residential mortgage loans held for sale.

Excluding the impact of net interest recoveries in the third quarter of 2017, the tax-equivalent yield on earning assets was 3.44 percent, up 51 basis points over the third quarter of 2016, primarily due to increases in short-term interest rates resulting from three 25 basis point increases in the federal funds rate by the Federal Reserve. Loan yields increased 57 basis points to 4.20 percent. The yield on interest-bearing cash and cash equivalents increased 78 basis points. The available for sale securities portfolio yield was up 16 basis points to 2.17 percent. The yield on the fair value option securities portfolio increased 127 basis points primarily related to a change in the mix of securities and an increase in average rates. Funding costs were up 31 basis points over the third quarter of 2016. Growth in the cost of interest-bearing deposits was limited to 13 basis points by a lack of market pricing pressure. The cost of other borrowed funds increased 70 basis points. The cost of the subordinated debt was up 184 basis points as higher fixed rate debt issued in the second quarter of 2016 replaced lower variable rate debt paid off in third quarter of 2016. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities was 26 basis points for the third quarter of 2017, up 11 basis points over the third quarter of 2016. Average non-interest bearing deposits comprised 28% of total liabilities and equity for the third quarter of 2017, up from 26% for the third quarter of 2016.

Average earning assets for the third quarter of 2017 increased \$559 million or 2 percent over the third quarter of 2016, including \$482 million related to the Mobank acquisition in the fourth quarter of 2016. Average loans, net of allowance for loan losses, increased \$806 million due primarily to growth in commercial and personal loans, partially offset by lower commercial real estate loan balances. Loan growth included \$482 million related to the Mobank acquisition. Fair value option securities held as an economic hedge of our mortgage servicing rights increased \$418 million. The average balance of trading securities increased \$125 million primarily due to expansion of U.S. agency

residential mortgage-backed securities trading activities. Available for sale securities decreased \$434 million. The average balance of residential mortgage loans held for sale decreased \$190 million. Interest-bearing cash and cash equivalents decreased \$82 million and investment securities decreased \$77 million.

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Average deposits increased \$1.4 billion over the third quarter of 2016, including \$514 million from the Mobank acquisition. Demand deposit balances grew by \$893 million, including \$248 million from Mobank. Interest-bearing transaction account balances increased \$438 million, including \$233 million from Mobank. Savings account balances also grew over the prior year and time deposit balances were largely unchanged. Average borrowed funds decreased \$360 million compared to the third quarter of 2016, primarily due to decreased borrowings from the Federal Home Loan Banks and lower average repurchase agreement balances. The average balance of subordinated debentures decreased \$111 million.

Excluding the impact of net interest recoveries in the third quarter of 2017, net interest margin increased 6 basis points over the second quarter of 2017. The yield on average earning assets increased 14 basis points. The loan portfolio yield increased by 17 basis points primarily due to increases in the 30 day and 90 day LIBOR. The yield on the available for sale securities portfolio increased 6 basis points. The yield on interest-bearing cash and cash equivalents increased 25 basis points. Funding costs were 0.75 percent, up 12 basis points over the prior quarter. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities increased 4 basis points over the prior quarter.

Average earning assets increased \$395 million compared to the second quarter of 2017. Fair value option securities held as an economic hedge of our mortgage servicing rights increased \$208 million. Average loan balances grew by \$127 million. Available for sale securities increased \$44 million, trading securities increased \$36 million and restricted equity securities were up \$33 million over the prior quarter. These increases were partially offset by a \$42 million decrease in average interest-bearing cash and cash equivalents balances.

Average deposits increased \$27 million over the previous quarter. Demand deposit balances increased \$51 million, partially offset by a \$28 million decrease in time deposit balances. Interest-bearing transaction account balances were largely unchanged compared to the prior quarter. The average balance of borrowed funds increased \$511 million over the second quarter of 2017 primarily due to increased borrowings from the Federal Home Loan Banks, partially offset by lower average repurchase agreement balances.

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

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 | | | Nine Months Ended | | |
|--|---------------------------|----------------------------|------------|---------------------------|----------------------------|------------|
| | September 30, 2017 / 2016 | | | September 30, 2017 / 2016 | | |
| | 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 | \$3,724 | \$(204) | \$ 3,928 | \$7,891 | \$(172) | \$ 8,063 |
| Trading securities | 965 | 3,813 | (2,848) | 8,349 | 12,645 | (4,296) |
| Investment securities: | | | | | | |
| Taxable securities | (58) | (40) | (18) | (358) | (246) | (112) |
| Tax-exempt securities | (201) | (452) | 251 | (413) | (1,058) | 645 |
| Total investment securities | (259) | (492) | 233 | (771) | (1,304) | 533 |
| Available for sale securities: | | | | | | |
| Taxable securities | 2,066 | (1,536) | 3,602 | (364) | (4,819) | 4,455 |
| Tax-exempt securities | (301) | (275) | (26) | (586) | (771) | 185 |
| Total available for sale securities | 1,765 | (1,811) | 3,576 | (950) | (5,590) | 4,640 |
| Fair value option securities | 3,535 | 1,881 | 1,654 | 4,803 | 2,532 | 2,271 |
| Restricted equity securities | 316 | (168) | 484 | 850 | (294) | 1,144 |
| Residential mortgage loans held for sale | (1,520) | (1,597) | 77 | (3,506) | (3,641) | 135 |
| Loans | 37,429 | 8,320 | 29,109 | 86,798 | 24,936 | 61,862 |
| Total tax-equivalent interest revenue | 45,955 | 9,742 | 36,213 | 103,464 | 29,112 | 74,352 |
| Interest expense: | | | | | | |
| Transaction deposits | 4,645 | 211 | 4,434 | 9,719 | 816 | 8,903 |
| Savings deposits | (10) | 5 | (15) | (23) | 36 | (59) |
| Time deposits | 83 | (43) | 126 | (1,541) | (659) | (882) |
| Funds purchased | 83 | (26) | 109 | 134 | (92) | 226 |
| Repurchase agreements | 87 | (37) | 124 | 26 | (62) | 88 |
| Other borrowings | 11,000 | (384) | 11,384 | 21,439 | (1,190) | 22,629 |
| Subordinated debentures | (398) | (1,331) | 933 | 2,042 | (2,823) | 4,865 |
| Total interest expense | 15,490 | (1,605) | 17,095 | 31,796 | (3,974) | 35,770 |
| Tax-equivalent net interest revenue | 30,465 | 11,347 | 19,118 | 71,668 | 33,086 | 38,582 |
| Change in tax-equivalent adjustment | (141) | | | (140) | | |
| Net interest revenue | \$30,606 | | | \$71,808 | | |

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 \$175.7 million for the third quarter of 2017, an \$11.6 million decrease compared to the third quarter of 2016 and a \$6.5 million decrease compared to the second quarter of 2017. Fees and commissions revenue decreased \$7.8 million compared to the third quarter of 2016 and decreased \$4.0 million compared to the prior quarter. The change in the fair value of mortgage servicing rights, net of economic hedges, increased other operating revenue by \$1.0 million in the third quarter of 2017, increased other operating revenue by \$1.2 million in the third quarter of 2016 and decreased other operating revenue \$1.7 million in the second quarter of 2017.

Table 2 – Other Operating Revenue
(In thousands)

| | Three Months Ended September 30, | | Increase (Decrease) | % Increase (Decrease) | Three Months Ended June 30, 2017 | Increase (Decrease) | % Increase (Decrease) |
|---|-------------------------------------|-----------|------------------------|-----------------------------|--|------------------------|-----------------------------|
| | 2017 | 2016 | | | | | |
| Brokerage and trading revenue | \$33,169 | \$38,006 | \$(4,837) | (13)% | \$31,764 | \$1,405 | 4% |
| Transaction card revenue | 37,826 | 33,933 | 3,893 | 11% | 35,296 | 2,530 | 7% |
| Fiduciary and asset management revenue | 40,687 | 34,073 | 6,614 | 19% | 41,808 | (1,121) | (3)% |
| Deposit service charges and fees | 23,209 | 23,668 | (459) | (2)% | 23,354 | (145) | (1)% |
| Mortgage banking revenue | 24,890 | 38,516 | (13,626) | (35)% | 30,276 | (5,386) | (18)% |
| Other revenue | 13,670 | 13,080 | 590 | 5% | 14,984 | (1,314) | (9)% |
| Total fees and commissions revenue | 173,451 | 181,276 | (7,825) | (4)% | 177,482 | (4,031) | (2)% |
| Other gains (losses), net | (1,283) | 2,442 | (3,725) | N/A | 6,108 | (7,391) | N/A |
| Gain on derivatives, net | 1,033 | 2,226 | (1,193) | N/A | 3,241 | (2,208) | N/A |
| Gain (loss) on fair value option securities, net | 661 | (3,355) | 4,016 | N/A | 1,984 | (1,323) | N/A |
| Change in fair value of mortgage servicing rights | (639) | 2,327 | (2,966) | N/A | (6,943) | 6,304 | N/A |
| Gain on available for sale securities, net | 2,487 | 2,394 | 93 | N/A | 380 | 2,107 | N/A |
| Total other operating revenue | \$175,710 | \$187,310 | \$(11,600) | (6)% | \$182,252 | \$(6,542) | (4)% |

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 44 percent of total revenue for the third quarter of 2017, 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 that cause net interest revenue compression such as falling interest rates may also drive growth in our mortgage banking revenue. We expect growth in other operating revenue to come through offering new products and services and by further development of our presence in other markets. However, current and future economic conditions, regulatory constraints, increased competition and saturation in our existing markets could affect the rate of future increases.

Brokerage and trading revenue, which includes revenues from trading, customer hedging, retail brokerage and investment banking, decreased \$4.8 million or 13 percent compared to the third quarter of 2016.

Trading revenue includes net realized and unrealized gains primarily related to sales of U.S. government securities, residential mortgage-backed securities guaranteed by U.S. government agencies and municipal securities to institutional customers and related derivative instruments. Trading revenue was \$11.9 million for the third quarter of 2017, a \$98 thousand or 1 percent decrease compared to the third quarter of 2016.

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Customer hedging revenue is based primarily on realized and unrealized changes in the fair value of derivative contracts held for customer risk management programs. As more fully discussed under Customer Derivative Programs in Note 3 of the Consolidated Financial Statements, we offer commodity, interest rate, foreign exchange and equity derivatives to our customers. Customer hedging revenue totaled \$10.5 million for the third quarter of 2017, a \$3.2 million or 23 percent decrease compared to the third quarter of 2016 primarily attributed to decreased activity related to our mortgage banking customers.

Revenue earned from retail brokerage transactions decreased \$1.7 million or 25 percent compared to the third quarter of 2016 to \$5.2 million. Retail brokerage revenue includes fees and commissions earned on sales of fixed income securities, annuities, mutual funds and other financial instruments to retail customers. Revenue is primarily based on the volume of customer transactions and applicable commission rate for each product type. The implementation of the new Department of Labor ("DOL") fiduciary rule in the second quarter of 2017 has negatively impacted retail brokerage revenue. New regulation issued by the DOL amended the definition of investment advice under the Employee Retirement Income Security Act ("ERISA"). The new rule is designed to provide better protection to plans, participants, beneficiaries and individual retirement account ("IRA") owners against conflicts of interest, imprudence and disloyalty.

Investment banking revenue, which includes fees earned upon completion of underwriting and financial advisory services and loan syndication fees, totaled \$5.5 million for the third quarter of 2017, a \$214 thousand or 4 percent increase over the third quarter of 2016. Investment banking revenue is primarily related to the timing and volume of completed transactions.

Brokerage and trading revenue increased \$1.4 million over the second quarter of 2017, primarily due to increases of \$1.8 million in trading revenue and \$1.5 million in investment banking revenue, partially offset by a decrease of \$1.1 million in customer hedging revenue.

Transaction card revenue depends largely on the volume and amount of transactions processed, the number of TransFund automated teller machine ("ATM") locations and the number of merchants served. Transaction card revenue for the third quarter of 2017 increased \$3.9 million or 11.5 percent, including a \$2.1 million early termination penalty, over the third quarter of 2016. Excluding the penalty, TransFund revenue was up \$1.0 million or 5.3 percent. TransFund electronic funds transfer ("EFT") network revenue totaled \$20.8 million, up \$3.1 million or 17.3 percent over the prior year. Merchant services fees totaled \$12.0 million, a \$712 thousand or 6 percent increase. Revenue from interchange fees paid by merchants for transactions processed from debit cards issued by the Company totaled \$5.0 million, an increase of \$114 thousand or 2 percent.

Transaction card revenue increased \$2.5 million over the prior quarter, primarily due to a customer early termination fee in the third quarter of 2017.

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

Fiduciary and asset management revenue grew by \$6.6 million or 19 percent over the third quarter of 2016, primarily due to growth in assets under management, improved pricing discipline and decreased fee waivers.

Fiduciary and asset management revenue decreased \$1.1 million compared to the second quarter of 2017. The annual assessment of tax preparation fees added \$1.0 million in the second quarter of 2017.

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 September 30, | | | | | |
|---|-------------------------------------|----------------------|---------------------|--------------|----------------------|---------------------|
| | 2017 | | | 2016 | | |
| | Balance | Revenue ¹ | Margin ² | Balance | Revenue ¹ | Margin ² |
| Managed fiduciary assets: | | | | | | |
| Personal | \$7,611,265 | \$ 21,299 | 1.12 % | \$7,502,577 | \$ 19,521 | 1.04 % |
| Institutional | 12,747,679 | 5,585 | 0.18 % | 11,732,295 | 4,366 | 0.15 % |
| Total managed fiduciary assets | 20,358,944 | 26,884 | 0.53 % | 19,234,872 | 23,887 | 0.50 % |
| Non-managed assets: | | | | | | |
| Fiduciary | 24,818,241 | 13,214 | 0.21 % | 23,164,851 | 9,692 | 0.17 % |
| Non-fiduciary | 16,458,382 | 589 | 0.01 % | 17,289,854 | 494 | 0.01 % |
| Safekeeping and brokerage assets under administration | 16,015,342 | — | — % | 15,584,153 | — | — % |
| Total non-managed assets | 57,291,965 | 13,803 | 0.10 % | 56,038,858 | 10,186 | 0.07 % |
| Total assets under management or administration | \$77,650,909 | \$ 40,687 | 0.21 % | \$75,273,730 | \$ 34,073 | 0.18 % |

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 September 30, 2017 and 2016 follows:

Table 4 -- Changes in Assets Under Management or Administration

| | Three Months Ended September 30, | |
|--------------------------|-------------------------------------|--------------|
| | 2017 | 2016 |
| Beginning balance | \$77,811,762 | \$73,001,516 |
| Net inflows (outflows) | (1,781,037) | 870,819 |
| Net change in fair value | 1,620,184 | 1,401,395 |
| Ending balance | \$77,650,909 | \$75,273,730 |

Deposit service charges and fees were \$23.2 million for the third quarter of 2017, a decrease of \$459 thousand or 2 percent compared to the third quarter of 2016. Commercial account service charge revenue totaled \$11.8 million, up \$400 thousand or 4 percent. Overdraft fees were \$9.7 million, an \$895 thousand or 8.5 percent decrease compared to the third quarter of 2016. Service charges on deposit accounts with a standard monthly fee were \$1.7 million, an increase of \$33 thousand or 2 percent. Deposit service charges and fees decreased \$145 thousand compared to the prior quarter.

Mortgage banking revenue decreased \$13.6 million or 35 percent compared to the third quarter of 2016. Mortgage production revenue decreased \$13.6 million. Mortgage loan production volumes decreased \$725 million, including a \$539 million decrease related to the Company's strategic decision to exit the correspondent lending channel during the third quarter of 2016. Production volumes in the retail channel decreased compared to the prior year as average primary mortgage interest rates were up 43 basis points over the third quarter of 2016. Gain on sale margin decreased

41 basis points compared to the prior year. The margin decrease was primarily due to market pricing pressure. Mortgage servicing revenue was relatively consistent compared to the third quarter of 2016. The outstanding principal balance of mortgage loans serviced for others totaled \$22.1 billion, an increase of \$212 million or 1 percent.

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Mortgage banking revenue decreased \$5.4 million compared to the second quarter of 2017. Mortgage production revenue decreased \$5.5 million. Production volume decreased \$78 million primarily due to increased competition. Gain on sale margin decreased due to increased market pricing pressure. Revenue from mortgage loan servicing increased \$125 thousand over the prior quarter.

Table 5 – Mortgage Banking Revenue

(In thousands)

| | Three Months Ended September 30, | | Increase (Decrease) | % Increase (Decrease) | Three Months Ended June 30, 2017 | | Increase (Decrease) | % Increase (Decrease) |
|---|-------------------------------------|-------------|------------------------|-----------------------------|--|------------|------------------------|-----------------------------|
| | 2017 | 2016 | | | | | | |
| Mortgage production revenue | \$8,329 | \$21,958 | \$(13,629) | (62)% | \$13,840 | \$(5,511) | (40)% | |
| Mortgage loans funded for sale | \$832,796 | \$1,864,583 | | | \$902,978 | | | |
| Add: Current period end outstanding commitments | 334,337 | 630,804 | | | 362,088 | | | |
| Less: Prior period end outstanding commitments | 362,088 | 965,631 | | | 381,732 | | | |
| Total mortgage production volume | \$805,045 | \$1,529,756 | \$(724,711) | (47)% | \$883,334 | \$(78,289) | (9)% | |
| Mortgage loan refinances to mortgage loans funded for sale | 38 | % 51 | % (1,300) |) bps | 33 | % 500 |) bps | |
| Gains on sale margin | 1.03 | % 1.44 | % (41) |) bps | 1.57 | % (54) |) bps | |
| Primary mortgage interest rates: | | | | | | | | |
| Average | 3.88 | % 3.45 | % 43 |) bps | 3.98 | % (10) |) bps | |
| Period end | 3.83 | % 3.42 | % 41 |) bps | 3.88 | % (5) |) bps | |
| Mortgage servicing revenue | \$16,561 | \$16,558 | \$3 | — % | \$16,436 | \$125 | 1 % | |
| Average outstanding principal balance of mortgage loans serviced for others | 22,079,177 | 21,514,962 | 564,215 | 3 % | 22,055,127 | 24,050 | — % | |
| Average mortgage servicing revenue rates | 0.30 | % 0.31 | % (1) |) bp | 0.30 | % — | | |

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

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

Net gains on other assets, securities and derivatives

Other net losses totaled \$1.3 million in the third quarter of 2017, which includes a \$1.1 million write-down related to recent tornado damage. Other net gains totaled \$6.1 million in the second quarter of 2017 due to the sale of a merchant banking investment.

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

The net economic benefit of the changes in fair value of mortgage servicing rights and related economic hedges was \$3.6 million in the third quarter of 2017, including a \$639 thousand decrease in the fair value of mortgage servicing rights, offset by a \$1.7 million increase in the fair value of securities and derivative contracts held as an economic hedge and \$2.5 million of related net interest revenue.

The net economic benefit of changes in the fair value of mortgage servicing rights and related economic hedges was \$2.1 million for the third quarter of 2016. The fair value of mortgage servicing rights increased \$2.3 million. The fair value of securities and interest rate derivative contracts held as an economic hedge decreased \$1.1 million. Net interest earned on securities held as an economic hedge was \$861 thousand.

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The net economic benefit of changes in the fair value of mortgage servicing rights and related economic hedges was \$247 thousand for the second quarter of 2017. The fair value of mortgage servicing rights decreased by \$6.9 million. The fair value of securities and interest rate derivative contracts held as an economic hedge increased by \$5.2 million.

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

| | Three Months Ended | | |
|---|----------------------|------------------|----------------------|
| | Sept. 30, 2017 | June 30, 2017 | Sept. 30, 2016 |
| Gain on mortgage hedge derivative contracts, net | \$1,025 | \$3,241 | \$2,268 |
| Gain (loss) on fair value option securities, net | 661 | 1,984 | (3,355) |
| Gain (loss) on economic hedge of mortgage servicing rights, net | 1,686 | 5,225 | (1,087) |
| Gain (loss) on change in fair value of mortgage servicing rights | (639) | (6,943) | 2,327 |
| Gain (loss) on changes in fair value of mortgage servicing rights, net of economic hedges included in other operating revenue | 1,047 | (1,718) | 1,240 |
| Net interest revenue on fair value option securities ¹ | 2,543 | 1,965 | 861 |
| Total economic benefit of changes in the fair value of mortgage servicing rights, net of economic hedges | \$3,590 | \$247 | \$2,101 |

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

Other Operating Expense

Other operating expense for the third quarter of 2017 totaled \$265.9 million, an increase of \$7.8 million or 3 percent over the third quarter of 2016. Personnel expense increased \$8.7 million or 6 percent. Non-personnel expense decreased \$852 thousand or 1 percent compared to the prior year.

Other operating expense increased \$15.0 million over the previous quarter. Personnel expense was up \$4.2 million and non-personnel expense increased \$10.9 million.

In addition to \$1.1 million of losses included in other gain (losses), net, operating expense for the third quarter of 2017 included \$1.3 million of additional expense related to tornado damage sustained on our Tulsa operations center and the impact of the hurricane in the Houston market.

Table 7 – Other Operating Expense
(In thousands)

| | Three Months Ended | | Increase (Decrease) | % Increase (Decrease) | | Three | | Increase (Decrease) | % Increase (Decrease) | | |
|---|--------------------|-----------|------------------------|-----------------------------|------|-----------------|-----------|------------------------|-----------------------------|----|----|
| | September 30, | 2016 | | | | Months Ended | June 30, | | | | |
| | 2017 | 2016 | | | | 2017 | | | | | |
| Regular compensation | \$83,583 | \$83,123 | \$ 460 | 1 | % | \$83,630 | \$ (47 |) | — | % | |
| Incentive compensation: | | | | | | | | | | | |
| Cash-based | 33,643 | 33,240 | 403 | 1 | % | 29,954 | 3,689 | | 12 | % | |
| Share-based | 8,407 | 1,839 | 6,568 | 357 | % | 7,380 | 1,027 | | 14 | % | |
| Deferred compensation | 975 | 1,059 | (84 |) | N/A | 1,000 | (25 |) | N/A | | |
| Total incentive compensation | 43,025 | 36,138 | 6,887 | 19 | % | 38,334 | 4,691 | | 12 | % | |
| Employee benefits | 21,302 | 19,951 | 1,351 | 7 | % | 21,780 | (478 |) | (2 |)% | |
| Total personnel expense | 147,910 | 139,212 | 8,698 | 6 | % | 143,744 | 4,166 | | 3 | % | |
| Business promotion | 7,105 | 6,839 | 266 | 4 | % | 7,738 | (633 |) | (8 |)% | |
| Professional fees and services | 11,887 | 14,038 | (2,151 |) | (15 |)% | 12,419 | (532 |) | (4 |)% |
| Net occupancy and equipment | 21,325 | 20,111 | 1,214 | 6 | % | 21,125 | 200 | | 1 | % | |
| Insurance | 6,005 | 9,390 | (3,385 |) | (36 |)% | 689 | 5,316 | 772 | % | |
| Data processing and communications | 37,327 | 33,331 | 3,996 | 12 | % | 36,330 | 997 | | 3 | % | |
| Printing, postage and supplies | 3,917 | 3,790 | 127 | 3 | % | 4,140 | (223 |) | (5 |)% | |
| Net losses (gains) and operating expenses of repossessed assets | 6,071 | (926 |) | 6,997 | (756 |)% | 2,267 | 3,804 | 168 | % | |
| Amortization of intangible assets | 1,744 | 1,521 | 223 | 15 | % | 1,803 | (59 |) | (3 |)% | |
| Mortgage banking costs | 13,450 | 15,963 | (2,513 |) | (16 |)% | 12,072 | 1,378 | 11 | % | |
| Other expense | 9,193 | 14,819 | (5,626 |) | (38 |)% | 8,558 | 635 | 7 | % | |
| Total other operating expense | \$265,934 | \$258,088 | \$ 7,846 | 3 | % | \$250,885 | \$ 15,049 | | 6 | % | |
| Average number of employees (full-time equivalent) | 4,887 | 4,928 | (41 |) | (1 |)% | 4,910 | (23 |) | — | % |

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

Personnel expense

Regular compensation, which consists of salaries and wages, overtime pay and temporary personnel costs, increased \$460 thousand or 1 percent over the third quarter of 2016. The average number of employees was relatively

unchanged compared to the prior year. Standard annual merit increases in regular compensation were effective for the majority of our staff on March 1.

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Incentive compensation increased \$6.9 million or 19 percent over the third quarter of 2016, primarily due to increased share-based compensation expense. Share-based compensation expense represents expense for equity awards based on grant-date fair value. Non-vested shares generally cliff vest in 3 years and are subject to a two year holding period after vesting. The number of shares that will ultimately vest is determined by BOKF's change in earnings per share relative to a defined group of peer banks. In addition, compensation costs related to certain shares is variable based on changes in the the fair value of BOK Financial common shares. Third quarter 2017 equity compensation expense included charges of \$4.0 million from changes in the vesting assumptions for performance-based awards and \$1.9 million from an increase in the fair value of BOK Financial common shares.

Cash-based incentive compensation plans are either intended to provide current rewards to employees who generate long-term business opportunities for the Company based on growth in loans, deposits, customer relationships and other measurable metrics or intended to compensate employees with commissions on completed transactions. Cash-based incentive compensation expense increased \$403 thousand or 1 percent over the third quarter of 2016.

Employee benefits expense increased \$1.4 million or 7 percent over the the third quarter of 2016, primarily due to an increase in employee medical costs.

Personnel expense increased \$4.2 million over the second quarter of 2017. Cash-based incentive compensation increased \$3.7 million due to continued improvement of performance metrics against internal targets. Regular compensation expense was largely unchanged compared to the prior quarter. A \$1.5 million seasonal decrease in payroll tax expense was partially offset by a \$740 thousand increase in employee healthcare costs.

Non-personnel operating expense

Non-personnel operating expense decreased \$852 thousand or 1% compared to the third quarter of 2016.

Deposit insurance expense decreased \$3.4 million due to improvement in risk factors including the benefit of decreased criticized and classified asset levels. Mortgage banking expense decreased \$2.5 million primarily due to lower prepayments as average mortgage interest rates trended upward. Professional fees and servicing expense decreased \$2.2 million.

Data processing and communications expense increased \$4.0 million. Occupancy and equipment expense increased \$1.2 million. Increases in these expense categories were primarily due to information technology infrastructure and cybersecurity project costs and increased data processing transaction activity.

Other expense decreased \$5.6 million compared to the third quarter of 2016, primarily due to a \$5.0 million legal settlement accrual concerning the manner in which the Company posted charges to certain consumer and small business deposit accounts in the third quarter of 2016.

Non-personnel expense increased \$10.9 million over the second quarter of 2017. Deposit insurance expense increased \$5.3 million, primarily due to \$5.1 million in credits received during the second quarter of 2017 related to the revision of certain inputs to the assessment calculation filed in previous periods. Net losses and operating expenses of repossessed assets increased \$3.8 million mainly due to a \$4.7 million write-down of a set of oil and gas properties. Mortgage banking expense increased \$1.4 million and data processing and communication expense increased \$1.0 million.

Income Taxes

The Company's income tax expense was \$42.4 million or 33.1 percent of net income before taxes for the third quarter of 2017 compared to \$32.0 million or 29.8 percent of net income before taxes for the third quarter of 2016 and \$47.7 million or 34.9 percent of net income before taxes for the second quarter of 2017.

The statute of limitations expired on uncertain income tax positions and the Company adjusted its current income tax liability amounts on filed tax returns for 2016 during the third quarter of 2017. These adjustments reduced income tax expense by \$3.1 million in the third quarter of 2017. Adjustments reduced income tax expense by \$4.1 million in the third quarter of 2016 related to filed tax returns for 2015. Excluding these adjustments, income tax expense would have been 35.5 percent of net income before taxes for the third quarter of 2017 and 33.7 percent of net income before taxes for the third quarter of 2016.

The Company's effective tax rate is affected by recurring items such as amortization related to its investments in affordable housing investments net of affordable housing tax credits and other tax benefits, bank-owned life insurance and tax-exempt income. The effective tax rate is also affected by items that may occur in any given period but are not consistent from period to period. Accordingly, the comparability of the effective tax rate from period to period may be impacted.

BOK Financial operates in numerous jurisdictions, which requires judgment regarding the allocation of income, expense and earnings under various laws and regulations of each of these taxing jurisdictions. Each jurisdiction may audit our tax returns and may take different positions with respect to these allocations. The reserve for uncertain tax positions was \$18 million at September 30, 2017, \$17 million at June 30, 2017 and \$14 million at September 30, 2016.

Lines of Business

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

In addition to our lines of business, we have a Funds Management unit. The primary purpose of this unit is to manage our overall liquidity needs and interest rate risk. Each line of business borrows funds from and provides funds to the Funds Management unit as needed to support their operations. Operating results for Funds Management and other include the effect of interest rate risk positions and risk management activities, securities gains and losses including impairment charges, the provision for credit losses in excess of net loans charged off, tax planning strategies and certain executive compensation costs that are not attributed to the lines of business.

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

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

method of transfer-pricing funds that supports assets of the operating lines of business tends to insulate them from interest rate risk.

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

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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 increased \$18.1 million or 25 percent over the third quarter of 2016. Net interest revenue grew by \$34.9 million over the prior year. Other operating revenue decreased \$6.9 million while operating expenses decreased \$3.2 million. Net charge-offs were down \$2.8 million compared to the prior year.

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

| | Three Months Ended | | Nine Months Ended | |
|----------------------------|--------------------|--------------------|--------------------|--------------------|
| | September 30, 2017 | September 30, 2016 | September 30, 2017 | September 30, 2016 |
| Commercial Banking | \$69,689 | \$55,995 | \$201,603 | \$145,885 |
| Consumer Banking | 6,734 | 8,761 | 18,900 | 13,103 |
| Wealth Management | 15,576 | 9,108 | 45,684 | 26,865 |
| Subtotal | 91,999 | 73,864 | 266,187 | 185,853 |
| Funds Management and other | (6,350) | 413 | (4,035) | (3,211) |
| Total | \$85,649 | \$74,277 | \$262,152 | \$182,642 |

Commercial Banking

Commercial Banking contributed \$69.7 million to consolidated net income in the third quarter of 2017, an increase of \$13.7 million or 25 percent over the third quarter of 2016. The increase in Commercial Banking's contribution was largely due to an increase in net interest revenue.

Table 9 -- Commercial Banking
(Dollars in thousands)

| | Three Months Ended September 30, | | Increase (Decrease) | Nine Months Ended September 30, | | Increase (Decrease) |
|--|-------------------------------------|---------------|------------------------|------------------------------------|---------------|------------------------|
| | 2017 | 2016 | | 2017 | 2016 | |
| Net interest revenue from external sources | \$ 157,080 | \$ 123,599 | \$ 33,481 | \$ 435,946 | \$ 358,713 | \$ 77,233 |
| Net interest expense from internal sources | (24,173) | (15,052) | (9,121) | (61,803) | (44,259) | (17,544) |
| Total net interest revenue | 132,907 | 108,547 | 24,360 | 374,143 | 314,454 | 59,689 |
| Net loans charged off | 3,217 | 5,601 | (2,384) | 2,983 | 34,024 | (31,041) |
| Net interest revenue after net loans charged off | 129,690 | 102,946 | 26,744 | 371,160 | 280,430 | 90,730 |
| Fees and commissions revenue | 53,928 | 47,710 | 6,218 | 148,193 | 144,215 | 3,978 |
| Other gains, net | 163 | 1,932 | (1,769) | 7,946 | 2,033 | 5,913 |
| Other operating revenue | 54,091 | 49,642 | 4,449 | 156,139 | 146,248 | 9,891 |
| Personnel expense | 28,902 | 28,365 | 537 | 83,935 | 82,513 | 1,422 |
| Non-personnel expense | 28,050 | 25,010 | 3,040 | 84,582 | 79,526 | 5,056 |
| Other operating expense | 56,952 | 53,375 | 3,577 | 168,517 | 162,039 | 6,478 |
| Net direct contribution | 126,829 | 99,213 | 27,616 | 358,782 | 264,639 | 94,143 |
| Gain on financial instruments, net | 4 | — | 4 | 46 | — | 46 |
| Gain (loss) on repossessed assets, net | (4,126) | 1,486 | (5,612) | (2,728) | 806 | (3,534) |
| Corporate expense allocations | 8,650 | 9,054 | (404) | 26,144 | 26,681 | (537) |
| Income before taxes | 114,057 | 91,645 | 22,412 | 329,956 | 238,764 | 91,192 |
| Federal and state income tax | 44,368 | 35,650 | 8,718 | 128,353 | 92,879 | 35,474 |
| Net income | \$ 69,689 | \$ 55,995 | \$ 13,694 | \$ 201,603 | \$ 145,885 | \$ 55,718 |
| Average assets | \$ 17,558,390 | \$ 16,934,587 | \$ 623,803 | \$ 17,525,658 | \$ 16,958,999 | \$ 566,659 |
| Average loans | 14,274,896 | 13,737,081 | 537,815 | 14,157,340 | 13,542,719 | 614,621 |
| Average deposits | 8,683,331 | 8,317,341 | 365,990 | 8,656,144 | 8,392,558 | 263,586 |
| Average invested capital | 1,353,525 | 1,285,627 | 67,898 | 1,334,056 | 1,234,962 | 99,094 |

Net interest revenue increased \$24.4 million or 22 percent over the prior year. Growth in net interest revenue was primarily due to increased yields on commercial loans due to rising short-term interest rates and a \$538 million or 4 percent increase in average loan balances. Average deposit balances increased \$366 million or 4 percent. The Mobank acquisition increased loans by \$390 million and deposits by \$396 million. Yields on deposits sold to the funds management unit also went up due to the increase in short-term interest rates from the Federal Reserve increase in the federal funds rate.

Fees and commissions revenue increased \$6.2 million or 13 percent compared to the third quarter of 2016 primarily due to a \$3.9 million increase in transaction card revenue and a \$1.5 million increase in brokerage and trading revenue. The increase in transaction card revenue included a \$2.1 million early customer termination fee received in the third quarter of 2017. The increase in brokerage and trading revenue was largely due a \$1.2 million increase in loan syndication fees.

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Operating expenses increased \$3.6 million or 7 percent compared to the third quarter of 2016. Personnel expense increased \$537 thousand or 2 percent. Non-personnel expense increased \$3.0 million or 12 percent. Net repossession expense increased \$1.3 million related mainly to the repossession of certain oil and gas properties. Deposit insurance expense increased \$1.4 million due to increased granularity in the allocation to the segments.

The average outstanding balance of loans attributed to Commercial Banking grew by \$538 million or 4 percent over the third quarter of 2016 to \$14.3 billion. See the Loans section of Management's Discussion and Analysis of Financial Condition following for additional discussion of changes in commercial and commercial real estate loans, which are primarily attributed to the Commercial Banking segment.

Average deposits attributed to Commercial Banking were \$8.7 billion for the third quarter of 2017, an increase of \$366 million or 4 percent compared to the third quarter of 2016. See Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital for further discussion of change.

Consumer Banking

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

Consumer Banking contributed \$6.7 million to consolidated net income for the third quarter of 2017, down \$2.0 million compared to the third quarter of 2016. Growth in net interest revenue of \$6.4 million was offset by a decrease in other operating revenue of \$13.6 million while operating expense decreased by \$4.2 million.

Table 10 -- Consumer Banking
(Dollars in thousands)

| | Three Months Ended | | Increase (Decrease) | Nine Months Ended | | Increase (Decrease) |
|---|-----------------------|-------------|------------------------|-----------------------|-------------|------------------------|
| | September 30, 2017 | 2016 | | September 30, 2017 | 2016 | |
| Net interest revenue from external sources | \$25,576 | \$22,098 | \$3,478 | \$70,208 | \$65,897 | \$4,311 |
| Net interest revenue from internal sources | 12,213 | 9,263 | 2,950 | 35,002 | 27,492 | 7,510 |
| Total net interest revenue | 37,789 | 31,361 | 6,428 | 105,210 | 93,389 | 11,821 |
| Net loans charged off | 1,315 | 1,157 | 158 | 3,512 | 4,177 | (665) |
| Net interest revenue after net loans charged off | 36,474 | 30,204 | 6,270 | 101,698 | 89,212 | 12,486 |
| Fees and commissions revenue | 47,134 | 60,773 | (13,639) | 146,605 | 172,114 | (25,509) |
| Other gains (losses), net | (101) | (170) | 69 | (165) | (42) | (123) |
| Other operating revenue | 47,033 | 60,603 | (13,570) | 146,440 | 172,072 | (25,632) |
| Personnel expense | 25,547 | 26,604 | (1,057) | 76,490 | 77,675 | (1,185) |
| Non-personnel expense | 31,238 | 34,360 | (3,122) | 89,537 | 101,812 | (12,275) |
| Total other operating expense | 56,785 | 60,964 | (4,179) | 166,027 | 179,487 | (13,460) |
| Net direct contribution | 26,722 | 29,843 | (3,121) | 82,111 | 81,797 | 314 |
| Gain (loss) on financial instruments, net | 1,686 | (1,087) | 2,773 | 5,242 | 30,539 | (25,297) |
| Change in fair value of mortgage servicing rights | (639) | 2,327 | (2,966) | (5,726) | (41,944) | 36,218 |
| Gain on repossessed assets, net | 292 | 161 | 131 | 253 | 566 | (313) |
| Corporate expense allocations | 17,039 | 16,905 | 134 | 50,947 | 49,513 | 1,434 |
| Income before taxes | 11,022 | 14,339 | (3,317) | 30,933 | 21,445 | 9,488 |
| Federal and state income tax | 4,288 | 5,578 | (1,290) | 12,033 | 8,342 | 3,691 |
| Net income | \$6,734 | \$8,761 | \$(2,027) | \$18,900 | \$13,103 | \$5,797 |
| Average assets | \$9,115,319 | \$8,827,816 | \$287,503 | \$8,871,470 | \$8,763,564 | \$107,906 |
| Average loans | 1,961,265 | 1,893,431 | 67,834 | 1,945,122 | 1,888,693 | 56,429 |
| Average deposits | 6,707,859 | 6,660,514 | 47,345 | 6,651,177 | 6,623,724 | 27,453 |
| Average invested capital | 327,667 | 356,788 | (29,121) | 321,420 | 328,752 | (7,332) |

Net interest revenue from Consumer Banking activities grew by \$6.4 million or 21 percent over the the third quarter of 2016 primarily due to increased rates received on deposit balances sold to the Funds Management unit. Average loan balances grew by \$68 million or 4 percent and average deposits increased \$47 million or 1% over the prior year.

Fees and commissions revenue decreased \$13.6 million or 22 percent compared to the third quarter of 2016 due to a \$13.6 million decrease in mortgage banking revenue. Mortgage loan production volumes decreased \$725 million, largely due to the exit from the correspondent lending channel. Gain on sale margin decreased 41 basis points due to market pricing pressure. Revenue from interchange fees paid by merchants for transactions processed from debit cards issued by the Company and deposit service charges and fees were relatively unchanged compared to the prior year.

Operating expenses decreased \$4.2 million or 7 percent compared to the third quarter of 2016. Personnel expenses decreased \$1.1 million or 4 percent. Non-personnel expense decreased \$3.1 million or 9 percent compared to the prior year. Mortgage banking costs were down \$2.5 million primarily due to lower prepayments of loans serviced for others. A \$1.8 million decrease in professional fees and services expense was partially offset by an increase of \$575 thousand in data processing and communications expense and \$569 thousand in business promotion expense.

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Changes in the fair value of our mortgage servicing rights, net of economic hedge, resulted in a \$640 thousand increase in Consumer Banking net income in the third quarter of 2017 compared to a \$758 thousand increase in Consumer Banking net income in the third quarter of 2016.

Average consumer deposits grew by \$47 million over the third quarter of 2016. Higher-costing time deposit balances decreased \$114 million or 10 percent, offset by an \$80 million or 5 percent increase in demand deposit balances, a \$42 million or 11 percent increase in savings account balances and a \$39 million or 1 percent increase in interest-bearing transaction accounts.

Wealth Management

Wealth Management contributed \$15.6 million to consolidated net income in the third quarter of 2017, up \$6.5 million or 71 percent over the third quarter of 2016, largely due to growth in net interest revenue.

Table 11 -- Wealth Management
(Dollars in thousands)

| | Three Months Ended September 30, | | Increase (Decrease) | Nine Months Ended September 30, | | Increase (Decrease) |
|--|-------------------------------------|-------------|------------------------|------------------------------------|-------------|------------------------|
| | 2017 | 2016 | | 2017 | 2016 | |
| Net interest revenue from external sources | \$11,169 | \$9,274 | \$1,895 | \$33,130 | \$21,620 | \$11,510 |
| Net interest revenue from internal sources | 9,604 | 7,401 | 2,203 | 28,784 | 22,258 | 6,526 |
| Total net interest revenue | 20,773 | 16,675 | 4,098 | 61,914 | 43,878 | 18,036 |
| Net loans charged off (recovered) | (623 |) (89 |) (534 |) (676 |) (479 |) (197 |
| Net interest revenue after net loans charged off (recovered) | 21,396 | 16,764 | 4,632 | 62,590 | 44,357 | 18,233 |
| Fees and commissions revenue | 75,915 | 73,331 | 2,584 | 225,390 | 217,519 | 7,871 |
| Other gains (losses), net | (208 |) 192 | (400 |) 44 | 523 | (479 |
| Other operating revenue | 75,707 | 73,523 | 2,184 | 225,434 | 218,042 | 7,392 |
| Personnel expense | 46,494 | 48,969 | (2,475 |) 136,758 | 142,235 | (5,477 |
| Non-personnel expense | 15,297 | 15,457 | (160 |) 46,058 | 44,289 | 1,769 |
| Other operating expense | 61,791 | 64,426 | (2,635 |) 182,816 | 186,524 | (3,708 |
| Net direct contribution | 35,312 | 25,861 | 9,451 | 105,208 | 75,875 | 29,333 |
| Loss on financial instruments, net | — | (42 |) 42 | — | (42 |) 42 |
| Corporate expense allocations | 9,819 | 10,912 | (1,093 |) 30,438 | 31,864 | (1,426 |
| Income before taxes | 25,493 | 14,907 | 10,586 | 74,770 | 43,969 | 30,801 |
| Federal and state income tax | 9,917 | 5,799 | 4,118 | 29,086 | 17,104 | 11,982 |
| Net income | \$15,576 | \$9,108 | \$6,468 | \$45,684 | \$26,865 | \$18,819 |
| Average assets | \$6,992,021 | \$6,413,735 | \$578,286 | \$6,971,369 | \$5,916,545 | \$1,054,824 |
| Average loans | 1,324,574 | 1,139,396 | 185,178 | 1,301,549 | 1,109,410 | 192,139 |
| Average deposits | 5,495,250 | 4,913,409 | 581,841 | 5,535,979 | 4,710,893 | 825,086 |
| Average invested capital | 244,976 | 202,168 | 42,808 | 231,608 | 198,167 | 33,441 |

Net interest revenue for the third quarter of 2017 increased \$4.1 million or 25 percent over the third quarter of 2016, primarily due to the increase in the average loan volume of \$185 million coupled with the increase in rates. Additionally, earnings on net funds invested grew by \$2.2 million. Average deposit balances grew by \$582 million or 12 percent over the third quarter of 2016. Non-interest bearing demand deposits grew by \$240 million or 21 percent, interest-bearing transaction account balances increased \$264 million or 9 percent and time deposit balances grew by \$76 million or 11 percent. Average loan balances increased \$185 million or 16 percent over the prior year.

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Fees and commissions revenue increased \$2.2 million or 3 percent over the third quarter of 2016. Fiduciary and asset management revenue increased \$6.5 million or 19 percent over the prior year primarily due to growth in assets under management, improved pricing discipline and decreased fee waivers. Brokerage and trading revenue decreased by \$4.8 million or 14 percent primarily due to decreased activity related to our mortgage banking customers along with a decrease in brokerage fees due to the implementation of the DOL fiduciary rule in the second quarter of 2017.

Fees and commissions revenue above includes fees earned from state and municipal bond and corporate debt underwritings and financial advisory services, primarily in the Oklahoma and Texas markets. In the third quarter of 2017, the Wealth Management division participated in 79 state and municipal bond underwritings that totaled \$1.7 billion. As a participant, the Wealth Management division was responsible for facilitating the sale of approximately \$454 million of these underwritings. The Wealth Management division also participated in 7 corporate debt underwritings that totaled \$2.6 billion. Our interest in these underwritings was \$69 million. In the third quarter of 2016, the Wealth Management division participated in 107 state and municipal bond underwritings that totaled approximately \$5.2 billion. Our interest in these underwritings totaled approximately \$708 million. The Wealth Management division also participated in 11 corporate debt underwritings that totaled \$4 billion. Our interest in these underwritings was \$93 million.

Operating expense decreased \$2.6 million or 4 percent compared to the third quarter of 2016. Personnel expense decreased \$2.5 million primarily due to decreased incentive compensation expense. Non-personnel expense decreased \$160 thousand.

Corporate expense allocations decreased \$1.1 million or 10 percent compared to the prior year.

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 September 30, 2017, December 31, 2016 and September 30, 2016.

At September 30, 2017, the carrying value of investment (held-to-maturity) securities was \$467 million and the fair value was \$490 million. Investment securities consist primarily of long-term, fixed rate Oklahoma and Texas municipal bonds, taxable Texas school construction bonds and residential mortgage-backed securities issued by U.S. government agencies. The investment security portfolio is diversified among issuers. The largest obligation of any single issuer is \$30 million. Substantially all of these bonds are general obligations of the issuers. Approximately \$99 million of the \$198 million portfolio of Texas school construction bonds is also guaranteed by the Texas Permanent School Fund Guarantee Program supervised by the State Board of Education for the State of Texas.

Available for sale securities, which may be sold prior to maturity, are carried at fair value. Unrealized gains or losses, net of deferred taxes, are recorded as accumulated other comprehensive income in shareholders' equity. The amortized cost of available for sale securities totaled \$8.4 billion at September 30, 2017, a \$44 million increase compared to June 30, 2017. At September 30, 2017, the available for sale securities portfolio consisted primarily of U.S. government agency residential mortgage-backed securities with an amortized cost of \$5.3 billion and U.S. government agency commercial mortgage-backed securities with an amortized cost of \$2.9 billion. Both residential and commercial mortgage-backed securities also 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 September 30, 2017 is 3.2 years. Management estimates the duration extends to 3.9 years assuming an immediate 200 basis point upward shock. The estimated duration contracts to 2.8 years assuming a 50 basis point decline in the current low rate environment.

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We also hold amortized cost of \$81 million in residential mortgage-backed securities privately issued by publicly-owned financial institutions, a decrease of \$5.9 million from June 30, 2017 due to cash payments received during the quarter. The fair value of our portfolio of privately issued residential mortgage-backed securities totaled \$100 million at September 30, 2017.

The aggregate gross amount of unrealized losses on available for sale securities totaled \$51 million at September 30, 2017, compared to \$50 million at June 30, 2017. On a quarterly basis, we perform separate evaluations on debt and equity 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 third quarter of 2017.

BOK Financial is required to hold stock as members of the Federal Reserve system and the Federal Home Loan Banks ("FHLB"). These restricted equity securities are carried at cost as these securities do not have a readily determined fair value because the ownership of these shares is restricted and they lack a market. Federal Reserve Bank stock totaled \$37 million and holdings of FHLB stock totaled \$311 million at September 30, 2017. Holdings of FHLB stock increased \$37 million compared to June 30, 2017. We are required to hold stock in the FHLB in proportion to our borrowings with the FHLB.

Bank-Owned Life Insurance

We have approximately \$314 million of bank-owned life insurance at September 30, 2017. This investment is expected to provide a long-term source of earnings to support existing employee benefit programs. Approximately \$286 million is held in separate accounts. Our separate account holdings are invested in diversified portfolios of investment-grade fixed income securities and cash equivalents, including U.S. Treasury and Agency securities, residential mortgage-backed securities, corporate debt, asset-backed and commercial mortgage-backed securities. The portfolios are managed by unaffiliated professional managers within parameters established in the portfolio's investment guidelines. The cash surrender value of certain life insurance policies is further supported by a stable value wrap, which protects against changes in the fair value of the investments. At September 30, 2017, the fair value of investments held in separate accounts was approximately \$292 million. As the underlying fair value of the investments held in a separate accounts at September 30, 2017 exceeded the net book value of the investments, no cash surrender value was supported by the stable value wrap. The stable value wrap is provided by a domestic financial institution. The remaining cash surrender value of \$28 million primarily represents the cash surrender value of policies held in general accounts and other amounts due from various insurance companies.

Loans

The aggregate loan portfolio before allowance for loan losses totaled \$17 billion at September 30, 2017, an increase of \$23 million over June 30, 2017. The outstanding balance of commercial loans increased by \$158 million, offset by a \$170 million decrease in commercial real estate loan balances. Residential mortgage loans increased \$6.6 million and personal loans grew by \$29 million.

Table 12 -- Loans
(In thousands)

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| Commercial: | | | | | |
| Energy | \$2,867,981 | \$2,847,240 | \$2,537,112 | \$2,497,868 | \$2,520,804 |
| Services | 2,967,513 | 2,958,827 | 3,013,375 | 3,108,990 | 2,936,599 |
| Healthcare | 2,239,451 | 2,221,518 | 2,265,604 | 2,201,916 | 2,085,046 |
| Wholesale/retail | 1,658,098 | 1,543,695 | 1,506,243 | 1,576,818 | 1,602,030 |
| Manufacturing | 519,446 | 546,137 | 543,430 | 514,975 | 499,486 |
| Other commercial and industrial | 543,445 | 520,538 | 461,346 | 490,257 | 476,198 |
| Total commercial | 10,795,934 | 10,637,955 | 10,327,110 | 10,390,824 | 10,120,163 |
| Commercial real estate: | | | | | |
| Retail | 725,865 | 722,805 | 745,046 | 761,888 | 801,377 |
| Multifamily | 999,009 | 952,380 | 922,991 | 903,272 | 873,773 |
| Office | 797,089 | 862,973 | 860,889 | 798,888 | 752,705 |
| Industrial | 591,080 | 693,635 | 871,463 | 871,749 | 838,021 |
| Residential construction and land development | 112,102 | 141,592 | 135,994 | 135,533 | 159,946 |
| Other commercial real estate | 292,997 | 315,207 | 334,680 | 337,716 | 367,776 |
| Total commercial real estate | 3,518,142 | 3,688,592 | 3,871,063 | 3,809,046 | 3,793,598 |
| Residential mortgage: | | | | | |
| Permanent mortgage | 1,013,965 | 989,040 | 977,743 | 1,006,820 | 969,558 |
| Permanent mortgages guaranteed by U.S. government agencies | 187,370 | 191,729 | 204,181 | 199,387 | 190,309 |
| Home equity | 744,415 | 758,429 | 764,350 | 743,625 | 712,926 |
| Total residential mortgage | 1,945,750 | 1,939,198 | 1,946,274 | 1,949,832 | 1,872,793 |
| Personal | 947,008 | 917,900 | 847,459 | 839,958 | 678,232 |
| Total | \$17,206,834 | \$17,183,645 | \$16,991,906 | \$16,989,660 | \$16,464,786 |

Commercial

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

continuous basis from underwriting throughout the life of the loan for compliance with commercial lending policies.

Commercial loans totaled \$10.8 billion or 63 percent of the loan portfolio at September 30, 2017, an increase of \$158 million over June 30, 2017. Wholesale/retail loan balances grew by \$114 million. Other commercial and industrial loans increased by \$23 million, energy loan balances increased by \$21 million and healthcare sector loan balances increased \$18 million. This growth was offset by a \$27 million decrease in manufacturing sector loan balances.

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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/Michigan | Other | Total |
|---------------------------------|-------------|-------------|------------|-----------|-----------|-----------|-----------------|-------------|--------------|
| Energy | \$515,667 | \$1,538,977 | \$16,971 | \$4,020 | \$334,392 | \$8,606 | \$72,259 | \$377,089 | \$2,867,981 |
| Services | 661,654 | 856,253 | 187,561 | 5,965 | 316,468 | 231,846 | 314,463 | 393,303 | 2,967,513 |
| Healthcare | 265,166 | 394,476 | 131,983 | 96,446 | 122,688 | 127,707 | 263,705 | 837,280 | 2,239,451 |
| Wholesale/retail | 422,993 | 587,592 | 44,080 | 31,501 | 71,908 | 62,706 | 88,834 | 348,484 | 1,658,098 |
| Manufacturing | 109,034 | 150,554 | 410 | 3,121 | 61,398 | 32,885 | 95,558 | 66,486 | 519,446 |
| Other commercial and industrial | 107,925 | 160,797 | 2,371 | 71,194 | 26,610 | 19,204 | 58,728 | 96,616 | 543,445 |
| Total commercial loans | \$2,082,439 | \$3,688,649 | \$383,376 | \$212,247 | \$933,464 | \$482,954 | \$893,547 | \$2,119,258 | \$10,795,934 |

The majority of the collateral securing our commercial loan portfolio is located within our geographical footprint with 34 percent concentrated in the Texas market and 19 percent concentrated in the Oklahoma market. At September 30, 2017, the Other category is primarily composed of California - \$310 million or 2.87 percent of the commercial loan portfolio, Florida - \$195 million or 1.81 percent of the commercial loan portfolio, Louisiana - \$171 million or 1.58 percent of the commercial loan portfolio, Pennsylvania - \$119 million or 1.10 percent of the commercial loan portfolio and Tennessee - \$114 million or 1.05 percent of the commercial loan portfolio. All other states individually represent one percent or less of total commercial loans.

Supporting the energy industry with loans to producers and other energy-related entities has been a hallmark of the Company since its founding and represents a large portion of our commercial loan portfolio. In addition, energy production and related industries have a significant impact on the economy in our primary markets. Loans collateralized by oil and gas properties are subject to a semi-annual engineering review by our internal staff of petroleum engineers. This review is utilized as the basis for developing the expected cash flows supporting the loan amount. The projected cash flows are discounted according to risk characteristics of the underlying oil and gas properties. Loans are evaluated to demonstrate with reasonable certainty that crude oil, natural gas and natural gas liquids can be recovered from known oil and gas reservoirs under existing economic and operating conditions at current pricing levels and with existing conventional equipment and operating methods and costs. As part of our evaluation of credit quality, we analyze rigorous stress tests over a range of commodity prices and take proactive steps to mitigate risk when appropriate.

Outstanding energy loans totaled \$2.9 billion or 17 percent of total loans at September 30, 2017. Unfunded energy loan commitments of \$2.7 billion at September 30, 2017 were largely unchanged compared to June 30, 2017. Approximately \$2.3 billion of energy loans were to oil and gas producers, largely unchanged compared to June 30, 2017. The majority of this portfolio is first lien, senior secured, reserve-based lending, which we believe is the lowest risk form of energy lending. The Company has largely avoided higher-risk energy lending areas including second-lien financing, mezzanine debt and subordinated debt. In addition, the Company has no direct exposure to energy company equity or to borrowers with deep-water offshore exposure. Approximately 57 percent of the committed production loans are secured by properties primarily producing oil and 43 percent of the committed production loans are secured by properties primarily producing natural gas. Loans to midstream oil and gas companies totaled \$314 million at

September 30, 2017, an increase of \$36 million over June 30, 2017. Loans to borrowers that provide services to the energy industry totaled \$163 million at September 30, 2017, down \$15 million compared to the prior quarter. Loans to other energy borrowers, including those engaged in wholesale or retail energy sales, totaled \$52 million, a \$14 million increase over the prior quarter.

The services sector of the loan portfolio totaled \$3.0 billion or 17 percent of total loans and consists of a large number of loans to a variety of businesses, including governmental, educational services, consumer services, loans to entities providing services for real estate and construction and commercial services. Service sector loans increased by \$8.7 million over June 30, 2017. Loans to governmental entities totaled \$571 million at September 30, 2017. Approximately \$1.5 billion of the services category is made up of loans with individual balances of less than \$10 million. Service sector loans are generally secured by the assets of the borrower with repayment coming from the cash flows of ongoing operations of the customer's business.

The healthcare sector of the loan portfolio totaled \$2.2 billion or 13% 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 \$20 million and with three or more non-affiliated banks as participants. At September 30, 2017, the outstanding principal balance of these loans totaled \$4.1 billion. Substantially all of these loans are to borrowers with local market relationships. We serve as the agent lender in approximately 17 percent of our shared national credits, based on dollars committed. We hold shared credits to the same standard of analysis and perform the same level of review as internally originated credits. Our lending policies generally avoid loans in which we do not have the opportunity to maintain or achieve other business relationships with the customer. In addition to management's quarterly assessment of credit risk, banking regulators annually review a sample of shared national credits for proper risk grading.

Commercial Real Estate

Commercial real estate represents loans for the construction of buildings or other improvements to real estate and property held by borrowers for investment purposes generally within our geographical footprint, with larger concentrations in Texas and Oklahoma which represent 35 percent and 13 percent of the total commercial real estate portfolio at September 30, 2017, respectively. We require collateral values in excess of the loan amounts, demonstrated cash flows in excess of expected debt service requirements, equity investment in the project and a portion of the project already sold, leased or permanent financing already secured. The expected cash flows from all significant new or renewed income producing property commitments are stress tested to reflect the risks in varying interest rates, vacancy rates and rental rates. As with commercial loans, inherent lending risks are centrally monitored on a continuous basis from underwriting throughout the life of the loan for compliance with applicable lending policies.

Commercial real estate loans totaled \$3.5 billion or 20 percent of the loan portfolio at September 30, 2017. The outstanding balance of commercial real estate loans decreased \$170 million during the third quarter of 2017 as borrowers continue to refinance loans in the permanent market. Loans secured by industrial properties decreased \$103 million. Loans secured by office buildings decreased \$66 million. Residential construction and land development loans and other commercial real estate loans also decreased compared to the prior quarter. These decreases were partially offset by a \$47 million increase in multifamily residential loans. The commercial real estate loan balance as a percentage of our total loan portfolio has ranged from 18 percent to 23 percent over the past five years.

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

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

| | Oklahoma | Texas | New Mexico | Arkansas | Colorado | Arizona | Kansas/Missouri | Other | Total |
|---|----------|-----------|------------|----------|----------|----------|-----------------|-----------|-----------|
| Retail | \$68,768 | \$291,284 | \$103,151 | \$6,419 | \$31,647 | \$27,583 | \$19,923 | \$177,090 | \$725,865 |
| Multifamily | 115,182 | 485,063 | 19,464 | 25,930 | 48,855 | 56,321 | 111,260 | 136,934 | 999,009 |
| Office | 93,693 | 222,094 | 76,416 | 5,928 | 30,903 | 68,080 | 51,787 | 248,188 | 797,089 |
| Industrial | 97,399 | 154,007 | 23,161 | — | 10,151 | 10,245 | 47,044 | 249,073 | 591,080 |
| Residential construction and land development | 11,483 | 26,153 | 18,138 | 1,995 | 15,633 | 6,892 | 16,018 | 15,790 | 112,102 |

| | | | | | | | | | |
|------------------------------|-----------|-------------|-----------|----------|-----------|-----------|-----------|-----------|-------------|
| Other | | | | | | | | | |
| commercial real estate | 61,464 | 38,617 | 14,645 | 3,301 | 14,397 | 24,480 | 28,311 | 107,782 | 292,997 |
| Total | | | | | | | | | |
| commercial real estate loans | \$447,989 | \$1,217,218 | \$254,975 | \$43,573 | \$151,586 | \$193,601 | \$274,343 | \$934,857 | \$3,518,142 |

The Other category is primarily composed of Utah and California, which represent \$120 million or 3.4 percent and \$118 million or 3.3 percent of the commercial real estate portfolio, respectively. All other states represent less than 3% individually.

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

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Based on Moody's U.S. Retail Industry Classifications, approximately 60 percent of \$726 million of outstanding retail commercial real estate loans have services-based tenants, which are considered less susceptible to online competition. Additionally, 61 percent of the \$718 million of outstanding retail loans included in our commercial wholesale/retail sector are service-based.

Residential Mortgage and Personal

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

Residential mortgage loans totaled \$1.9 billion, largely unchanged compared to June 30, 2017. In general, we sell the majority of our conforming fixed rate loan originations in the secondary market and retain the majority of our non-conforming and adjustable-rate mortgage loans. We have no concentration in sub-prime residential mortgage loans. Our mortgage loan portfolio does not include payment option adjustable rate mortgage loans or adjustable rate mortgage loans with initial rates that are below market. Collateral for 96 percent 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 September 30, 2017, \$187 million of permanent residential mortgage loans are guaranteed by U.S. government agencies. We have minimal credit exposure on loans guaranteed by the agencies. This amount includes residential mortgage loans previously sold into GNMA mortgage pools that the Company may repurchase when certain defined delinquency criteria are met. Because of this repurchase right, the Company is deemed to have regained effective control over these loans and must include them on the Consolidated Balance Sheet. Permanent residential mortgage loans guaranteed by U.S. government agencies decreased \$4.4 million compared to June 30, 2017.

Home equity loans totaled \$744 million at September 30, 2017, a \$14 million decrease compared to June 30, 2017. Our home equity loan portfolio is primarily composed of first-lien, fully amortizing home equity loans. Home equity loans generally require a minimum FICO score of 700 and a maximum DTI of 50 percent. The maximum loan amount available for our home equity loan products is generally \$400 thousand. Revolving loans have a 10 year revolving period followed by a 15 year term of amortizing repayment. Interest-only home equity loans have a 5 year revolving period followed by a 15 year term of amortizing repayments and may not be extended for any additional revolving time. All other home equity loans may be extended at management's discretion for an additional 5 year revolving term subject to an update of certain credit information. A summary of our home equity loan portfolio at September 30, 2017 by lien position and amortizing status follows in Table 15.

Table 15 -- Home Equity Loans
(In thousands)

| | Revolving | Amortizing | Total |
|-------------------|------------|------------|------------|
| First lien | \$ 71,921 | \$ 406,132 | \$ 478,053 |
| Junior lien | 140,791 | 125,571 | 266,362 |
| Total home equity | \$ 212,712 | \$ 531,703 | \$ 744,415 |

Personal loans totaled \$947 million, a \$29 million increase over the prior quarter primarily due to growth in loans to wealth management customers for investment in businesses that will be repaid from personal income.

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The distribution of residential mortgage and personal loans at September 30, 2017 is as follows in Table 16. Residential mortgage loans are distributed by collateral location. Personal loans are generally distributed by borrower location.

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

| | Oklahoma | Texas | New Mexico | Arkansas | Colorado | Arizona | Kansas/Missouri | Other | Total |
|--|------------|------------|---------------|-----------|------------|------------|-----------------|-----------|--------------|
| Residential mortgage: | | | | | | | | | |
| Permanent mortgage | \$ 178,762 | \$ 420,529 | \$ 46,567 | \$ 12,765 | \$ 168,312 | \$ 93,812 | \$ 52,951 | \$ 40,267 | \$ 1,013,965 |
| Permanent mortgages guaranteed by U.S. government agencies | 54,803 | 26,028 | 41,887 | 7,029 | 5,744 | 1,987 | 13,128 | 36,764 | 187,370 |
| Home equity | 387,021 | 134,753 | 95,537 | 5,098 | 38,346 | 9,100 | 71,904 | 2,656 | 744,415 |
| Total residential mortgage | \$ 620,586 | \$ 581,310 | \$ 183,991 | \$ 24,892 | \$ 212,402 | \$ 104,899 | \$ 137,983 | \$ 79,687 | \$ 1,945,750 |
| Personal | \$ 287,080 | \$ 403,033 | \$ 12,803 | \$ 10,438 | \$ 62,598 | \$ 47,182 | \$ 77,992 | \$ 45,882 | \$ 947,008 |

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

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

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
|---|-------------------|------------------|------------------|------------------|-------------------|
| Bank of Oklahoma: | | | | | |
| Commercial | \$3,408,973 | \$3,369,967 | \$3,189,183 | \$3,370,259 | \$3,545,924 |
| Commercial real estate | 712,915 | 667,932 | 691,332 | 684,381 | 795,806 |
| Residential mortgage | 1,405,900 | 1,398,021 | 1,404,054 | 1,407,197 | 1,401,166 |
| Personal | 322,320 | 318,016 | 310,708 | 303,823 | 271,420 |
| Total Bank of Oklahoma | 5,850,108 | 5,753,936 | 5,595,277 | 5,765,660 | 6,014,316 |
| Bank of Texas: | | | | | |
| Commercial | 4,434,595 | 4,339,634 | 4,148,316 | 4,022,455 | 3,903,218 |
| Commercial real estate | 1,236,702 | 1,360,164 | 1,452,988 | 1,415,011 | 1,400,709 |
| Residential mortgage | 229,993 | 232,074 | 231,647 | 233,981 | 229,345 |
| Personal | 375,173 | 354,222 | 312,092 | 306,748 | 278,167 |
| Total Bank of Texas | 6,276,463 | 6,286,094 | 6,145,043 | 5,978,195 | 5,811,439 |
| Bank of Albuquerque: | | | | | |
| Commercial | 367,747 | 369,370 | 407,403 | 399,256 | 398,147 |
| Commercial real estate | 319,208 | 324,405 | 307,927 | 284,603 | 299,785 |
| Residential mortgage | 101,983 | 103,849 | 106,432 | 108,058 | 110,478 |
| Personal | 12,953 | 12,439 | 11,305 | 11,483 | 11,333 |
| Total Bank of Albuquerque | 801,891 | 810,063 | 833,067 | 803,400 | 819,743 |
| Bank of Arkansas: | | | | | |
| Commercial | 91,051 | 85,020 | 88,010 | 86,577 | 83,544 |
| Commercial real estate | 80,917 | 73,943 | 74,469 | 73,616 | 72,649 |
| Residential mortgage | 6,318 | 6,395 | 6,829 | 7,015 | 6,936 |
| Personal | 10,388 | 11,993 | 6,279 | 6,524 | 6,757 |
| Total Bank of Arkansas | 188,674 | 177,351 | 175,587 | 173,732 | 169,886 |
| Colorado State Bank & Trust: | | | | | |
| Commercial | 1,124,200 | 1,065,780 | 998,216 | 1,018,208 | 1,013,314 |
| Commercial real estate | 186,427 | 255,379 | 266,218 | 265,264 | 254,078 |
| Residential mortgage | 63,734 | 63,346 | 62,313 | 59,631 | 59,838 |
| Personal | 60,513 | 56,187 | 49,523 | 50,372 | 42,901 |
| Total Colorado State Bank & Trust | 1,434,874 | 1,440,692 | 1,376,270 | 1,393,475 | 1,370,131 |
| Bank of Arizona: | | | | | |
| Commercial | 634,809 | 617,759 | 643,222 | 686,253 | 680,447 |
| Commercial real estate | 706,188 | 705,858 | 737,088 | 747,409 | 726,542 |
| Residential mortgage | 40,730 | 37,034 | 36,737 | 36,265 | 39,206 |
| Personal | 55,050 | 55,528 | 51,386 | 52,553 | 31,205 |

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| | | | | | |
|----------------------------|--------------|--------------|--------------|--------------|--------------|
| Total Bank of Arizona | 1,436,777 | 1,416,179 | 1,468,433 | 1,522,480 | 1,477,400 |
| Mobank (Kansas City): | | | | | |
| Commercial | 734,559 | 790,425 | 852,760 | 807,816 | 495,569 |
| Commercial real estate | 275,785 | 300,911 | 341,041 | 338,762 | 244,029 |
| Residential mortgage | 97,092 | 98,479 | 98,262 | 97,685 | 25,824 |
| Personal | 110,611 | 109,515 | 106,166 | 108,455 | 36,449 |
| Total Mobank (Kansas City) | 1,218,047 | 1,299,330 | 1,398,229 | 1,352,718 | 801,871 |
| Total BOK Financial loans | \$17,206,834 | \$17,183,645 | \$16,991,906 | \$16,989,660 | \$16,464,786 |

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Loan Commitments

We enter into certain off-balance sheet arrangements in the normal course of business. These arrangements included unfunded loan commitments, which totaled \$9.7 billion and standby letters of credit, which totaled \$666 million at September 30, 2017. Loan commitments may be unconditional obligations to provide financing or conditional obligations that depend on the borrower's financial condition, collateral value or other factors. Standby letters of credit are unconditional commitments to guarantee the performance of our customer to a third party. Since some of these commitments are expected to expire before being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. Approximately \$55 thousand of the outstanding standby letters of credit were issued on behalf of customers whose loans are nonperforming at September 30, 2017.

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

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
|-----------------------------------|-------------------|------------------|------------------|------------------|-------------------|
| Loan commitments | \$9,693,489 | \$9,632,911 | \$9,403,641 | \$9,404,665 | \$8,697,322 |
| Standby letters of credit | 665,513 | 614,852 | 595,746 | 585,472 | 499,990 |
| Mortgage loans sold with recourse | 128,681 | 133,896 | 134,631 | 139,486 | 139,306 |

We have off-balance sheet commitments related to certain residential mortgage loans originated under community development loan programs that were sold to a U.S. government agency with full recourse. These mortgage loans were underwritten to standards approved by the agencies, including full documentation and originated under programs available only for owner-occupied properties. The Company no longer sells residential mortgage loans with recourse. We are obligated to repurchase these loans for the life of these loans in the event of foreclosure for the unpaid principal and interest at the time of foreclosure. Substantially all of these loans are to borrowers in our primary markets including \$79 million to borrowers in Oklahoma, \$14 million to borrowers in Arkansas and \$12 million to borrowers in New Mexico. An accrual related to this off-balance sheet risk is included in Other liabilities in the consolidated balance sheets and totaled \$3.8 million at September 30, 2017 and \$3.9 million at June 30, 2017.

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

For the period from 2010 through the third quarter of 2017 combined, approximately 18 percent of repurchase requests have currently resulted in actual repurchases or indemnification by the Company. The Company repurchased five loans from the agencies for \$1.2 million during the third quarter of 2017. There were four indemnifications on loans paid during the third quarter of 2017. Losses recognized on repurchases were insignificant.

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

| | September 30, 2017 | 2016 |
|--|-----------------------|-----------|
| Number of unresolved deficiency requests | 180 | 221 |
| Aggregate outstanding principal balance subject to unresolved deficiency | \$ 8,899 | \$ 15,750 |

requests

Unpaid principal

balance subject to
indemnification by the

5,206

5,399

Company

The accrual for potential loan repurchases under representations and warranties totaled \$1.4 million at September 30, 2017 and \$1.6 million at June 30, 2017.

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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 September 30, 2017, the net fair values of derivative contracts, before consideration of cash margin, reported as assets under these programs totaled \$322 million compared to \$265 million at June 30, 2017. At September 30, 2017, the fair value of our derivative contracts included \$250 million for foreign exchange contracts, \$29 million of to-be-announced residential mortgage-backed securities, \$27 million for interest rate swaps and \$10 million for energy contracts. The aggregate net fair value of derivative contracts, before consideration of cash margin, held under these programs reported as liabilities totaled \$312 million at September 30, 2017 and \$257 million at June 30, 2017.

At September 30, 2017, total derivative assets were reduced by \$4.0 million of cash collateral received from counterparties and total derivative liabilities were reduced by \$18 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 September 30, 2017 follows in Table 19.

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

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| | |
|--|-----------|
| Banks and other financial institutions | \$163,232 |
| Customers | 132,215 |
| Exchanges and clearing organizations | 22,478 |
| Fair value of customer risk management program asset derivative contracts, net | \$317,925 |

At September 30, 2017, our largest derivative exposure was to a financial institution for equity option derivative contracts which totaled \$3.8 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

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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 \$27.71 per barrel of oil would increase the fair value of derivative assets by \$5.5 million. An increase in prices equivalent to \$77.25 per barrel of oil would increase the fair value of derivative assets by \$298 million as current prices move further away from the fixed prices embedded in our existing contracts. Liquidity requirements of this program may also be affected by our credit rating. At September 30, 2017, a decrease in our credit rating to below investment grade did not have a significant impact on our obligation to post cash margin on existing contracts. The fair value of our to-be-announced residential mortgage-backed securities and interest rate swap derivative contracts is affected by changes in interest rates. Based on our assessment as of September 30, 2017, changes in interest rates would not materially impact regulatory capital or liquidity needed to support this portion of our customer derivative program.

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Summary of Loan Loss Experience

We maintain an allowance for loan losses and an accrual for off-balance sheet credit risk. At September 30, 2017, the combined allowance for loan losses and off-balance sheet credit losses totaled \$253 million or 1.47 percent of outstanding loans and 117 percent of nonaccruing loans, excluding loans guaranteed by U.S. government agencies. The allowance for loan losses was \$248 million and the accrual for off-balance sheet credit losses was \$5.4 million. At June 30, 2017, the combined allowance for credit losses was \$256 million or 1.49 percent of outstanding loans and 109 percent of nonaccruing loans, excluding loans guaranteed by U.S. government agencies. The allowance for loan losses was \$250 million and the accrual for off-balance sheet credit losses was \$6.4 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 changes in nonaccruing and potential problem loans, overall loan growth and net charge-offs, the Company determined that no provision for credit losses was necessary in the third quarter of 2017 or the second quarter of 2017.

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

| | Three Months Ended | | | | | |
|---|--------------------|------------------|------------------|------------------|-------------------|---|
| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 | |
| Allowance for loan losses: | | | | | | |
| Beginning balance | \$250,061 | \$248,710 | \$246,159 | \$245,103 | \$243,259 | |
| Loans charged off: | | | | | | |
| Commercial | (4,429) | (1,703) | (424) | (81) | (6,266) | |
| Commercial real estate | — | (76) | — | — | — | |
| Residential mortgage | (168) | (40) | (236) | (208) | (285) | |
| Personal | (1,228) | (1,053) | (1,493) | (1,362) | (1,550) | |
| Total | (5,825) | (2,872) | (2,153) | (1,651) | (8,101) | |
| Recoveries of loans previously charged off: | | | | | | |
| Commercial | 1,014 | 283 | 1,182 | 839 | 177 | |
| Commercial real estate | 739 | 208 | 735 | 395 | 521 | |
| Residential mortgage | 134 | 169 | 228 | 986 | 650 | |
| Personal | 550 | 554 | 755 | 593 | 690 | |
| Total | 2,437 | 1,214 | 2,900 | 2,813 | 2,038 | |
| Net loans recovered (charged off) | (3,388) | (1,658) | 747 | 1,162 | (6,063) | |
| Provision for loan losses | 1,030 | 3,009 | 1,804 | (106) | 7,907 | |
| Ending balance | \$247,703 | \$250,061 | \$248,710 | \$246,159 | \$245,103 | |
| Accrual for off-balance sheet credit losses: | | | | | | |
| Beginning balance | \$6,431 | \$9,440 | \$11,244 | \$11,138 | \$9,045 | |
| Provision for off-balance sheet credit losses | (1,030) | (3,009) | (1,804) | 106 | 2,093 | |
| Ending balance | \$5,401 | \$6,431 | \$9,440 | \$11,244 | \$11,138 | |
| Total combined provision for credit losses | \$— | \$— | \$— | \$— | \$10,000 | |
| Allowance for loan losses to loans outstanding at period-end | 1.44 | % 1.46 | % 1.46 | % 1.45 | % 1.49 | % |
| Net charge-offs (recoveries) (annualized) to average loans | 0.08 | % 0.04 | % (0.02) | % (0.03) | % 0.15 | % |
| Total provision for credit losses (annualized) to average loans | — | % — | % — | % — | % 0.24 | % |
| Recoveries to gross charge-offs | 41.84 | % 42.27 | % 134.70 | % 170.38 | % 25.16 | % |
| Accrual for off-balance sheet credit losses to off-balance sheet credit commitments | 0.05 | % 0.06 | % 0.09 | % 0.11 | % 0.12 | % |
| Combined allowance for credit losses to loans outstanding at period-end | 1.47 | % 1.49 | % 1.52 | % 1.52 | % 1.56 | % |
| 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 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 September 30, 2017, impaired loans totaled \$404 million, including \$90 million with specific allowances of \$13 million and \$315 million with no specific allowances. At June 30, 2017, impaired loans totaled \$428 million, including \$73 million of impaired loans with specific allowances of \$9.7 million and \$355 million with no specific allowances.

Risk grading guidelines in the Office of the Comptroller of the Currency ("OCC") Oil and Gas Lending Handbook updated at the beginning of 2016, heavily weight the ability to repay total borrower debt, regardless of collateral position. This change in grading methodology has increased loans especially mentioned, potential problem loans and nonaccrual loans. Because substantially all of our energy portfolio is supported by senior lien positions that, in general, have substantially lower loss exposure, the historical relationship between loan classification and loss exposure may be more difficult to correlate. The most recently completed energy portfolio redetermination supported that \$45 million of impaired energy loans required no allowance for credit losses based on the adequacy of collateral and \$66 million of impaired loans with a \$4.9 million allowance for credit losses. In addition, \$53 million of impaired energy loans are current on all payments due.

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 \$206 million at September 30, 2017, a decrease of \$6.7 million compared to June 30, 2017. The general allowance attributed to the commercial loan segment decreased \$4.5 million and the general allowance attributed to the commercial real estate loan segment decreased \$2.2 million.

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 \$28 million at September 30, 2017, an increase of \$704 thousand over June 30, 2017. The nonspecific allowance includes consideration of the indirect impact of the prolonged low energy price environment on the broader economies within our geographical footprint that are highly dependent on the energy industry and the impact of the recent hurricane on borrowers in the Houston market.

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

Our loan monitoring process also identified certain accruing substandard loans that possess more than the normal amount of risk due to deterioration in the financial condition of the borrower or the value of the collateral. Because the borrowers are still performing in accordance with the original terms of the loan agreements, and no loss of principal or interest is anticipated, these loans were not included in nonperforming assets. Known information does, however, cause management concern as to the borrowers' ability to comply with current repayment terms. These potential problem loans totaled \$285 million at September 30, 2017 and were primarily composed of \$207 million or 7 percent of energy loans, \$33 million or 1 percent of healthcare sector loans and \$17 million or 3 percent of manufacturing sector loans. Potential problem loans totaled \$327 million at June 30, 2017.

Based on regulatory guidelines, other loans especially mentioned are in compliance with the original terms of the agreement but may have a weakness that deserves management's close attention. Other loans especially mentioned totaled \$198 million at September 30, 2017 and were composed primarily of \$114 million or 4 percent of outstanding energy loans, \$32 million or 1 percent of outstanding healthcare loans and \$26 million or less than 1 percent of outstanding services loans. Other loans especially mentioned totaled \$199 million at June 30, 2017.

We updated our semi-annual energy loan portfolio stress test at June 30, 2017 to estimate how the energy portfolio may respond in a prolonged low-price environment. Stress test assumptions include a starting price of \$2.00 per million BTUs for natural gas and \$35.87 per barrel of oil, gradually escalating over twelve to fifteen years to a maximum of \$3.00 and \$55.00, respectively. The portion of the combined allowance for credit losses attributable to the energy portfolio totaled 2.41 percent of outstanding energy loans at September 30, 2017, compared to 2.84 percent of outstanding energy loans at June 30, 2017.

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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 \$3.4 million in the third quarter of 2017, compared to net charge-offs of \$1.7 million in the second quarter of 2017 and net loans charged off of \$6.1 million in the third quarter of 2016. The ratio of net loans charged off to average loans on an annualized basis was 0.08 percent for the third quarter of 2017, compared with 0.04 percent for the second quarter of 2017 and 0.15 percent for the third quarter of 2016.

Net charge-offs of commercial loans were \$3.4 million in the third quarter of 2017, primarily due to \$4.3 million of charge-offs related to two energy borrowers. Commercial loans had net charge-offs of \$1.4 million in the second quarter of 2017 primarily due to a single healthcare borrower. Net commercial real estate loan recoveries were \$739 thousand in the third quarter of 2017, compared to net recoveries of \$132 thousand in the second quarter of 2017. Net charge-offs of residential mortgage loans were \$34 thousand and net charge-offs of personal loans were \$678 thousand for the third quarter. Personal loan net charge-offs include deposit account overdraft losses.

Nonperforming Assets

Table 21 -- Nonperforming Assets
(In thousands)

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
|---|-------------------|------------------|------------------|------------------|-------------------|
| Nonaccruing loans: | | | | | |
| Commercial | \$ 176,900 | \$ 197,157 | \$ 156,825 | \$ 178,953 | \$ 176,464 |
| Commercial real estate | 2,975 | 3,775 | 4,475 | 5,521 | 7,350 |
| Residential mortgage | 45,506 | 44,235 | 46,081 | 46,220 | 52,452 |
| Personal | 255 | 272 | 235 | 290 | 686 |
| Total nonaccruing loans | 225,636 | 245,439 | 207,616 | 230,984 | 236,952 |
| Accruing renegotiated loans guaranteed by U.S. government agencies | 69,440 | 80,624 | 83,577 | 81,370 | 80,306 |
| Real estate and other repossessed assets | 32,535 | 39,436 | 42,726 | 44,287 | 31,941 |
| Total nonperforming assets | \$ 327,611 | \$ 365,499 | \$ 333,919 | \$ 356,641 | \$ 349,199 |
| Total nonperforming assets excluding those guaranteed by U.S. government agencies | \$ 249,280 | \$ 275,823 | \$ 240,234 | \$ 263,425 | \$ 253,461 |
| Nonaccruing loans by loan portfolio segment and class: | | | | | |
| Commercial: | | | | | |
| Energy | \$ 110,683 | \$ 123,992 | \$ 110,425 | \$ 132,499 | \$ 142,966 |
| Services | 1,174 | 7,754 | 7,713 | 8,173 | 8,477 |
| Wholesale / retail | 1,893 | 10,620 | 11,090 | 11,407 | 2,453 |
| Manufacturing | 9,059 | 9,656 | 5,907 | 4,931 | 274 |
| Healthcare | 24,446 | 24,505 | 909 | 825 | 855 |
| Other commercial and industrial | 29,645 | 20,630 | 20,781 | 21,118 | 21,439 |
| Total commercial | 176,900 | 197,157 | 156,825 | 178,953 | 176,464 |
| Commercial real estate: | | | | | |
| Residential construction and land development | 1,924 | 2,051 | 2,616 | 3,433 | 3,739 |
| Retail | 289 | 301 | 314 | 326 | 1,249 |
| Office | 275 | 396 | 413 | 426 | 882 |
| Multifamily | — | 10 | 24 | 38 | 51 |
| Industrial | — | — | 76 | 76 | 76 |
| Other commercial real estate | 487 | 1,017 | 1,032 | 1,222 | 1,353 |
| Total commercial real estate | 2,975 | 3,775 | 4,475 | 5,521 | 7,350 |
| Residential mortgage: | | | | | |
| Permanent mortgage | 24,623 | 23,415 | 24,188 | 22,855 | 25,956 |
| Permanent mortgage guaranteed by U.S. government agencies | 8,891 | 9,052 | 10,108 | 11,846 | 15,432 |
| Home equity | 11,992 | 11,768 | 11,785 | 11,519 | 11,064 |
| Total residential mortgage | 45,506 | 44,235 | 46,081 | 46,220 | 52,452 |
| Personal | 255 | 272 | 235 | 290 | 686 |
| Total nonaccruing loans | \$ 225,636 | \$ 245,439 | \$ 207,616 | \$ 230,984 | \$ 236,952 |

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 | |
|---|----------------------|------------------|---------------------|---------------------|-------------------|--|
| Nonaccruing loans as % of outstanding balance for class: | | | | | | |
| Commercial: | | | | | | |
| Energy | 3.86 % | 4.35 % | 4.35 % | 5.30 % | 5.67 % | |
| Services | 0.04 % | 0.26 % | 0.26 % | 0.26 % | 0.29 % | |
| Wholesale / retail | 0.11 % | 0.69 % | 0.74 % | 0.72 % | 0.15 % | |
| Manufacturing | 1.74 % | 1.77 % | 1.09 % | 0.96 % | 0.05 % | |
| Healthcare | 1.09 % | 1.10 % | 0.04 % | 0.04 % | 0.04 % | |
| Other commercial and industrial | 5.46 % | 3.96 % | 4.50 % | 4.31 % | 4.50 % | |
| Total commercial | 1.64 % | 1.85 % | 1.52 % | 1.72 % | 1.74 % | |
| Commercial real estate: | | | | | | |
| Residential construction and land development | 1.72 % | 1.45 % | 1.92 % | 2.53 % | 2.34 % | |
| Retail | 0.04 % | 0.04 % | 0.04 % | 0.04 % | 0.16 % | |
| Office | 0.03 % | 0.05 % | 0.05 % | 0.05 % | 0.12 % | |
| Multifamily | — % | — % | — % | — % | 0.01 % | |
| Industrial | — % | — % | 0.01 % | 0.01 % | 0.01 % | |
| Other commercial real estate | 0.17 % | 0.32 % | 0.31 % | 0.36 % | 0.37 % | |
| Total commercial real estate | 0.08 % | 0.10 % | 0.12 % | 0.14 % | 0.19 % | |
| Residential mortgage: | | | | | | |
| Permanent mortgage | 2.43 % | 2.37 % | 2.47 % | 2.27 % | 2.68 % | |
| Permanent mortgage guaranteed by U.S. government agencies | 4.75 % | 4.72 % | 4.95 % | 5.94 % | 8.11 % | |
| Home equity | 1.61 % | 1.55 % | 1.54 % | 1.55 % | 1.55 % | |
| Total residential mortgage | 2.34 % | 2.28 % | 2.37 % | 2.37 % | 2.80 % | |
| Personal | 0.03 % | 0.03 % | 0.03 % | 0.03 % | 0.10 % | |
| Total nonaccruing loans | 1.31 % | 1.43 % | 1.22 % | 1.36 % | 1.44 % | |
| Ratios: | | | | | | |
| Allowance for loan losses to nonaccruing loans ¹ | 114.28 % | 105.78 % | 125.92 % | 112.73 % | 110.65 % | |
| Accruing loans 90 days or more past due ¹ | \$253 | \$1,414 | \$95 | \$5 | \$3,839 | |

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

Nonperforming assets totaled \$328 million or 1.90 percent of outstanding loans and repossessed assets at September 30, 2017. Nonaccruing loans totaled \$226 million, accruing renegotiated residential mortgage loans totaled \$69 million and real estate and other repossessed assets totaled \$33 million. All accruing renegotiated residential mortgage loans and \$8.9 million of nonaccruing loans are guaranteed by U.S. government agencies. Excluding assets guaranteed by U.S. government agencies, nonperforming assets decreased \$27 million compared to the third quarter primarily due to a decrease in nonaccruing energy loans. The Company generally retains nonperforming assets to maximize potential recovery, which may cause future nonperforming assets to decrease more slowly.

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

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

A rollforward of nonperforming assets for the three and nine months ended September 30, 2017 follows in Table 22.

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

| | Three Months Ended September 30, 2017 | | | Total Nonperforming Assets |
|---|--|-----------------------|---|----------------------------------|
| | Nonaccruing Loans | Renegotiated Loans | Real Estate and Other Repossessed Assets | |
| Balance, June 30, 2017 | \$245,439 | \$ 80,624 | \$ 39,436 | \$ 365,499 |
| Additions | 24,366 | 11,329 | — | 35,695 |
| Transfers from premises and equipment | — | — | — | — |
| Payments | (34,686) | (760) | — | (35,446) |
| Charge-offs | (5,825) | — | — | (5,825) |
| Net gains, losses and write-downs | — | — | (3,810) | (3,810) |
| Foreclosure of nonperforming loans | (2,600) | — | 2,600 | — |
| Foreclosure of loans guaranteed by U.S. government agencies | (1,221) | (930) | — | (2,151) |
| Proceeds from sales | — | (21,053) | (5,210) | (26,263) |
| Net transfers to nonaccruing loans | 136 | (136) | — | — |
| Return to accrual status | — | — | — | — |
| Other, net | 27 | 366 | (481) | (88) |
| Balance, September 30, 2017 | \$225,636 | \$ 69,440 | \$ 32,535 | \$ 327,611 |

| | Nine Months Ended September 30, 2017 | | | Total Nonperforming Assets |
|---|---|-----------------------|--|----------------------------------|
| | Nonaccruing Loans | Renegotiated Loans | Real Estate and Other Reposessed Assets | |
| Balance, December 31, 2016 | \$230,984 | \$ 81,370 | \$ 44,287 | \$ 356,641 |
| Additions | 106,098 | 37,683 | — | 143,781 |
| Transfers from premises and equipment | — | — | 452 | 452 |
| Payments | (84,848) | (2,546) | — | (87,394) |
| Charge-offs | (10,850) | — | — | (10,850) |
| Net gains, losses and write-downs | — | — | (2,206) | (2,206) |
| Foreclosure of nonperforming loans | (4,197) | — | 4,197 | — |
| Foreclosure of loans guaranteed by U.S. government agencies | (5,201) | (5,220) | — | (10,421) |
| Proceeds from sales | — | (42,459) | (12,912) | (55,371) |
| Net transfers to nonaccruing loans | 136 | (136) | — | — |
| Return to accrual status | (6,556) | — | — | (6,556) |
| Other, net | 70 | 748 | (1,283) | (465) |
| Balance, September 30, 2017 | \$225,636 | \$ 69,440 | \$ 32,535 | \$ 327,611 |

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

Commercial

Nonaccruing commercial loans totaled \$177 million or 1.64 percent of total commercial loans at September 30, 2017 and \$197 million or 1.85 percent of commercial loans at June 30, 2017. There were \$15 million in newly identified nonaccruing commercial loans during the quarter, offset by \$31 million in payments and \$4.4 million of charge-offs. Newly identified nonaccruing commercial loans were primarily other commercial & industrial loans and energy loans.

Nonaccruing commercial loans at September 30, 2017 were primarily composed of \$111 million or 3.86 percent of total energy loans, \$30 million or 5.46 percent of total other commercial and industrial sector loans and \$24 million or 1.09 percent of total healthcare sector loans.

Commercial Real Estate

Nonaccruing commercial real estate loans totaled \$3.0 million or 0.08 percent of outstanding commercial real estate loans at September 30, 2017, down from \$3.8 million or 0.10 percent of outstanding commercial real estate loans at June 30, 2017. Newly identified nonaccruing commercial real estate loans of \$2.0 million were offset by \$1.7 million of cash payments received and \$1.1 million foreclosures. There were no charge-offs of nonaccruing commercial real estate loans during the third quarter.

Nonaccruing commercial real estate loans were primarily composed of \$1.9 million or 1.72 percent of residential construction and land development loans.

Residential Mortgage and Personal

Nonaccruing residential mortgage loans totaled \$46 million or 2.34 percent of outstanding residential mortgage loans at September 30, 2017, a \$1.3 million increase over June 30, 2017. Newly identified nonaccruing residential mortgage loans totaling \$5.7 million were partially offset by \$2.8 million of foreclosures, \$1.7 million of payments and \$168 thousand of loans charged off during the quarter.

Nonaccruing residential mortgage loans primarily consist of non-guaranteed permanent residential mortgage loans, which totaled \$25 million or 2.43 percent of outstanding non-guaranteed permanent residential mortgage loans at September 30, 2017. Nonaccruing home equity loans totaled \$12 million or 1.61 percent of total home equity loans.

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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 increased \$3.2 million in the third quarter to \$6.8 million at September 30, 2017. Residential mortgage loans 60 to 89 days past due decreased by \$489 thousand. Personal loans past due 30 to 59 days increased by \$2.8 million and personal loans 60 to 89 days decreased \$208 thousand.

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

| | September 30, 2017 | | | June 30, 2017 | | |
|---------------------------------|--------------------------|---------------------|---------------------|--------------------------|---------------------|---------------------|
| | 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 | \$— | \$454 | \$3,705 | \$132 | \$1,026 | \$2,024 |
| Home equity | 28 | 445 | 3,066 | — | 362 | 1,564 |
| Total residential mortgage | \$28 | \$899 | \$6,771 | 132 | \$1,388 | \$3,588 |
| Personal | \$8 | \$81 | \$3,296 | \$— | \$289 | \$487 |

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 \$33 million at September 30, 2017, a decrease of \$6.9 million compared to June 30, 2017. The distribution of real estate and other repossessed assets attributed by geographical market is included in Table 24 following.

Table 24 -- Real Estate and Other Repossessed Assets by Collateral Location
(In thousands)

| | Oklahoma | Texas | Colorado | Arkansas | New Mexico | Arizona | Kansas/ Missouri | Other | Total |
|--|----------|-----------|----------|----------|---------------|----------|---------------------|--------|-----------|
| 1-4 family residential properties | \$ 2,735 | \$ 882 | \$ — | \$ 418 | \$ 1,185 | \$ 692 | \$ 160 | \$ 358 | \$ 6,430 |
| Developed commercial real estate properties | 71 | — | 1,116 | — | — | 207 | — | — | 1,394 |
| Undeveloped land | 1,116 | 1,215 | — | — | 1,057 | 135 | 1,197 | — | 4,720 |
| Residential land development properties | 101 | — | — | — | — | 102 | 1 | — | 204 |
| Oil and gas properties | 5,645 | 13,060 | — | — | — | — | 1,075 | — | 19,780 |
| Other | 7 | — | — | — | — | — | — | — | 7 |
| Total real estate and other repossessed assets | \$ 9,675 | \$ 15,157 | \$ 1,116 | \$ 418 | \$ 2,242 | \$ 1,136 | \$ 2,433 | \$ 358 | \$ 32,535 |

Undeveloped land is primarily zoned for commercial development. Developed commercial real estate properties are primarily completed with no additional construction necessary for sale.

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Liquidity and Capital

Subsidiary Bank

Deposits and borrowed funds are the primary sources of liquidity for BOKF, NA, the wholly owned subsidiary bank of BOK Financial. Based on the average balances for the third quarter of 2017, approximately 67 percent of our funding was provided by deposit accounts, 20 percent from borrowed funds, less than 1 percent is from long-term subordinated debt and 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.

Deposit accounts represent our largest funding source. We compete for retail and commercial deposits by offering a broad range of products and services and focusing on customer convenience. Retail deposit growth is supported through personal and small business checking, online bill paying services, mobile banking services, an extensive network of branch locations and ATMs and our Express Bank call center. Commercial deposit growth is supported by offering treasury management and lockbox services. We also acquire brokered deposits when the cost of funds is advantageous to other funding sources.

Average deposits for the third quarter of 2017 totaled \$22.1 billion, largely unchanged compared to the second quarter of 2017. Demand deposit balances grew by \$51 million during the third quarter of 2017 partially offset by a decrease in time deposits of \$28 million.

Table 25 - Average Deposits by Line of Business

(In thousands)

| | Three Months Ended | | | | |
|----------------------------|--------------------|------------------|------------------|------------------|-------------------|
| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
| Commercial Banking | \$8,683,331 | \$8,652,811 | \$8,631,724 | \$8,543,532 | \$8,317,341 |
| Consumer Banking | 6,707,859 | 6,662,838 | 6,581,446 | 6,659,380 | 6,660,514 |
| Wealth Management | 5,495,250 | 5,531,091 | 5,582,554 | 5,333,095 | 4,913,409 |
| Subtotal | 20,886,440 | 20,846,740 | 20,795,724 | 20,536,007 | 19,891,264 |
| Funds Management and other | 1,232,881 | 1,245,591 | 1,573,698 | 1,167,409 | 873,750 |
| Total | \$22,119,321 | \$22,092,331 | \$22,369,422 | \$21,703,416 | \$20,765,014 |

Average Commercial Banking deposit balances were largely unchanged compared to the second quarter of 2017. The average balance of interest-bearing transaction accounts increased \$60 million, partially offset by a \$26 million decrease in demand deposits. Average deposit balances attributed to commercial and industrial customers decreased by \$145 million, offset by a \$114 million increase in balances attributed to energy customers and a \$45 million increase in average balances attributed to commercial real estate customers. Commercial customers continue to retain large cash reserves primarily due to a combination of factors including uncertainty about the economic environment and potential for growth, lack of preferable liquid alternatives and a desire to minimize deposit service charges through the earnings credit. The earnings credit is a non-cash method that enables commercial customers to offset deposit service charges based on account balances. Commercial deposit balances may decrease once the economic outlook improves and customers deploy cash or short-term market interest rates rise and related earnings credit rates rise, reducing the amount of deposits required to offset service charges.

Average Consumer Banking deposit balances increased by \$45 million. Demand deposit balances grew by \$51 million, partially offset by a \$17 million decrease in time deposit balances. Interest-bearing transaction and savings account balances were also up slightly over the prior quarter.

Average Wealth Management deposits decreased \$36 million compared to the second quarter of 2017. A \$68 million decrease in interest-bearing transaction account balances was partially offset by a \$39 million increase in demand deposit balances.

Average deposits attributed to Funds Management and Other decreased \$13 million.

Average time deposits for the third quarter of 2017 included \$602 million of brokered deposits, an increase of \$12 million over the second quarter of 2017. Average interest-bearing transaction accounts for the third quarter included \$1.4 billion of brokered deposits, an increase of \$26 million over the second quarter of 2017.

The distribution of our period end deposit account balances among principal markets follows in Table 26.

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Table 26 -- Period End Deposits by Principal Market Area
(In thousands)

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
|---|-------------------|------------------|------------------|------------------|-------------------|
| Bank of Oklahoma: | | | | | |
| Demand | \$4,061,612 | \$4,353,421 | \$4,320,666 | \$3,993,170 | \$4,158,273 |
| Interest-bearing: | | | | | |
| Transaction | 5,909,259 | 5,998,787 | 6,114,288 | 6,345,536 | 5,701,983 |
| Savings | 265,023 | 263,664 | 265,014 | 241,696 | 242,959 |
| Time | 1,131,547 | 1,170,014 | 1,189,144 | 1,118,355 | 1,091,464 |
| Total interest-bearing | 7,305,829 | 7,432,465 | 7,568,446 | 7,705,587 | 7,036,406 |
| Total Bank of Oklahoma | 11,367,441 | 11,785,886 | 11,889,112 | 11,698,757 | 11,194,679 |
| Bank of Texas: | | | | | |
| Demand | 3,094,184 | 3,121,890 | 3,091,258 | 3,137,009 | 2,734,981 |
| Interest-bearing: | | | | | |
| Transaction | 2,272,987 | 2,272,185 | 2,317,576 | 2,388,812 | 2,240,040 |
| Savings | 93,400 | 91,491 | 89,640 | 83,101 | 84,642 |
| Time | 521,072 | 502,128 | 511,037 | 535,642 | 528,380 |
| Total interest-bearing | 2,887,459 | 2,865,804 | 2,918,253 | 3,007,555 | 2,853,062 |
| Total Bank of Texas | 5,981,643 | 5,987,694 | 6,009,511 | 6,144,564 | 5,588,043 |
| Bank of Albuquerque: | | | | | |
| Demand | 659,793 | 612,117 | 593,117 | 627,979 | 584,681 |
| Interest-bearing: | | | | | |
| Transaction | 551,884 | 558,523 | 623,677 | 590,571 | 555,326 |
| Savings | 53,532 | 54,136 | 53,683 | 49,963 | 54,480 |
| Time | 224,773 | 229,616 | 233,506 | 238,408 | 244,706 |
| Total interest-bearing | 830,189 | 842,275 | 910,866 | 878,942 | 854,512 |
| Total Bank of Albuquerque | 1,489,982 | 1,454,392 | 1,503,983 | 1,506,921 | 1,439,193 |
| Bank of Arkansas: | | | | | |
| Demand | 31,442 | 40,511 | 42,622 | 26,389 | 32,203 |
| Interest-bearing: | | | | | |
| Transaction | 126,746 | 129,848 | 106,804 | 105,232 | 313,480 |
| Savings | 1,876 | 2,135 | 2,304 | 2,192 | 2,051 |
| Time | 14,434 | 14,876 | 15,067 | 16,696 | 17,534 |
| Total interest-bearing | 143,056 | 146,859 | 124,175 | 124,120 | 333,065 |
| Total Bank of Arkansas | 174,498 | 187,370 | 166,797 | 150,509 | 365,268 |
| Colorado State Bank & Trust: | | | | | |
| Demand | 540,300 | 577,617 | 601,778 | 576,000 | 517,063 |
| Interest-bearing: | | | | | |
| Transaction | 628,807 | 626,343 | 610,510 | 616,679 | 623,055 |
| Savings | 34,776 | 35,651 | 37,801 | 32,866 | 31,613 |
| Time | 231,927 | 228,458 | 234,740 | 242,782 | 247,667 |
| Total interest-bearing | 895,510 | 890,452 | 883,051 | 892,327 | 902,335 |
| Total Colorado State Bank & Trust | 1,435,810 | 1,468,069 | 1,484,829 | 1,468,327 | 1,419,398 |

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
|------------------------------|-------------------|------------------|------------------|------------------|-------------------|
| Bank of Arizona: | | | | | |
| Demand | 335,740 | 366,866 | 342,854 | 366,755 | 418,718 |
| Interest-bearing: | | | | | |
| Transaction | 174,010 | 154,457 | 180,254 | 305,099 | 303,750 |
| Savings | 4,105 | 3,638 | 3,858 | 2,973 | 2,959 |
| Time | 20,831 | 19,911 | 26,112 | 27,765 | 27,935 |
| Total interest-bearing | 198,946 | 178,006 | 210,224 | 335,837 | 334,644 |
| Total Bank of Arizona | 534,686 | 544,872 | 553,078 | 702,592 | 753,362 |
| Mobank (Kansas City): | | | | | |
| Demand | 462,410 | 496,473 | 514,278 | 508,418 | 235,445 |
| Interest-bearing: | | | | | |
| Transaction | 361,391 | 346,996 | 406,105 | 513,176 | 86,526 |
| Savings | 12,513 | 13,603 | 13,424 | 12,679 | 1,645 |
| Time | 27,705 | 31,119 | 34,242 | 42,152 | 11,945 |
| Total interest-bearing | 401,609 | 391,718 | 453,771 | 568,007 | 100,116 |
| Total Mobank (Kansas City) | 864,019 | 888,191 | 968,049 | 1,076,425 | 335,561 |
| Total BOK Financial deposits | \$21,848,079 | \$22,316,474 | \$22,575,359 | \$22,748,095 | \$21,095,504 |

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 \$13 million at September 30, 2017. Securities repurchase agreements generally mature within 90 days and are secured by certain available for sale securities. Federal Home Loan Bank borrowings are generally short term and are secured by a blanket pledge of eligible collateral (generally unencumbered U.S. Treasury and agency mortgage-backed securities, 1-4 family residential mortgage loans, multifamily and other qualifying commercial real estate loans). Amounts borrowed from the Federal Home Loan Bank of Topeka averaged \$6.1 billion during the quarter, up from \$5.5 billion in the second quarter of 2017.

At September 30, 2017, the estimated unused credit available to BOKF, NA from collateralized sources was approximately \$6.1 billion.

A summary of other borrowings for BOK Financial on a consolidated basis follows in Table 27.

Table 27 -- Borrowed Funds
(In thousands)

| | Three Months Ended September 30, 2017 | | | | Three Months Ended June 30, 2017 | | | |
|--|--|---|---------|---|-------------------------------------|---|---------|--|
| | Sept. 30, 2017 | Average Balance During the Quarter | Rate | Maximum Outstanding At Any Month End During the Quarter | June 30, 2017 | Average Balance During the Quarter | Rate | Maximum Outstanding At Any Month End During the Quarter |
| Parent Company and Other Non-Bank Subsidiaries: | | | | | | | | |
| Trust preferred debt | \$— | \$— | — % | \$— | \$— | \$6,084 | 3.49 % | \$ 7,217 |
| Other | 3,103 | 947 | 11.23 % | \$ 3,104 | 878 | 867 | 11.06 % | 881 |
| Total other borrowings | 3,103 | 947 | 11.23 % | | 878 | 6,951 | 5.14 % | |
| Subordinated debentures | 144,668 | 144,663 | 5.68 % | \$ 144,668 | 144,658 | 144,654 | 5.55 % | 144,658 |
| Total parent company and other non-bank subsidiaries | 147,771 | 145,610 | 5.83 % | | 145,536 | 151,605 | 5.53 % | |
| BOKF, NA: | | | | | | | | |
| Funds purchased | 62,356 | 49,774 | 0.92 % | 62,356 | 67,990 | 63,263 | 0.61 % | 67,990 |
| Repurchase agreements | 328,189 | 361,512 | 0.15 % | 381,340 | 396,333 | 427,353 | 0.06 % | 489,814 |
| Other borrowings: | | | | | | | | |
| Federal Home Loan Bank advances | 6,200,000 | 6,127,174 | 1.27 % | 6,200,000 | 5,200,000 | 5,532,967 | 1.07 % | 5,600,000 |
| GNMA repurchase liability | 22,705 | 19,083 | 4.55 % | 22,908 | 16,056 | 16,734 | 4.65 % | 17,693 |
| Other | 15,467 | 15,437 | 2.38 % | 15,467 | 15,409 | 15,379 | 2.40 % | 15,409 |
| Total other borrowings | 6,238,172 | 6,161,694 | 1.29 % | | 5,231,465 | 5,565,080 | 1.09 % | |
| Total BOKF, NA | 6,628,717 | 6,572,980 | 1.22 % | | 5,695,788 | 6,055,696 | 1.01 % | |
| Total other borrowed funds and subordinated debentures | \$6,776,488 | \$6,718,590 | 1.32 % | | \$5,841,324 | \$6,207,301 | 1.12 % | |

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 September 30, 2017, cash and interest-bearing cash and cash equivalents held by the parent company totaled \$162 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 September 30, 2017, based upon the most restrictive limitations as well as management's internal capital policy, the bank could declare up to \$343 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 September 30, 2017 was \$3.5 billion, an increase of \$66 million over June 30, 2017. Net income less cash dividends paid increased equity \$57 million during the third quarter of 2017. Capital is managed to maximize long-term value to the shareholders. Factors considered in managing capital include projections of future earnings, 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.

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On October 27, 2015, the board of directors authorized the Company to purchase up to five million common shares, subject to market conditions, securities law and other regulatory compliance limitations. As of September 30, 2017, a cumulative total of 2,879,243 shares have been repurchased under this authorization. No shares were repurchased in the third quarter of 2017.

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.

Effective January 1, 2015 for BOK Financial, regulatory capital rules establish a 7 percent threshold for the common equity Tier 1 ratio consisting of a minimum level plus capital conservation buffer. The Company has elected to exclude unrealized gains and losses from available for sale securities from its calculation of Tier 1 capital, consistent with the treatment under previous capital rules.

A summary of minimum capital requirements, including capital conservation buffer follows in Table 28. 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 28.

Table 28 -- Capital Ratios

| | Minimum Capital Requirement | Capital Conservation Buffer | Minimum Capital Requirement Including Capital Conservation Buffer | Sept. 30, 2017 | June 30, 2017 | Sept. 30, 2016 | | | | | | |
|--|-----------------------------------|-----------------------------------|---|----------------------|------------------|----------------------|--------|--------|--------|---|------|---|
| Risk-based capital: | | | | | | | | | | | | |
| Common equity Tier 1 | 4.50 | % | 2.50 | % | 7.00 | % | 11.90% | 11.76% | 11.99% | | | |
| Tier 1 capital | 6.00 | % | 2.50 | % | 8.50 | % | 11.90% | 11.76% | 11.99% | | | |
| Total capital | 8.00 | % | 2.50 | % | 10.50 | % | 13.47% | 13.36% | 13.65% | | | |
| Tier 1 Leverage | 4.00 | % | N/A | | 4.00 | % | 9.30 | % | 9.27 | % | 9.06 | % |
| Average total equity to average assets | | | | | | | 10.56% | 10.53% | 10.39% | | | |
| Tangible common equity ratio | | | | | | | 9.23 | % | 9.24 | % | 9.19 | % |

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

Table 29 -- Non-GAAP Measure
(Dollars in thousands)

| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 | |
|---|----------------|---------------|---------------|---------------|----------------|---|
| Tangible common equity ratio: | | | | | | |
| Total shareholders' equity | \$3,488,814 | \$3,422,469 | \$3,341,744 | \$3,274,854 | \$3,398,311 | |
| Less: Goodwill and intangible assets, net | 485,710 | 487,452 | 488,294 | 495,830 | 424,716 | |
| Tangible common equity | 3,003,104 | 2,935,017 | 2,853,450 | 2,779,024 | 2,973,595 | |
| Total assets | 33,005,515 | 32,263,532 | 32,628,932 | 32,772,281 | 32,779,231 | |
| Less: Goodwill and intangible assets, net | 485,710 | 487,452 | 488,294 | 495,830 | 424,716 | |
| Tangible assets | \$32,519,805 | \$31,776,080 | \$32,140,638 | \$32,276,451 | \$32,354,515 | |
| Tangible common equity ratio | 9.23 | % 9.24 | % 8.88 | % 8.61 | % 9.19 | % |

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 50 basis point decrease in interest rates.

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

Table 30 -- Interest Rate Sensitivity
(Dollars in thousands)

| | 200 bp Increase | | 50 bp Decrease | |
|--|-----------------|--------|----------------|------------|
| | September 30, | | September 30, | |
| | 2017 | 2016 | 2017 | 2016 |
| Anticipated impact over the next twelve months on net interest revenue | \$652 | \$551 | \$(18,117) | \$(25,147) |
| | 0.08 % | 0.07 % | (2.10)% | (3.22)% |

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.

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Table 31 -- MSR Asset and Hedge Sensitivity Analysis
(Dollars in thousands)

| | September 30, 2017 | | 2016 | |
|--------------|-----------------------|------------|-----------|------------|
| | Up 50 bp | Down 50 bp | Up 50 bp | Down 50 bp |
| MSR Asset | \$26,449 | \$(33,561) | \$30,597 | \$(52,609) |
| MSR Hedge | (32,790) | 29,132 | (37,529) | 34,948 |
| Net Exposure | (6,341) | (4,429) | (6,932) | (17,661) |

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 32 -- Mortgage Pipeline Sensitivity Analysis
(Dollars in thousands)

| | Three Months Ended September 30, 2017 | | | | Nine Months Ended September 30, 2016 | | | |
|----------------------|---|------------|----------|------------|--|------------|-----------|------------|
| | 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 | \$(167) | \$(881) | \$(590) | \$(449) | \$21 | \$(1,172) | \$(2,778) | \$(542) |
| Low ² | 1,314 | 187 | 930 | 1,055 | 1,314 | 187 | 930 | 1,815 |
| High ³ | (1,533) | (1,993) | (2,563) | (2,030) | (1,553) | (2,377) | (6,858) | (2,953) |
| Period End | (744) | (374) | (76) | 360 | (744) | (374) | (76) | 360 |

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

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

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

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

portfolios. Both of these activities involve interest rate, liquidity and price risk. BOK Financial has an insignificant exposure to foreign exchange risk and does not take positions in commodity derivatives.

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

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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 33 -- Trading Sensitivity Analysis
(Dollars in thousands)

| | Three Months Ended | | | | Nine Months Ended | | | |
|----------------------|--------------------|------------|-----------|------------|--------------------|------------|-----------|------------|
| | September 30, 2017 | | 2016 | | September 30, 2017 | | 2016 | |
| | 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 | \$(1,152) | \$1,171 | \$(3,541) | \$3,756 | \$(1,711) | \$1,884 | \$(3,172) | \$3,070 |
| Low ² | 328 | 3,509 | (954) | 7,013 | 328 | 5,210 | 146 | 7,013 |
| High ³ | (3,404) | (486) | (6,130) | 430 | (4,386) | (486) | (6,130) | (107) |
| Period End | (1,395) | 945 | (1,718) | 2,469 | (1,395) | 945 | (1,718) | 2,469 |

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.

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 in general. Words such as "anticipates," "believes," "estimates," "expects," "forecasts," "plans," "projects," "will," "intends," "various" 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 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 that BOK Financial has not independently verified. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions that 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 expressed, 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, 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. 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.

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Consolidated Statements of Earnings (Unaudited)
(In thousands, except share and per share data)

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|-------------------------------------|-----------|------------------------------------|------------|
| | 2017 | 2016 | 2017 | 2016 |
| Interest revenue | | | | |
| Loans | \$184,200 | \$146,840 | \$514,047 | \$427,512 |
| Residential mortgage loans held for sale | 2,095 | 3,615 | 6,317 | 9,823 |
| Trading securities | 3,975 | 2,996 | 12,497 | 4,136 |
| Investment securities | 3,951 | 4,132 | 12,127 | 12,736 |
| Available for sale securities | 44,925 | 43,042 | 131,660 | 132,381 |
| Fair value option securities | 5,066 | 1,531 | 10,985 | 6,182 |
| Restricted equity securities | 4,826 | 4,510 | 13,534 | 12,684 |
| Interest-bearing cash and cash equivalents | 6,375 | 2,651 | 15,817 | 7,926 |
| Total interest revenue | 255,413 | 209,317 | 716,984 | 613,380 |
| Interest expense | | | | |
| Deposits | 14,530 | 9,812 | 38,506 | 30,351 |
| Borrowed funds | 20,361 | 9,191 | 47,542 | 25,943 |
| Subordinated debentures | 2,070 | 2,468 | 6,098 | 4,056 |
| Total interest expense | 36,961 | 21,471 | 92,146 | 60,350 |
| Net interest revenue | 218,452 | 187,846 | 624,838 | 553,030 |
| Provision for credit losses | — | 10,000 | — | 65,000 |
| Net interest revenue after provision for credit losses | 218,452 | 177,846 | 624,838 | 488,030 |
| Other operating revenue | | | | |
| Brokerage and trading revenue | 33,169 | 38,006 | 98,556 | 109,877 |
| Transaction card revenue | 37,826 | 33,933 | 105,249 | 101,237 |
| Fiduciary and asset management revenue | 40,687 | 34,073 | 121,126 | 100,942 |
| Deposit service charges and fees | 23,209 | 23,668 | 69,593 | 68,828 |
| Mortgage banking revenue | 24,890 | 38,516 | 80,357 | 105,500 |
| Other revenue | 13,670 | 13,080 | 40,406 | 38,336 |
| Total fees and commissions | 173,451 | 181,276 | 515,287 | 524,720 |
| Other gains, net | (1,283) |) 2,442 | 8,452 | 5,309 |
| Gain on derivatives, net | 1,033 | 2,226 | 3,824 | 20,130 |
| Gain (loss) on fair value option securities, net | 661 | (3,355) |) 1,505 | 10,367 |
| Change in fair value of mortgage servicing rights | (639) |) 2,327 | (5,726) |) (41,944) |
| Gain on available for sale securities, net | 2,487 | 2,394 | 4,916 | 11,684 |
| Total other operating revenue | 175,710 | 187,310 | 528,258 | 530,266 |
| Other operating expense | | | | |
| Personnel | 147,910 | 139,212 | 428,079 | 411,987 |
| Business promotion | 7,105 | 6,839 | 21,560 | 19,238 |
| Professional fees and services | 11,887 | 14,038 | 35,723 | 39,955 |
| Net occupancy and equipment | 21,325 | 20,111 | 64,074 | 58,554 |
| Insurance | 6,005 | 9,390 | 13,098 | 23,784 |
| Data processing and communications | 37,327 | 33,331 | 108,559 | 98,150 |
| Printing, postage and supplies | 3,917 | 3,790 | 11,908 | 11,586 |
| Net losses (gains) and operating expenses of repossessed assets | 6,071 | (926) |) 9,347 | 1,732 |
| Amortization of intangible assets | 1,744 | 1,521 | 5,349 | 5,304 |
| Mortgage banking costs | 13,450 | 15,963 | 38,525 | 44,039 |
| Other expense | 9,193 | 14,819 | 25,308 | 37,714 |
| Total other operating expense | 265,934 | 258,088 | 761,530 | 752,043 |

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| | | | | |
|---|------------|------------|------------|------------|
| Net income before taxes | 128,228 | 107,068 | 391,566 | 266,253 |
| Federal and state income taxes | 42,438 | 31,956 | 128,246 | 83,881 |
| Net income | 85,790 | 75,112 | 263,320 | 182,372 |
| Net income (loss) attributable to non-controlling interests | 141 | 835 | 1,168 | (270) |
| Net income attributable to BOK Financial Corporation shareholders | \$85,649 | \$74,277 | \$262,152 | \$182,642 |
| Earnings per share: | | | | |
| Basic | \$1.31 | \$1.13 | \$4.01 | \$2.77 |
| Diluted | \$1.31 | \$1.13 | \$4.00 | \$2.76 |
| Average shares used in computation: | | | | |
| Basic | 64,742,822 | 65,085,392 | 64,729,391 | 65,208,774 |
| Diluted | 64,805,172 | 65,157,841 | 64,793,893 | 65,263,566 |
| Dividends declared per share | \$0.44 | \$0.43 | \$1.32 | \$1.29 |

See accompanying notes to consolidated financial statements.

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Consolidated Statements of Comprehensive Income (Unaudited)

(In thousands, except share and per share data)

| | Three Months Ended | | Nine Months Ended | |
|---|--------------------|----------|-------------------|-----------|
| | September 30, | | September 30, | |
| | 2017 | 2016 | 2017 | 2016 |
| Net income | \$85,790 | \$75,112 | \$263,320 | \$182,372 |
| Other comprehensive income (loss) before income taxes: | | | | |
| Net change in unrealized gain (loss) | 512 | (33,458) | 33,881 | 133,108 |
| Reclassification adjustments included in earnings: | | | | |
| Interest revenue, Investment securities, Taxable securities | — | — | — | (112) |
| Gain on available for sale securities, net | (2,487) | (2,394) | (4,916) | (11,684) |
| Other comprehensive income (loss) before income taxes | (1,975) | (35,852) | 28,965 | 121,312 |
| Federal and state income taxes | (768) | (13,947) | 11,241 | 47,172 |
| Other comprehensive income (loss), net of income taxes | (1,207) | (21,905) | 17,724 | 74,140 |
| Comprehensive income | 84,583 | 53,207 | 281,044 | 256,512 |
| Comprehensive income (loss) attributable to non-controlling interests | 141 | 835 | 1,168 | (270) |
| Comprehensive income attributable to BOK Financial Corp. shareholders | \$84,442 | \$52,372 | \$279,876 | \$256,782 |

See accompanying notes to consolidated financial statements.

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Consolidated Balance Sheets

(In thousands, except share data)

| | Sept. 30, 2017 (Unaudited) | Dec. 31, 2016 (Footnote 1) | Sept. 30, 2016 (Unaudited) |
|---|----------------------------------|----------------------------------|----------------------------------|
| Assets | | | |
| Cash and due from banks | \$547,203 | \$620,846 | \$535,916 |
| Interest-bearing cash and cash equivalents | 1,926,779 | 1,916,651 | 2,080,978 |
| Trading securities | 614,117 | 337,628 | 546,615 |
| Investment securities (fair value: September 30, 2017 – \$489,895; December 31, 2016 – \$565,493 ; September 30, 2016 – \$580,310) | 466,562 | 546,145 | 546,457 |
| Available for sale securities | 8,383,199 | 8,676,829 | 8,862,283 |
| Fair value option securities | 819,531 | 77,046 | 222,409 |
| Restricted equity securities | 347,542 | 307,240 | 333,391 |
| Residential mortgage loans held for sale | 275,643 | 301,897 | 447,592 |
| Loans | 17,206,834 | 16,989,660 | 16,464,786 |
| Allowance for loan losses | (247,703) | (246,159) | (245,103) |
| Loans, net of allowance | 16,959,131 | 16,743,501 | 16,219,683 |
| Premises and equipment, net | 320,060 | 325,849 | 318,196 |
| Receivables | 314,251 | 772,952 | 650,368 |
| Goodwill | 446,697 | 448,899 | 382,739 |
| Intangible assets, net | 39,013 | 46,931 | 41,977 |
| Mortgage servicing rights | 245,858 | 247,073 | 203,621 |
| Real estate and other repossessed assets, net of allowance (September 30, 2017 – \$11,738; December 31, 2016 – \$9,562; September 30, 2016 – \$9,524) | 32,535 | 44,287 | 31,941 |
| Derivative contracts, net | 352,559 | 689,872 | 655,078 |
| Cash surrender value of bank-owned life insurance | 314,201 | 308,430 | 310,211 |
| Receivable on unsettled securities sales | 230,225 | 7,188 | 19,642 |
| Other assets | 370,409 | 353,017 | 370,134 |
| Total assets | \$33,005,515 | \$32,772,281 | \$32,779,231 |
| Liabilities and Equity | | | |
| Liabilities: | | | |
| Noninterest-bearing demand deposits | \$9,185,481 | \$9,235,720 | \$8,681,364 |
| Interest-bearing deposits: | | | |
| Transaction | 10,025,084 | 10,865,105 | 9,824,160 |
| Savings | 465,225 | 425,470 | 420,349 |
| Time | 2,172,289 | 2,221,800 | 2,169,631 |
| Total deposits | 21,848,079 | 22,748,095 | 21,095,504 |
| Funds purchased | 62,356 | 57,929 | 109,031 |
| Repurchase agreements | 328,189 | 668,661 | 504,573 |
| Other borrowings | 6,241,275 | 4,846,072 | 6,533,443 |
| Subordinated debentures | 144,668 | 144,640 | 144,631 |
| Accrued interest, taxes and expense | 152,029 | 146,704 | 191,276 |
| Derivative contracts, net | 336,327 | 664,531 | 573,987 |
| Due on unsettled securities purchases | 160,781 | 6,508 | 677 |
| Other liabilities | 217,372 | 182,784 | 193,698 |
| Total liabilities | 29,491,076 | 29,465,924 | 29,346,820 |

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Shareholders' equity:

| | | | |
|---|--------------|--------------|--------------|
| Common stock (\$.00006 par value; 2,500,000,000 shares authorized; shares issued and outstanding: September 30, 2017 – 75,129,535; December 31, 2016 – 74,993,407; September 30, 2016 – 74,866,429) | 4 | 4 | 4 |
| Capital surplus | 1,028,489 | 1,006,535 | 995,680 |
| Retained earnings | 2,999,005 | 2,823,334 | 2,801,931 |
| Treasury stock (shares at cost: September 30, 2017 – 9,672,749; December 31, 2016 – 9,655,975; September 30, 2016 – 8,955,975) | (545,441 |) (544,052 |) (495,031 |
| Accumulated other comprehensive income (loss) | 6,757 | (10,967 |) 95,727 |
| Total shareholders' equity | 3,488,814 | 3,274,854 | 3,398,311 |
| Non-controlling interests | 25,625 | 31,503 | 34,100 |
| Total equity | 3,514,439 | 3,306,357 | 3,432,411 |
| Total liabilities and equity | \$33,005,515 | \$32,772,281 | \$32,779,231 |

See accompanying notes to consolidated financial statements.

Consolidated Statements of Changes in Equity (Unaudited)

(In thousands)

| | Common Stock Shares | Capital Surplus Amount | Retained Earnings | Treasury Stock Shares | Treasury Stock Amount | Accumulated Other Comprehensive Income (Loss) | Total Shareholders' Equity | Non- Controlling Interests | Total Equity |
|---|---------------------------|------------------------------|----------------------|--------------------------|--------------------------|---|----------------------------------|----------------------------------|--------------|
| Balance, December 31, 2015 | 74,530 | \$4 \$982,009 | \$2,704,121 | 8,636 | \$(477,165) | \$21,587 | \$3,230,556 | \$37,083 | \$3,267,639 |
| Net income (loss) | — | — | 182,642 | — | — | — | 182,642 | (270) | 182,372 |
| Other comprehensive income | — | — | — | — | — | 74,140 | 74,140 | — | 74,140 |
| Repurchase of common stock | — | — | — | 305 | (17,771) | — | (17,771) | — | (17,771) |
| Share-based compensation plans: | | | | | | | | | |
| Stock options exercised | 108 | — 5,513 | — | — | — | — | 5,513 | — | 5,513 |
| Non-vested shares awarded, net | 228 | — | — | — | — | — | — | — | — |
| Vesting of non-vested shares | — | — | — | 15 | (95) | — | (95) | — | (95) |
| Tax effect from equity compensation, net | — | — 589 | — | — | — | — | 589 | — | 589 |
| Share-based compensation | — | — 7,569 | — | — | — | — | 7,569 | — | 7,569 |
| Cash dividends on common stock | — | — | (84,832) | — | — | — | (84,832) | — | (84,832) |
| Capital calls and distributions, net | — | — | — | — | — | — | — | (2,713) | (2,713) |
| Balance, September 30, 2016 | 74,866 | \$4 \$995,680 | \$2,801,931 | 8,956 | \$(495,031) | \$95,727 | \$3,398,311 | \$34,100 | \$3,432,411 |
| Balance, December 31, | 74,993 | \$4 \$1,006,535 | \$2,823,334 | 9,656 | \$(544,052) | \$(10,967) | \$3,274,854 | \$31,503 | \$3,306,357 |

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| | | | | | | | | | | |
|--------------------------------------|--------|-----|-------------|-------------|-------|-------------|---------|-------------|----------|-------------|
| 2016 | | | | | | | | | | |
| Net income (loss) | — | — | — | 262,152 | — | — | — | 262,152 | 1,168 | 263,320 |
| Other comprehensive income | — | — | — | — | — | — | 17,724 | 17,724 | — | 17,724 |
| Share-based compensation plans: | | | | | | | | | | |
| Stock options exercised | 80 | — | 4,564 | — | — | — | — | 4,564 | — | 4,564 |
| Non-vested shares awarded, net | 57 | — | — | — | — | — | — | — | — | — |
| Vesting of non-vested shares | — | — | — | — | 17 | (1,389) | — | (1,389) | — | (1,389) |
| Share-based compensation | — | — | 17,390 | — | — | — | — | 17,390 | — | 17,390 |
| Cash dividends on common stock | — | — | — | (86,481) | — | — | — | (86,481) | — | (86,481) |
| Capital calls and distributions, net | — | — | — | — | — | — | — | — | (7,046) | (7,046) |
| Balance, September 30, 2017 | 75,130 | \$4 | \$1,028,489 | \$2,999,005 | 9,673 | \$(545,441) | \$6,757 | \$3,488,814 | \$25,625 | \$3,514,439 |

See accompanying notes to consolidated financial statements.

Consolidated Statements of Cash Flows (Unaudited)
(in thousands)

| | Nine Months Ended September 30, | |
|---|------------------------------------|--------------|
| | 2017 | 2016 |
| Cash Flows From Operating Activities: | | |
| Net income | \$263,320 | \$182,372 |
| Adjustments to reconcile net income to net cash provided by (used in) operating activities: | | |
| Provision for credit losses | — | 65,000 |
| Change in fair value of mortgage servicing rights due to market changes | 5,726 | 41,944 |
| Change in the fair value of mortgage servicing rights due to loan runoff | 24,928 | 29,385 |
| Net unrealized gains from derivative contracts | (3,937) | (9,755) |
| Share-based compensation | 17,390 | 7,569 |
| Depreciation and amortization | 39,154 | 35,158 |
| Net amortization of securities discounts and premiums | 22,149 | 31,373 |
| Net realized gains on financial instruments and other net gains | (1,930) | (13,663) |
| Net gain on mortgage loans held for sale | (35,778) | (61,775) |
| Mortgage loans originated for sale | (2,446,793) | (4,927,442) |
| Proceeds from sale of mortgage loans held for sale | 2,503,759 | 4,855,682 |
| Capitalized mortgage servicing rights | (29,439) | (56,345) |
| Change in trading and fair value option securities | (1,019,906) | (204,030) |
| Change in receivables | 459,480 | (483,836) |
| Change in other assets | (18,991) | (17,931) |
| Change in accrued interest, taxes and expense | (99) | 27,780 |
| Change in other liabilities | 43,767 | 7,262 |
| Net cash provided by (used in) operating activities | (177,200) | (491,252) |
| Cash Flows From Investing Activities: | | |
| Proceeds from maturities or redemptions of investment securities | 94,243 | 65,104 |
| Proceeds from maturities or redemptions of available for sale securities | 1,345,575 | 1,120,917 |
| Purchases of investment securities | (18,802) | (18,599) |
| Purchases of available for sale securities | (2,001,160) | (1,860,287) |
| Proceeds from sales of available for sale securities | 966,044 | 1,027,379 |
| Change in amount receivable on unsettled securities transactions | (223,037) | 20,551 |
| Loans originated, net of principal collected | (156,404) | (551,351) |
| Net payments on derivative asset contracts | 334,709 | (79,512) |
| Acquisitions, net of cash acquired | — | (7,700) |
| Proceeds from disposition of assets | 162,793 | 131,761 |
| Purchases of assets | (170,937) | (159,263) |
| Net cash provided by (used in) investing activities | 333,024 | (311,000) |
| Cash Flows From Financing Activities: | | |
| Net change in demand deposits, transaction deposits and savings accounts | (850,505) | 243,779 |
| Net change in time deposits | (49,511) | (236,433) |
| Net change in other borrowed funds | 957,859 | 1,015,822 |
| Repayment of subordinated debentures | — | (226,550) |
| Issuance of subordinated debentures | — | 145,331 |
| Net proceeds on derivative liability contracts | (339,566) | 76,144 |
| Net change in derivative margin accounts | (8,583) | (129,141) |
| Change in amount due on unsettled security transactions | 154,273 | (16,220) |
| Issuance of common and treasury stock, net | 3,175 | 5,418 |

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| | | |
|--|-------------|-------------|
| Repurchase of common stock | — | (17,771) |
| Dividends paid | (86,481) | (84,832) |
| Net cash provided by (used in) financing activities | (219,339) | 775,547 |
| Net increase (decrease) in cash and cash equivalents | (63,515) | (26,705) |
| Cash and cash equivalents at beginning of period | 2,537,497 | 2,643,599 |
| Cash and cash equivalents at end of period | \$2,473,982 | \$2,616,894 |

Supplemental Cash Flow Information:

| | | |
|---|-----------|----------|
| Cash paid for interest | \$89,901 | \$61,522 |
| Cash paid for taxes | \$95,967 | \$43,096 |
| Net loans and bank premises transferred to repossessed real estate and other assets | \$4,649 | \$20,580 |
| Residential mortgage loans guaranteed by U.S. government agencies that became eligible for repurchase during the period | \$101,299 | \$79,710 |
| Conveyance of other real estate owned guaranteed by U.S. government agencies | \$32,033 | \$50,855 |
| See accompanying notes to consolidated financial statements. | | |

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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., The Milestone Group, Inc. and Cavanal Hill Investment Management Inc. Operating divisions of the Bank include Bank of Albuquerque, Bank of Arizona, Bank of Arkansas, Bank of Oklahoma, Bank of Texas, Colorado State Bank and Trust, 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 2016 Form 10-K filed with the Securities and Exchange Commission, which contains audited financial statements. Amounts presented as of December 31, 2016 have been derived from the audited financial statements included in BOK Financial’s 2016 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 nine-month period ended September 30, 2017 are not necessarily indicative of the results that may be expected for the year ending December 31, 2017.

Newly Adopted and Pending Accounting Policies

Financial Accounting Standards Board (“FASB”)

FASB Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (“ASU 2014-09”)

On May 28, 2014, the FASB issued ASU 2014-09 to clarify the principles for recognizing revenue by providing a more robust framework that will give greater consistency and comparability in revenue recognition practices. In the new framework, an entity recognizes revenue in an amount that reflects the consideration to which the entity expects to be entitled in exchange for goods or services. The new model requires the identification of performance obligations included in contracts with customers, a determination of the transaction price and an allocation of the price to those performance obligations. The entity recognizes revenue when performance obligations are satisfied. ASU 2014-09 is effective for the Company for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. Net interest revenue from financial assets and liabilities is explicitly excluded from the scope of ASU 2014-09. Management expects that there will be no material impact on the timing of revenue recognized as our current revenue recognition policies generally conform with the principals in the standard. Management will adopt the standard in the first quarter of 2018 with a cumulative effect adjustment to opening retained earnings if such adjustment is significant. Currently, we do not anticipate any significant adjustments.

FASB Accounting Standards Update No. 2016-08, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net) (“ASU 2016-08”)

On March 17, 2016, the FASB Issued ASU 2016-08 to amend the principal versus agent implementation guidance in ASU 2014-09. The ASU clarifies that an entity should evaluate whether it is the principal or the agent for each specified good or service promised in a contract with a customer. ASU 2016-08 is effective for the Company for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. Management expects that interchange fees paid to issuing banks for card transactions processed related to its merchant processing services currently included in data processing and communication expense, will be netted against the amounts charged to the merchant in transaction card processing revenue. For 2016, interchange fees related to merchant processing services were approximately \$27 million.

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FASB Accounting Standards Update No. 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01")

On January 5, 2016, the FASB issued ASU 2016-01 over the recognition and measurement of financial assets and liabilities. The update requires equity investments, in general, to be measured at fair value with changes in fair value recognized in earnings. It also eliminates the requirement to disclose the methods and significant assumptions used to estimate the fair value for financial instruments measured at amortized cost, requires entities to use the exit price notion when measuring fair value, requires an entity to present separately in other comprehensive income the portion of the total change in fair value of a liability resulting from a change in the instrument-specific credit risk when the fair value option has been elected, requires separate presentation of financial assets and liabilities by measurement category and form on the balance sheet or accompanying notes, clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets, and simplifies the impairment assessment of equity investments without readily determinable fair values. The ASU is effective for the Company for interim and annual periods beginning after December 15, 2017. Upon adoption, unrealized gains and losses from equity securities will be reclassified from other comprehensive income to retained earnings. At September 30, 2017, the Company had \$2.2 million of net unrealized gains included in accumulated other comprehensive income.

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 will be required to recognize an obligation for future lease payments measured on a discounted basis and a right-of-use asset. The ASU is effective for the Company for interim and annual periods beginning after December 15, 2018 and requires transition through a modified retrospective approach for leases existing at or entered into after January 1, 2017. The Company is evaluating the impact the adoption of ASU 2016-02 will have on the Company's financial statements.

FASB Accounting Standards Update No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09")

On March 30, 2016, the FASB issued ASU 2016-09 to simplify multiple aspects of accounting for employee share-based payment transactions including accounting for income taxes, forfeitures, and statutory tax withholding requirements. The ASU became effective for annual reporting periods beginning after December 15, 2016, including interim periods within those annual reporting periods. Implementation of ASU 2016-09 decreased tax expense \$2.5 million in the first nine months of 2017.

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

On June 16, 2016, the FASB issued ASU 2016-13 in order to provide more timely recording of credit losses on loans and other financial instruments. The ASU adds an impairment model (known as the current expected credit loss ("CECL") model) that is based on expected credit losses rather than incurred credit losses. It requires measurement of all expected credit losses for financial assets carried at amortized cost, including loans and investment securities, based on historical experience, current conditions, and reasonable and supportable forecasts. ASU 2016-13 also changes the recognition of other-than-temporary impairment of available for sale securities to an allowance methodology from a direct write-down methodology. ASU 2016-13 will be effective for the Company for annual reporting periods beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted for annual reporting periods beginning after December 15, 2018. ASU 2016-13 will be applied

through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The Company is evaluating the impact the adoption of ASU 2016-13 will have on the Company's financial statements.

FASB Accounting Standards Update No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments ("ASU 2016-15")

On August 26, 2016, the FASB issued ASU 2016-15, which amends guidance in ASC 230 on the classification of certain cash receipts and payments in the statement of cash flows. The amendments address eight cash flow issues. ASU 2016-15 is effective for the Company for interim and annual reporting periods beginning after December 15, 2017. Entities generally must apply the guidance retrospectively to all periods presented. Adoption of ASU 2016-15 is not expected to have a material impact on the Company's financial statements.

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FASB Accounting Standards Update No. 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities ("ASU 2017-12")

On August 28, 2017, the FASB issued ASU 2017-12, which amends the hedge accounting recognition and presentation requirements in ASC815 in order to improve transparency and understandability of information and reduce the complexity. The update expands the types of transactions eligible for hedge accounting, eliminates the requirement to separately measure and present hedge ineffectiveness, simplifies hedge effectiveness assessments and updates documentation and presentation requirements. ASU 2017-12 is effective for the Company for fiscal years beginning after December 15, 2018, and interim periods therein; however, early adoption is permitted. The Company is evaluating the impact the adoption of ASU 2017-12 will have on the Company's financial statements.

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(2) Securities

Trading Securities

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

| | September 30, 2017 | | December 31, 2016 | | September 30, 2016 | |
|---|--------------------|----------------------------|-------------------|----------------------------|--------------------|----------------------------|
| | Fair Value | Net Unrealized Gain (Loss) | Fair Value | Net Unrealized Gain (Loss) | Fair Value | Net Unrealized Gain (Loss) |
| U.S. government agency debentures | \$30,162 | \$ (101) | \$6,234 | \$ (4) | \$15,705 | \$ (7) |
| U.S. government agency residential mortgage-backed securities | 516,760 | 723 | 310,067 | 635 | 464,749 | 876 |
| Municipal and other tax-exempt securities | 56,148 | 153 | 14,427 | 50 | 54,856 | (100) |
| Other trading securities | 11,047 | 23 | 6,900 | 57 | 11,305 | 14 |
| Total trading securities | \$614,117 | \$ 798 | \$337,628 | \$ 738 | \$546,615 | \$ 783 |

Investment Securities

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

| | September 30, 2017 | | | |
|---|--------------------|-----------|-------------------------------|---------|
| | Amortized Fair | | Gross Unrealized ¹ | |
| | Cost | Value | Gain | Loss |
| Municipal and other tax-exempt | \$246,000 | \$249,250 | \$3,415 | \$(165) |
| U.S. government agency residential mortgage-backed securities – Other | 16,926 | 17,458 | 594 | (62) |
| Other debt securities | 203,636 | 223,187 | 20,141 | (590) |
| Total investment securities | \$466,562 | \$489,895 | \$24,150 | \$(817) |

¹ Gross unrealized gains and losses are not recognized in Accumulated Other Comprehensive Income "AOCI" in the Consolidated Balance Sheets.

| | December 31, 2016 | | | |
|---|-------------------|-----------|-------------------------------|-----------|
| | Amortized Fair | | Gross Unrealized ¹ | |
| | Cost | Value | Gain | Loss |
| Municipal and other tax-exempt | \$320,364 | \$321,225 | \$2,272 | \$(1,411) |
| U.S. government agency residential mortgage-backed securities – Other | 20,777 | 21,473 | 767 | (71) |
| Other debt securities | 205,004 | 222,795 | 18,115 | (324) |
| Total investment securities | \$546,145 | \$565,493 | \$21,154 | \$(1,806) |

¹ Gross unrealized gains and losses are not recognized in AOCI in the Consolidated Balance Sheets.

| | September 30, 2016 | | | |
|---|--------------------|-----------|-------------------------------|---------|
| | Amortized Fair | | Gross Unrealized ¹ | |
| | Cost | Value | Gain | Loss |
| Municipal and other tax-exempt | \$323,225 | \$327,788 | \$4,745 | \$(182) |
| U.S. government agency residential mortgage-backed securities – Other | 22,166 | 23,452 | 1,286 | — |
| Other debt securities | 201,066 | 229,070 | 28,014 | (10) |
| Total investment securities | \$546,457 | \$580,310 | \$34,045 | \$(192) |

¹ Gross unrealized gains and losses are not recognized in AOCI in the Consolidated Balance Sheets.

The amortized cost and fair values of investment securities at September 30, 2017, 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 ² |
|---|-----------------------|----------------------|---------------------|-------------------|-----------|--|
| Municipal and other tax-exempt: | | | | | | |
| Amortized cost | \$84,786 | \$107,938 | \$16,132 | \$37,144 | \$246,000 | 3.51 |
| Fair value | 84,835 | 108,352 | 16,776 | 39,287 | 249,250 | |
| Nominal yield ¹ | 1.75 % | 2.15 % | 4.68 % | 5.21 % | 2.64 % | |
| Other debt securities: | | | | | | |
| Amortized cost | 13,546 | 47,077 | 130,494 | 12,519 | 203,636 | 6.40 |
| Fair value | 13,688 | 50,230 | 147,066 | 12,203 | 223,187 | |
| Nominal yield | 4.10 % | 4.86 % | 5.75 % | 4.47 % | 5.35 % | |
| Total fixed maturity securities: | | | | | | |
| Amortized cost | \$98,332 | \$155,015 | \$146,626 | \$49,663 | \$449,636 | 4.82 |
| Fair value | 98,523 | 158,582 | 163,842 | 51,490 | 472,437 | |
| Nominal yield | 2.08 % | 2.97 % | 5.63 % | 5.02 % | 3.87 % | |
| Residential mortgage-backed securities: | | | | | | |
| Amortized cost | | | | | \$16,926 | ³ |
| Fair value | | | | | 17,458 | |
| Nominal yield ⁴ | | | | | 2.76 % | |
| Total investment securities: | | | | | | |
| Amortized cost | | | | | \$466,562 | |
| Fair value | | | | | 489,895 | |
| Nominal yield | | | | | 3.83 % | |

¹ Calculated on a taxable equivalent basis using a 39 percent effective tax rate.

² Expected maturities may differ from contractual maturities, because borrowers may have the right to call or prepay obligations with or without penalty.

³ The average expected lives of residential mortgage-backed securities were 4.7 years based upon current prepayment assumptions.

The nominal yield on residential mortgage-backed securities is based upon prepayment assumptions at the purchase date. Actual yields earned may differ significantly based upon actual prepayments. See Quarterly Financial Summary - Unaudited for current yields on the investment securities portfolio.

Available for Sale Securities

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

| | September 30, 2017 | | | | |
|---|--------------------|---------------|-------------------------------|------------|-------------------|
| | Amortized Cost | Fair Value | Gross Unrealized ¹ | | OTTI ² |
| | | | Gain | Loss | |
| U.S. Treasury | \$1,000 | \$999 | \$— | \$(1) | \$ — |
| Municipal and other tax-exempt | 28,411 | 28,368 | 240 | (283) |) — |
| Residential mortgage-backed securities: | | | | | |
| U. S. government agencies: | | | | | |
| FNMA | 3,103,869 | 3,108,822 | 25,510 | (20,557) |) — |
| FHLMC | 1,331,212 | 1,330,159 | 6,630 | (7,683) |) — |
| GNMA | 864,256 | 862,394 | 3,254 | (5,116) |) — |
| Other | 25,000 | 25,009 | 51 | (42) |) — |
| Total U.S. government agencies | 5,324,337 | 5,326,384 | 35,445 | (33,398) |) — |
| Private issue: | | | | | |
| Alt-A loans | 35,853 | 46,695 | 10,842 | — | — |
| Jumbo-A loans | 44,944 | 53,299 | 8,355 | — | — |
| Total private issue | 80,797 | 99,994 | 19,197 | — | — |
| Total residential mortgage-backed securities | 5,405,134 | 5,426,378 | 54,642 | (33,398) |) — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,899,828 | 2,889,346 | 5,577 | (16,059) |) — |
| Other debt securities | 4,400 | 4,153 | — | (247) |) — |
| Perpetual preferred stock | 12,562 | 16,245 | 3,683 | — | — |
| Equity securities and mutual funds | 17,803 | 17,710 | 655 | (748) |) — |
| Total available for sale securities | \$8,369,138 | \$8,383,199 | \$64,797 | \$(50,736) | \$ — |

¹ Gross unrealized gain/loss recognized in AOCI in the consolidated balance sheet.

² Amounts represent unrealized loss that remains in AOCI after an other-than-temporary credit loss has been recognized in income.

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| | December 31, 2016 | | | | |
|--|-------------------|--------------|-------------------------------|------------|--------------------|
| | Amortized Cost | Fair Value | Gross Unrealized ¹ | | OTTIP ² |
| | | | Gain | Loss | |
| U.S. Treasury | \$ 1,000 | \$ 999 | \$— | \$(1) | \$— |
| Municipal and other tax-exempt | 41,050 | 40,993 | 343 | (400) | — |
| Residential mortgage-backed securities: | | | | | |
| U. S. government agencies: | | | | | |
| FNMA | 3,062,525 | 3,055,676 | 25,066 | (31,915) | — |
| FHLMC | 1,534,451 | 1,531,116 | 8,475 | (11,810) | — |
| GNMA | 878,375 | 873,594 | 2,259 | (7,040) | — |
| Total U.S. government agencies | 5,475,351 | 5,460,386 | 35,800 | (50,765) | — |
| Private issue: | | | | | |
| Alt-A loans | 44,245 | 51,512 | 7,485 | — | (218) |
| Jumbo-A loans | 56,947 | 64,023 | 7,092 | (16) | — |
| Total private issue | 101,192 | 115,535 | 14,577 | (16) | (218) |
| Total residential mortgage-backed securities | 5,576,543 | 5,575,921 | 50,377 | (50,781) | (218) |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 3,035,750 | 3,017,933 | 5,472 | (23,289) | — |
| Other debt securities | 4,400 | 4,152 | — | (248) | — |
| Perpetual preferred stock | 15,561 | 18,474 | 2,913 | — | — |
| Equity securities and mutual funds | 17,424 | 18,357 | 1,060 | (127) | — |
| Total available for sale securities | \$ 8,691,728 | \$ 8,676,829 | \$ 60,165 | \$(74,846) | \$(218) |

¹ Gross unrealized gain/loss recognized in AOCI in the consolidated balance sheet.

² Amounts represent unrealized loss that remains in AOCI after an other-than-temporary credit loss has been recognized in income.

| | September 30, 2016 | | | | |
|--|--------------------|--------------|-------------------------------|-----------|--------------------|
| | Amortized Cost | Fair Value | Gross Unrealized ¹ | | OTTIP ² |
| | | | Gain | Loss | |
| U.S. Treasury | \$ 1,000 | \$ 1,002 | \$ 2 | \$— | \$— |
| Municipal and other tax-exempt | 41,943 | 42,092 | 602 | (453) | — |
| Residential mortgage-backed securities: | | | | | |
| U. S. government agencies: | | | | | |
| FNMA | 3,035,041 | 3,101,136 | 67,859 | (1,764) | — |
| FHLMC | 1,611,887 | 1,641,178 | 29,640 | (349) | — |
| GNMA | 924,176 | 926,358 | 3,530 | (1,348) | — |
| Total U.S. government agencies | 5,571,104 | 5,668,672 | 101,029 | (3,461) | — |
| Private issue: | | | | | |
| Alt-A loans | 47,039 | 54,065 | 7,230 | — | (204) |
| Jumbo-A loans | 61,377 | 67,538 | 6,187 | (26) | — |
| Total private issue | 108,416 | 121,603 | 13,417 | (26) | (204) |
| Total residential mortgage-backed securities | 5,679,520 | 5,790,275 | 114,446 | (3,487) | (204) |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,942,988 | 2,986,495 | 45,329 | (1,822) | — |
| Other debt securities | 4,400 | 4,151 | — | (249) | — |
| Perpetual preferred stock | 15,562 | 19,578 | 4,016 | — | — |
| Equity securities and mutual funds | 17,337 | 18,690 | 1,370 | (17) | — |
| Total available for sale securities | \$ 8,702,750 | \$ 8,862,283 | \$ 165,765 | \$(6,028) | \$(204) |

¹ Gross unrealized gain/loss recognized in AOCI in the consolidated balance sheet.

² Amounts represent unrealized loss that remains in AOCI after an other-than-temporary credit loss has been recognized in income.

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The amortized cost and fair values of available for sale securities at September 30, 2017, 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 ⁵ |
|--|-----------------------|----------------------|---------------------|-------------------|---------------------|--|
| U.S. Treasuries: | | | | | | |
| Amortized cost | \$1,000 | \$— | \$— | \$— | \$1,000 | 0.29 |
| Fair value | 999 | — | — | — | 999 | |
| Nominal yield | 0.87 % | — % | — % | — % | 0.87 % | % |
| Municipal and other tax-exempt: | | | | | | |
| Amortized cost | \$8,754 | \$4,163 | \$— | \$15,494 | \$28,411 | 9.00 |
| Fair value | 8,780 | 4,313 | — | 15,275 | 28,368 | |
| Nominal yield ¹ | 3.25 % | 5.13 % | — % | 2.26 % | 2.99 % ⁶ | % |
| Commercial mortgage-backed securities: | | | | | | |
| Amortized cost | \$59,483 | \$978,565 | \$1,616,383 | \$245,397 | \$2,899,828 | 6.90 |
| Fair value | 59,402 | 976,466 | 1,610,642 | 242,836 | 2,889,346 | |
| Nominal yield | 1.25 % | 1.85 % | 1.92 % | 1.92 % | 1.88 % | % |
| Other debt securities: | | | | | | |
| Amortized cost | \$— | \$— | \$— | \$4,400 | \$4,400 | 29.91 |
| Fair value | — | — | — | 4,153 | 4,153 | |
| Nominal yield | — % | — % | — % | 1.71 % | 1.71 % ⁶ | % |
| Total fixed maturity securities: | | | | | | |
| Amortized cost | \$69,237 | \$982,728 | \$1,616,383 | \$265,291 | \$2,933,639 | 6.96 |
| Fair value | 69,181 | 980,779 | 1,610,642 | 262,264 | 2,922,866 | |
| Nominal yield | 1.50 % | 1.86 % | 1.92 % | 1.93 % | 1.88 % | % |
| Residential mortgage-backed securities: | | | | | | |
| Amortized cost | | | | | \$5,405,134 | ² |
| Fair value | | | | | 5,426,378 | |
| Nominal yield ⁴ | | | | | 1.99 % | % |
| Equity securities and mutual funds: | | | | | | |
| Amortized cost | | | | | \$30,365 | ³ |
| Fair value | | | | | 33,955 | |
| Nominal yield | | | | | — % | % |
| Total available-for-sale securities: | | | | | | |
| Amortized cost | | | | | \$8,369,138 | |
| Fair value | | | | | 8,383,199 | |
| Nominal yield | | | | | 1.95 % | % |

¹ Calculated on a taxable equivalent basis using a 39 percent effective tax rate.

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

³ Primarily common stock and preferred stock of corporate issuers with no stated maturity.

⁴ The nominal yield on mortgage-backed securities is based upon prepayment assumptions at the purchase date. Actual yields earned may differ significantly based upon actual prepayments. See Quarterly Financial Summary — Unaudited following for current yields on available for sale securities portfolio.

⁵ Expected maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without penalty.

⁶ Nominal yield on municipal and other tax-exempt securities and other debt securities with contractual maturity dates over ten years are based on variable rates which generally are reset within 35 days.

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

| | Three Months Ended | | Nine Months Ended | |
|--|--------------------|-----------|-------------------|-------------|
| | September 30, | | September 30, | |
| | 2017 | 2016 | 2017 | 2016 |
| Proceeds | \$265,632 | \$232,239 | \$966,044 | \$1,027,379 |
| Gross realized gains | 2,768 | 2,415 | 7,623 | 11,705 |
| Gross realized losses | (281 |) (21 |) (2,707 |) (21 |
| Related federal and state income tax expense | 967 | 931 | 1,912 | 4,545 |

A summary of investment and available for sale securities that have been pledged as collateral for repurchase agreements, public trust funds on deposit and for other purposes, as required by law was as follows (in thousands):

| | Sept. 30, | Dec. 31, | Sept. 30, |
|----------------|-----------|-----------|-----------|
| | 2017 | 2016 | 2016 |
| Investment: | | | |
| Amortized cost | \$237,525 | \$322,208 | \$301,754 |
| Fair value | 241,208 | 323,808 | 307,264 |

Available for sale:

| | | | |
|----------------|-----------|-----------|-----------|
| Amortized cost | 6,559,615 | 7,353,116 | 7,098,721 |
| Fair value | 6,551,240 | 7,327,470 | 7,213,520 |

The secured parties do not have the right to sell or repledge these securities.

At September 30, 2017, trading securities and receivables collateralized by securities with a fair value of \$224 million were pledged as collateral at the Federal Home Loan Bank (FHLB) for the trading activities of BOK Financial Securities, Inc. No trading securities were pledged as collateral as of December 31, 2016 and no trading securities were pledged as collateral at September 30, 2016.

Temporarily Impaired Securities as of September 30, 2017
(in thousands):

| | Number of Securities | Less Than 12 Months Fair Value | Unrealized Loss | 12 Months or Longer Fair Value | Unrealized Loss | Total Fair Value | Unrealized Loss |
|--|----------------------------|---|--------------------|---|--------------------|------------------------|--------------------|
| Investment: | | | | | | | |
| Municipal and other tax-exempt | 63 | \$80,235 | \$ 70 | \$9,795 | \$ 95 | \$90,030 | \$ 165 |
| U.S. government agency residential mortgage-backed securities – Other | 1 | 3,578 | 62 | — | — | 3,578 | 62 |
| Other debt securities | 28 | 10,022 | 566 | 427 | 24 | 10,449 | 590 |
| Total investment securities | 92 | \$93,835 | \$ 698 | \$10,222 | \$ 119 | \$104,057 | \$ 817 |

| | Number of Securities | Less Than 12 Months Fair Value | Unrealized Loss | 12 Months or Longer Fair Value | Unrealized Loss | Total Fair Value | Unrealized Loss |
|--|----------------------------|---|--------------------|---|--------------------|------------------------|--------------------|
| Available for sale: | | | | | | | |
| U.S. Treasury | 1 | \$999 | \$ 1 | \$— | \$— | \$999 | \$ 1 |
| Municipal and other tax-exempt Residential mortgage-backed securities: | 11 | 576 | 1 | 4,785 | 282 | 5,361 | 283 |
| U. S. government agencies: | | | | | | | |
| FNMA | 81 | 1,054,171 | 10,288 | 480,994 | 10,269 | 1,535,165 | 20,557 |
| FHLMC | 42 | 477,823 | 3,546 | 198,478 | 4,137 | 676,301 | 7,683 |
| GNMA | 17 | 166,565 | 1,718 | 124,037 | 3,398 | 290,602 | 5,116 |
| Other | 1 | 19,958 | 42 | — | — | 19,958 | 42 |
| Total U.S. government agencies | 141 | 1,718,517 | 15,594 | 803,509 | 17,804 | 2,522,026 | 33,398 |
| Private issue: | | | | | | | |
| Alt-A loans | — | — | — | — | — | — | — |
| Jumbo-A loans | — | — | — | — | — | — | — |
| Total private issue | — | — | — | — | — | — | — |
| Total residential mortgage-backed securities | 141 | 1,718,517 | 15,594 | 803,509 | 17,804 | 2,522,026 | 33,398 |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 137 | 1,154,911 | 7,194 | 559,984 | 8,865 | 1,714,895 | 16,059 |
| Other debt securities | 2 | — | — | 4,153 | 247 | 4,153 | 247 |
| Perpetual preferred stocks | — | — | — | — | — | — | — |
| Equity securities and mutual funds | 91 | 3,672 | 696 | 1,428 | 52 | 5,100 | 748 |
| Total available for sale securities | 383 | \$2,878,675 | \$ 23,486 | \$1,373,859 | \$ 27,250 | \$4,252,534 | \$ 50,736 |

Temporarily Impaired Securities as of December 31, 2016

(In thousands)

| | Number of Securities | Less Than 12 Months Fair Value | Unrealized Loss | 12 Months or Longer Fair Value | Unrealized Loss | Total Fair Value | Unrealized Loss |
|--|----------------------------|---|--------------------|---|--------------------|------------------------|--------------------|
| Investment: | | | | | | | |
| Municipal and other tax-exempt | 151 | \$219,892 | \$ 1,316 | \$4,333 | \$ 95 | \$224,225 | \$ 1,411 |
| U.S. government agency residential mortgage-backed securities – Other | 1 | 4,358 | 71 | — | — | 4,358 | 71 |
| Other debt securities | 41 | 11,820 | 322 | 855 | 2 | 12,675 | 324 |
| Total investment securities | 193 | \$236,070 | \$ 1,709 | \$5,188 | \$ 97 | \$241,258 | \$ 1,806 |

| | Number of Securities | Less Than 12 Months Fair Value | Unrealized Loss | 12 Months or Longer Fair Value | Unrealized Loss | Total Fair Value | Unrealized Loss |
|--|----------------------------|--------------------------------------|--------------------|---|--------------------|------------------------|--------------------|
| Available for sale: | | | | | | | |
| U.S. Treasury | 1 | \$999 | \$ 1 | \$— | \$ — | \$999 | \$ 1 |
| Municipal and other tax-exempt Residential mortgage-backed securities: | 24 | 15,666 | 22 | 4,689 | 378 | 20,355 | 400 |
| U. S. government agencies: | | | | | | | |
| FNMA | 91 | 1,787,644 | 30,238 | 72,105 | 1,677 | 1,859,749 | 31,915 |
| FHLMC | 58 | 964,017 | 11,210 | 18,307 | 600 | 982,324 | 11,810 |
| GNMA | 31 | 548,637 | 6,145 | 25,796 | 895 | 574,433 | 7,040 |
| Total U.S. government agencies | 180 | 3,300,298 | 47,593 | 116,208 | 3,172 | 3,416,506 | 50,765 |
| Private issue ¹ : | | | | | | | |
| Alt-A loans | 5 | 7,931 | 174 | 7,410 | 44 | 15,341 | 218 |
| Jumbo-A loans | 1 | — | — | 6,098 | 16 | 6,098 | 16 |
| Total private issue | 6 | 7,931 | 174 | 13,508 | 60 | 21,439 | 234 |
| Total residential mortgage-backed securities | 186 | 3,308,229 | 47,767 | 129,716 | 3,232 | 3,437,945 | 50,999 |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 171 | 1,904,584 | 22,987 | 38,875 | 302 | 1,943,459 | 23,289 |
| Other debt securities | 2 | — | — | 4,152 | 248 | 4,152 | 248 |
| Perpetual preferred stocks | — | — | — | — | — | — | — |
| Equity securities and mutual funds | 104 | 2,127 | 41 | 817 | 86 | 2,944 | 127 |
| Total available for sale securities | 488 | \$5,231,605 | \$ 70,818 | \$178,249 | \$ 4,246 | \$5,409,854 | \$ 75,064 |

¹ Includes securities for which an unrealized loss remains in AOCI after an other-than-temporary credit loss has been recognized in income.

Temporarily Impaired Securities as of September 30, 2016

(In thousands)

| | 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 | 75 | \$100,624 | \$ 106 | \$4,359 | \$ 76 | \$104,983 | \$ 182 |
| U.S. government agency residential mortgage-backed securities – Other | — | — | — | — | — | — | — |
| Other debt securities | 3 | 444 | 6 | 856 | 4 | 1,300 | 10 |
| Total investment securities | 78 | \$101,068 | \$ 112 | \$5,215 | \$ 80 | \$106,283 | \$ 192 |

| | 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 | — | \$— | \$ — | \$— | \$ — | \$— | \$ — |
| Municipal and other tax-exempt ¹ | 20 | 2,210 | 3 | 6,396 | 450 | 8,606 | 453 |
| Residential mortgage-backed securities: | | | | | | | |
| U. S. government agencies: | | | | | | | |
| FNMA | 14 | 365,201 | 1,712 | 14,229 | 52 | 379,430 | 1,764 |
| FHLMC | 6 | 122,713 | 91 | 20,306 | 258 | 143,019 | 349 |
| GNMA | 16 | 230,043 | 1,157 | 212,705 | 191 | 442,748 | 1,348 |
| Total U.S. government agencies | 36 | 717,957 | 2,960 | 247,240 | 501 | 965,197 | 3,461 |
| Private issue ¹ : | | | | | | | |
| Alt-A loans | 5 | 8,231 | 141 | 7,773 | 63 | 16,004 | 204 |
| Jumbo-A loans | 1 | 6,583 | 26 | — | — | 6,583 | 26 |
| Total private issue | 6 | 14,814 | 167 | 7,773 | 63 | 22,587 | 230 |
| Total residential mortgage-backed securities | 42 | 732,771 | 3,127 | 255,013 | 564 | 987,784 | 3,691 |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 33 | 372,805 | 1,656 | 60,851 | 166 | 433,656 | 1,822 |
| Other debt securities | 2 | — | — | 4,151 | 249 | 4,151 | 249 |
| Perpetual preferred stocks | — | — | — | — | — | — | — |
| Equity securities and mutual funds | 33 | 86 | — | 886 | 17 | 972 | 17 |
| Total available for sale securities | 130 | \$1,107,872 | \$ 4,786 | \$327,297 | \$ 1,446 | \$1,435,169 | \$ 6,232 |

¹ Includes securities for which an unrealized loss remains in AOCI after an other-than-temporary credit loss has been recognized in income.

For debt securities, management determines whether it intends to sell or if it is more-likely-than-not that it will be required to sell impaired securities. This determination considers current and forecasted liquidity requirements, regulatory and capital requirements and securities portfolio management. Impaired equity securities, including perpetual preferred stocks, are evaluated based on the near-term prospects of the investment in relation to the severity and duration of the impairment and management's ability and intent to hold the securities until fair value recovers. Based on this evaluation as of September 30, 2017, the Company does not intend to sell any impaired available for sale 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.

Fair Value Option Securities

Fair value option securities represent securities which the Company has elected to carry at fair value and are separately identified on the Consolidated Balance Sheets. Changes in the fair value are recognized in earnings as they occur. Certain U.S. Treasury securities, residential mortgage-backed securities issued by U.S. government agencies and derivative contracts are held as an economic hedge of the mortgage servicing rights.

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

| | September 30, 2017 | | December 31, 2016 | | September 30, 2016 | |
|---|--------------------|----------------------------|-------------------|----------------------------|--------------------|----------------------------|
| | Fair Value | Net Unrealized Gain (Loss) | Fair Value | Net Unrealized Gain (Loss) | Fair Value | Net Unrealized Gain (Loss) |
| U.S. Treasury | \$— | \$ — | \$— | \$ — | \$222,409 | \$ (2,397) |
| U.S. government agency residential mortgage-backed securities | 819,531 | 1,671 | 77,046 | (1,777) | — | — |
| Total | \$819,531 | \$ 1,671 | \$77,046 | \$ (1,777) | \$222,409 | \$ (2,397) |

Restricted Equity Securities

Restricted equity securities primarily include stock we are required to hold as members of the Federal Reserve system and the Federal Home Loan Banks. Restricted equity securities are carried at cost as these securities do not have a readily determined fair value because ownership of these shares are restricted and they lack a market. A summary of restricted equity securities follows (in thousands):

| | Sept. 30, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
|------------------------------|----------------|---------------|----------------|
| Federal Reserve stock | \$36,676 | \$36,498 | \$36,283 |
| Federal Home Loan Bank stock | 310,622 | 270,541 | 296,907 |
| Other | 244 | 201 | 201 |
| Total | \$347,542 | \$307,240 | \$333,391 |

(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.

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 as an economic hedge of trading securities. As of September 30, 2017, derivative contracts under the internal risk management programs were primarily used as part of the economic hedges of the change in the fair value of the mortgage servicing rights and trading securities.

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 September 30, 2017 (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 | \$ 14,244,442 | \$ 38,875 | \$ (9,547) | \$ 29,328 | \$— | \$ 29,328 |
| Interest rate swaps | 1,368,210 | 27,016 | — | 27,016 | (2,820) | 24,196 |
| Energy contracts | 983,794 | 45,368 | (35,166) | 10,202 | (238) | 9,964 |
| Agricultural contracts | 60,745 | 1,870 | (1,172) | 698 | — | 698 |
| Foreign exchange contracts | 252,525 | 249,788 | — | 249,788 | — | 249,788 |
| Equity option contracts | 101,841 | 4,871 | — | 4,871 | (920) | 3,951 |
| Total customer risk management programs | 17,011,557 | 367,788 | (45,885) | 321,903 | (3,978) | 317,925 |
| Internal risk management programs | 11,941,260 | 34,634 | — | 34,634 | — | 34,634 |
| Total derivative contracts | \$ 28,952,817 | \$ 402,422 | \$ (45,885) | \$ 356,537 | \$ (3,978) | \$ 352,559 |
| 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 | \$ 14,244,442 | \$ 34,948 | \$ (9,547) | \$ 25,401 | \$ (374) | \$ 25,027 |
| Interest rate swaps | 1,368,230 | 27,056 | — | 27,056 | (16,599) | 10,457 |
| Energy contracts | 939,350 | 42,744 | (35,166) | 7,578 | — | 7,578 |
| Agricultural contracts | 60,746 | 1,846 | (1,172) | 674 | — | 674 |
| Foreign exchange contracts | 249,269 | 245,925 | — | 245,925 | (1,395) | 244,530 |
| Equity option contracts | 101,841 | 4,871 | — | 4,871 | — | 4,871 |
| Total customer risk management programs | 16,963,878 | 357,390 | (45,885) | 311,505 | (18,368) | 293,137 |
| Internal risk management programs | 9,180,531 | 43,190 | — | 43,190 | — | 43,190 |
| Total derivative contracts | \$ 26,144,409 | \$ 400,580 | \$ (45,885) | \$ 354,695 | \$ (18,368) | \$ 336,327 |

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, 2016 (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 | \$ 16,949,152 | \$ 180,695 | \$ (60,555) | \$ 120,140 | \$— | \$ 120,140 |
| Interest rate swaps | 1,403,408 | 34,442 | — | 34,442 | (4,567) | 29,875 |
| Energy contracts | 835,566 | 64,140 | (28,298) | 35,842 | (71) | 35,771 |
| Agricultural contracts | 53,209 | 1,382 | (515) | 867 | — | 867 |
| Foreign exchange contracts | 580,886 | 494,349 | — | 494,349 | (5,183) | 489,166 |
| Equity option contracts | 100,924 | 4,357 | — | 4,357 | (730) | 3,627 |
| Total customer risk management programs | 19,923,145 | 779,365 | (89,368) | 689,997 | (10,551) | 679,446 |
| Internal risk management programs | 2,514,169 | 10,426 | — | 10,426 | — | 10,426 |
| Total derivative contracts | \$ 22,437,314 | \$ 789,791 | \$ (89,368) | \$ 700,423 | \$ (10,551) | \$ 689,872 |
| 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 | \$ 16,637,532 | \$ 176,928 | \$ (60,555) | \$ 116,373 | \$— | \$ 116,373 |
| Interest rate swaps | 1,403,408 | 34,442 | — | 34,442 | (11,977) | 22,465 |
| Energy contracts | 820,365 | 64,306 | (28,298) | 36,008 | (31,534) | 4,474 |
| Agricultural contracts | 53,216 | 1,365 | (515) | 850 | (769) | 81 |
| Foreign exchange contracts | 580,712 | 494,695 | — | 494,695 | (3,630) | 491,065 |
| Equity option contracts | 100,924 | 4,357 | — | 4,357 | — | 4,357 |
| Total customer risk management programs | 19,596,157 | 776,093 | (89,368) | 686,725 | (47,910) | 638,815 |
| Internal risk management programs | 2,582,202 | 25,716 | — | 25,716 | — | 25,716 |
| Total derivative contracts | \$ 22,178,359 | \$ 801,809 | \$ (89,368) | \$ 712,441 | \$ (47,910) | \$ 664,531 |

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 September 30, 2016 (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 | \$20,078,974 | \$90,999 | \$(38,678) | \$52,321 | \$— | \$52,321 |
| Interest rate swaps | 1,323,045 | 49,279 | — | 49,279 | (794) | 48,485 |
| Energy contracts | 729,202 | 41,775 | (28,464) | 13,311 | (288) | 13,023 |
| Agricultural contracts | 53,002 | 3,950 | (1,571) | 2,379 | (1,076) | 1,303 |
| Foreign exchange contracts | 550,828 | 536,264 | — | 536,264 | (7,577) | 528,687 |
| Equity option contracts | 103,464 | 4,654 | — | 4,654 | (730) | 3,924 |
| Total customer risk management programs | 22,838,515 | 726,921 | (68,713) | 658,208 | (10,465) | 647,743 |
| Internal risk management programs | 2,298,038 | 7,335 | — | 7,335 | — | 7,335 |
| Total derivative contracts | \$25,136,553 | \$734,256 | \$(68,713) | \$665,543 | \$(10,465) | \$655,078 |
| 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 | \$19,776,883 | \$86,812 | \$(38,678) | \$48,134 | \$(39,042) | \$9,092 |
| Interest rate swaps | 1,323,045 | 49,518 | — | 49,518 | (34,457) | 15,061 |
| Energy contracts | 695,835 | 40,888 | (28,464) | 12,424 | (3,857) | 8,567 |
| Agricultural contracts | 52,997 | 3,943 | (1,571) | 2,372 | — | 2,372 |
| Foreign exchange contracts | 550,943 | 536,660 | — | 536,660 | (5,396) | 531,264 |
| Equity option contracts | 103,464 | 4,654 | — | 4,654 | — | 4,654 |
| Total customer risk management programs | 22,503,167 | 722,475 | (68,713) | 653,762 | (82,752) | 571,010 |
| Internal risk management programs | 1,485,691 | 2,977 | — | 2,977 | — | 2,977 |
| Total derivative contracts | \$23,988,858 | \$725,452 | \$(68,713) | \$656,739 | \$(82,752) | \$573,987 |

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 | | | |
|--|--------------------|--------------------|--------------------|--------------|
| | September 30, 2017 | | September 30, 2016 | |
| | Brokerage | Gain (Loss) | Brokerage | Gain (Loss) |
| | and | on | and | on |
| | Trading | Derivatives, | Trading | Derivatives, |
| | Revenue | Net | Revenue | Net |
| Customer risk management programs: | | | | |
| Interest rate contracts | | | | |
| To-be-announced residential mortgage-backed securities | \$9,181 | \$ — | \$11,584 | \$ — |
| Interest rate swaps | 767 | — | 710 | — |
| Energy contracts | 378 | — | 1,222 | — |
| Agricultural contracts | 38 | — | 25 | — |
| Foreign exchange contracts | 164 | — | 218 | — |
| Equity option contracts | — | — | — | — |
| Total customer risk management programs | 10,528 | — | 13,759 | — |
| Internal risk management programs | (711) | 1,033 | (1,608) | 2,226 |
| Total derivative contracts | \$9,817 | \$ 1,033 | \$12,151 | \$ 2,226 |
| Nine Months Ended | | | | |
| September 30, 2017 | | September 30, 2016 | | |
| | Brokerage | Gain (Loss) | Brokerage | Gain (Loss) |
| | and | on | and | on |
| | Trading | Derivatives, | Trading | Derivatives, |
| | Revenue | Net | Revenue | Net |
| Customer risk management programs: | | | | |
| Interest rate contracts | | | | |
| To-be-announced residential mortgage-backed securities | \$26,413 | \$ — | \$28,886 | \$ — |
| Interest rate swaps | 1,891 | — | 1,758 | — |
| Energy contracts | 4,917 | — | 4,667 | — |
| Agricultural contracts | 58 | — | 86 | — |
| Foreign exchange contracts | 524 | — | 730 | — |
| Equity option contracts | — | — | — | — |
| Total customer risk management programs | 33,803 | — | 36,127 | — |
| Internal risk management programs | 5,307 | 3,824 | (1,617) | 20,130 |
| Total derivative contracts | \$39,110 | \$ 3,824 | \$34,510 | \$ 20,130 |

(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"). 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.

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.

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 principal balance continues to be guaranteed; 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.

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

| | September 30, 2017 | | | | December 31, 2016 | | | |
|--|--------------------|---------------|-------------|--------------|-------------------|---------------|-------------|--------------|
| | Fixed Rate | Variable Rate | Non-accrual | Total | Fixed Rate | Variable Rate | Non-accrual | Total |
| Commercial | \$2,225,470 | \$8,393,564 | \$ 176,900 | \$10,795,934 | \$2,327,085 | \$7,884,786 | \$ 178,953 | \$10,390,824 |
| Commercial real estate | 564,681 | 2,950,486 | 2,975 | 3,518,142 | 624,187 | 3,179,338 | 5,521 | 3,809,046 |
| Residential mortgage | 1,589,013 | 311,231 | 45,506 | 1,945,750 | 1,647,357 | 256,255 | 46,220 | 1,949,832 |
| Personal | 153,750 | 793,003 | 255 | 947,008 | 154,971 | 684,697 | 290 | 839,958 |
| Total | \$4,532,914 | \$12,448,284 | \$ 225,636 | \$17,206,834 | \$4,753,600 | \$12,005,076 | \$ 230,984 | \$16,989,660 |
| Accruing loans past due (90 days) ¹ | | | | \$253 | | | | \$5 |

| | September 30, 2016 | | | |
|--|--------------------|---------------|-------------|--------------|
| | Fixed Rate | Variable Rate | Non-accrual | Total |
| Commercial | \$1,991,423 | \$7,952,276 | \$ 176,464 | \$10,120,163 |
| Commercial real estate | 565,429 | 3,220,819 | 7,350 | 3,793,598 |
| Residential mortgage | 1,572,288 | 248,053 | 52,452 | 1,872,793 |
| Personal | 104,408 | 573,138 | 686 | 678,232 |
| Total | \$4,233,548 | \$11,994,286 | \$ 236,952 | \$16,464,786 |
| Accruing loans past due (90 days) ¹ | | | | \$3,839 |

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

At September 30, 2017, \$5.9 billion or 34 percent of our total loan portfolio is to businesses and individuals attributed to the Texas market and \$3.4 billion or 20 percent of the total loan portfolio is to businesses and individuals attributed to the Oklahoma market. These geographic concentrations subject the loan portfolio to the general economic conditions within these areas.

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, interest 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 risk is centrally monitored on a continuous basis from underwriting throughout the life of the loan for compliance with commercial lending policies.

At September 30, 2017, commercial loans attributed to the Texas market totaled \$3.7 billion or 34 percent of the commercial loan portfolio segment and commercial loans attributed to the Oklahoma market totaled \$2.1 billion or 19 percent of the commercial loan portfolio segment.

The commercial loan portfolio segment is further divided into loan classes. The energy loan class totaled \$2.9 billion or 17 percent of total loans at September 30, 2017, including \$2.3 billion of outstanding loans to energy producers. Approximately 57 percent of committed production loans are secured by properties primarily producing oil and 43

percent are secured by properties producing natural gas. The services loan class totaled \$3.0 billion or 17 percent of total loans at September 30, 2017. Approximately \$1.5 billion of loans in the services category consist of loans with individual balances of less than \$10 million. Businesses included in the services class include governmental, educational services, consumer services, loans to entities providing services for real estate and construction and commercial services. The healthcare loan class totaled \$2.2 billion or 13 percent of total loans at September 30, 2017. The healthcare loan class 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.

Commercial Real Estate

Commercial real estate loans are for the construction of buildings or other improvements to real estate and property held by borrowers for investment purposes primarily within our geographical footprint. 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.

At September 30, 2017, 35 percent of commercial real estate loans are secured by properties primarily located in the Dallas and Houston areas of Texas. An additional 13 percent of commercial real estate loans are secured by properties located primarily in the Tulsa and Oklahoma City metropolitan areas of Oklahoma.

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 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 retained in the Company's portfolio are primarily composed of various mortgage programs to support customer relationships including jumbo mortgage loans, non-builder construction loans and special loan programs for high net worth individuals and certain professionals. Jumbo loans may be fixed or variable rate and are fully amortizing. Jumbo loans generally conform to government sponsored entity standards, except that the loan size exceeds maximums required under these 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 ("LTV") ratios are tiered from 60 percent to 100 percent, depending on the market. Special mortgage programs include fixed and variable 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 September 30, 2017, residential mortgage loans included \$187 million of loans guaranteed by U.S. government agencies previously sold into GNMA mortgage pools. These loans either have been repurchased or are eligible to be repurchased by the Company when certain defined delinquency criteria are met. Although payments on these loans generally are past due more than 90 days, interest continues to accrue based on the government guarantee.

Home equity loans totaled \$744 million at September 30, 2017. Approximately 64 percent of the home equity loan portfolio is comprised of first lien loans and 36 percent of the home equity portfolio is comprised of junior lien loans. Junior lien loans are distributed 47 percent to amortizing term loans and 53 percent to revolving lines of credit. Home equity loans generally require a minimum FICO score of 700 and a maximum DTI of 40 percent. The maximum loan amount available for our home equity loan products is generally \$400 thousand. Revolving loans have a 5 year revolving period followed by a 15 year term of amortizing repayments. Interest-only home equity loans 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.

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 September 30, 2017, outstanding commitments totaled \$9.7 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.

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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 September 30, 2017, outstanding standby letters of credit totaled \$666 million. Commercial letters of credit are used to facilitate customer trade transactions with the drafts being drawn when the underlying transaction is consummated. At September 30, 2017, outstanding commercial letters of credit totaled \$2.3 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 nine months ended September 30, 2017.

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 September 30, 2017 is summarized as follows (in thousands):

| | Commercial | Commercial Real Estate | Residential Mortgage | Personal | Nonspecific Allowance | Total |
|--|------------|------------------------|----------------------|----------|-----------------------|------------|
| Allowance for loan losses: | | | | | | |
| Beginning balance | \$ 137,742 | \$ 58,580 | \$ 18,259 | \$ 8,106 | \$ 27,374 | \$ 250,061 |
| Provision for loan losses | 2,474 | (2,914) | 168 | 598 | 704 | 1,030 |
| Loans charged off | (4,429) | — | (168) | (1,228) | — | (5,825) |
| Recoveries | 1,014 | 739 | 134 | 550 | — | 2,437 |
| Ending balance | \$ 136,801 | \$ 56,405 | \$ 18,393 | \$ 8,026 | \$ 28,078 | \$ 247,703 |
| Allowance for off-balance sheet credit losses: | | | | | | |
| Beginning balance | \$ 6,301 | \$ 84 | \$ 38 | \$ 8 | \$ — | \$ 6,431 |
| Provision for off-balance sheet credit losses | (976) | (49) | 1 | (6) | — | (1,030) |
| Ending balance | \$ 5,325 | \$ 35 | \$ 39 | \$ 2 | \$ — | \$ 5,401 |
| Total provision for credit losses | \$ 1,498 | \$ (2,963) | \$ 169 | \$ 592 | \$ 704 | \$ — |

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 nine months ended September 30, 2017 is summarized as follows (in thousands):

| | Commercial | Commercial Real Estate | Residential Mortgage | Personal | Nonspecific Allowance | Total |
|--|-------------|------------------------|----------------------|----------|-----------------------|------------|
| Allowance for loan losses: | | | | | | |
| Beginning balance | \$ 140,213 | \$ 50,749 | \$ 18,224 | \$ 8,773 | \$ 28,200 | \$ 246,159 |
| Provision for loan losses | 665 | 4,050 | 82 | 1,168 | (122) | 5,843 |
| Loans charged off | (6,556) | (76) | (444) | (3,774) | — | (10,850) |
| Recoveries | 2,479 | 1,682 | 531 | 1,859 | — | 6,551 |
| Ending balance | \$ 136,801 | \$ 56,405 | \$ 18,393 | \$ 8,026 | \$ 28,078 | \$ 247,703 |
| Allowance for off-balance sheet credit losses: | | | | | | |
| Beginning balance | \$ 11,063 | \$ 123 | \$ 50 | \$ 8 | \$ — | \$ 11,244 |
| Provision for off-balance sheet credit losses | (5,738) | (88) | (11) | (6) | — | (5,843) |
| Ending balance | \$ 5,325 | \$ 35 | \$ 39 | \$ 2 | \$ — | \$ 5,401 |
| Total provision for credit losses | \$ (5,073) | \$ 3,962 | \$ 71 | \$ 1,162 | \$ (122) | \$ — |

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 September 30, 2016 is summarized as follows (in thousands):

| | Commercial | Commercial Real Estate | Residential Mortgage | Personal | Nonspecific Allowance | Total |
|--|------------|------------------------|----------------------|----------|-----------------------|------------|
| Allowance for loan losses: | | | | | | |
| Beginning balance | \$ 145,139 | \$ 46,745 | \$ 18,690 | \$ 6,001 | \$ 26,684 | \$ 243,259 |
| Provision for loan losses | 2,420 | 2,551 | (466) | 1,900 | 1,502 | 7,907 |
| Loans charged off | (6,266) | — | (285) | (1,550) | — | (8,101) |
| Recoveries | 177 | 521 | 650 | 690 | — | 2,038 |
| Ending balance | \$ 141,470 | \$ 49,817 | \$ 18,589 | \$ 7,041 | \$ 28,186 | \$ 245,103 |
| Allowance for off-balance sheet credit losses: | | | | | | |
| Beginning balance | \$ 8,752 | \$ 203 | \$ 62 | \$ 28 | \$ — | \$ 9,045 |
| Provision for off-balance sheet credit losses | 2,170 | (53) | (7) | (17) | — | 2,093 |
| Ending balance | \$ 10,922 | \$ 150 | \$ 55 | \$ 11 | \$ — | \$ 11,138 |
| Total provision for credit losses | \$ 4,590 | \$ 2,498 | \$ (473) | \$ 1,883 | \$ 1,502 | \$ 10,000 |

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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 nine months ended September 30, 2016 is summarized as follows (in thousands):

| | Commercial | Commercial Real Estate | Residential Mortgage | Personal | Nonspecific Allowance | Total |
|--|------------|------------------------|----------------------|----------|-----------------------|------------|
| Allowance for loan losses: | | | | | | |
| Beginning balance | \$ 130,334 | \$ 41,391 | \$ 19,509 | \$ 4,164 | \$ 30,126 | \$ 225,524 |
| Provision for loan losses | 45,995 | 7,538 | (829) | 4,809 | (1,940) | 55,573 |
| Loans charged off | (35,747) | — | (1,104) | (4,086) | — | (40,937) |
| Recoveries | 888 | 888 | 1,013 | 2,154 | — | 4,943 |
| Ending balance | \$ 141,470 | \$ 49,817 | \$ 18,589 | \$ 7,041 | \$ 28,186 | \$ 245,103 |
| Allowance for off-balance sheet credit losses: | | | | | | |
| Beginning balance | \$ 1,506 | \$ 153 | \$ 30 | \$ 22 | \$ — | \$ 1,711 |
| Provision for off-balance sheet credit losses | 9,416 | (3) | 25 | (11) | — | 9,427 |
| Ending balance | \$ 10,922 | \$ 150 | \$ 55 | \$ 11 | \$ — | \$ 11,138 |
| Total provision for credit losses | \$ 55,411 | \$ 7,535 | \$ (804) | \$ 4,798 | \$ (1,940) | \$ 65,000 |

The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at September 30, 2017 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 | \$ 10,619,034 | \$ 123,517 | \$ 176,900 | \$ 13,284 | \$ 10,795,934 | \$ 136,801 |
| Commercial real estate | 3,515,167 | 56,405 | 2,975 | — | 3,518,142 | 56,405 |
| Residential mortgage | 1,900,244 | 18,393 | 45,506 | — | 1,945,750 | 18,393 |
| Personal | 946,753 | 8,026 | 255 | — | 947,008 | 8,026 |
| Total | 16,981,198 | 206,341 | 225,636 | 13,284 | 17,206,834 | 219,625 |
| Nonspecific allowance | — | — | — | — | — | 28,078 |
| Total | \$ 16,981,198 | \$ 206,341 | \$ 225,636 | \$ 13,284 | \$ 17,206,834 | \$ 247,703 |

The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at December 31, 2016 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 | \$ 10,211,871 | \$ 139,416 | \$ 178,953 | \$ 797 | \$ 10,390,824 | \$ 140,213 |
| Commercial real estate | 3,803,525 | 50,749 | 5,521 | — | 3,809,046 | 50,749 |
| Residential mortgage | 1,903,612 | 18,178 | 46,220 | 46 | 1,949,832 | 18,224 |
| Personal | 839,668 | 8,773 | 290 | — | 839,958 | 8,773 |
| Total | 16,758,676 | 217,116 | 230,984 | 843 | 16,989,660 | 217,959 |

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| | | | | | | |
|-----------------------|--------------|------------|-----------|--------|--------------|------------|
| Nonspecific allowance | — | — | — | — | — | 28,200 |
| Total | \$16,758,676 | \$ 217,116 | \$230,984 | \$ 843 | \$16,989,660 | \$ 246,159 |

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The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at September 30, 2016 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 | \$9,943,699 | \$ 134,968 | \$ 176,464 | \$ 6,502 | \$ 10,120,163 | \$ 141,470 |
| Commercial real estate | 3,786,248 | 49,817 | 7,350 | — | 3,793,598 | 49,817 |
| Residential mortgage | 1,820,341 | 18,527 | 52,452 | 62 | 1,872,793 | 18,589 |
| Personal | 677,546 | 7,041 | 686 | — | 678,232 | 7,041 |
| Total | 16,227,834 | 210,353 | 236,952 | 6,564 | 16,464,786 | 216,917 |
| Nonspecific allowance | — | — | — | — | — | 28,186 |
| Total | \$ 16,227,834 | \$ 210,353 | \$ 236,952 | \$ 6,564 | \$ 16,464,786 | \$ 245,103 |

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 September 30, 2017 is as follows (in thousands):

| | Internally Risk Graded | | Non-Graded | | Total | |
|------------------------|------------------------|----------------------|------------------------|----------------------|------------------------|----------------------|
| | Recorded Investment | Related Allowance | Recorded Investment | Related Allowance | Recorded Investment | Related Allowance |
| Commercial | \$ 10,750,657 | \$ 135,846 | \$ 45,277 | \$ 955 | \$ 10,795,934 | \$ 136,801 |
| Commercial real estate | 3,518,142 | 56,405 | — | — | 3,518,142 | 56,405 |
| Residential mortgage | 226,306 | 3,068 | 1,719,444 | 15,325 | 1,945,750 | 18,393 |
| Personal | 856,030 | 6,043 | 90,978 | 1,983 | 947,008 | 8,026 |
| Total | 15,351,135 | 201,362 | 1,855,699 | 18,263 | 17,206,834 | 219,625 |
| Nonspecific allowance | — | — | — | — | — | 28,078 |
| Total | \$ 15,351,135 | \$ 201,362 | \$ 1,855,699 | \$ 18,263 | \$ 17,206,834 | \$ 247,703 |

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, 2016 is as follows (in thousands):

| | Internally Risk Graded | | Non-Graded | | Total | |
|------------------------|------------------------|------------|--------------|-----------|---------------|------------|
| | Recorded | Related | Recorded | Related | Recorded | Related |
| | Investment | Allowance | Investment | Allowance | Investment | Allowance |
| Commercial | \$10,360,725 | \$ 139,293 | \$30,099 | \$ 920 | \$10,390,824 | \$ 140,213 |
| Commercial real estate | 3,809,046 | 50,749 | — | — | 3,809,046 | 50,749 |
| Residential mortgage | 243,703 | 2,893 | 1,706,129 | 15,331 | 1,949,832 | 18,224 |
| Personal | 744,602 | 5,035 | 95,356 | 3,738 | 839,958 | 8,773 |
| Total | 15,158,076 | 197,970 | 1,831,584 | 19,989 | 16,989,660 | 217,959 |
| Nonspecific allowance | — | — | — | — | — | 28,200 |
| Total | \$15,158,076 | \$ 197,970 | \$ 1,831,584 | \$ 19,989 | \$ 16,989,660 | \$ 246,159 |

The allowance for loan losses and recorded investment of the related loans by portfolio segment for risk graded and non-risk graded loans at September 30, 2016 is as follows (in thousands):

| | Internally Risk Graded | | Non-Graded | | Total | |
|------------------------|------------------------|------------|--------------|-----------|---------------|------------|
| | Recorded | Related | Recorded | Related | Recorded | Related |
| | Investment | Allowance | Investment | Allowance | Investment | Allowance |
| Commercial | \$10,093,884 | \$ 140,552 | \$26,279 | \$ 918 | \$10,120,163 | \$ 141,470 |
| Commercial real estate | 3,793,598 | 49,817 | — | — | 3,793,598 | 49,817 |
| Residential mortgage | 206,430 | 3,028 | 1,666,363 | 15,561 | 1,872,793 | 18,589 |
| Personal | 586,869 | 4,182 | 91,363 | 2,859 | 678,232 | 7,041 |
| Total | 14,680,781 | 197,579 | 1,784,005 | 19,338 | 16,464,786 | 216,917 |
| Nonspecific allowance | — | — | — | — | — | 28,186 |
| Total | \$14,680,781 | \$ 197,579 | \$ 1,784,005 | \$ 19,338 | \$ 16,464,786 | \$ 245,103 |

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.

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The following table summarizes the Company's loan portfolio at September 30, 2017 by the risk grade categories (in thousands):

| | Internally Risk Graded Performing | | | Non-Graded | | | Total |
|--|--------------------------------------|---|-------------------------|-------------------|--------------------|------------------|---------------------|
| | Pass | Other Loans Especially Mentioned | Accruing Substandard | Nonaccrual | Performing | Nonaccrual | |
| Commercial: | | | | | | | |
| Energy | \$2,436,465 | \$ 114,065 | \$ 206,768 | \$ 110,683 | \$— | \$— | \$2,867,981 |
| Services | 2,932,577 | 26,372 | 7,390 | 1,174 | — | — | 2,967,513 |
| Wholesale/retail | 1,637,698 | 9,021 | 9,486 | 1,893 | — | — | 1,658,098 |
| Manufacturing | 486,383 | 7,181 | 16,823 | 9,059 | — | — | 519,446 |
| Healthcare | 2,150,099 | 31,855 | 33,051 | 24,446 | — | — | 2,239,451 |
| Other commercial and industrial | 458,796 | 52 | 9,820 | 29,500 | 45,132 | 145 | 543,445 |
| Total commercial | 10,102,018 | 188,546 | 283,338 | 176,755 | 45,132 | 145 | 10,795,934 |
| Commercial real estate: | | | | | | | |
| Residential construction and land development | 110,178 | — | — | 1,924 | — | — | 112,102 |
| Retail | 724,887 | 689 | — | 289 | — | — | 725,865 |
| Office | 788,539 | 8,275 | — | 275 | — | — | 797,089 |
| Multifamily | 998,125 | — | 884 | — | — | — | 999,009 |
| Industrial | 591,080 | — | — | — | — | — | 591,080 |
| Other commercial real estate | 292,509 | — | 1 | 487 | — | — | 292,997 |
| Total commercial real estate | 3,505,318 | 8,964 | 885 | 2,975 | — | — | 3,518,142 |
| Residential mortgage: | | | | | | | |
| Permanent mortgage | 224,235 | 393 | 462 | 1,216 | 764,252 | 23,407 | 1,013,965 |
| Permanent mortgages guaranteed by U.S. government agencies | — | — | — | — | 178,479 | 8,891 | 187,370 |
| Home equity | — | — | — | — | 732,423 | 11,992 | 744,415 |
| Total residential mortgage | 224,235 | 393 | 462 | 1,216 | 1,675,154 | 44,290 | 1,945,750 |
| Personal | 855,857 | 49 | 38 | 86 | 90,809 | 169 | 947,008 |
| Total | \$14,687,428 | \$ 197,952 | \$ 284,723 | \$ 181,032 | \$1,811,095 | \$ 44,604 | \$17,206,834 |

The following table summarizes the Company's loan portfolio at December 31, 2016 by the risk grade categories (in thousands):

| | Internally Risk Graded Performing | | | Non-Graded | | | Total |
|--|--------------------------------------|---|-------------------------|------------------|--------------------|-----------------|---------------------|
| | Pass | Other Loans Especially Mentioned | Accruing Substandard | Nonaccrual | Performing | Nonaccrual | |
| Commercial: | | | | | | | |
| Energy | \$1,937,790 | \$119,583 | \$307,996 | \$132,499 | \$— | \$— | \$2,497,868 |
| Services | 3,052,002 | 10,960 | 37,855 | 8,173 | — | — | 3,108,990 |
| Wholesale/retail | 1,535,463 | 16,886 | 13,062 | 11,407 | — | — | 1,576,818 |
| Manufacturing | 468,314 | 26,532 | 15,198 | 4,931 | — | — | 514,975 |
| Healthcare | 2,140,458 | 44,472 | 16,161 | 825 | — | — | 2,201,916 |
| Other commercial and industrial | 433,789 | 5,309 | — | 21,060 | 30,041 | 58 | 490,257 |
| Total commercial | 9,567,816 | 223,742 | 390,272 | 178,895 | 30,041 | 58 | 10,390,824 |
| Commercial real estate: | | | | | | | |
| Residential construction and land development | 131,630 | — | 470 | 3,433 | — | — | 135,533 |
| Retail | 756,418 | 4,745 | 399 | 326 | — | — | 761,888 |
| Office | 798,462 | — | — | 426 | — | — | 798,888 |
| Multifamily | 898,800 | — | 4,434 | 38 | — | — | 903,272 |
| Industrial | 871,673 | — | — | 76 | — | — | 871,749 |
| Other commercial real estate | 336,488 | — | 6 | 1,222 | — | — | 337,716 |
| Total commercial real estate | 3,793,471 | 4,745 | 5,309 | 5,521 | — | — | 3,809,046 |
| Residential mortgage: | | | | | | | |
| Permanent mortgage | 238,769 | 1,186 | 2,331 | 1,417 | 741,679 | 21,438 | 1,006,820 |
| Permanent mortgages guaranteed by U.S. government agencies | — | — | — | — | 187,541 | 11,846 | 199,387 |
| Home equity | — | — | — | — | 732,106 | 11,519 | 743,625 |
| Total residential mortgage | 238,769 | 1,186 | 2,331 | 1,417 | 1,661,326 | 44,803 | 1,949,832 |
| Personal | 743,451 | — | 1,054 | 97 | 95,163 | 193 | 839,958 |
| Total | \$14,343,507 | \$229,673 | \$398,966 | \$185,930 | \$1,786,530 | \$45,054 | \$16,989,660 |

The following table summarizes the Company's loan portfolio at September 30, 2016 by the risk grade categories (in thousands):

| | Internally Risk Graded Performing | | | Non-Graded | | | Total |
|--|--------------------------------------|---|-------------------------|------------------|--------------------|-----------------|---------------------|
| | Pass | Other Loans Especially Mentioned | Accruing Substandard | Nonaccrual | Performing | Nonaccrual | |
| Commercial: | | | | | | | |
| Energy | \$1,869,598 | \$147,153 | \$361,087 | \$142,966 | \$— | \$— | \$2,520,804 |
| Services | 2,882,065 | 14,861 | 31,196 | 8,477 | — | — | 2,936,599 |
| Wholesale/retail | 1,557,067 | 15,337 | 27,173 | 2,453 | — | — | 1,602,030 |
| Manufacturing | 470,702 | 8,774 | 19,736 | 274 | — | — | 499,486 |
| Healthcare | 2,022,757 | 42,224 | 19,210 | 855 | — | — | 2,085,046 |
| Other commercial and industrial | 415,769 | 2,478 | 10,302 | 21,370 | 26,210 | 69 | 476,198 |
| Total commercial | 9,217,958 | 230,827 | 468,704 | 176,395 | 26,210 | 69 | 10,120,163 |
| Commercial real estate: | | | | | | | |
| Residential construction and land development | 155,737 | — | 470 | 3,739 | — | — | 159,946 |
| Retail | 794,920 | 4,802 | 406 | 1,249 | — | — | 801,377 |
| Office | 750,924 | 899 | — | 882 | — | — | 752,705 |
| Multifamily | 868,501 | — | 5,221 | 51 | — | — | 873,773 |
| Industrial | 837,945 | — | — | 76 | — | — | 838,021 |
| Other commercial real estate | 366,416 | — | 7 | 1,353 | — | — | 367,776 |
| Total commercial real estate | 3,774,443 | 5,701 | 6,104 | 7,350 | — | — | 3,793,598 |
| Residential mortgage: | | | | | | | |
| Permanent mortgage | 200,590 | 1,192 | 2,134 | 2,514 | 739,686 | 23,442 | 969,558 |
| Permanent mortgages guaranteed by U.S. government agencies | — | — | — | — | 174,877 | 15,432 | 190,309 |
| Home equity | — | — | — | — | 701,862 | 11,064 | 712,926 |
| Total residential mortgage | 200,590 | 1,192 | 2,134 | 2,514 | 1,616,425 | 49,938 | 1,872,793 |
| Personal | 585,287 | 228 | 923 | 431 | 91,108 | 255 | 678,232 |
| Total | \$13,778,278 | \$237,948 | \$477,865 | \$186,690 | \$1,733,743 | \$50,262 | \$16,464,786 |

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 includes all nonaccruing loans, all loans modified in a TDR and all loans repurchased from GNMA pools.

A summary of impaired loans follows (in thousands):

| | As of | | | | | For the | | For the | |
|--|--------------------------|---------------------|-------------------|----------------|-------------------|-----------------------------|---------------------|-----------------------------|---------------------|
| | September 30, 2017 | | | | | Three Months Ended | | Nine Months Ended | |
| | Unpaid Principal Balance | Recorded Investment | | | Related Allowance | September 30, 2017 | | September 30, 2017 | |
| | | Total | With No Allowance | With Allowance | | Average Recorded Investment | Interest Recognized | Average Recorded Investment | Interest Recognized |
| Commercial: | | | | | | | | | |
| Energy | \$133,643 | \$110,683 | \$45,169 | \$65,514 | \$4,944 | \$117,338 | \$— | \$121,591 | \$— |
| Services | 3,838 | 1,174 | 1,174 | — | — | 4,464 | — | 4,674 | — |
| Wholesale/retail | 8,418 | 1,893 | 1,893 | — | — | 6,256 | — | 6,650 | — |
| Manufacturing | 9,674 | 9,059 | 9,059 | — | — | 9,357 | — | 6,995 | — |
| Healthcare | 24,591 | 24,446 | 474 | 23,972 | 8,323 | 24,476 | — | 12,635 | — |
| Other commercial and industrial | 38,222 | 29,645 | 29,626 | 19 | 17 | 25,138 | — | 25,382 | — |
| Total commercial | 218,386 | 176,900 | 87,395 | 89,505 | 13,284 | 187,029 | — | 177,927 | — |
| Commercial real estate: | | | | | | | | | |
| Residential construction and land development | 3,532 | 1,924 | 1,924 | — | — | 1,988 | — | 2,679 | — |
| Retail | 513 | 289 | 289 | — | — | 295 | — | 308 | — |
| Office | 287 | 275 | 275 | — | — | 335 | — | 351 | — |
| Multifamily | — | — | — | — | — | 5 | — | 19 | — |
| Industrial | — | — | — | — | — | — | — | 38 | — |
| Other commercial real estate | 671 | 487 | 487 | — | — | 752 | — | 855 | — |
| Total commercial real estate | 5,003 | 2,975 | 2,975 | — | — | 3,375 | — | 4,250 | — |
| Residential mortgage: | | | | | | | | | |
| Permanent mortgage | 29,861 | 24,623 | 24,623 | — | — | 24,019 | 315 | 23,739 | 912 |
| Permanent mortgage guaranteed by U.S. government agencies ¹ | 193,594 | 187,370 | 187,370 | — | — | 188,461 | 1,884 | 199,532 | 5,809 |
| Home equity | 13,332 | 11,992 | 11,992 | — | — | 11,880 | — | 11,755 | — |
| Total residential mortgage | 236,787 | 223,985 | 223,985 | — | — | 224,360 | 2,199 | 235,026 | 6,721 |
| Personal | 290 | 255 | 255 | — | — | 263 | — | 273 | — |

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Total \$460,466 \$404,115 \$314,610 \$89,505 \$13,284 \$415,027 \$2,199 \$417,476 \$6,721

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 September 30, 2017, \$8.9 million of these loans were nonaccruing and \$178 million 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.

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A summary of impaired loans at December 31, 2016 follows (in thousands):

| | Unpaid Principal Balance | Recorded Investment | | | Related Allowance |
|--|--------------------------------|---------------------|----------------------|-------------------|----------------------|
| | | Total | With No Allowance | With Allowance | |
| Commercial: | | | | | |
| Energy | \$146,897 | \$132,499 | \$121,418 | \$11,081 | \$762 |
| Services | 11,723 | 8,173 | 8,173 | — | — |
| Wholesale/retail | 17,669 | 11,407 | 11,407 | — | — |
| Manufacturing | 5,320 | 4,931 | 4,931 | — | — |
| Healthcare | 1,147 | 825 | 825 | — | — |
| Other commercial and industrial | 29,006 | 21,118 | 21,083 | 35 | 35 |
| Total commercial | 211,762 | 178,953 | 167,837 | 11,116 | 797 |
| Commercial real estate: | | | | | |
| Residential construction and land development | 4,951 | 3,433 | 3,433 | — | — |
| Retail | 530 | 326 | 326 | — | — |
| Office | 521 | 426 | 426 | — | — |
| Multifamily | 1,000 | 38 | 38 | — | — |
| Industrial | 76 | 76 | 76 | — | — |
| Other commercial real estate | 7,349 | 1,222 | 1,222 | — | — |
| Total commercial real estate | 14,427 | 5,521 | 5,521 | — | — |
| Residential mortgage: | | | | | |
| Permanent mortgage | 28,830 | 22,855 | 22,809 | 46 | 46 |
| Permanent mortgage guaranteed by U.S. government agencies ¹ | 205,564 | 199,387 | 199,387 | — | — |
| Home equity | 12,611 | 11,519 | 11,519 | — | — |
| Total residential mortgage | 247,005 | 233,761 | 233,715 | 46 | 46 |
| Personal | 332 | 290 | 290 | — | — |
| Total | \$473,526 | \$418,525 | \$407,363 | \$11,162 | \$843 |

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, 2016, \$12 million of these loans were nonaccruing and \$188 million were accruing based on the guarantee by U.S. government agencies.

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A summary of impaired loans at September 30, 2016 follows (in thousands):

| | As of September 30, 2016 | | | | | For the | For the | | |
|--|--------------------------|---------------------------|-------------------|------------------|-------------------|---------------------------------------|---------------------|--------------------------------------|---------------------|
| | Unpaid Principal Balance | Recorded Investment Total | With No Allowance | With Allowance | Related Allowance | Three Months Ended September 30, 2016 | September 30, 2016 | Nine Months Ended September 30, 2016 | September 30, 2016 |
| | | | | | | Average Recorded Investment | Interest Recognized | Average Recorded Investment | Interest Recognized |
| Commercial: | | | | | | | | | |
| Energy | \$ 179,578 | \$ 142,966 | \$ 100,300 | \$ 42,666 | \$ 6,502 | \$ 155,555 | \$ — | \$ 85,333 | \$ — |
| Services | 11,858 | 8,477 | 8,477 | — | — | 8,932 | — | 9,384 | — |
| Wholesale/retail | 8,528 | 2,453 | 2,453 | — | — | 2,613 | — | 2,686 | — |
| Manufacturing | 642 | 274 | 274 | — | — | 284 | — | 303 | — |
| Healthcare | 1,168 | 855 | 855 | — | — | 865 | — | 964 | — |
| Other commercial and industrial | 29,176 | 21,439 | 21,439 | — | — | 10,978 | — | 11,031 | — |
| Total commercial | 230,950 | 176,464 | 133,798 | 42,666 | 6,502 | 179,227 | — | 109,701 | — |
| Commercial real estate: | | | | | | | | | |
| Residential | | | | | | | | | |
| construction and land development | 6,090 | 3,739 | 3,739 | — | — | 4,000 | — | 4,074 | — |
| Retail | 1,914 | 1,249 | 1,249 | — | — | 1,257 | — | 1,284 | — |
| Office | 1,187 | 882 | 882 | — | — | 744 | — | 766 | — |
| Multifamily | 1,000 | 51 | 51 | — | — | 58 | — | 163 | — |
| Industrial | 76 | 76 | 76 | — | — | 76 | — | 76 | — |
| Other commercial real estate | 7,375 | 1,353 | 1,353 | — | — | 1,430 | — | 1,813 | — |
| Total commercial real estate | 17,642 | 7,350 | 7,350 | — | — | 7,565 | — | 8,176 | — |
| Residential mortgage: | | | | | | | | | |
| Permanent mortgage | 32,372 | 25,956 | 25,847 | 109 | 62 | 26,592 | 292 | 27,470 | 923 |
| Permanent mortgage guaranteed by U.S. government agencies ¹ | 196,162 | 190,309 | 190,309 | — | — | 190,547 | 2,098 | 193,879 | 5,893 |
| Home equity | 12,099 | 11,064 | 11,064 | — | — | 10,578 | — | 10,710 | — |
| Total residential mortgage | 240,633 | 227,329 | 227,220 | 109 | 62 | 227,717 | 2,390 | 232,059 | 6,816 |
| Personal | 724 | 686 | 686 | — | — | 520 | — | 575 | — |
| Total | \$ 489,949 | \$ 411,829 | \$ 369,054 | \$ 42,775 | \$ 6,564 | \$ 415,029 | \$ 2,390 | \$ 350,511 | \$ 6,816 |

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 September 30, 2016, \$15 million of these loans were nonaccruing and \$175 million were accruing based on the guarantee by U.S. government agencies.

Troubled Debt Restructurings

A summary of troubled debt restructurings ("TDRs") by accruing status as of September 30, 2017 is as follows (in thousands):

| | As of September 30, 2017 | | | | Amounts Charged Off During: | |
|--|--------------------------|--|--|--------------------|-----------------------------------|----------------------------------|
| | Recorded Investment | Performing in Accordance with Modified Terms | Not Performing in Accordance with Modified Terms | Specific Allowance | Three Months Ended Sept. 30, 2017 | Nine Months Ended Sept. 30, 2017 |
| Nonaccruing TDRs: | | | | | | |
| Commercial: | | | | | | |
| Energy | \$9,582 | \$ 9,506 | \$ 76 | \$ — | —\$4,322 | \$ 4,322 |
| Services | 720 | 103 | 617 | — | 7 | 10 |
| Wholesale/retail | 1,802 | — | 1,802 | — | — | — |
| Manufacturing | 180 | 180 | — | — | — | — |
| Healthcare | — | — | — | — | — | — |
| Other commercial and industrial | 20,097 | 19,890 | 207 | — | — | — |
| Total commercial | 32,381 | 29,679 | 2,702 | — | 4,329 | 4,332 |
| Commercial real estate: | | | | | | |
| Residential construction and land development | 327 | 91 | 236 | — | — | — |
| Retail | 289 | 289 | — | — | — | — |
| Office | — | — | — | — | — | — |
| Multifamily | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — |
| Other commercial real estate | 353 | 353 | — | — | — | — |
| Total commercial real estate | 969 | 733 | 236 | — | — | — |
| Residential mortgage: | | | | | | |
| Permanent mortgage | 14,765 | 10,188 | 4,577 | — | — | — |
| Permanent mortgage guaranteed by U.S. government agencies | 5,601 | 523 | 5,078 | — | — | — |
| Home equity | 5,625 | 4,213 | 1,412 | — | 39 | 70 |
| Total residential mortgage | 25,991 | 14,924 | 11,067 | — | 39 | 70 |
| Personal | 205 | 195 | 10 | — | 2 | 10 |
| Total nonaccruing TDRs | \$59,546 | \$ 45,531 | \$ 14,015 | \$ — | —\$4,370 | \$ 4,412 |
| Accruing TDRs: | | | | | | |
| Permanent mortgages guaranteed by U.S. government agencies | 69,440 | 14,948 | 54,492 | — | — | — |

| | | | | | | |
|------------|-----------|-----------|-----------|----|----------|---------|
| Total TDRs | \$128,986 | \$ 60,479 | \$ 68,507 | \$ | —\$4,370 | \$4,412 |
|------------|-----------|-----------|-----------|----|----------|---------|

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A summary of troubled debt restructurings by accruing status as of December 31, 2016 is as follows (in thousands):

| | As of December 31, 2016 | | Not Performing in Accordance With Modified Terms | Specific Allowance |
|--|----------------------------|---|--|-----------------------|
| | Recorded Investment | Performing in Accordance With Modified Terms | | |
| Nonaccruing TDRs: | | | | |
| Commercial: | | | | |
| Energy | \$ 16,893 | \$ 10,867 | \$ 6,026 | \$ — |
| Services | 7,527 | 6,830 | 697 | — |
| Wholesale/retail | 11,291 | 11,251 | 40 | — |
| Manufacturing | 224 | 224 | — | — |
| Healthcare | 607 | — | 607 | — |
| Other commercial and industrial | 337 | 53 | 284 | — |
| Total commercial | 36,879 | 29,225 | 7,654 | — |
| Commercial real estate: | | | | |
| Residential construction and land development | 690 | 97 | 593 | — |
| Retail | 326 | 326 | — | — |
| Office | 143 | 143 | — | — |
| Multifamily | — | — | — | — |
| Industrial | — | — | — | — |
| Other commercial real estate | 548 | 548 | — | — |
| Total commercial real estate | 1,707 | 1,114 | 593 | — |
| Residential mortgage: | | | | |
| Permanent mortgage | 14,876 | 10,175 | 4,701 | 46 |
| Permanent mortgage guaranteed by U.S. government agencies | 6,702 | 2,241 | 4,461 | — |
| Home equity | 5,346 | 4,458 | 888 | — |
| Total residential mortgage | 26,924 | 16,874 | 10,050 | 46 |
| Personal | 237 | 236 | 1 | — |
| Total nonaccruing TDRs | \$ 65,747 | \$ 47,449 | \$ 18,298 | \$ 46 |
| Accruing TDRs: | | | | |
| Permanent mortgages guaranteed by U.S. government agencies | 81,370 | 27,289 | 54,081 | — |
| Total TDRs | \$ 147,117 | \$ 74,738 | \$ 72,379 | \$ 46 |

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A summary of troubled debt restructurings by accruing status as of September 30, 2016 is as follows (in thousands):

| | As of September 30, 2016 | | | | Amounts Charged Off During: | |
|--|--------------------------|--------------------------------|--|--------------------|-----------------------------------|----------------------------------|
| | Recorded Investment | Performing With Modified Terms | Not Performing in Accordance With Modified Terms | Specific Allowance | Three Months Ended Sept. 30, 2016 | Nine Months Ended Sept. 30, 2016 |
| Nonaccruing TDRs: | | | | | | |
| Commercial: | | | | | | |
| Energy | \$1,746 | \$ — | \$ 1,746 | \$ — | \$500 | \$1,000 |
| Services | 7,761 | 7,034 | 727 | — | — | — |
| Wholesale/retail | 2,327 | 2,287 | 40 | — | — | — |
| Manufacturing | 238 | 238 | — | — | — | — |
| Healthcare | 623 | — | 623 | — | — | — |
| Other commercial and industrial | 497 | 61 | 436 | — | — | 57 |
| Total commercial | 13,192 | 9,620 | 3,572 | — | 500 | 1,057 |
| Commercial real estate: | | | | | | |
| Residential construction and land development | 794 | 359 | 435 | — | — | — |
| Retail | 1,249 | 892 | 357 | — | — | — |
| Office | 149 | 149 | — | — | — | — |
| Multifamily | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — |
| Other commercial real estate | 666 | 666 | — | — | — | — |
| Total commercial real estate | 2,858 | 2,066 | 792 | — | — | — |
| Residential mortgage: | | | | | | |
| Permanent mortgage | 16,109 | 11,944 | 4,165 | 62 | — | 2 |
| Permanent mortgage guaranteed by U.S. government agencies | 8,220 | 2,331 | 5,889 | — | — | — |
| Home equity | 5,168 | 4,667 | 501 | — | 34 | 153 |
| Total residential mortgage | 29,497 | 18,942 | 10,555 | 62 | 34 | 155 |
| Personal | 273 | 271 | 2 | — | 9 | 18 |
| Total nonaccruing TDRs | \$45,820 | \$ 30,899 | \$ 14,921 | \$ 62 | \$543 | \$1,230 |
| Accruing TDRs: | | | | | | |
| Permanent mortgages guaranteed by U.S. government agencies | 80,306 | 29,020 | 51,286 | — | — | — |
| Total TDRs | \$126,126 | \$ 59,919 | \$ 66,207 | \$ 62 | \$543 | \$1,230 |

Troubled debt restructurings generally consist of interest rate concessions, payment stream concessions or a combination of concessions to distressed borrowers. The following tables detail the recorded balance of loans at September 30, 2017 by class that were restructured during the three months ended September 30, 2017 by primary type of concession (in thousands):

| | Three Months Ended Sept. 30, 2017 | | | Nonaccrual | | | Total |
|--|--------------------------------------|------------------------|---------|-------------------|------------------------|---------|----------|
| | Accruing Payment Stream | Combination & Other | Total | Payment Stream | Combination & Other | Total | |
| Commercial: | | | | | | | |
| Energy | \$— | \$ — | \$— | \$— | \$ — | \$— | \$— |
| Services | — | — | — | — | — | — | — |
| Wholesale/retail | — | — | — | — | — | — | — |
| Manufacturing | — | — | — | — | — | — | — |
| Healthcare | — | — | — | — | — | — | — |
| Other commercial and industrial | — | — | — | — | 60 | 60 | 60 |
| Total commercial | — | — | — | — | 60 | 60 | 60 |
| Commercial real estate: | | | | | | | |
| Residential construction and land development | — | — | — | — | — | — | — |
| Retail | — | — | — | — | — | — | — |
| Office | — | — | — | — | — | — | — |
| Multifamily | — | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — | — |
| Other commercial real estate | — | — | — | — | — | — | — |
| Total commercial real estate | — | — | — | — | — | — | — |
| Residential mortgage: | | | | | | | |
| Permanent mortgage | — | — | — | 969 | 506 | 1,475 | 1,475 |
| Permanent mortgage guaranteed by U.S. government agencies | 8,205 | 620 | 8,825 | 315 | — | 315 | 9,140 |
| Home equity | — | — | — | — | 469 | 469 | 469 |
| Total residential mortgage | 8,205 | 620 | 8,825 | 1,284 | 975 | 2,259 | 11,084 |
| Personal | — | — | — | — | 4 | 4 | 4 |
| Total | \$8,205 | \$ 620 | \$8,825 | \$1,284 | \$ 1,039 | \$2,323 | \$11,148 |

| | Nine Months Ended | | | | | | Total |
|---|-------------------|------------------------|----------|-------------------|------------------------|----------|----------|
| | Sept. 30, 2017 | | | | | | |
| | Accruing | | | Nonaccrual | | | |
| | Payment Stream | Combination & Other | Total | Payment Stream | Combination & Other | Total | Total |
| Commercial: | | | | | | | |
| Energy | \$— | \$ — | \$— | \$7,781 | \$ — | \$7,781 | \$7,781 |
| Services | — | — | — | — | — | — | — |
| Wholesale/retail | — | — | — | — | — | — | — |
| Manufacturing | — | — | — | — | — | — | — |
| Healthcare | — | — | — | — | — | — | — |
| Other commercial and industrial | — | — | — | 19,825 | 60 | 19,885 | 19,885 |
| Total commercial | — | — | — | 27,606 | 60 | 27,666 | 27,666 |
| Commercial real estate: | | | | | | | |
| Residential construction and land development | — | — | — | — | — | — | — |
| Retail | — | — | — | — | — | — | — |
| Office | — | — | — | — | — | — | — |
| Multifamily | — | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — | — |
| Other commercial real estate | — | — | — | — | — | — | — |
| Total commercial real estate | — | — | — | — | — | — | — |
| Residential mortgage: | | | | | | | |
| Permanent mortgage | — | — | — | 153 | 1,559 | 1,712 | 1,712 |
| Permanent mortgage guaranteed by U.S. government agencies | 18,678 | 2,649 | 21,327 | 443 | 85 | 528 | 21,855 |
| Home equity | — | — | — | 104 | 1,468 | 1,572 | 1,572 |
| Total residential mortgage | 18,678 | 2,649 | 21,327 | 700 | 3,112 | 3,812 | 25,139 |
| Personal | — | — | — | — | 48 | 48 | 48 |
| Total | \$18,678 | \$ 2,649 | \$21,327 | \$28,306 | \$ 3,220 | \$31,526 | \$52,853 |

Troubled debt restructurings generally consist of interest rate concessions, payment stream concessions or a combination of concessions to distressed borrowers. The following tables detail the recorded balance of loans by class that were restructured during three months ended September 30, 2016 by primary type of concession (in thousands):

| | Three Months Ended Sept. 30, 2016 | | | Nonaccrual Payments | | Total |
|---|--------------------------------------|------------------------|----------------|------------------------|------------------------|----------------|
| | Accruing Payment Stream | Combination & Other | Total | Stream & Other | Combination & Other | |
| Commercial: | | | | | | |
| Energy | \$— | \$— | \$— | \$— | \$— | \$— |
| Services | — | — | — | — | — | — |
| Wholesale/retail | — | — | — | — | — | — |
| Manufacturing | — | — | — | — | — | — |
| Healthcare | — | — | — | — | — | — |
| Other commercial and industrial | — | — | — | — | — | — |
| Total commercial | — | — | — | — | — | — |
| Commercial real estate: | | | | | | |
| Residential construction and land development | — | — | — | — | — | — |
| Retail | — | — | — | — | — | — |
| Office | — | — | — | — | — | — |
| Multifamily | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — |
| Other commercial real estate | — | — | — | — | — | — |
| Total commercial real estate | — | — | — | — | — | — |
| Residential mortgage: | | | | | | |
| Permanent mortgage | — | — | — | —151 | 151 | 151 |
| Permanent mortgage guaranteed by U.S. government agencies | 3,527 | 4,211 | 7,738 | —287 | 287 | 8,025 |
| Home equity | — | — | — | —920 | 920 | 920 |
| Total residential mortgage | 3,527 | 4,211 | 7,738 | —1,358 | 1,358 | 9,096 |
| Personal | — | — | — | —19 | 19 | 19 |
| Total | \$3,527 | \$ 4,211 | \$7,738 | \$— 1,377 | \$1,377 | \$9,115 |

| | Nine Months Ended Sept. 30, 2016 | | | Nonaccrual | | | Total |
|--|-------------------------------------|------------------------|----------|-------------------|------------------------|---------|----------|
| | Accruing Payment Stream | Combination & Other | Total | Payment Stream | Combination & Other | Total | |
| Commercial: | | | | | | | |
| Energy | \$— | \$ — | \$— | \$501 | \$ — | \$501 | \$501 |
| Services | — | — | — | — | — | — | — |
| Wholesale/retail | — | — | — | — | — | — | — |
| Manufacturing | — | — | — | — | — | — | — |
| Healthcare | — | — | — | — | — | — | — |
| Other commercial and industrial | — | — | — | — | — | — | — |
| Total commercial | — | — | — | 501 | — | 501 | 501 |
| Commercial real estate: | | | | | | | |
| Residential construction and land development | — | — | — | — | — | — | — |
| Retail | — | — | — | — | — | — | — |
| Office | — | — | — | — | — | — | — |
| Multifamily | — | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — | — |
| Other commercial real estate | — | — | — | — | — | — | — |
| Total commercial real estate | — | — | — | — | — | — | — |
| Residential mortgage: | | | | | | | |
| Permanent mortgage | — | — | — | 1,037 | 1,051 | 2,088 | 2,088 |
| Permanent mortgage guaranteed by U.S. government agencies | 9,687 | 9,350 | 19,037 | — | 982 | 982 | 20,019 |
| Home equity | — | — | — | 48 | 1,630 | 1,678 | 1,678 |
| Total residential mortgage | 9,687 | 9,350 | 19,037 | 1,085 | 3,663 | 4,748 | 23,785 |
| Personal | — | — | — | — | 82 | 82 | 82 |
| Total | \$9,687 | \$ 9,350 | \$19,037 | \$1,586 | \$ 3,745 | \$5,331 | \$24,368 |

The following table summarizes, by loan class, the recorded investment at September 30, 2017 and 2016, respectively, of loans modified as TDRs within the previous 12 months and for which there was a payment default during the three months ended September 30, 2017 and 2016, respectively (in thousands):

| | Three Months Ended Sept. 30, 2017 | | | Nine Months Ended Sept. 30, 2017 | | |
|---|--------------------------------------|------------|----------|-------------------------------------|------------|----------|
| | Accruing | Nonaccrual | Total | Accruing | Nonaccrual | Total |
| Commercial: | | | | | | |
| Energy | \$— | \$ 7,857 | \$7,857 | \$— | \$ 9,582 | \$9,582 |
| Services | — | — | — | — | — | — |
| Wholesale/retail | — | — | — | — | — | — |
| Manufacturing | — | — | — | — | — | — |
| Healthcare | — | — | — | — | — | — |
| Other commercial and industrial | — | — | — | — | 19,825 | 19,825 |
| Total commercial | — | 7,857 | 7,857 | — | 29,407 | 29,407 |
| Commercial real estate: | | | | | | |
| Residential construction and land development | — | — | — | — | — | — |
| Retail | — | — | — | — | — | — |
| Office | — | — | — | — | — | — |
| Multifamily | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — |
| Other commercial real estate | — | — | — | — | — | — |
| Total commercial real estate | — | — | — | — | — | — |
| Residential mortgage: | | | | | | |
| Permanent mortgage | — | 1,511 | 1,511 | — | 1,511 | 1,511 |
| Permanent mortgage guaranteed by U.S. government agencies | 23,620 | 878 | 24,498 | 24,349 | 878 | 25,227 |
| Home equity | — | 1,030 | 1,030 | — | 1,139 | 1,139 |
| Total residential mortgage | 23,620 | 3,419 | 27,039 | 24,349 | 3,528 | 27,877 |
| Personal | — | 10 | 10 | — | 10 | 10 |
| Total | \$23,620 | \$ 11,286 | \$34,906 | \$24,349 | \$ 32,945 | \$57,294 |

A payment default is defined as being 30 days or more past due. The table above includes loans that experienced a payment default during the period, but may be performing in accordance with the modified terms as of the balance sheet date.

| | Three Months Ended Sept. 30, 2016 | | | Nine Months Ended Sept. 30, 2016 | | |
|---|--------------------------------------|------------|----------|-------------------------------------|------------|----------|
| | Accruing | Nonaccrual | Total | Accruing | Nonaccrual | Total |
| Commercial: | | | | | | |
| Energy | \$— | \$ 1,746 | \$1,746 | \$— | \$ 1,746 | \$1,746 |
| Services | — | — | — | — | — | — |
| Wholesale/retail | — | — | — | — | — | — |
| Manufacturing | — | — | — | — | — | — |
| Healthcare | — | — | — | — | — | — |
| Other commercial and industrial | — | — | — | — | — | — |
| Total commercial | — | 1,746 | 1,746 | — | 1,746 | 1,746 |
| Commercial real estate: | | | | | | |
| Residential construction and land development | — | — | — | — | — | — |
| Retail | — | — | — | — | — | — |
| Office | — | — | — | — | — | — |
| Multifamily | — | — | — | — | — | — |
| Industrial | — | — | — | — | — | — |
| Other commercial real estate | — | — | — | — | — | — |
| Total commercial real estate | — | — | — | — | — | — |
| Residential mortgage: | | | | | | |
| Permanent mortgage | — | 298 | 298 | — | 542 | 542 |
| Permanent mortgage guaranteed by U.S. government agencies | 17,491 | 1,095 | 18,586 | 19,352 | 1,121 | 20,473 |
| Home equity | — | 258 | 258 | — | 258 | 258 |
| Total residential mortgage | 17,491 | 1,651 | 19,142 | 19,352 | 1,921 | 21,273 |
| Personal | — | 11 | 11 | — | 11 | 11 |
| Total | \$17,491 | \$ 3,408 | \$20,899 | \$19,352 | \$ 3,678 | \$23,030 |

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 September 30, 2017 is as follows (in thousands):

| | Current | Past Due | | | Nonaccrual | Total |
|--|---------------|------------------|------------------|--------------------|------------|---------------|
| | | 30 to 59 Days | 60 to 89 Days | 90 Days or More | | |
| Commercial: | | | | | | |
| Energy | \$2,752,259 | \$— | \$5,039 | \$— | \$ 110,683 | \$2,867,981 |
| Services | 2,963,746 | 2,343 | 250 | — | 1,174 | 2,967,513 |
| Wholesale/retail | 1,654,018 | 1,748 | 409 | 30 | 1,893 | 1,658,098 |
| Manufacturing | 508,231 | — | 2,156 | — | 9,059 | 519,446 |
| Healthcare | 2,214,849 | 156 | — | — | 24,446 | 2,239,451 |
| Other commercial and industrial | 513,748 | 52 | — | — | 29,645 | 543,445 |
| Total commercial | 10,606,851 | 4,299 | 7,854 | 30 | 176,900 | 10,795,934 |
| Commercial real estate: | | | | | | |
| Residential construction and land development | 109,994 | 184 | — | — | 1,924 | 112,102 |
| Retail | 724,850 | 726 | — | — | 289 | 725,865 |
| Office | 796,687 | 127 | — | — | 275 | 797,089 |
| Multifamily | 999,009 | — | — | — | — | 999,009 |
| Industrial | 591,080 | — | — | — | — | 591,080 |
| Other commercial real estate | 292,322 | 1 | — | 187 | 487 | 292,997 |
| Total commercial real estate | 3,513,942 | 1,038 | — | 187 | 2,975 | 3,518,142 |
| Residential mortgage: | | | | | | |
| Permanent mortgage | 985,183 | 3,705 | 454 | — | 24,623 | 1,013,965 |
| Permanent mortgages guaranteed by U.S. government agencies | 25,169 | 17,346 | 13,343 | 122,621 | 8,891 | 187,370 |
| Home equity | 728,884 | 3,066 | 445 | 28 | 11,992 | 744,415 |
| Total residential mortgage | 1,739,236 | 24,117 | 14,242 | 122,649 | 45,506 | 1,945,750 |
| Personal | 943,368 | 3,296 | 81 | 8 | 255 | 947,008 |
| Total | \$ 16,803,397 | \$ 32,750 | \$ 22,177 | \$ 122,874 | \$ 225,636 | \$ 17,206,834 |

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A summary of loans currently performing, loans past due and accruing and nonaccrual loans as of December 31, 2016 is as follows (in thousands):

| | Current | Past Due | | | Nonaccrual | Total |
|--|---------------------|-----------------|---------------|------------------|-------------------|---------------------|
| | | 30 to 59 Days | 60 to 89 Days | 90 Days or More | | |
| Commercial: | | | | | | |
| Energy | \$2,364,890 | \$479 | — | \$— | \$ 132,499 | \$2,497,868 |
| Services | 3,099,605 | 191 | 1,021 | — | 8,173 | 3,108,990 |
| Wholesale/retail | 1,561,650 | 3,761 | — | — | 11,407 | 1,576,818 |
| Manufacturing | 509,662 | 382 | — | — | 4,931 | 514,975 |
| Healthcare | 2,201,050 | — | 41 | — | 825 | 2,201,916 |
| Other commercial and industrial | 468,981 | 155 | 3 | — | 21,118 | 490,257 |
| Total commercial | 10,205,838 | 4,968 | 1,065 | — | 178,953 | 10,390,824 |
| Commercial real estate: | | | | | | |
| Residential construction and land development | 132,100 | — | — | — | 3,433 | 135,533 |
| Retail | 761,562 | — | — | — | 326 | 761,888 |
| Office | 798,462 | — | — | — | 426 | 798,888 |
| Multifamily | 903,234 | — | — | — | 38 | 903,272 |
| Industrial | 871,673 | — | — | — | 76 | 871,749 |
| Other commercial real estate | 336,488 | 6 | — | — | 1,222 | 337,716 |
| Total commercial real estate | 3,803,519 | 6 | — | — | 5,521 | 3,809,046 |
| Residential mortgage: | | | | | | |
| Permanent mortgage | 979,386 | 3,299 | 1,280 | — | 22,855 | 1,006,820 |
| Permanent mortgages guaranteed by U.S. government agencies | 40,594 | 17,465 | 13,803 | 115,679 | 11,846 | 199,387 |
| Home equity | 729,493 | 2,276 | 337 | — | 11,519 | 743,625 |
| Total residential mortgage | 1,749,473 | 23,040 | 15,420 | 115,679 | 46,220 | 1,949,832 |
| Personal | 838,811 | 589 | 263 | 5 | 290 | 839,958 |
| Total | \$16,597,641 | \$28,603 | 16,748 | \$115,684 | \$ 230,984 | \$16,989,660 |

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A summary of loans currently performing, loans past due and accruing and nonaccrual loans as of September 30, 2016 is as follows (in thousands):

| | Current | Past Due 30 to 59 Days | 60 to 89 Days | 90 Days or More | Nonaccrual | Total |
|--|---------------------|------------------------------|---------------------|--------------------|------------------|---------------------|
| Commercial: | | | | | | |
| Energy | \$2,365,850 | \$11,988 | — | \$— | \$142,966 | \$2,520,804 |
| Services | 2,923,874 | 502 | 39 | 3,707 | 8,477 | 2,936,599 |
| Wholesale/retail | 1,599,356 | 221 | — | — | 2,453 | 1,602,030 |
| Manufacturing | 499,212 | — | — | — | 274 | 499,486 |
| Healthcare | 2,083,556 | 635 | — | — | 855 | 2,085,046 |
| Other commercial and industrial | 454,538 | 34 | 68 | 119 | 21,439 | 476,198 |
| Total commercial | 9,926,386 | 13,380 | 107 | 3,826 | 176,464 | 10,120,163 |
| Commercial real estate: | | | | | | |
| Residential construction and land development | 156,207 | — | — | — | 3,739 | 159,946 |
| Retail | 796,362 | 3,766 | — | — | 1,249 | 801,377 |
| Office | 751,823 | — | — | — | 882 | 752,705 |
| Multifamily | 868,591 | — | 5,131 | — | 51 | 873,773 |
| Industrial | 837,945 | — | — | — | 76 | 838,021 |
| Other commercial real estate | 366,416 | 7 | — | — | 1,353 | 367,776 |
| Total commercial real estate | 3,777,344 | 3,773 | 5,131 | — | 7,350 | 3,793,598 |
| Residential mortgage: | | | | | | |
| Permanent mortgage | 939,853 | 3,547 | 202 | — | 25,956 | 969,558 |
| Permanent mortgages guaranteed by U.S. government agencies | 41,150 | 17,364 | 12,963 | 103,400 | 15,432 | 190,309 |
| Home equity | 700,031 | 1,526 | 305 | — | 11,064 | 712,926 |
| Total residential mortgage | 1,681,034 | 22,437 | 13,470 | 103,400 | 52,452 | 1,872,793 |
| Personal | 677,194 | 191 | 148 | 13 | 686 | 678,232 |
| Total | \$16,061,958 | \$39,781 | 18,856 | \$107,239 | \$236,952 | \$16,464,786 |

(5) Acquisitions

On December 1, 2016, the Company acquired MBT Bancshares (“MBT”), parent company of Missouri Bank and Trust of Kansas City (“Mobank”) following regulatory approval of the transaction. Mobank operated four banking branches in the Kansas City, Mo. area. BOK Financial paid \$102.5 million in an all-cash deal for all outstanding shares of MBT stock. MBT was merged into BOK Financial and Mobank became a wholly owned subsidiary of BOK Financial on December 1, 2016. On February 21, 2017, Mobank was merged with the Bank of Kansas City division of BOKF, NA. All branches in the Kansas City market will operate under the Mobank name. The preliminary purchase price allocation was updated in the first quarter of 2017 resulting in a \$2.0 million increase in identifiable intangibles, \$1.5 million decrease in premises and equipment and other repossessed assets, and a \$526 thousand decrease in goodwill.

(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 sale 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):

| | September 30, 2017 | | December 31, 2016 | | September 30, 2016 | |
|--|--------------------|-----------|-------------------|-----------|--------------------|------------|
| | Unpaid | Fair | Unpaid | Fair | Unpaid | Fair Value |
| | Balance/ | Value | Balance/ | Value | Balance/ | |
| | Notional | | Notional | | Notional | |
| Residential mortgage loans held for sale | \$261,868 | \$265,783 | \$286,414 | \$286,971 | \$422,523 | \$433,040 |
| Residential mortgage loan commitments | 334,337 | 9,066 | 318,359 | 9,733 | 630,804 | 18,598 |
| Forward sales contracts | 524,878 | 794 | 569,543 | 5,193 | 929,907 | (4,046) |
| | | \$275,643 | | \$301,897 | | \$447,592 |

No residential mortgage loans held for sale were 90 days or more past due or considered impaired as of September 30, 2017, December 31, 2016 or September 30, 2016. No credit losses were recognized on residential mortgage loans held for sale for the three and nine month periods ended September 30, 2017 and 2016.

Mortgage banking revenue was as follows (in thousands):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|--|----------|------------------------------------|-----------|
| | 2017 | 2016 | 2017 | 2016 |
| Production revenue: | | | | |
| Net realized gains on sale of mortgage loans | \$12,041 | \$23,110 | \$32,443 | \$47,424 |
| Net change in unrealized gain on mortgage loans held for sale | (1,492) | (2,518) | 3,335 | 4,649 |
| Net change in the fair value of mortgage loan commitments | (1,927) | (6,901) | (667) | 10,464 |
| Net change in the fair value of forward sales contracts | (293) | 8,267 | (4,399) | (4,846) |
| Total production revenue | 8,329 | 21,958 | 30,712 | 57,691 |
| Servicing revenue | 16,561 | 16,558 | 49,645 | 47,809 |
| Total mortgage banking revenue | \$24,890 | \$38,516 | \$80,357 | \$105,500 |

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):

| | September 30, 2017 | December 31, 2016 | September 30, 2016 | |
|---|-----------------------|----------------------|-----------------------|---|
| Number of residential mortgage loans serviced for others | 137,359 | 139,340 | 139,587 | |
| Outstanding principal balance of residential mortgage loans serviced for others | \$22,063,121 | \$21,997,568 | \$21,851,536 | |
| Weighted average interest rate | 3.95 | % 3.97 | % 4.01 | % |
| Remaining term (in months) | 298 | 301 | 302 | |

Activity in capitalized mortgage servicing rights during the three months ended September 30, 2017 was as follows (in thousands):

| | Purchased | Originated | Total |
|---|-----------|------------|-----------|
| Balance, June 30, 2017 | \$ 7,995 | \$237,244 | \$245,239 |
| Additions, net | — | 9,925 | 9,925 |
| Change in fair value due to principal payments | (470) | (8,197) | (8,667) |
| Change in fair value due to market assumption changes | 303 | (942) | (639) |
| Balance, September 30, 2017 | \$ 7,828 | \$238,030 | \$245,858 |
| | Purchased | Originated | Total |
| Balance, December 31, 2016 | \$ 8,909 | \$238,164 | \$247,073 |
| Additions, net | — | 29,439 | 29,439 |
| Change in fair value due to principal payments | (1,443) | (23,485) | (24,928) |
| Change in fair value due to market assumption changes | 362 | (6,088) | (5,726) |
| Balance, September 30, 2017 | \$ 7,828 | \$238,030 | \$245,858 |

Activity in capitalized mortgage servicing rights during the three months ended September 30, 2016 was as follows (in thousands):

| | Purchased | Originated | Total |
|---|-----------|------------|------------|
| Balance, June 30, 2016 | \$ 4,067 | \$ 186,680 | \$ 190,747 |
| Additions, net | — | 21,990 | 21,990 |
| Change in fair value due to scheduled payments and full-balance payoffs | (753) | (10,690) | (11,443) |
| Change in fair value due to market assumption changes | 251 | 2,076 | 2,327 |
| Balance, September 30, 2016 | \$ 3,565 | \$ 200,056 | \$ 203,621 |
| | Purchased | Originated | Total |
| Balance, December 31, 2015 | \$ 9,911 | \$ 208,694 | \$ 218,605 |
| Additions, net | — | 56,345 | 56,345 |
| Change in fair value due to scheduled payments and full-balance payoffs | (2,109) | (27,276) | (29,385) |
| Change in fair value due to market assumption changes | (4,237) | (37,707) | (41,944) |
| Balance, September 30, 2016 | \$ 3,565 | \$ 200,056 | \$ 203,621 |

Changes in the fair value of mortgage servicing rights are included in Other operating revenue in the Consolidated Statements of Earnings. Changes in fair value due to actual loan payments are included in Mortgage banking costs. Changes in fair value due to market assumption changes are reported separately. Changes in fair value due to market assumption changes during the period relate to assets held at the reporting date.

There is no active market for trading in mortgage servicing rights after origination. Fair value is determined by discounting the projected net cash flows. Significant assumptions used to determine fair value based on significant unobservable inputs were as follows:

| | September 30, 2017 | December 31, 2016 | September 30, 2016 |
|---|-----------------------|----------------------|-----------------------|
| Discount rate – risk-free rate plus a market premium | 9.84% | 10.08% | 10.08% |
| Prepayment rate - based upon loan interest rate, original term and loan type | 8.71%-15.43% | 8.98%-16.91% | 9.16%-47.15% |
| Loan servicing costs – annually per loan based upon loan type: | | | |
| Performing loans | \$65-\$120 | \$63 - \$120 | \$63 - \$120 |
| Delinquent loans | \$150-\$500 | \$150 - \$500 | \$150 - \$500 |
| Loans in foreclosure | \$1,000-\$4,250 | \$650 - \$4,250 | \$650 - \$4,250 |
| Escrow earnings rate – indexed to rates paid on deposit accounts with comparable average life | 2.00% | 1.98% | 1.18% |
| Primary/secondary mortgage rate spread | 105 bps | 105 bps | 115 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.

The aging status of our mortgage loans serviced for others by investor at September 30, 2017 follows (in thousands):

| | Current | Past Due 30 to 59 Days | 60 to 89 Days | 90 Days or More | Total |
|-------|-------------|------------------------------|------------------|--------------------|-------------|
| FHLMC | \$8,021,016 | \$78,542 | \$13,100 | \$26,171 | \$8,138,829 |
| FNMA | 6,635,428 | 76,065 | 10,398 | 20,596 | 6,742,487 |
| GNMA | 6,376,127 | 215,506 | 59,659 | 20,925 | 6,672,217 |

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| | | | | | |
|-------|--------------|-----------|----------|----------|--------------|
| Other | 502,768 | 3,492 | 1,167 | 2,161 | 509,588 |
| Total | \$21,535,339 | \$373,605 | \$84,324 | \$69,853 | \$22,063,121 |

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(7) Commitments and Contingent Liabilities

Litigation Contingencies

As a member of Visa, BOK Financial is obligated for a proportionate share of certain covered litigation losses incurred by Visa under a retrospective responsibility plan. A contingent liability was recognized for the Company's share of Visa's covered litigation liabilities. Visa funded an escrow account to cover litigation claims, including covered litigation losses under the retrospective responsibility plan, with proceeds from its initial public offering in 2008 and from available cash.

BOK Financial currently owns 252,233 Visa Class B shares which are convertible into 415,755 shares of Visa Class A shares after the final settlement of all covered litigation. Class B shares may be diluted in the future if the escrow fund is not adequate to cover future covered litigation costs. Therefore, no value has been currently assigned to the Class B shares and no value may be assigned until the Class B shares are converted into a known number of Class A shares. On June 24, 2015, the Bank 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 the Bank 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 (now estimated to be approximately \$48 million, less the value of the facilities securing repayment of the bonds), subject to oversight by a court appointed monitor. On September 7, 2016, the Bank agreed, and the SEC entered, a consent order finding that the Bank had violated Section 17(a) of the Securities Act of 1933 and Section 10(b) of the Securities Exchange Act and requiring the Bank to disgorge \$1,067,721 of fees and pay a civil penalty of \$600,000. The Bank has disgorged the fees and paid the penalty.

On August 26, 2016, the Bank 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 the Bank participated in the fraudulent sale of securities by the principals. On September 14, 2016, the Bank was sued in the District Court of Tulsa County, Oklahoma by 19 bondholders alleging the Bank participated in the fraudulent sale of securities by the principals. Management has been advised by counsel that the Bank has valid defenses to the claims.

On September 15, 2017, the principal filed for protection under Chapter 11 of the United States Bankruptcy Code in the United States Bankruptcy Court for the Northern District of Georgia. The obligation of the principal to pay all principal and interest on the bonds is non-dischargeable in bankruptcy. The Bank expects the Court ordered payment plan will result in the payment of the bonds by the principals. Accordingly, no loss is probable at this time and no provision for loss has been made. If the payment plan does not result in payment of the bonds, a loss could become probable. A reasonable estimate cannot be made at this time though the amount could be material to the Company.

On March 14, 2017, the Bank 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 the Bank also served as indenture trustee. The bondholders allege the Bank failed to disclose that the seller of the purchased facilities had engaged in the conduct complained of in the New Jersey action. The Bank 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 the Bank has valid defenses to the claims of these

bondholders. It is the opinion of management that no loss is probable at this time.

The County of Bernalillo, New Mexico, commenced arbitration pursuant to the Arbitration Rules of FINRA seeking recovery of \$5.6 million alleging that various municipal bonds purchased by the elected County Treasurer of Bernalillo County, New Mexico, from BOK Financial Securities, Inc. were unsuitable. The arbitration was conducted in July 2017. The arbitration panel found the County of Bernalillo's complaint frivolous and awarded BOK Financial Securities, Inc. attorney fees and costs. The County has sued in the United States District Court for New Mexico to set aside the award of fees and costs to BOK Financial Securities but not the finding that the County's complaint was frivolous.

On March 30, 2017, two deposit customers of the Bank sued the Bank in the District Court of Harris County, Texas. A judgment creditor had served a garnishment summons on the Bank. The deposit customers allege that, because the Bank was unable to produce adequate documentation of ownership of a series of deposit accounts at the Bank owned by them, they were compelled to enter into a settlement agreement with the judgment creditor pursuant to which the Bank paid \$4.2 million from the accounts to the judgment creditor. The two deposit customers seek \$7 million. Management has been advised by counsel that a loss is not probable and that the amount of the liability, if any, cannot be quantified at this time.

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. BOKF, NA was previously sued in a class action in the United States District Court for the Northern District of Oklahoma making the same allegations. Pursuant to a motion to dismiss, the Northern District of Oklahoma Court action was dismissed. Other courts considering the question whether extended overdraft fees are interest have likewise determined such fees are not interest. BOKF, NA has moved to dismiss the action. 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 determined by the nature of the entity. Variable interest entities are generally defined as entities that either do not have sufficient equity to finance their activities without support from other parties or whose equity investors lack a controlling financial interest. Variable interest entities are consolidated based on the determination that the Company is the primary beneficiary including the power to direct the activities that most significantly impact the variable interest's economic performance and the obligation to absorb losses of the variable interest or the right to receive benefits of the variable interest that could be significant to the variable interest.

BOKF Equity, LLC, an indirect wholly-owned subsidiary, is the general partner of two consolidated private equity funds ("the Funds"). The Funds provide alternative investment opportunities to certain customers, some of which are related parties, through unaffiliated limited partnerships. These unaffiliated limited partnerships generally invest in distressed assets, asset buy-outs or venture capital companies. As general partner, BOKF Equity, LLC has the power to direct activities that most significantly affect the Funds' performance and contingent obligations to make additional investments totaling \$3.4 million at September 30, 2017. Substantially all of the obligations are offset by limited partner commitments. The Company does not accrue its contingent liability to fund investments. The Volcker Rule in Title VI of the Dodd-Frank Act will limit both the amount and structure of these types of investments.

Consolidated tax credit investment entities represent the Company's interest in entities earning federal new market tax credits related to qualifying loans. The Company has the power to direct the activities that most significantly impact the variable interest's economic performance of the entity including being the primary beneficiary of or the obligation to absorb losses of the variable interest that could be significant to the variable interest.

Other consolidated alternative investments include entities held under merchant banking authority. While the Company owns a majority of the voting interest in these entities, its ability to manage daily operations is limited by applicable banking regulations. Consolidated other assets includes total tangible assets, identifiable intangible assets and goodwill held by these entities.

The Company also has interests in various unrelated alternative investments generally consisting of unconsolidated limited partnership interests in or loans to entities for which investment return is primarily in the form of tax credits or that invest in distressed real estate loans and properties, energy development, venture capital and other activities. The Company is prohibited by banking regulations from controlling or actively managing the activities of these investments and the Company's maximum exposure to loss is restricted to its investment balance. The Company's obligation to fund alternative investments is included in Other liabilities in the Consolidated Balance Sheets.

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A summary of consolidated and unconsolidated alternative investments as of September 30, 2017, December 31, 2016 and September 30, 2016 is as follows (in thousands):

| | September 30, 2017 | | | | |
|----------------------|--------------------|--------------|-------------------|------------------|---------------------------|
| | Loans | Other assets | Other liabilities | Other borrowings | Non-controlling interests |
| Consolidated: | | | | | |
| Private equity funds | \$— | \$15,621 | \$— | \$— | \$ 12,806 |
| Tax credit entities | 10,000 | 11,119 | — | 10,963 | 10,000 |
| Other | — | 15,618 | 1,588 | 3,104 | 2,819 |
| Total consolidated | \$10,000 | \$42,358 | \$1,588 | \$14,067 | \$ 25,625 |

| | | | | | |
|----------------------|----------|-----------|----------|-----|-----|
| Unconsolidated: | | | | | |
| Tax credit entities | \$65,247 | \$145,479 | \$61,364 | \$— | \$— |
| Other | — | 32,462 | 13,657 | — | — |
| Total unconsolidated | \$65,247 | \$177,941 | \$75,021 | \$— | \$— |

| | December 31, 2016 | | | | |
|----------------------|-------------------|--------------|-------------------|------------------|---------------------------|
| | Loans | Other assets | Other liabilities | Other borrowings | Non-controlling interests |
| Consolidated: | | | | | |
| Private equity funds | \$— | \$17,357 | \$— | \$— | \$ 13,237 |
| Tax credit entities | 10,000 | 11,585 | — | 10,964 | 10,000 |
| Other | — | 29,783 | 3,189 | 1,092 | 8,266 |
| Total consolidated | \$10,000 | \$58,725 | \$3,189 | \$12,056 | \$ 31,503 |

| | | | | | |
|----------------------|----------|-----------|----------|-----|-----|
| Unconsolidated: | | | | | |
| Tax credit entities | \$44,488 | \$143,715 | \$63,329 | \$— | \$— |
| Other | — | 31,675 | 15,028 | — | — |
| Total unconsolidated | \$44,488 | \$175,390 | \$78,357 | \$— | \$— |

| | September 30, 2016 | | | | |
|----------------------|--------------------|--------------|-------------------|------------------|---------------------------|
| | Loans | Other assets | Other liabilities | Other borrowings | Non-controlling interests |
| Consolidated: | | | | | |
| Private equity funds | \$— | \$18,420 | \$— | \$— | \$ 15,946 |
| Tax credit entities | 10,000 | 11,740 | — | 10,964 | 10,000 |
| Other | — | 30,978 | 2,346 | 1,063 | 8,154 |
| Total consolidated | \$10,000 | \$61,138 | \$2,346 | \$12,027 | \$ 34,100 |

| | | | | | |
|----------------------|----------|-----------|----------|-----|-----|
| Unconsolidated: | | | | | |
| Tax credit entities | \$39,849 | \$129,715 | \$57,026 | \$— | \$— |
| Other | — | 30,272 | 13,653 | — | — |
| Total unconsolidated | \$39,849 | \$159,987 | \$70,679 | \$— | \$— |

Other Commitments and Contingencies

At September 30, 2017, Cavanal Hill Funds' assets included U.S. Treasury, cash management and tax-free money market funds. Assets of these funds consist of highly-rated, short-term obligations of the U.S. Treasury, corporate issuers and U.S. states and municipalities. The net asset value of units in these funds was \$1.00 at September 30, 2017. An investment in these funds is not insured by the Federal Deposit Insurance Corporation or guaranteed by BOK Financial or any of its subsidiaries. BOK Financial may, but is not obligated to purchase assets from these funds to maintain the net asset value at \$1.00. No assets were purchased from the funds in 2017 or 2016.

(8) Shareholders' Equity

On October 31, 2017, the Company declared a quarterly cash dividend of \$0.45 per common share on or about November 27, 2017 to shareholders of record as of November 13, 2017.

Dividends declared were \$0.44 per share and \$1.32 per share during the three and nine months ended September 30, 2017 and \$0.43 per share and \$1.29 per share during the three and nine months ended September 30, 2016.

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. AOCI also includes unrealized gains on AFS securities that were transferred from AFS to investment securities in the third quarter of 2011. Such amounts are being amortized over the estimated remaining life of the security as an adjustment to yield, offsetting the related amortization of premium on the transferred securities. 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 | Investment Securities Transferred from AFS | Employee Benefit Plans | Total |
| Balance, December 31, 2015 | \$23,284 | \$ 68 | \$(1,765) | \$21,587 |
| Net change in unrealized gain (loss) | 133,108 | — | — | 133,108 |
| Reclassification adjustments included in earnings: | | | | |
| Interest revenue, Investment securities, Taxable securities | — | (112) | — | (112) |
| Gain on available for sale securities, net | (11,684) | — | — | (11,684) |
| Other comprehensive income (loss), before income taxes | 121,424 | (112) | — | 121,312 |
| Federal and state income taxes ¹ | 47,216 | (44) | — | 47,172 |
| Other comprehensive income (loss), net of income taxes | 74,208 | (68) | — | 74,140 |
| Balance, September 30, 2016 | \$97,492 | \$ — | \$(1,765) | \$95,727 |
| Balance, December 31, 2016 | \$(9,087) | \$ — | \$(1,880) | \$(10,967) |
| Net change in unrealized gain (loss) | 33,876 | — | 5 | 33,881 |
| Reclassification adjustments included in earnings: | | | | |
| Gain on available for sale securities, net | (4,916) | — | — | (4,916) |
| Other comprehensive income, before income taxes | 28,960 | — | 5 | 28,965 |
| Federal and state income taxes ¹ | 11,239 | — | 2 | 11,241 |

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| | | | | |
|---|---------|------|------------|---------|
| Other comprehensive income, net of income taxes | 17,721 | — | 3 | 17,724 |
| Balance, September 30, 2017 | \$8,634 | \$ — | \$(1,877) | \$6,757 |

¹ Calculated using a 39 percent effective tax rate.

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(9) Earnings Per Share

| (In thousands, except share and per share amounts) | Three Months Ended | | Nine Months Ended | |
|--|--------------------|--------------------|--------------------|--------------------|
| | September 30, 2017 | September 30, 2016 | September 30, 2017 | September 30, 2016 |
| Numerator: | | | | |
| Net income attributable to BOK Financial Corp. shareholders | \$85,649 | \$ 74,277 | \$262,152 | \$ 182,642 |
| Less: Earnings allocated to participating securities | 888 | 916 | 2,817 | 2,275 |
| Numerator for basic earnings per share – income available to common shareholders | 84,761 | 73,361 | 259,335 | 180,367 |
| Effect of reallocating undistributed earnings of participating securities | 1 | 1 | 2 | 1 |
| Numerator for diluted earnings per share – income available to common shareholders | \$84,762 | \$ 73,362 | \$259,337 | \$ 180,368 |
| Denominator: | | | | |
| Weighted average shares outstanding | 65,423,256 | 65,895,430 | 65,432,313 | 66,031,497 |
| Less: Participating securities included in weighted average shares outstanding | 680,436 | 810,038 | 702,922 | 822,723 |
| Denominator for basic earnings per common share | 64,742,820 | 65,085,392 | 64,729,391 | 65,208,774 |
| Dilutive effect of employee stock compensation plans ¹ | 62,350 | 72,449 | 64,502 | 54,792 |
| Denominator for diluted earnings per common share | 64,805,170 | 65,157,841 | 64,793,893 | 65,263,566 |
| Basic earnings per share | \$1.31 | \$ 1.13 | \$4.01 | \$ 2.77 |
| Diluted earnings per share | \$1.31 | \$ 1.13 | \$4.00 | \$ 2.76 |
| 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 September 30, 2017 is as follows (in thousands):

| | Commercial | Consumer | Wealth Management | Funds Management and Other | BOK Financial Consolidated |
|---|--------------|-------------|----------------------|----------------------------------|----------------------------------|
| Net interest revenue from external sources | \$157,080 | \$25,576 | \$11,169 | \$24,627 | \$218,452 |
| Net interest revenue (expense) from internal sources | (24,173 |) 12,213 | 9,604 | 2,356 | — |
| Net interest revenue | 132,907 | 37,789 | 20,773 | 26,983 | 218,452 |
| Provision for credit losses | 3,217 | 1,315 | (623 |) (3,909 |) — |
| Net interest revenue after provision for credit losses | 129,690 | 36,474 | 21,396 | 30,892 | 218,452 |
| Other operating revenue | 54,091 | 47,033 | 75,707 | (1,121 |) 175,710 |
| Other operating expense | 56,952 | 56,785 | 61,791 | 90,406 | 265,934 |
| Net direct contribution | 126,829 | 26,722 | 35,312 | (60,635 |) 128,228 |
| Gain on financial instruments, net | 4 | 1,686 | — | (1,690 |) — |
| Change in fair value of mortgage servicing rights | — | (639 |) — | 639 | — |
| Gain (loss) on repossessed assets, net | (4,126 |) 292 | — | 3,834 | — |
| Corporate expense allocations | 8,650 | 17,039 | 9,819 | (35,508 |) — |
| Net income before taxes | 114,057 | 11,022 | 25,493 | (22,344 |) 128,228 |
| Federal and state income taxes | 44,368 | 4,288 | 9,917 | (16,135 |) 42,438 |
| Net income | 69,689 | 6,734 | 15,576 | (6,209 |) 85,790 |
| Net income attributable to non-controlling interests | — | — | — | 141 | 141 |
| Net income attributable to BOK Financial Corp. shareholders | \$69,689 | \$6,734 | \$15,576 | \$(6,350 |) \$85,649 |
| Average assets | \$17,558,390 | \$9,115,319 | \$6,992,021 | \$(657,560 |) \$33,008,170 |

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Reportable segments reconciliation to the Consolidated Financial Statements for the nine months ended September 30, 2017 is as follows (in thousands):

| | Commercial | Consumer | Wealth Management | Funds Management and Other | BOK Financial Consolidated |
|---|--------------|-------------|----------------------|----------------------------------|----------------------------------|
| Net interest revenue from external sources | \$435,946 | \$70,208 | \$33,130 | \$85,554 | \$624,838 |
| Net interest revenue (expense) from internal sources | (61,803) |) 35,002 | 28,784 | (1,983) |) — |
| Net interest revenue | 374,143 | 105,210 | 61,914 | 83,571 | 624,838 |
| Provision for credit losses | 2,983 | 3,512 | (676) |) (5,819) |) — |
| Net interest revenue after provision for credit losses | 371,160 | 101,698 | 62,590 | 89,390 | 624,838 |
| Other operating revenue | 156,139 | 146,440 | 225,434 | 245 | 528,258 |
| Other operating expense | 168,517 | 166,027 | 182,816 | 244,170 | 761,530 |
| Net direct contribution | 358,782 | 82,111 | 105,208 | (154,535) |) 391,566 |
| Gain on financial instruments, net | 46 | 5,242 | — | (5,288) |) — |
| Change in fair value of mortgage servicing rights | — | (5,726) |) — | 5,726 | — |
| Gain (loss) on repossessed assets, net | (2,728) |) 253 | — | 2,475 | — |
| Corporate expense allocations | 26,144 | 50,947 | 30,438 | (107,529) |) — |
| Net income before taxes | 329,956 | 30,933 | 74,770 | (44,093) |) 391,566 |
| Federal and state income taxes | 128,353 | 12,033 | 29,086 | (41,226) |) 128,246 |
| Net income | 201,603 | 18,900 | 45,684 | (2,867) |) 263,320 |
| Net income attributable to non-controlling interests | — | — | — | 1,168 | 1,168 |
| Net income attributable to BOK Financial Corp. shareholders | \$201,603 | \$18,900 | \$45,684 | \$ (4,035) |) \$262,152 |
| Average assets | \$17,525,658 | \$8,871,470 | \$6,971,369 | \$ (591,059) |) \$32,777,438 |

Reportable segments reconciliation to the Consolidated Financial Statements for the three months ended September 30, 2016 is as follows (in thousands):

| | Commercial | Consumer | Wealth Management | Funds Management and Other | BOK Financial Consolidated |
|--|------------|----------|----------------------|----------------------------------|----------------------------------|
| Net interest revenue from external sources | \$123,599 | \$22,098 | \$9,274 | \$32,875 | \$187,846 |
| Net interest revenue (expense) from internal sources | (15,052) |) 9,263 | \$7,401 | (1,612) |) — |
| Net interest revenue | 108,547 | 31,361 | 16,675 | 31,263 | 187,846 |
| Provision for credit losses | 5,601 | 1,157 | (89) |) 3,331 | 10,000 |
| Net interest revenue after provision for credit losses | 102,946 | 30,204 | 16,764 | 27,932 | 177,846 |
| Other operating revenue | 49,642 | 60,603 | 73,523 | 3,542 | 187,310 |
| Other operating expense | 53,375 | 60,964 | 64,426 | 79,323 | 258,088 |
| Net direct contribution | 99,213 | 29,843 | 25,861 | (47,849) |) 107,068 |
| Gain (loss) on financial instruments, net | — | (1,087) |) (42) |) 1,129 | — |
| Change in fair value of mortgage servicing rights | — | 2,327 | — | (2,327) |) — |
| Gain on repossessed assets, net | 1,486 | 161 | — | (1,647) |) — |

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| | | | | | |
|---|--------------|-------------|-------------|------------|--------------|
| Corporate expense allocations | 9,054 | 16,905 | 10,912 | (36,871 |) — |
| Net income before taxes | 91,645 | 14,339 | 14,907 | (13,823 |) 107,068 |
| Federal and state income taxes | 35,650 | 5,578 | 5,799 | (15,071 |) 31,956 |
| Net income | 55,995 | 8,761 | 9,108 | 1,248 | 75,112 |
| Net income attributable to non-controlling interests | — | — | — | 835 | 835 |
| Net income attributable to BOK Financial Corp. shareholders | \$55,995 | \$8,761 | \$9,108 | \$ 413 | \$74,277 |
| Average assets | \$16,934,587 | \$8,827,816 | \$6,413,735 | \$ 470,335 | \$32,646,473 |

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Reportable segments reconciliation to the Consolidated Financial Statements for the nine months ended September 30, 2016 is as follows (in thousands):

| | Commercial | Consumer | Wealth Management | Funds Management and Other | BOK Financial Consolidated | |
|---|--------------|-------------|----------------------|----------------------------------|----------------------------------|---|
| Net interest revenue from external sources | \$358,713 | \$65,897 | \$21,620 | \$ 106,800 | \$553,030 | |
| Net interest revenue (expense) from internal sources | (44,259 |) 27,492 | \$22,258 | (5,491 |) — | |
| Net interest revenue | 314,454 | 93,389 | 43,878 | 101,309 | 553,030 | |
| Provision for credit losses | 34,024 | 4,177 | (479 |) 27,278 | 65,000 | |
| Net interest revenue after provision for credit losses | 280,430 | 89,212 | 44,357 | 74,031 | 488,030 | |
| Other operating revenue | 146,248 | 172,072 | 218,042 | (6,096 |) 530,266 | |
| Other operating expense | 162,039 | 179,487 | 186,524 | 223,993 | 752,043 | |
| Net direct contribution | 264,639 | 81,797 | 75,875 | (156,058 |) 266,253 | |
| Gain (loss) on financial instruments, net | — | 30,539 | (42 |) (30,497 |) — | |
| Change in fair value of mortgage servicing rights | — | (41,944 |) — | 41,944 | — | |
| Gain on repossessed assets, net | 806 | 566 | — | (1,372 |) — | |
| Corporate expense allocations | 26,681 | 49,513 | 31,864 | (108,058 |) — | |
| Net income before taxes | 238,764 | 21,445 | 43,969 | (37,925 |) 266,253 | |
| Federal and state income taxes | 92,879 | 8,342 | 17,104 | (34,444 |) 83,881 | |
| Net income | 145,885 | 13,103 | 26,865 | (3,481 |) 182,372 | |
| Net loss attributable to non-controlling interests | — | — | — | (270 |) (270 |) |
| Net income attributable to BOK Financial Corp. shareholders | \$ 145,885 | \$ 13,103 | \$ 26,865 | \$ (3,211 |) \$ 182,642 | |
| Average assets | \$16,958,999 | \$8,763,564 | \$5,916,545 | \$ 410,075 | \$32,049,183 | |

(11) 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. 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 nine months ended September 30, 2017 and 2016, respectively. Transfers between significant other observable inputs and significant unobservable inputs during the three and nine months ended September 30, 2017 and 2016 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 September 30, 2017, December 31, 2016 or September 30, 2016.

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 September 30, 2017 (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 | \$ 30,162 | \$ — | \$ 30,162 | \$ — |
| U.S. government agency residential mortgage-backed securities | 516,760 | — | 516,760 | — |
| Municipal and other tax-exempt securities | 56,148 | — | 56,148 | — |
| Other trading securities | 11,047 | — | 11,047 | — |
| Total trading securities | 614,117 | — | 614,117 | — |
| Available for sale securities: | | | | |
| U.S. Treasury | 999 | 999 | — | — |
| Municipal and other tax-exempt securities | 28,368 | — | 23,583 | 4,785 |
| U.S. government agency residential mortgage-backed securities | 5,326,384 | — | 5,326,384 | — |
| Privately issued residential mortgage-backed securities | 99,994 | — | 99,994 | — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,889,346 | — | 2,889,346 | — |
| Other debt securities | 4,153 | — | — | 4,153 |
| Perpetual preferred stock | 16,245 | — | 16,245 | — |
| Equity securities and mutual funds | 17,710 | 2,578 | 15,132 | — |
| Total available for sale securities | 8,383,199 | 3,577 | 8,370,684 | 8,938 |
| Fair value option securities – U.S. government agency residential mortgage-backed securities | 819,531 | — | 819,531 | — |
| Residential mortgage loans held for sale | 275,643 | — | 263,543 | 12,100 |
| Mortgage servicing rights ¹ | 245,858 | — | — | 245,858 |
| Derivative contracts, net of cash collateral ² | 352,559 | 8,498 | 344,061 | — |
| Liabilities: | | | | |
| Derivative contracts, net of cash collateral ² | 336,327 | 6,903 | 329,424 | — |

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.

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

² exchange-traded interest rate, energy and agricultural derivative contracts. Derivative contracts in liability positions that were valued using quoted prices in active markets for identical instruments are exchange-traded interest rate derivative contracts, net of cash margin.

The fair value of financial assets and liabilities measured on a recurring basis was as follows as of December 31, 2016 (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 | \$ 6,234 | \$ — | —\$ 6,234 | \$ — |
| U.S. government agency residential mortgage-backed securities | 310,067 | — | 310,067 | — |
| Municipal and other tax-exempt securities | 14,427 | — | 14,427 | — |
| Other trading securities | 6,900 | — | 6,900 | — |
| Total trading securities | 337,628 | — | 337,628 | — |
| Available for sale securities: | | | | |
| U.S. Treasury | 999 | 999 | — | — |
| Municipal and other tax-exempt securities | 40,993 | — | 35,204 | 5,789 |
| U.S. government agency residential mortgage-backed securities | 5,460,386 | — | 5,460,386 | — |
| Privately issued residential mortgage-backed securities | 115,535 | — | 115,535 | — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 3,017,933 | — | 3,017,933 | — |
| Other debt securities | 4,152 | — | — | 4,152 |
| Perpetual preferred stock | 18,474 | — | 18,474 | — |
| Equity securities and mutual funds | 18,357 | 3,495 | 14,862 | — |
| Total available for sale securities | 8,676,829 | 4,494 | 8,662,394 | 9,941 |
| Fair value option securities – U.S. government agency residential mortgage-backed securities | 77,046 | — | 77,046 | — |
| Residential mortgage loans held for sale | 301,897 | — | 290,280 | 11,617 |
| Mortgage servicing rights ¹ | 247,073 | — | — | 247,073 |
| Derivative contracts, net of cash collateral ² | 689,872 | 7,541 | 682,331 | — |
| Liabilities: | | | | |
| Derivative contracts, net of cash collateral ² | 664,531 | 6,972 | 657,559 | — |

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.

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 and energy 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, energy and agricultural derivative contracts, net of cash margin.

The fair value of financial assets and liabilities measured on a recurring basis was as follows as of September 30, 2016 (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 | \$ 15,705 | \$ — | \$ 15,705 | \$ — |
| U.S. government agency residential mortgage-backed securities | 464,749 | — | 464,749 | — |
| Municipal and other tax-exempt securities | 54,856 | — | 54,856 | — |
| Other trading securities | 11,305 | — | 11,305 | — |
| Total trading securities | 546,615 | — | 546,615 | — |
| Available for sale securities: | | | | |
| U.S. Treasury | 1,002 | 1,002 | — | — |
| Municipal and other tax-exempt securities | 42,092 | — | 36,379 | 5,713 |
| U.S. government agency residential mortgage-backed securities | 5,668,672 | — | 5,668,672 | — |
| Privately issued residential mortgage-backed securities | 121,603 | — | 121,603 | — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,986,495 | — | 2,986,495 | — |
| Other debt securities | 4,151 | — | — | 4,151 |
| Perpetual preferred stock | 19,578 | — | 19,578 | — |
| Equity securities and mutual funds | 18,690 | 3,544 | 15,146 | — |
| Total available for sale securities | 8,862,283 | 4,546 | 8,847,873 | 9,864 |
| Fair value option securities: | | | | |
| U.S. Treasury | 222,409 | 222,409 | — | — |
| U.S. government agency residential mortgage-backed securities | — | — | — | — |
| Total fair value option securities | 222,409 | 222,409 | — | — |
| Residential mortgage loans held for sale | 447,592 | — | 438,291 | 9,301 |
| Mortgage servicing rights ¹ | 203,621 | — | — | 203,621 |
| Derivative contracts, net of cash collateral ² | 655,078 | 5,575 | 649,503 | — |
| Liabilities: | | | | |
| Derivative contracts, net of cash collateral ² | 573,987 | 1,308 | 572,679 | — |

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.

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 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 and energy derivative contracts, net 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 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 counterparty credit rating or equivalent loan grading, derivative contract notional size, price volatility of the underlying commodity, duration of the derivative contracts and expected loss severity. Expected loss severity is based on historical losses for similarly risk graded commercial loan customers. Decreases in counterparty credit rating or grading and increases in price volatility and expected loss severity all tend to increase the credit quality adjustment which reduces the fair value of asset contracts. The reduction in fair value is recognized in earnings during the current period.

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. The change in the fair value would be recognized in earnings in the current period.

Residential Mortgage Loans Held for Sale

Residential mortgage loans held for sale are carried on the balance sheet at fair value. 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.

Other Assets - Private Equity Funds

The fair value of the portfolio investments of the Company's two private equity funds is based upon net asset value reported by the underlying funds, as adjusted by the general partner when necessary, as a practical expedient to measure the fair value of the investments in the underlying funds. The Company's private equity funds provide customers alternative investment opportunities as limited partners of the funds. As fund of funds, the private equity

funds invest in other limited partnerships or limited liability companies that invest substantially all of their assets in U.S. companies pursuing diversified investment strategies including early-stage venture capital, distressed securities and corporate or asset buy-outs. Private equity fund assets are long-term, illiquid investments. No secondary market exists for these assets. The private equity funds typically invest in funds that provide no redemption rights to investors. The fair value of the private equity investments may only be realized through cash distributions from the underlying funds.

See Note 7 for disclosure of the fair value of the private equity funds using the net asset value per share of the underlying investments, as a practical expedient, included in Other assets in the Consolidated Balance Sheets of the Company.

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The following represents the changes for the three and nine months ended September 30, 2017 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, June 30, 2017 | \$4,655 | \$ 4,152 | \$ 12,735 |
| Transfer to Level 3 from Level 2 ¹ | — | — | 176 |
| Purchases | — | — | — |
| Proceeds from sales | — | — | (847) |
| Redemptions and distributions | — | — | — |
| Gain recognized in earnings: | | | |
| Mortgage banking revenue | — | — | 36 |
| Other comprehensive income: | | | |
| Net change in unrealized gain | 130 | 1 | — |
| Balance, September 30, 2017 | \$4,785 | \$ 4,153 | \$ 12,100 |

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, 2016 | \$5,789 | \$ 4,152 | \$ 11,617 |
| Transfer to Level 3 from Level 2 ¹ | — | — | 2,916 |
| Purchases | — | — | — |
| Proceeds from sales | — | — | (2,549) |
| Redemptions and distributions | (1,100) | — | — |
| Gain (loss) recognized in earnings: | | | |
| Mortgage banking revenue | — | — | 116 |
| Other comprehensive income (loss): | | | |
| Net change in unrealized gain (loss) | 96 | 1 | — |
| Balance, September 30, 2017 | \$4,785 | \$ 4,153 | \$ 12,100 |

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 September 30, 2016 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, June 30, 2016 | \$9,600 | \$ 4,151 | \$ 9,749 |
| Transfer to Level 3 from Level 2 ¹ | — | — | 442 |
| Purchases | — | — | — |
| Proceeds from sales | — | — | (1,003) |
| Redemptions and distributions | (3,975) | — | — |
| Gain (loss) recognized in earnings: | | | |
| Mortgage banking revenue | — | — | 113 |
| Other comprehensive income (loss): | | | |
| Net change in unrealized gain (loss) | 88 | — | — |
| Balance, September 30, 2016 | \$5,713 | \$ 4,151 | \$ 9,301 |

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, 2015 | \$9,610 | \$ 4,151 | \$ 7,874 |
| Transfer to Level 3 from Level 2 ¹ | — | — | 3,982 |
| Purchases | — | — | — |
| Proceeds from sales | — | — | (2,365) |
| Redemptions and distributions | (3,975) | — | — |
| Gain (loss) recognized in earnings: | | | |
| Mortgage banking revenue | — | — | (190) |
| Other comprehensive income (loss): | | | |
| Net change in unrealized gain (loss) | 78 | — | — |
| Balance, September 30, 2016 | \$5,713 | \$ 4,151 | \$ 9,301 |

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.

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A summary of quantitative information about assets measured at fair value on a recurring basis using Significant Unobservable Inputs (Level 3) as of September 30, 2017 follows (in thousands):

| | Par Value | Amortized Cost/Unpaid Principal Balance | Fair Value | Valuation Technique(s) | Unobservable Input | Range (Weighted Average) | |
|---|-----------|---|------------|---|---|----------------------------|--------------|
| Available for sale securities | | | | | | | |
| Municipal and other tax-exempt securities | \$5,095 | \$ 5,067 | \$4,785 | Discounted cash flows | ¹ Interest rate spread | 6.05%-6.05% (6.05%) | ² |
| | | | | | | 92.25%-95.02% (93.91%) | ³ |
| | | | | | | 6.65%-6.73% (6.72%) | ⁴ |
| Other debt securities | 4,400 | 4,400 | 4,153 | Discounted cash flows | ¹ Interest rate spread | 94.38% - 94.38 (94.38%) | ³ |
| Residential mortgage loans held for sale | N/A | 12,612 | 12,100 | Quoted prices of loans sold in securitization transactions, with a liquidity discount applied | Liquidity discount applied to the market value of a mortgage loans qualifying for sale to U.S. government agencies. | 95.94% | |

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.

¹ comparable securities of similar duration and credit rating as determined by the nationally-recognized rating agencies, adjusted for lack of trading volume.

² Interest rate yields used to value investment grade tax-exempt securities represent a spread of 352 to 467 basis points over average yields for comparable tax-exempt securities.

³ Represents fair value as a percentage of par value.

⁴ Interest rate yields used to value investment grade taxable securities based on comparable short-term taxable securities which are generally yielding less than 3 percent.

A summary of quantitative information about Recurring Fair Value Measurements based on Significant Unobservable Inputs (Level 3) as of December 31, 2016 follows (in thousands):

| | Par Value | Amortized Cost/Unpaid Principal Balance | Fair Value | Valuation Technique(s) | Unobservable Input | Range (Weighted Average) | |
|---|-----------|---|------------|------------------------|-----------------------------------|---------------------------|--------------|
| Available for sale securities | | | | | | | |
| Municipal and other tax-exempt securities | \$6,195 | \$ 6,163 | \$5,789 | Discounted cash flows | ¹ Interest rate spread | 5.91%-6.21% (6.16%) | ² |
| | | | | | | 90.00%-93.40% (92.20%) | ³ |
| Other debt securities | 4,400 | 4,400 | 4,152 | Discounted cash flows | ¹ Interest rate spread | 6.01%-6.26% (6.23%) | ⁴ |
| | | | | | | | ³ |

94.34% - 94.36
(94.36%)

| | | | | | | |
|--|-----|--------|--------|---|---|--------|
| Residential mortgage loans held for sale | N/A | 12,431 | 11,617 | Quoted prices of loans sold in securitization transactions, with a liquidity discount applied | Liquidity discount applied to the market value of a mortgage loans qualifying for sale to U.S. government agencies. | 93.45% |
|--|-----|--------|--------|---|---|--------|

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

² Interest rate yields used to value investment grade tax-exempt securities represent a spread of 467 to 525 basis
points over average yields for comparable tax-exempt securities.

³ Represents fair value as a percentage of par value.

⁴ Interest rate yields used to value investment grade taxable securities based on comparable short-term taxable
securities which are generally yielding less than 1 percent.

A summary of quantitative information about Recurring Fair Value Measurements based on Significant Unobservable Inputs (Level 3) as of September 30, 2016 follows (in thousands):

| | Par Value | Amortized Cost | Fair Value | Valuation Technique(s) | Unobservable Input | Range (Weighted Average) | |
|---|-----------|----------------|------------|---|---|--------------------------|--------------|
| Available for sale securities | | | | | | | |
| Municipal and other tax-exempt securities | \$6,195 | \$ 6,162 | \$5,713 | Discounted cash flows | ¹ Interest rate spread | 5.60%-5.90% (5.85%) | ² |
| | | | | | | 90.00%-93.79% (92.22%) | ³ |
| | | | | | | 5.98%-6.03% (6.02%) | ⁴ |
| Other debt securities | 4,400 | 4,400 | 4,151 | Discounted cash flows | ¹ Interest rate spread | 94.34% - 94.34% (94.34%) | ³ |
| Residential mortgage loans held for sale | N/A | 9,957 | 9,301 | Quoted prices of loans sold in securitization transactions, with a liquidity discount applied | Liquidity discount applied to the market value of a mortgage loans qualifying for sale to U.S. government agencies. | 93.41% | |

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 Interest rate yields used to value investment grade tax-exempt securities represent a spread of 437 to 484 basis points over average yields for comparable tax-exempt securities.

³ Represents fair value as a percentage of par value.

⁴ Interest rate yields used to value investment grade taxable securities based on comparable short-term taxable securities which are generally yielding less than 1 percent.

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 September 30, 2017 for which the fair value was adjusted during the nine months ended September 30, 2017:

| Carrying Value at September 30, 2017 | Fair Value Adjustments for the | | | | |
|--|---------------------------------------|--------------------------|--------------------------------------|--------------------------|----------------------------|
| | Three Months Ended September 30, 2017 | | Nine Months Ended September 30, 2017 | | |
| | Recognized in: | | | | |
| Quoted Prices of Significant Observable Inputs | Significant Unobservable Inputs | Gross charge-off against | Net losses and expenses of | Gross charge-off against | Net losses and expenses of |

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| | in Inputs | | allowancerepossessed | allowancerepossessed |
|--|-------------|-----------|----------------------|----------------------|
| | Active | | for assets, net | for loan assets, net |
| | Markets | | loan | losses |
| | for | | losses | |
| | Identical | | | |
| | Instruments | | | |
| Impaired loans | \$-\$ 423 | \$ 10,960 | \$4,397 | \$ —\$ 5,058 |
| Real estate and other repossessed assets | —4,392 | 6,845 | — 4,683 | — 4,915 |

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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 September 30, 2016 for which the fair value was adjusted during the nine months ended September 30, 2016:

| | Carrying Value at September 30, 2016 | | Fair Value | | Nine Months Ended September 30, 2016 Recognized in: | | |
|--|--|-------------------------------|---|--|--|--|--|
| | | | Adjustments for the Three Months Ended September 30, 2016 Recognized in: | | | | |
| | Quoted Prices in Significant Markets for Identical Instruments | 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 | \$ 436 | \$ 23,089 | \$ 6,334 | \$ — | — | \$ 30,200 | \$ — |
| Real estate and other repossessed assets | — | 6,048 | 1,927 | — | 480 | — | 1,260 |

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 September 30, 2017 follows (in thousands):

| | Fair Value | Valuation Technique(s) | Unobservable Input | Range (Weighted Average) |
|--|------------|------------------------------|---|------------------------------|
| Impaired loans | \$ 10,960 | Discounted cash flows | Recoverable oil and gas reserves, forward-looking commodity prices, estimated operating costs | 64% - 88% (68%) ¹ |
| Real estate and other repossessed assets | 6,845 | Appraised value, as adjusted | 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.

A summary of quantitative information about Non-recurring Fair Value Measurements based on Significant Unobservable Inputs (Level 3) as of September 30, 2016 follows (in thousands):

| | Fair Value | Valuation Technique(s) | Unobservable Input | Range (Weighted Average) |
|--|------------|------------------------------|---|------------------------------|
| Impaired loans | \$ 23,089 | Discounted cash flows | Recoverable oil and gas reserves, forward-looking commodity prices, estimated operating costs | 23% - 59% (43%) ¹ |
| Real estate and other repossessed assets | 1,927 | Appraised value, as adjusted | Marketability adjustments off appraised value ² | 68% - 80% (71%) |

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.

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 September 30, 2017 (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 | \$ 547,203 | \$ 547,203 | \$ 547,203 | \$ — | \$ — |
| Interest-bearing cash and cash equivalents | 1,926,779 | 1,926,779 | 1,926,779 | — | — |
| Trading securities: | | | | — | |
| U.S. government agency debentures | 30,162 | 30,162 | — | 30,162 | — |
| U.S. government agency residential mortgage-backed securities | 516,760 | 516,760 | — | 516,760 | — |
| Municipal and other tax-exempt securities | 56,148 | 56,148 | — | 56,148 | — |
| Other trading securities | 11,047 | 11,047 | — | 11,047 | — |
| Total trading securities | 614,117 | 614,117 | — | 614,117 | — |
| Investment securities: | | | | | |
| Municipal and other tax-exempt securities | 246,000 | 249,250 | — | 249,250 | — |
| U.S. government agency residential mortgage-backed securities | 16,926 | 17,458 | — | 17,458 | — |
| Other debt securities | 203,636 | 223,187 | — | 223,187 | — |
| Total investment securities | 466,562 | 489,895 | — | 489,895 | — |
| Available for sale securities: | | | | | |
| U.S. Treasury | 999 | 999 | 999 | — | — |
| Municipal and other tax-exempt securities | 28,368 | 28,368 | — | 23,583 | 4,785 |
| U.S. government agency residential mortgage-backed securities | 5,326,384 | 5,326,384 | — | 5,326,384 | — |
| Privately issued residential mortgage-backed securities | 99,994 | 99,994 | — | 99,994 | — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,889,346 | 2,889,346 | — | 2,889,346 | — |
| Other debt securities | 4,153 | 4,153 | — | — | 4,153 |
| Perpetual preferred stock | 16,245 | 16,245 | — | 16,245 | — |
| Equity securities and mutual funds | 17,710 | 17,710 | 2,578 | 15,132 | — |
| Total available for sale securities | 8,383,199 | 8,383,199 | 3,577 | 8,370,684 | 48,938 |
| Fair value option securities – U.S. government agency residential mortgage-backed securities | 819,531 | 819,531 | — | 819,531 | — |
| Residential mortgage loans held for sale | 275,643 | 275,643 | — | 263,543 | 12,100 |
| Loans: | | | | | |
| Commercial | 10,795,934 | 10,574,720 | — | — | 10,574,720 |
| Commercial real estate | 3,518,142 | 3,467,009 | — | — | 3,467,009 |
| Residential mortgage | 1,945,750 | 1,958,632 | — | — | 1,958,632 |
| Personal | 947,008 | 938,819 | — | — | 938,819 |
| Total loans | 17,206,834 | 16,939,180 | — | — | 16,939,180 |
| Allowance for loan losses | (247,703) | — | — | — | — |

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| | | | | | |
|---|------------|------------|-------|---------|------------|
| Loans, net of allowance | 16,959,131 | 16,939,180 | — | — | 16,939,180 |
| Mortgage servicing rights | 245,858 | 245,858 | — | — | 245,858 |
| Derivative instruments with positive fair value, net of cash collateral | 352,559 | 352,559 | 8,498 | 344,061 | — |
| Deposits with no stated maturity | 19,675,790 | 19,675,790 | — | — | 19,675,790 |
| Time deposits | 2,172,289 | 2,138,367 | — | — | 2,138,367 |
| Other borrowed funds | 6,631,820 | 6,609,642 | — | — | 6,609,642 |
| Subordinated debentures | 144,668 | 146,693 | — | 146,693 | — |
| Derivative instruments with negative fair value, net of cash collateral | 336,327 | 336,327 | 6,903 | 329,424 | — |

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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, 2016 (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 | \$ 620,846 | \$ 620,846 | \$ 620,846 | \$ — | \$ — |
| Interest-bearing cash and cash equivalents | 1,916,651 | 1,916,651 | 1,916,651 | — | — |
| Trading securities: | | | | — | |
| U.S. government agency debentures | 6,234 | 6,234 | — | 6,234 | — |
| U.S. government agency residential mortgage-backed securities | 310,067 | 310,067 | — | 310,067 | — |
| Municipal and other tax-exempt securities | 14,427 | 14,427 | — | 14,427 | — |
| Other trading securities | 6,900 | 6,900 | — | 6,900 | — |
| Total trading securities | 337,628 | 337,628 | — | 337,628 | — |
| Investment securities: | | | | | |
| Municipal and other tax-exempt securities | 320,364 | 321,225 | — | 321,225 | — |
| U.S. government agency residential mortgage-backed securities | 20,777 | 21,473 | — | 21,473 | — |
| Other debt securities | 205,004 | 222,795 | — | 222,795 | — |
| Total investment securities | 546,145 | 565,493 | — | 565,493 | — |
| Available for sale securities: | | | | | |
| U.S. Treasury | 999 | 999 | 999 | — | — |
| Municipal and other tax-exempt securities | 40,993 | 40,993 | — | 35,204 | 5,789 |
| U.S. government agency residential mortgage-backed securities | 5,460,386 | 5,460,386 | — | 5,460,386 | — |
| Privately issued residential mortgage-backed securities | 115,535 | 115,535 | — | 115,535 | — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 3,017,933 | 3,017,933 | — | 3,017,933 | — |
| Other debt securities | 4,152 | 4,152 | — | — | 4,152 |
| Perpetual preferred stock | 18,474 | 18,474 | — | 18,474 | — |
| Equity securities and mutual funds | 18,357 | 18,357 | 3,495 | 14,862 | — |
| Total available for sale securities | 8,676,829 | 8,676,829 | 4,494 | 8,662,394 | 9,941 |
| Fair value option securities – U.S. government agency residential mortgage-backed securities | 77,046 | 77,046 | — | 77,046 | — |
| Residential mortgage loans held for sale | 301,897 | 301,897 | — | 290,280 | 11,617 |
| Loans: | | | | | |
| Commercial | 10,390,824 | 10,437,016 | — | — | 10,437,016 |
| Commercial real estate | 3,809,046 | 3,850,981 | — | — | 3,850,981 |
| Residential mortgage | 1,949,832 | 2,025,159 | — | — | 2,025,159 |
| Personal | 839,958 | 864,904 | — | — | 864,904 |
| Total loans | 16,989,660 | 17,178,060 | — | — | 17,178,060 |
| Allowance for loan losses | (246,159) | — | — | — | — |
| Loans, net of allowance | 16,743,501 | 17,178,060 | — | — | 17,178,060 |
| Mortgage servicing rights | 247,073 | 247,073 | — | — | 247,073 |

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| | | | | | |
|---|------------|------------|-------|---------|------------|
| Derivative instruments with positive fair value, net of cash collateral | 689,872 | 689,872 | 7,541 | 682,331 | — |
| Deposits with no stated maturity | 20,526,295 | 20,526,295 | — | — | 20,526,295 |
| Time deposits | 2,221,800 | 2,218,303 | — | — | 2,218,303 |
| Other borrowed funds | 5,572,662 | 5,556,327 | — | — | 5,556,327 |
| Subordinated debentures | 144,640 | 128,903 | — | 128,903 | — |
| Derivative instruments with negative fair value, net of cash collateral | 664,531 | 664,531 | 6,972 | 657,559 | — |

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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 September 30, 2016 (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 | \$ 535,916 | \$ 535,916 | \$ 535,916 | \$ — | \$ — |
| Interest-bearing cash and cash equivalents | 2,080,978 | 2,080,978 | 2,080,978 | — | — |
| Trading securities: | | | | | |
| U.S. government agency debentures | 15,705 | 15,705 | — | 15,705 | — |
| U.S. government agency residential mortgage-backed securities | 464,749 | 464,749 | — | 464,749 | — |
| Municipal and other tax-exempt securities | 54,856 | 54,856 | — | 54,856 | — |
| Other trading securities | 11,305 | 11,305 | — | 11,305 | — |
| Total trading securities | 546,615 | 546,615 | — | 546,615 | — |
| Investment securities: | | | | | |
| Municipal and other tax-exempt securities | 323,225 | 327,788 | — | 327,788 | — |
| U.S. government agency residential mortgage-backed securities | 22,166 | 23,452 | — | 23,452 | — |
| Other debt securities | 201,066 | 229,070 | — | 229,070 | — |
| Total investment securities | 546,457 | 580,310 | — | 580,310 | — |
| Available for sale securities: | | | | | |
| U.S. Treasury | 1,002 | 1,002 | 1,002 | — | — |
| Municipal and other tax-exempt securities | 42,092 | 42,092 | — | 36,379 | 5,713 |
| U.S. government agency residential mortgage-backed securities | 5,668,672 | 5,668,672 | — | 5,668,672 | — |
| Privately issued residential mortgage-backed securities | 121,603 | 121,603 | — | 121,603 | — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,986,495 | 2,986,495 | — | 2,986,495 | — |
| Other debt securities | 4,151 | 4,151 | — | — | 4,151 |
| Perpetual preferred stock | 19,578 | 19,578 | — | 19,578 | — |
| Equity securities and mutual funds | 18,690 | 18,690 | 3,544 | 15,146 | — |
| Total available for sale securities | 8,862,283 | 8,862,283 | 4,546 | 8,847,873 | 9,864 |
| Fair value option securities: | | | | | |
| U.S. Treasury | 222,409 | 222,409 | 222,409 | — | — |
| U.S. government agency residential mortgage-backed securities | — | — | — | — | — |
| Total fair value option securities | 222,409 | 222,409 | 222,409 | — | — |
| Residential mortgage loans held for sale | 447,592 | 447,592 | — | 438,291 | 9,301 |
| Loans: | | | | | |
| Commercial | 10,120,163 | 9,926,548 | — | — | 9,926,548 |
| Commercial real estate | 3,793,598 | 3,769,427 | — | — | 3,769,427 |
| Residential mortgage | 1,872,793 | 1,905,786 | — | — | 1,905,786 |
| Personal | 678,232 | 671,421 | — | — | 671,421 |
| Total loans | 16,464,786 | 16,273,182 | — | — | 16,273,182 |

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| | | | | | |
|---|------------|------------|-------|---------|------------|
| Allowance for loan losses | (245,103) | — | — | — | — |
| Loans, net of allowance | 16,219,683 | 16,273,182 | — | — | 16,273,182 |
| Mortgage servicing rights | 203,621 | 203,621 | — | — | 203,621 |
| Derivative instruments with positive fair value, net of cash collateral | 655,078 | 655,078 | 5,575 | 649,503 | — |
| Deposits with no stated maturity | 18,925,873 | 18,925,873 | — | — | 18,925,873 |
| Time deposits | 2,169,631 | 2,163,947 | — | — | 2,163,947 |
| Other borrowed funds | 7,147,047 | 7,079,737 | — | — | 7,079,737 |
| Subordinated debentures | 144,631 | 148,360 | — | 148,360 | — |
| Derivative instruments with negative fair value, net of cash collateral | 573,987 | 573,987 | 1,308 | 572,679 | — |

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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.

The following methods and assumptions were used in estimating the fair value of these financial instruments:

Cash and Cash Equivalents

The book value reported in the consolidated balance sheets for cash and short-term instruments approximates those assets' fair values.

Securities

The fair values of securities are generally based on Significant Other Observable Inputs such as quoted prices for comparable instruments or interest rates and credit spreads, yield curves, volatilities, prepayment speeds and loss severities.

Loans

The fair value of loans, excluding loans held for sale, are based on discounted cash flow analyses using interest rates and credit and liquidity spreads currently being offered for loans with similar remaining terms to maturity and risk, adjusted for the impact of interest rate floors and ceilings, which are classified as Significant Unobservable Inputs. The fair values of loans were estimated to approximate their discounted cash flows less loan loss allowances allocated to these loans of \$220 million at September 30, 2017, \$218 million at December 31, 2016 and \$217 million at September 30, 2016. A summary of assumptions used in determining the fair value of loans follows:

| | Range of Contractual Yields | Average Re-pricing (in years) | Discount Rate |
|------------------------|-----------------------------------|-------------------------------------|------------------|
| September 30, 2017: | | | |
| Commercial | 0.38% - 30.00% | 0.62 | 0.78% - 4.59% |
| Commercial real estate | 0.38% - 18.00% | 0.77 | 1.04% - 4.38% |
| Residential mortgage | 1.74% - 18.00% | 2.12 | 1.79% - 4.09% |
| Personal | 0.25% - 21.00% | 0.24 | 0.55% - 4.78% |
| December 31, 2016: | | | |
| Commercial | 0.38% - 30.00% | 0.70 | 0.64% - 4.60% |
| Commercial real estate | 0.38% - 18.00% | 0.71 | 0.94% - 4.27% |
| Residential mortgage | 1.74% - 18.00% | 2.27 | 1.71% - 4.26% |
| Personal | 0.25% - 21.00% | 0.40 | 1.03% - 4.59% |
| September 30, 2016: | | | |
| Commercial | 0.38% - 30.00% | 0.69 | 0.54% - 3.93% |
| Commercial real estate | 0.38% - 18.00% | 0.72 | 0.80% - 3.90% |
| Residential mortgage | 1.74% - 18.00% | 1.95 | 1.57% - 3.55% |
| Personal | 0.25% - 21.00% | 0.35 | 0.75% - 4.15% |

Deposits

The fair values of time deposits are based on discounted cash flow analyses using interest rates currently being offered on similar transactions which are considered Significant Unobservable Inputs. Estimated fair value of deposits with no stated maturity, which includes demand deposits, transaction deposits, money market deposits and savings accounts, is equal to the amount payable on demand. Although market premiums paid reflect an additional value for these low cost deposits, adjusting fair value for the expected benefit of these deposits is prohibited. Accordingly, the positive effect of such deposits is not included in the tables above.

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A summary of assumptions used in determining the fair value of time deposits follows:

| | Range of Contractual Yields | Average Re-pricing (in years) | Discount Rate |
|--------------------|-----------------------------------|-------------------------------------|------------------|
| September 30, 2017 | 0.03% - 9.64% | 1.95 | 1.86% - 2.18% |
| December 31, 2016 | 0.02% - 9.65% | 1.96 | 1.57% - 2.00% |
| September 30, 2016 | 0.03% - 9.65% | 2.10 | 1.37% - 1.66% |

Other Borrowings and Subordinated Debentures

The fair values of these instruments are based upon discounted cash flow analyses using interest rates currently being offered on similar instruments, which are considered Significant Unobservable Inputs. A summary of assumptions used in determining the fair value of other borrowings and subordinated debentures follows:

| | Range of Contractual Yields | Average Re-pricing (in years) | Discount Rate |
|-------------------------|-----------------------------------|-------------------------------------|------------------|
| September 30, 2017: | | | |
| Other borrowed funds | 0.25% - 6.25% | 0.02 | 1.06% - 3.70% |
| Subordinated debentures | 5.38% | 16.85 | 4.96% |
| December 31, 2016: | | | |
| Other borrowed funds | 0.25% - 3.50% | 0.00 | 0.55% - 3.22% |
| Subordinated debentures | 5.38% | 16.86 | 6.11% |
| September 30, 2016: | | | |
| Other borrowed funds | 0.25% - 3.81% | 0.02 | 0.29% - 2.99% |
| Subordinated debentures | 5.38% | 18.37 | 5.38% |

Off-Balance Sheet Instruments

The fair values of commercial loan commitments are based on fees currently charged to enter into similar agreements, taking into account the remaining terms of the agreements. The fair values of these off-balance sheet instruments were not significant at September 30, 2017, December 31, 2016 or September 30, 2016.

Fair Value Election

As more fully disclosed in Note 2 and Note 6 to the Consolidated Financial Statements, the Company has elected to carry all residential mortgage-backed securities guaranteed by U.S. government agencies and U.S. Treasury securities held as economic hedges against changes in the fair value of mortgage servicing rights and all residential mortgage loans originated for sale at fair value. Changes in the fair value of these financial instruments are recognized in earnings.

(12) Federal and State Income Taxes

The reconciliations of income attributable to continuing operations at the U.S. federal statutory tax rate to income tax expense are as follows (in thousands):

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|--|--|----------|------------------------------------|----------|
| | 2017 | 2016 | 2017 | 2016 |
| Amount: | | | | |
| Federal statutory tax | \$44,880 | \$37,474 | \$137,048 | \$93,189 |
| Tax exempt revenue | (3,001) | (2,391) | (9,336) | (7,491) |
| Effect of state income taxes, net of federal benefit | 2,486 | 1,364 | 7,875 | 5,222 |
| Utilization of tax credits: | | | | |
| Low-income housing tax credit, net of amortization | (23) | (623) | (2,272) | (2,505) |
| Other tax credits | (364) | (522) | (1,091) | (1,564) |
| Bank-owned life insurance | (705) | (813) | (2,252) | (2,414) |
| Share-based compensation | (169) | — | (2,470) | — |
| Other, net | (666) | (2,533) | 744 | (556) |
| Total income tax expense | \$42,438 | \$31,956 | \$128,246 | \$83,881 |

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|--|--|--------|---------------------------------------|--------|
| | 2017 | 2016 | 2017 | 2016 |
| Percent of pretax income: | | | | |
| Federal statutory tax | 35.0 % | 35.0 % | 35.0 % | 35.0 % |
| Tax exempt revenue | (2.3) | (2.2) | (2.4) | (2.8) |
| Effect of state income taxes, net of federal benefit | 1.9 | 1.3 | 2.0 | 2.0 |
| Utilization of tax credits: | | | | |
| Low-income housing tax credit, net of amortization | — | (0.6) | (0.6) | (0.9) |
| Other tax credits | (0.3) | (0.5) | (0.3) | (0.6) |
| Bank-owned life insurance | (0.5) | (0.8) | (0.6) | (0.9) |
| Share-based compensation | (0.1) | — | (0.6) | — |
| Other, net | (0.6) | (2.4) | 0.3 | (0.3) |
| Total | 33.1 % | 29.8 % | 32.8 % | 31.5 % |

(13) Subsequent Events

The Company evaluated events from the date of the consolidated financial statements on September 30, 2017 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.

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Nine-Month Financial Summary – Unaudited

Consolidated Daily Average Balances, Average Yields and Rates

(In Thousands, Except Per Share Data)

| | Nine Months Ended | | | September 30, 2016 | | |
|---|--------------------|-----------------|------------|--------------------|-----------------|------------|
| | September 30, 2017 | | | September 30, 2016 | | |
| | Average Balance | Revenue/Expense | Yield/Rate | Average Balance | Revenue/Expense | Yield/Rate |
| Assets | | | | | | |
| Interest-bearing cash and cash equivalents | \$2,020,003 | \$15,817 | 1.05% | \$2,040,978 | \$7,926 | 0.52% |
| Trading securities | 508,741 | 13,008 | 3.55% | 264,525 | 4,659 | 2.48% |
| Investment securities | | | | | | |
| Taxable | 220,892 | 8,886 | 5.36% | 227,136 | 9,244 | 5.43% |
| Tax-exempt | 280,910 | 5,300 | 2.52% | 340,292 | 5,713 | 2.24% |
| Total investment securities | 501,802 | 14,186 | 3.77% | 567,428 | 14,957 | 3.52% |
| Available for sale securities | | | | | | |
| Taxable | 8,407,421 | 130,426 | 2.09% | 8,831,032 | 130,790 | 2.02% |
| Tax-exempt | 51,891 | 2,019 | 5.58% | 70,205 | 2,605 | 5.15% |
| Total available for sale securities | 8,459,312 | 132,445 | 2.11% | 8,901,237 | 133,395 | 2.04% |
| Fair value option securities | 526,714 | 10,985 | 2.77% | 361,623 | 6,182 | 2.11% |
| Restricted equity securities | 312,365 | 13,534 | 5.78% | 316,563 | 12,684 | 5.34% |
| Residential mortgage loans held for sale | 240,822 | 6,317 | 3.55% | 379,174 | 9,823 | 3.49% |
| Loans | | | | | | |
| Allowance for loan losses | (250,538) | | | (242,508) | | |
| Loans, net of allowance | 16,923,912 | 523,764 | 4.14% | 15,992,563 | 436,966 | 3.65% |
| Total earning assets | 29,493,671 | 730,056 | 3.32% | 28,824,091 | 626,592 | 2.92% |
| Receivable on unsettled securities sales | 72,888 | | | 141,957 | | |
| Cash and other assets | 3,210,879 | | | 3,083,135 | | |
| Total assets | \$32,777,438 | | | \$32,049,183 | | |
| Liabilities and equity | | | | | | |
| Interest-bearing deposits: | | | | | | |
| Transaction | \$10,246,125 | \$19,713 | 0.26% | \$9,666,048 | \$9,994 | 0.14% |
| Savings | 455,740 | 272 | 0.08% | 411,568 | 295 | 0.10% |
| Time | 2,213,090 | 18,521 | 1.12% | 2,286,844 | 20,062 | 1.17% |
| Total interest-bearing deposits | 12,914,955 | 38,506 | 0.40% | 12,364,460 | 30,351 | 0.33% |
| Funds purchased | 56,161 | 276 | 0.66% | 83,668 | 142 | 0.23% |
| Repurchase agreements | 436,882 | 240 | 0.07% | 598,631 | 214 | 0.05% |
| Other borrowings | 5,825,764 | 47,026 | 1.08% | 6,002,018 | 25,587 | 0.57% |
| Subordinated debentures | 144,653 | 6,098 | 5.64% | 238,415 | 4,056 | 2.27% |
| Total interest-bearing liabilities | 19,378,415 | 92,146 | 0.64% | 19,287,192 | 60,350 | 0.42% |
| Non-interest bearing demand deposits | 9,277,820 | | | 8,255,859 | | |
| Due on unsettled securities purchases | 131,571 | | | 150,994 | | |
| Other liabilities | 581,901 | | | 1,001,282 | | |
| Total equity | 3,407,731 | | | 3,353,856 | | |
| Total liabilities and equity | \$32,777,438 | | | \$32,049,183 | | |
| Tax-equivalent Net Interest Revenue | | \$637,910 | 2.68% | | \$566,242 | 2.50% |
| Tax-equivalent Net Interest Revenue to Earning Assets | | | 2.90% | | | 2.64% |
| Less tax-equivalent adjustment | | 13,072 | | | 13,212 | |
| Net Interest Revenue | | 624,838 | | | 553,030 | |
| Provision for credit losses | | — | | | 65,000 | |
| Other operating revenue | | 528,258 | | | 530,266 | |

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| | | |
|---|-----------|-----------|
| Other operating expense | 761,530 | 752,043 |
| Income before taxes | 391,566 | 266,253 |
| Federal and state income taxes | 128,246 | 83,881 |
| Net income | 263,320 | 182,372 |
| Net income (loss) attributable to non-controlling interests | 1,168 | (270) |
| Net income attributable to BOK Financial Corp. shareholders | \$262,152 | \$182,642 |
| Earnings Per Average Common Share Equivalent: | | |
| Net income: | | |
| Basic | \$4.01 | \$2.77 |
| Diluted | \$4.00 | \$2.76 |

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.

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Quarterly Financial Summary – Unaudited

Consolidated Daily Average Balances, Average Yields and Rates

(In Thousands, Except Per Share Data)

| | Three Months Ended | | | Three Months Ended | | |
|---|--------------------|---------------------|----------------|--------------------|---------------------|----------------|
| | September 30, 2017 | | | June 30, 2017 | | |
| | Average Balance | Revenue/ Expense | Yield/ Rate | Average Balance | Revenue/ Expense | Yield/ Rate |
| Assets | | | | | | |
| Interest-bearing cash and cash equivalents | \$1,965,645 | \$6,375 | 1.29% | \$2,007,746 | \$5,198 | 1.04% |
| Trading securities | 491,613 | 4,122 | 3.47% | 456,028 | 3,517 | 3.23% |
| Investment securities | | | | | | |
| Taxable | 221,609 | 2,942 | 5.31% | 219,385 | 2,931 | 5.34% |
| Tax-exempt | 254,096 | 1,650 | 2.60% | 279,987 | 1,757 | 2.51% |
| Total investment securities | 475,705 | 4,592 | 3.86% | 499,372 | 4,688 | 3.76% |
| Available for sale securities | | | | | | |
| Taxable | 8,381,536 | 44,579 | 2.16% | 8,332,709 | 42,920 | 2.09% |
| Tax-exempt | 46,817 | 566 | 5.27% | 51,348 | 725 | 6.09% |
| Total available for sale securities | 8,428,353 | 45,145 | 2.17% | 8,384,057 | 43,645 | 2.11% |
| Fair value option securities | 684,571 | 5,066 | 2.97% | 476,102 | 3,539 | 2.92% |
| Restricted equity securities | 328,677 | 4,826 | 5.87% | 295,743 | 4,399 | 5.95% |
| Residential mortgage loans held for sale | 256,343 | 2,095 | 3.36% | 245,401 | 2,386 | 3.92% |
| Loans | | | | | | |
| Allowance for loan losses | (250,590) | | | (251,632) | | |
| Loans, net of allowance | 17,006,073 | 187,506 | 4.38% | 16,877,901 | 172,139 | 4.09% |
| Total earning assets | 29,636,980 | 259,727 | 3.50% | 29,242,350 | 239,511 | 3.30% |
| Receivable on unsettled securities sales | 76,622 | | | 79,248 | | |
| Cash and other assets | 3,294,568 | | | 3,046,973 | | |
| Total assets | \$33,008,170 | | | \$32,368,571 | | |
| Liabilities and equity | | | | | | |
| Interest-bearing deposits: | | | | | | |
| Transaction | \$10,088,522 | \$8,062 | 0.32% | \$10,087,640 | \$6,437 | 0.26% |
| Savings | 464,130 | 90 | 0.08% | 461,586 | 95 | 0.08% |
| Time | 2,176,820 | 6,378 | 1.16% | 2,204,422 | 6,090 | 1.11% |
| Total interest-bearing deposits | 12,729,472 | 14,530 | 0.45% | 12,753,648 | 12,622 | 0.40% |
| Funds purchased | 49,774 | 116 | 0.92% | 63,263 | 96 | 0.61% |
| Repurchase agreements | 361,512 | 140 | 0.15% | 427,353 | 68 | 0.06% |
| Other borrowings | 6,162,641 | 20,105 | 1.29% | 5,572,031 | 15,188 | 1.09% |
| Subordinated debentures | 144,663 | 2,070 | 5.68% | 144,654 | 2,003 | 5.55% |
| Total interest-bearing liabilities | 19,448,062 | 36,961 | 0.75% | 18,960,949 | 29,977 | 0.63% |
| Non-interest bearing demand deposits | 9,389,849 | | | 9,338,683 | | |
| Due on unsettled securities purchases | 145,155 | | | 157,438 | | |
| Other liabilities | 540,463 | | | 502,068 | | |
| Total equity | 3,484,641 | | | 3,409,433 | | |
| Total liabilities and equity | \$33,008,170 | | | \$32,368,571 | | |
| Tax-equivalent Net Interest Revenue | | \$222,766 | 2.75% | | \$209,534 | 2.67% |
| Tax-equivalent Net Interest Revenue to Earning Assets | | | 3.01% | | | 2.89% |
| Less tax-equivalent adjustment | | 4,314 | | | 4,330 | |
| Net Interest Revenue | | 218,452 | | | 205,204 | |
| Provision for credit losses | | — | | | — | |

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| | | |
|---|----------|----------|
| Other operating revenue | 175,710 | 182,252 |
| Other operating expense | 265,934 | 250,885 |
| Income before taxes | 128,228 | 136,571 |
| Federal and state income taxes | 42,438 | 47,705 |
| Net income | 85,790 | 88,866 |
| Net income (loss) attributable to non-controlling interests | 141 | 719 |
| Net income attributable to BOK Financial Corp. shareholders | \$85,649 | \$88,147 |
| Earnings Per Average Common Share Equivalent: | | |
| Basic | \$1.31 | \$1.35 |
| Diluted | \$1.31 | \$1.35 |

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.

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Three Months Ended

| March 31, 2017 | | | December 31, 2016 | | | September 30, 2016 | | |
|-----------------|------------------|--------------|-------------------|-------------------|--------------|--------------------|-------------------|--------------|
| Average Balance | Revenue /Expense | Yield / Rate | Average Balance | Revenue / Expense | Yield / Rate | Average Balance | Revenue / Expense | Yield / Rate |
| \$2,087,964 | \$4,244 | 0.82 % | \$2,032,785 | \$2,800 | 0.55 % | \$2,047,991 | \$2,651 | 0.51 % |
| 579,549 | 5,369 | 3.87 % | 476,498 | 4,554 | 3.91 % | 366,545 | 3,157 | 2.71 % |
| 221,684 | 3,013 | 5.44 % | 224,376 | 3,024 | 5.39 % | 224,518 | 3,000 | 5.34 % |
| 309,252 | 1,893 | 2.45 % | 318,493 | 1,854 | 2.33 % | 328,074 | 1,851 | 2.26 % |
| 530,936 | 4,906 | 3.70 % | 542,869 | 4,878 | 3.60 % | 552,592 | 4,851 | 3.51 % |
| 8,509,423 | 42,927 | 2.02 % | 8,706,449 | 42,482 | 1.98 % | 8,795,869 | 42,513 | 1.99 % |
| 57,626 | 728 | 5.37 % | 60,106 | 748 | 5.27 % | 66,721 | 867 | 5.47 % |
| 8,567,049 | 43,655 | 2.05 % | 8,766,555 | 43,230 | 2.00 % | 8,862,590 | 43,380 | 2.01 % |
| 416,524 | 2,380 | 2.27 % | 210,733 | 541 | 0.99 % | 266,998 | 1,531 | 1.70 % |
| 312,498 | 4,309 | 5.52 % | 334,114 | 4,554 | 5.45 % | 335,812 | 4,510 | 5.37 % |
| 220,325 | 1,836 | 3.35 % | 345,066 | 2,835 | 3.31 % | 445,930 | 3,615 | 3.28 % |
| 17,135,825 | 164,119 | 3.88 % | 16,723,588 | 156,734 | 3.67 % | 16,447,750 | 150,077 | 3.63 % |
| (249,379) | | | (246,977) | | | (247,901) | | |
| 16,886,446 | 164,119 | 3.94 % | 16,476,611 | 156,734 | 3.72 % | 16,199,849 | 150,077 | 3.69 % |
| 29,601,291 | 230,818 | 3.15 % | 29,185,231 | 220,126 | 2.98 % | 29,078,307 | 213,772 | 2.93 % |
| 62,641 | | | 33,813 | | | 259,906 | | |
| 3,291,057 | | | 3,742,032 | | | 3,308,260 | | |
| \$32,954,989 | | | \$32,961,076 | | | \$32,646,473 | | |
| \$10,567,475 | \$5,214 | 0.20 % | \$9,980,132 | \$3,912 | 0.16 % | \$9,650,618 | \$3,417 | 0.14 % |
| 441,254 | 87 | 0.08 % | 421,654 | 91 | 0.09 % | 420,009 | 100 | 0.09 % |
| 2,258,930 | 6,053 | 1.09 % | 2,177,035 | 6,140 | 1.12 % | 2,197,350 | 6,295 | 1.14 % |
| 13,267,659 | 11,354 | 0.35 % | 12,578,821 | 10,143 | 0.32 % | 12,267,977 | 9,812 | 0.32 % |
| 55,508 | 64 | 0.47 % | 62,004 | 44 | 0.28 % | 68,280 | 33 | 0.19 % |
| 523,561 | 32 | 0.02 % | 560,891 | 34 | 0.02 % | 522,822 | 53 | 0.04 % |
| 5,737,955 | 11,733 | 0.83 % | 6,072,150 | 9,315 | 0.61 % | 6,342,369 | 9,105 | 0.57 % |
| 144,644 | 2,025 | 5.68 % | 144,635 | 2,003 | 5.51 % | 255,890 | 2,468 | 3.84 % |
| 19,729,327 | 25,208 | 0.52 % | 19,418,501 | 21,539 | 0.44 % | 19,457,338 | 21,471 | 0.44 % |
| 9,101,763 | | | 9,124,595 | | | 8,497,037 | | |
| 91,529 | | | 77,575 | | | 200,574 | | |
| 704,978 | | | 1,004,212 | | | 1,099,858 | | |
| 3,327,392 | | | 3,336,193 | | | 3,391,666 | | |
| \$32,954,989 | | | \$32,961,076 | | | \$32,646,473 | | |
| | \$205,610 | 2.63 % | | \$198,587 | 2.54 % | | \$192,301 | 2.49 % |
| | | 2.81 % | | | 2.69 % | | | 2.64 % |
| | 4,428 | | | 4,389 | | | 4,455 | |
| | 201,182 | | | 194,198 | | | 187,846 | |
| | — | | | — | | | 10,000 | |
| | 170,296 | | | 143,754 | | | 187,310 | |
| | 244,711 | | | 265,547 | | | 258,088 | |
| | 126,767 | | | 72,405 | | | 107,068 | |

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| | | |
|----------|----------|----------|
| 38,103 | 22,496 | 31,956 |
| 88,664 | 49,909 | 75,112 |
| 308 | (117) | 835 |
| \$88,356 | \$50,026 | \$74,277 |
| \$1.35 | \$0.76 | \$1.13 |
| \$1.35 | \$0.76 | \$1.13 |

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Quarterly Earnings Trends – Unaudited
(In thousands, except share and per share data)

| | Three Months Ended | | | | |
|---|--------------------|------------------|------------------|------------------|-------------------|
| | Sept. 30, 2017 | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 |
| Interest revenue | \$255,413 | \$235,181 | \$226,390 | \$215,737 | \$209,317 |
| Interest expense | 36,961 | 29,977 | 25,208 | 21,539 | 21,471 |
| Net interest revenue | 218,452 | 205,204 | 201,182 | 194,198 | 187,846 |
| Provision for credit losses | — | — | — | — | 10,000 |
| Net interest revenue after provision for credit losses | 218,452 | 205,204 | 201,182 | 194,198 | 177,846 |
| Other operating revenue | | | | | |
| Brokerage and trading revenue | 33,169 | 31,764 | 33,623 | 28,500 | 38,006 |
| Transaction card revenue | 37,826 | 35,296 | 32,127 | 34,521 | 33,933 |
| Fiduciary and asset management revenue | 40,687 | 41,808 | 38,631 | 34,535 | 34,073 |
| Deposit service charges and fees | 23,209 | 23,354 | 23,030 | 23,365 | 23,668 |
| Mortgage banking revenue | 24,890 | 30,276 | 25,191 | 28,414 | 38,516 |
| Other revenue | 13,670 | 14,984 | 11,752 | 12,693 | 13,080 |
| Total fees and commissions | 173,451 | 177,482 | 164,354 | 162,028 | 181,276 |
| Other gains, net | (1,283) | 6,108 | 3,627 | (1,279) | 2,442 |
| Gain (loss) on derivatives, net | 1,033 | 3,241 | (450) | (35,815) | 2,226 |
| Gain (loss) on fair value option securities, net | 661 | 1,984 | (1,140) | (20,922) | (3,355) |
| Change in fair value of mortgage servicing rights | (639) | (6,943) | 1,856 | 39,751 | 2,327 |
| Gain (loss) on available for sale securities, net | 2,487 | 380 | 2,049 | (9) | 2,394 |
| Total other operating revenue | 175,710 | 182,252 | 170,296 | 143,754 | 187,310 |
| Other operating expense | | | | | |
| Personnel | 147,910 | 143,744 | 136,425 | 141,132 | 139,212 |
| Business promotion | 7,105 | 7,738 | 6,717 | 7,344 | 6,839 |
| Charitable contributions to BOKF Foundation | — | — | — | 2,000 | — |
| Professional fees and services | 11,887 | 12,419 | 11,417 | 16,828 | 14,038 |
| Net occupancy and equipment | 21,325 | 21,125 | 21,624 | 21,470 | 20,111 |
| Insurance | 6,005 | 689 | 6,404 | 8,705 | 9,390 |
| Data processing and communications | 37,327 | 36,330 | 34,902 | 33,691 | 33,331 |
| Printing, postage and supplies | 3,917 | 4,140 | 3,851 | 3,998 | 3,790 |
| Net losses (gains) and operating expenses of repossessed assets | 6,071 | 2,267 | 1,009 | 1,627 | (926) |
| Amortization of intangible assets | 1,744 | 1,803 | 1,802 | 1,558 | 1,521 |
| Mortgage banking costs | 13,450 | 12,072 | 13,003 | 17,348 | 15,963 |
| Other expense | 9,193 | 8,558 | 7,557 | 9,846 | 14,819 |
| Total other operating expense | 265,934 | 250,885 | 244,711 | 265,547 | 258,088 |
| Net income before taxes | 128,228 | 136,571 | 126,767 | 72,405 | 107,068 |
| Federal and state income taxes | 42,438 | 47,705 | 38,103 | 22,496 | 31,956 |
| Net income | 85,790 | 88,866 | 88,664 | 49,909 | 75,112 |
| Net income (loss) attributable to non-controlling interests | 141 | 719 | 308 | (117) | 835 |
| Net income attributable to BOK Financial Corporation shareholders | \$85,649 | \$88,147 | \$88,356 | \$50,026 | \$74,277 |
| Earnings per share: | | | | | |
| Basic | \$1.31 | \$1.35 | \$1.35 | \$0.76 | \$1.13 |

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| | | | | | |
|-------------------------------------|------------|------------|------------|------------|------------|
| Diluted | \$1.31 | \$1.35 | \$1.35 | \$0.76 | \$1.13 |
| Average shares used in computation: | | | | | |
| Basic | 64,742,822 | 64,729,752 | 64,715,964 | 64,719,018 | 65,085,392 |
| Diluted | 64,805,172 | 64,793,134 | 64,783,737 | 64,787,728 | 65,157,841 |

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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 September 30, 2017.

| 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 |
|-----------------------------------|---|------------------------------|---|--|
| July 1 to July 31, 2017 | — | \$ — | — | 2,120,757 |
| August 1 to August 31, 2017 | — | \$ — | — | 2,120,757 |
| September 1 to September 30, 2017 | — | \$ — | — | 2,120,757 |
| Total | — | — | — | — |

¹ On October 1, 2015, the Company's board of directors authorized the Company to repurchase up to five million shares of the Company's common stock. As of September 30, 2017, the Company had repurchased 2,879,243 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 routinely repurchases 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

Interactive data files pursuant to Rule 405 of Regulation S-T: (i) the Consolidated Balance Sheets, (ii) the 101 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

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: October 31, 2017

/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

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