BOK FINANCIAL CORP ET AL
Form 10-Q
July 28, 2017

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

FORM 10-Q
(Mark One)
ý QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended June 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 of Incorporation or Organization) | (IRS Employer Identification No.) |

Bank of Oklahoma Tower
Boston Avenue at Second Street

| Tulsa, Oklahoma | 74192 |
|---|---|
| (Address of Principal Executive Offices) | (Zip Code) |

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

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

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

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

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

Emerging growth company ¨

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

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: 65,416,403 shares of common stock ($.00006 par value) as of June 30, 2017.

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BOK Financial Corporation
Form 10-Q
Quarter Ended June 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 $88.1 million or $1.35 per diluted share for the second quarter of 2017, compared to $65.8 million or $1.00 per diluted share for the second quarter of 2016 and $88.4 million or $1.35 per diluted share for the first quarter of 2017.

Highlights of the second quarter of 2017 included:

- Net interest revenue totaled $205.2 million for the second quarter of 2017, up from $182.6 million in the second quarter of 2016 and $201.2 million in the first quarter of 2017. The increase in net interest revenue over the prior year was driven by both improving yields and growth in average earning assets. Net interest margin was 2.89 percent for the second quarter of 2017. Net interest margin was 2.63 percent for the second quarter of 2016 and 2.81 percent for the first quarter of 2017. Average earning assets were $29.2 billion for the second quarter of 2017 and $28.8 billion for the second quarter of 2016.
- Fees and commissions revenue totaled $177.5 million for the second quarter of 2017, a $2.7 million decrease compared to the second quarter of 2016. Growth in fiduciary and asset management revenue was offset by lower brokerage and trading revenue and mortgage banking revenue. Fees and commissions revenue increased $13.1 million over the first quarter of 2017. Growth in mortgage banking revenue, fiduciary and asset management revenue and transaction card revenue were partially offset by a decrease in brokerage and trading revenue.
- Other operating expense for the second quarter of 2017 totaled $250.9 million, largely unchanged compared to the second quarter of 2016. Personnel expense increased $4.5 million, primarily due to an increase in the probability that certain performance-based equity awards will vest. Non-personnel expense decreased $5.0 million. Deposit insurance expense decreased primarily due to $5.1 million in credits received during the second quarter of 2017 related to revision of certain inputs to the assessment calculation filed in previous periods. Operating expenses increased $6.2 million over the previous quarter. Personnel expense was up $7.3 million and non-personnel expense decreased $1.1 million.
- Income tax expense was $47.7 million or 34.9 percent of net income before taxes for the second quarter of 2017, compared to $30.5 million or 31.5 percent in the second quarter of 2016 and $38.1 million or 30.1 percent in the first quarter of 2017. Excluding the effect of a new accounting standard that requires the tax effect of vested equity compensation to be recorded in income tax expense, the effective tax rate would be 33.7 percent of net income before taxes for the second quarter of 2017 and 33.2 percent for the first quarter of 2017.
- No provision for credit losses was recorded in the second quarter of 2017 or the first quarter of 2017. A $20.0 million provision for credit losses was recorded in the second quarter of 2016. Gross charge-offs were $2.9 million in the second quarter of 2017, $8.8 million in the second quarter of 2016 and $2.2 million in the first quarter of 2017. Recoveries were $1.2 million in the second quarter of 2017, compared to $1.4 million in the second quarter of 2016 and $2.9 million in the first quarter of 2017.
- The combined allowance for credit losses totaled $256 million or 1.49 percent of outstanding loans at June 30, 2017, compared to $258 million or 1.52 percent of outstanding loans at March 31, 2017.
- Nonperforming assets that are not guaranteed by U.S. government agencies totaled $276 million or 1.62 percent of outstanding loans and repossessed assets at June 30, 2017 and $240 million or 1.43 percent of outstanding loans and repossessed assets at March 31, 2017. The increase in nonperforming assets was primarily due to an increase in nonaccruing healthcare and energy loans.
- Average loans were largely unchanged compared to the previous quarter. Period-end outstanding loan balances were $17.2 billion at June 30, 2017, an increase of $192 million over March 31, 2017.
- Average deposits decreased $277 million compared to the previous quarter. Growth in demand deposit balances was offset by a decrease in interest-bearing transaction account balances and time deposits. Period-end deposits were $22.3 billion at June 30, 2017, a $259 million decrease compared to March 31, 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's common equity Tier 1 ratio was 11.59% at March 31, 2017. In addition, the Company's Tier 1 capital ratio was 11.59%, total capital ratio was 13.25% and leverage ratio was 8.89% at March 31, 2017.
- The Company paid a regular quarterly cash dividend of $29 million or $0.44 per common share during the second quarter of 2017. On July 25, 2017, the board of directors approved a regular quarterly cash dividend of $0.44 per common share payable on or about August 25, 2017 to shareholders of record as of August 11, 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 $205.2 million for the second quarter of 2017, up from $182.6 million in the second quarter of 2016 and $201.2 million in the first quarter of 2017. Net interest margin was 2.89 percent for the second quarter of 2017, 2.63 percent for the second quarter of 2016 and 2.81 percent for the first quarter of 2017.

Tax-equivalent net interest revenue increased $22.6 million over the second 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 $13.1 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 $9.4 million primarily due to the growth in average balances of loans and trading securities.

The tax-equivalent yield on earning assets was 3.30 percent for the second quarter of 2017, up 39 basis points over the second 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 since the second quarter of 2016. Loan yields increased 45 basis points to 4.03 percent. The yield on interest-bearing cash and cash equivalents increased 53 basis points. The available for sale securities portfolio yield was up 7 basis points to 2.11 percent. Funding costs were up 22 basis points over the second quarter of 2016. Growth in the cost of interest-bearing deposits was limited to 7 basis points by a lack of market pricing pressure. The cost of other borrowed funds increased 50 basis points. The cost of the subordinated debt was up 403 basis points as lower variable rate debt was replaced in the second quarter of 2016 by higher fixed rate debt. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities was 22 basis points for the second quarter of 2017, up 9 basis points over the second quarter of 2016. Average non-interest bearing deposits comprised 29% of total liabilities and equity for the second quarter of 2017, up from 26% for the second quarter of 2016.

Average earning assets for the second quarter of 2017 increased $424 million or 1 percent over the second quarter of 2016, including $495 million related to the Mobank acquisition. Average loans, net of allowance for loan losses, increased $860 million due primarily to growth in commercial, consumer and commercial real estate loans and included $495 million related to the Mobank acquisition. The average balance of trading securities increased $218 million primarily due to the addition of a new group in the third quarter of 2016 that trades in U.S. agency residential mortgage-backed securities. The average balance of fair value option securities held as an economic hedge of our mortgage servicing rights increased $108 million. The average balance of available for sale securities decreased $506 million. The average balance of residential mortgage loans held for sale decreased $156 million and the investment

securities portfolio balance decreased $63 million.

Average deposits increased $1.6 billion over the second quarter of 2016, including $547 million from the Mobank acquisition in the fourth quarter of 2016. Demand deposit balances grew by $1.2 billion, including $265 million from Mobank. Interest-bearing transaction account balances increased $497 million, including $282 million from Mobank. This growth was partially offset by a $93 million decrease in average time deposits. Savings account balances also grew over the prior year. Average borrowed funds decreased $695 million compared to the second 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 $88 million.

Net interest margin increased 8 basis points over the first quarter of 2017. The yield on average earning assets increased 15 basis points. The loan portfolio yield increased by 15 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 22 basis points. Funding costs were 0.63 percent, up 11 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 decreased $359 million compared to the first quarter of 2017. The average balance of the available for sale securities portfolio decreased $183 million. The average balance of fair value option securities held as an economic hedge of our mortgage servicing rights increased $60 million. Average trading securities portfolio balances decreased $124 million and interest-bearing cash and cash equivalents balances decreased $80 million.
Average deposits decreased $277 million compared to the previous quarter. Interest-bearing transaction account balances decreased $480 million and time deposit balances decreased $55 million, partially offset by a $237 million increase in demand deposit balances. The average balance of borrowed funds decreased $254 million compared to the first quarter of 2017 primarily due to decreased borrowings from the Federal Home Loan Banks and 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 June 30, 2017 / 2016 | | | Six Months Ended June 30, 2017 / 2016 | | |
|---|---|---|---|---|---|---|
| | | Change Due To[1] | | | Change Due To[1] | |
| | Change | Volume | Yield/Rate | Change | Volume | Yield/Rate |
| Tax-equivalent interest revenue: | | | | | | |
| Interest-bearing cash and cash equivalents | $2,629 | $(31) | $ 2,660 | $4,167 | $21 | $ 4,146 |
| Trading securities | 2,742 | 3,098 | (356) | 7,384 | 8,346 | (962) |
| Investment securities: | | | | | | |
| Taxable securities | (138) | (101) | (37) | (300) | (212) | (88) |
| Tax-exempt securities | (121) | (322) | 201 | (212) | (604) | 392 |
| Total investment securities | (259) | (423) | 164 | (512) | (816) | 304 |
| Available for sale securities: | | | | | | |
| Taxable securities | (425) | (2,078) | 1,653 | (2,430) | (3,284) | 854 |
| Tax-exempt securities | (137) | (285) | 148 | (285) | (492) | 207 |
| Total available for sale securities | (562) | (2,363) | 1,801 | (2,715) | (3,776) | 1,061 |
| Fair value option securities | 1,477 | 689 | 788 | 1,268 | 562 | 706 |
| Restricted equity securities | 536 | (424) | 960 | 534 | (115) | 649 |
| Residential mortgage loans held for sale | (1,122) | (1,434) | 312 | (1,986) | (2,014) | 28 |
| Loans | 27,431 | 8,459 | 18,972 | 49,369 | 17,945 | 31,424 |
| Total tax-equivalent interest revenue | 32,872 | 7,571 | 25,301 | 57,509 | 20,153 | 37,356 |
| Interest expense: | | | | | | |
| Transaction deposits | 3,177 | 241 | 2,936 | 5,074 | 607 | 4,467 |
| Savings deposits | (7) | 12 | (19) | (13) | 25 | (38) |
| Time deposits | (545) | (264) | (281) | (1,624) | (584) | (1,040) |
| Funds purchased | 63 | (7) | 70 | 51 | (61) | 112 |
| Repurchase agreements | (4) | (21) | 17 | (61) | (35) | (26) |
| Other borrowings | 6,513 | (1,040) | 7,553 | 10,439 | (675) | 11,114 |
| Subordinated debentures | 1,125 | (774) | 1,899 | 2,440 | (1,507) | 3,947 |
| Total interest expense | 10,322 | (1,853) | 12,175 | 16,306 | (2,230) | 18,536 |
| Tax-equivalent net interest revenue | 22,550 | 9,424 | 13,126 | 41,203 | 22,383 | 18,820 |
| Change in tax-equivalent adjustment | (42) | | | 1 | | |
| Net interest revenue | $22,592 | | | $41,202 | | |

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

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Other Operating Revenue

Other operating revenue was $182.3 million for the second quarter of 2017, a $3.3 million decrease compared to the second quarter of 2016 and a $12.0 million increase over the first quarter of 2017. Fees and commissions revenue decreased $2.7 million compared to the second quarter of 2016 and increased $13.1 million over the prior quarter. The change in the fair value of mortgage servicing rights, net of economic hedges, decreased other operating revenue by $1.7 million in the second quarter of 2017, decreased other operating revenue by $1.2 million in the second quarter of 2016 and increased other operating revenue $266 thousand in the first quarter of 2017.

Table 2 – Other Operating Revenue
(In thousands)

| | Three Months Ended June 30, | | Increase (Decrease) | % Increase (Decrease) | Three Months Ended Mar. 31, 2017 | Increase (Decrease) | % Increase (Decrease) |
|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | | | | | |
| Brokerage and trading revenue | $31,764 | $39,530 | $(7,766) | (20)% | $33,623 | $(1,859) | (6)% |
| Transaction card revenue | 35,296 | 34,950 | 346 | 1% | 32,127 | 3,169 | 10% |
| Fiduciary and asset management revenue | 41,808 | 34,813 | 6,995 | 20% | 38,631 | 3,177 | 8% |
| Deposit service charges and fees | 23,354 | 22,618 | 736 | 3% | 23,030 | 324 | 1% |
| Mortgage banking revenue | 30,276 | 34,884 | (4,608) | (13)% | 25,191 | 5,085 | 20% |
| Other revenue | 14,984 | 13,352 | 1,632 | 12% | 11,752 | 3,232 | 28% |
| Total fees and commissions revenue | 177,482 | 180,147 | (2,665) | (1)% | 164,354 | 13,128 | 8% |
| Other gains, net | 6,108 | 1,307 | 4,801 | N/A | 3,627 | 2,481 | N/A |
| Gain (loss) on derivatives, net | 3,241 | 10,766 | (7,525) | N/A | (450) | 3,691 | N/A |
| Gain (loss) on fair value option securities, net | 1,984 | 4,279 | (2,295) | N/A | (1,140) | 3,124 | N/A |
| Change in fair value of mortgage servicing rights | (6,943) | (16,283) | 9,340 | N/A | 1,856 | (8,799) | N/A |
| Gain on available for sale securities, net | 380 | 5,326 | (4,946) | N/A | 2,049 | (1,669) | N/A |
| Total other operating revenue | $182,252 | $185,542 | $(3,290) | (2)% | $170,296 | $11,956 | 7% |

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 46 percent of total revenue for the second 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 $7.8 million or 20 percent compared to the second 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 $10.1 million for the second quarter of 2017, a $2.2 million or 18 percent decrease compared to the second quarter of 2016. Lower volumes of U.S. agency residential mortgage-backed and municipal securities sold to our institutional customers due to anticipation of future interest increase, was offset by the addition of a new group in the third quarter of 2016 that trades in U.S. government agency residential mortgage-backed securities and related to-be-announced derivatives. The addition of this group added $1.4 million of net interest revenue and $2.1 million of trading revenue in the second quarter. This new group increased our trading securities portfolio by $359 million and receivable for unsettled trades by $111 million at June 30, 2017.

Customer hedging revenue is based primarily on realized and unrealized changes in the fair value of derivative contracts held for customer risk management programs. As more fully discussed under Customer Derivative Programs in Note 3 of the Consolidated Financial Statements, we offer commodity, interest rate, foreign exchange and equity derivatives to our customers. Customer hedging revenue totaled $11.6 million for the second quarter of 2017, a $1.9 million or 14 percent decrease compared to the second quarter of 2016 primarily attributed to energy and mortgage banking customers.

Revenue earned from retail brokerage transactions decreased $740 thousand or 11 percent compared to the second quarter of 2016 to $6.0 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. Trading volume decreased in the second quarter of 2017, primarily due to the impact of the implementation of the new Department of Labor ("DOL") fiduciary rule. 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 $4.0 million for the second quarter of 2017, a $2.9 million or 42 percent decrease compared to the second quarter of 2016. Investment banking revenue is primarily related to the timing and volume of completed transactions.

Brokerage and trading revenue decreased $1.9 million compared to the first quarter of 2017, primarily due to a $1.0 million decrease in trading revenue and an $862 thousand decrease in retail brokerage fees. Customer hedging revenue was unchanged compared to the prior quarter. Increased hedging activity from our mortgage banking customers was offset by a decreased volume of energy contracts.

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. Excluding the impact of a customer early termination fee received in the second quarter of 2016, transaction card revenue for the second quarter of 2017 increased $1.5 million or 5 percent over the second quarter of 2016. Revenues from the processing of transactions on behalf of the members of our TransFund electronic funds transfer ("EFT") network totaled $18.1 million, up $1.0 million or 6% over the prior year. Merchant services fees totaled $12.1 million, a $373 thousand or 3 percent increase from increased transaction activity. Revenue from interchange fees paid by merchants for transactions processed from debit cards issued by the Company totaled $5.1 million, an increase of $133 thousand or 3 percent over the second quarter of 2016.
Transaction card revenue increased $3.2 million over the prior quarter, primarily due to a seasonal increase in transaction volumes on our TransFund EFT network and a full quarter's impact of expansion into the Arizona market.

Revenue from processing transactions on behalf of merchants and check card revenue also increased over the prior quarter.

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 $7.0 million or 20 percent over the second quarter of 2016, primarily due to growth in assets under management, improved pricing discipline and decreased fee waivers. We earn fees as administrator to and investment adviser for the Cavanal Hill Funds, a diversified, open-ended investment company established as a business trust under the Investment Company Act of 1940. The Bank is custodian and Cavanal Hill Distributors, Inc. is distributor for the Cavanal Hill Funds. Products of the Cavanal Hill Funds are offered to customers, employee benefit plans, trusts and the general public in the ordinary course of business. Prior to the recent increases in short-term market interest rates as a result of the Federal Reserve's federal funds rate increases, we voluntarily waived $1.8 million of administration fees on the Cavanal Hill money market funds in order to maintain positive yields on these funds in the second quarter of 2016. We waived $445 thousand of fees in the first quarter of 2017. No fees were waived in the second quarter of 2017.

Fiduciary and asset management revenue increased $3.2 million over the first quarter of 2017, primarily due to an annual assessment of tax preparation fees, growth in assets under management and decreased fee waivers.

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

Table 3 -- Assets Under Management or Administration

| | Three Months Ended June 30, | | | | | |
|---|---|---|---|---|---|---|
| | 2017 | | | 2016 | | |
| | Balance | Revenue[1] | Margin[2] | Balance | Revenue[1] | Margin[2] |
| Managed fiduciary assets: | | | | | | |
| Personal | $7,581,555 | $ 21,698 | 1.14 % | $6,696,329 | $ 19,561 | 1.17 % |
| Institutional | 12,265,037 | 5,475 | 0.18 % | 11,423,563 | 4,498 | 0.16 % |
| Total managed fiduciary assets | 19,846,592 | 27,173 | 0.55 % | 18,119,892 | 24,059 | 0.53 % |
| | | | | | | |
| Non-managed assets: | | | | | | |
| Fiduciary | 25,242,561 | 14,049 | 0.22 % | 22,376,691 | 10,287 | 0.18 % |
| Non-fiduciary | 16,579,586 | 586 | 0.01 % | 16,863,508 | 467 | 0.01 % |
| Safekeeping and brokerage assets under administration | 16,143,023 | — | — % | 15,641,425 | — | — % |
| Total non-managed assets | 57,965,170 | 14,635 | 0.10 % | 54,881,624 | 10,754 | 0.08 % |
| | | | | | | |
| Total assets under management or administration | $77,811,762 | $ 41,808 | 0.21 % | $73,001,516 | $ 34,813 | 0.19 % |

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

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

A summary of changes in assets under management or administration for the three months ended June 30, 2017 and 2016 follows:

Table 4 -- Changes in Assets Under Management or Administration

| | Three Months Ended June 30, | |
|---|---|---|
| | 2017 | 2016 |
| Beginning balance | $77,418,956 | $71,869,013 |
| Net inflows (outflows) | (918,076 ) | 377,244 |
| Net change in fair value | 1,310,882 | 755,259 |

| Ending balance | $77,811,762 | $73,001,516 |
|---|---|---|

Deposit service charges and fees were $23.4 million for the second quarter of 2017, an increase of $736 thousand or 3 percent over the second quarter of 2016. Commercial account service charge revenue totaled $11.8 million, up $705 thousand or 6 percent. Overdraft fees were $9.8 million, largely unchanged compared to the second quarter of 2016. Service charges on deposit accounts with a standard monthly fee were $1.7 million, an increase of $109 thousand or 7 percent. Deposit service charges and fees increased $324 thousand over the prior quarter primarily due to an increase in commercial account service charge revenue and a seasonal increase in overdraft fee volumes.

Mortgage banking revenue decreased $4.6 million or 13 percent compared to the second quarter of 2016. Mortgage production revenue decreased $5.2 million. Mortgage loan production volumes decreased $998 million, including a $581 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 Home Direct online and retail channel both decreased compared to the prior year as average primary mortgage interest rates were up 39 basis points over the second quarter of 2016. Gains on sale margins increased 56 basis points over the prior year. The margin increase was primarily due to exiting the correspondent lending channel, the lowest margin of our three sales channels, partially offset by a decrease in margins from our Home Direct online origination channel. Mortgage servicing revenue was up $638 thousand or 4 percent over the second quarter of 2016. The outstanding principal balance of mortgage loans serviced for others totaled $22.1 billion, an increase of $917 million or 4 percent.
Mortgage banking revenue increased $5.1 million over the first quarter of 2017. Mortgage production revenue increased $5.3 million. Production volume increased $109 million in response to lower average primary mortgage interest rates and normal seasonality. Gains on sale margin improved due to increased retail margins and improved hedging performance. Revenue from mortgage loan servicing decreased $212 thousand compared to the prior quarter.

Table 5 – Mortgage Banking Revenue
(In thousands)

| | Three Months Ended June 30, | | Increase (Decrease) | % Increase (Decrease) | Three Months Ended Mar. 31, 2017 | Increase (Decrease) | % Increase (Decrease) |
|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | | | | | |
| Mortgage production revenue | $13,840 | $19,086 | $(5,246) | (27)% | $8,543 | $5,297 | 62% |
| Mortgage loans funded for sale | $902,978 | $1,818,844 | | | $711,019 | | |
| Add: Current period end outstanding commitments | 362,088 | 965,631 | | | 381,732 | | |
| Less: Prior period end outstanding commitments | 381,732 | 902,986 | | | 318,359 | | |
| Total mortgage production volume | $883,334 | $1,881,489 | $(998,155) | (53)% | $774,392 | $108,942 | 14% |
| Mortgage loan refinances to mortgage loans funded for sale | 33% | 44% | (11) bps | | 44% | (11) bps | |
| Gains on sale margin | 1.57% | 1.01% | 56 bps | | 1.10% | 47 bps | |
| Primary mortgage interest rates: | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average | 3.98 | % | 3.59 | % | 39 | bps | | | 4.17 | % | (19 | ) bps | |
| Period end | 3.88 | % | 3.48 | % | 40 | bps | | | 4.14 | % | (26 | ) bps | |
| Mortgage servicing revenue | $16,436 | | $15,798 | | $638 | | 4 | % | $16,648 | | $(212 | ) | (1 )% |
| Average outstanding principal balance of mortgage loans serviced for others | 22,055,127 | | 20,736,525 | | 1,318,602 | | 6 | % | 22,006,295 | | 48,832 | | — % |
| Average mortgage servicing revenue rates | 0.30 | % | 0.31 | % | (1 | ) bp | | | 0.31 | % | (1 | ) bp | |

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

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

Net gains on other assets, securities and derivatives

Other net gains totaled $6.1 million in the second quarter of 2017, due to the sale of a merchant banking investment. Other net gains totaled $3.6 million in the first quarter of 2017 related to holdings of two consolidated private equity funds and the sale of certain merchant banking investments. The sales of merchant banking investments included a consolidated entity that reduced goodwill by $2.7 million, identifiable intangible assets by $4.6 million and other assets by $5.6 million.

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 $247 thousand in the second quarter of 2017, including a $6.9 million decrease in the fair value of the mortgage servicing rights, a $5.2 million increase in the fair value of securities and derivative contracts held as an economic hedge and $2.0 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 $110 thousand for the second quarter of 2016. The fair value of mortgage servicing rights decreased $16.3 million.The fair value of securities and interest rate derivative contracts held as an economic hedge increased $15.0 million. Net interest earned on securities held as an economic hedge was $1.3 million.

The net economic benefit of changes in the fair value of mortgage servicing rights and related economic hedges was $1.5 million for the first quarter of 2017. The fair value of mortgage servicing rights increased by $1.9 million. The fair value of securities and interest rate derivative contracts held as an economic hedge decreased by $1.6 million.

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

| | Three Months Ended | | |
|---|---|---|---|
| | June 30, 2017 | Mar. 31, 2017 | June 30, 2016 |
| Gain (loss) on mortgage hedge derivative contracts, net | $3,241 | $(450 ) | $10,766 |
| Gain (loss) on fair value option securities, net | 1,984 | (1,140 ) | 4,279 |
| Gain (loss) on economic hedge of mortgage servicing rights, net | 5,225 | (1,590 ) | 15,045 |
| Gain (loss) on change in fair value of mortgage servicing rights | (6,943 ) | 1,856 | (16,283 ) |
| Loss on changes in fair value of mortgage servicing rights, net of economic hedges included in other operating revenue | (1,718 ) | 266 | (1,238 ) |
| Net interest revenue on fair value option securities[1] | 1,965 | 1,271 | 1,348 |
| Total economic benefit (cost) of changes in the fair value of mortgage servicing rights, net of economic hedges | $247 | $1,537 | $110 |

Other Operating Expense

Other operating expense for the second quarter of 2017 totaled $250.9 million, largely unchanged compared to the second quarter of 2016. Personnel expense increased $4.5 million or 3 percent. Non-personnel expense decreased $5.0 million or 4 percent compared to the prior year.

Other operating expense increased $6.2 million over previous quarter. Personnel expense was up $7.3 million, primarily due to changes in assumptions for the vesting of certain performance-based equity awards. Non-personnel expense decreased $1.1 million. Deposit insurance expense decreased 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. Data processing and communication expense increased $1.4 million and net losses and operating expenses of repossessed assets increased $1.3 million.

The discussion following excludes the impact of these items.

Table 7 – Other Operating Expense
(In thousands)

| | Three Months Ended June 30, | | Increase (Decrease) | % Increase (Decrease) | Three Months Ended Mar. 31, 2017 | Increase (Decrease) | % Increase (Decrease) |
|---|---|---|---|---|---|---|---|
| | 2017 | 2016 | | | | | |
| Regular compensation | $83,630 | $81,730 | $ 1,900 | 2 % | $83,228 | $ 402 | — % |
| Incentive compensation: | | | | | | | |
| Cash-based | 29,954 | 32,595 | (2,641) | (8)% | 28,836 | 1,118 | 4 % |
| Share-based | 7,380 | 3,701 | 3,679 | 99 % | 1,603 | 5,777 | 360 % |
| Deferred compensation | 1,000 | 211 | 789 | N/A | 792 | 208 | N/A |
| Total incentive compensation | 38,334 | 36,507 | 1,827 | 5 % | 31,231 | 7,103 | 23 % |
| Employee benefits | 21,780 | 20,976 | 804 | 4 % | 21,966 | (186) | (1)% |
| Total personnel expense | 143,744 | 139,213 | 4,531 | 3 % | 136,425 | 7,319 | 5 % |
| Business promotion | 7,738 | 6,703 | 1,035 | 15 % | 6,717 | 1,021 | 15 % |
| Professional fees and services | 12,419 | 14,158 | (1,739) | (12)% | 11,417 | 1,002 | 9 % |
| Net occupancy and equipment | 21,125 | 19,677 | 1,448 | 7 % | 21,624 | (499) | (2)% |
| Insurance | 689 | 7,129 | (6,440) | (90)% | 6,404 | (5,715) | (89)% |
| Data processing and communications | 36,330 | 32,802 | 3,528 | 11 % | 34,902 | 1,428 | 4 % |
| Printing, postage and supplies | 4,140 | 3,889 | 251 | 6 % | 3,851 | 289 | 8 % |
| Net losses (gains) and operating expenses of repossessed assets | 2,267 | 1,588 | 679 | 43 % | 1,009 | 1,258 | 125 % |
| Amortization of intangible assets | 1,803 | 2,624 | (821) | (31)% | 1,802 | 1 | — % |
| Mortgage banking costs | 12,072 | 15,746 | (3,674) | (23)% | 13,003 | (931) | (7)% |
| Other expense | 8,558 | 7,856 | 702 | 9 % | 7,557 | 1,001 | 13 % |
| Total other operating expense | $250,885 | $251,385 | $ (500) | — % | $244,711 | $ 6,174 | 3 % |
| | | | | | | | |
| Average number of employees (full-time equivalent) | 4,910 | 4,893 | 17 | — % | 4,910 | — | — % |

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

Personnel expense

Regular compensation, which consists of salaries and wages, overtime pay and temporary personnel costs, increased 1.9 million or 2 percent over the second quarter of 2016. The average number of employees was relatively unchanged compared to the prior year. Recent additions from the Mobank acquisition and in mortgage and technology were offset by the impact of staff reductions in the fourth quarter of 2016. In addition, standard annual merit increases in regular compensation were effective for the majority of our staff on March 1.

Incentive compensation increased $1.8 million or 5 percent over the second quarter of 2016, primarily due to increased share-based compensation expense, partially offset by lower cash-based incentive compensation expense.

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 decreased $2.6 million or 8 percent compared to the second quarter of 2016.

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. Share-based compensation expense increased $3.7 million or 99% over the prior year, primarily due to changes in the vesting assumptions for performance-based awards that were granted in January 2015 and a $21.43 per share increase in the fair value of BOK Financial common shares.

Employee benefits expense increased $804 thousand or 4 percent over the the second quarter of 2016, primarily due to an increase in employee medical costs.
Personnel expense increased $7.3 million over the first quarter of 2017. Regular compensation expense was largely unchanged compared to the prior quarter. Incentive compensation expense increased $7.1 million, primarily due to a $5.8 million increase in share-based compensation expense and a $1.1 million increase in cash-based incentive compensation expense. A $2.6 million increase in employee healthcare costs was offset by a $2.2 million seasonal decrease in payroll tax expense.

Non-personnel operating expense

Non-personnel operating expense decreased $5.0 million or 4% compared to the second quarter of 2016.

Deposit insurance expense decreased $6.4 million. The company received $5.1 million in credits during the second quarter of 2017 related to the revision of certain inputs to the assessment calculation filed for years 2013 through 2016. In conjunction with ongoing cost reduction efforts, management performed a comprehensive review of inputs into the deposit insurance assessment calculation. We were able to support eligibility for the custodial bank adjustment, which allows for the deduction of certain qualifying low-risk assets from the deposit insurance assessment base for depository institutions with greater than $50 billion in trust assets. The remaining decrease was primarily due to the benefit of decreased criticized and classified assets levels related to the stabilization of energy prices, partially offset by a new surcharge for banks with more than $10 billion in assets that became effective in the third quarter of 2016.

Mortgage banking expense decreased $3.7 million, primarily due to improvement in the estimated loss rates on servicing certain defaulted residential mortgage loans serviced for U.S. government agencies and lower prepayments

as average mortgage interest rates trended upward over the prior year. Professional fees and servicing expense was $1.7 million lower, primarily due to costs incurred in the second quarter of 2016 related to the Mobank acquisition and lower legal fees. Data processing and communications expense increased $3.5 million. Occupancy and equipment expense increased $1.4 million. Increases in these expense categories were primarily due to information technology infrastructure and cybersecurity project costs and increased data processing transaction activity. Business promotion expense was up $1.0 million primarily related to the timing of advertising spending.

Non-personnel expense decreased $1.1 million compared to the first quarter of 2017. Deposit insurance expense decreased $5.7 million. Data processing and communication expense increased $1.4 million primarily due to increased transaction activity. Net losses and operating expenses of repossessed assets increased $1.3 million primarily due to increased operating expenses related to repossessed oil and gas properties. This increased expense was offset by revenue from these properties included in other revenues.

Income Taxes

The Company's income tax expense was $47.7 million or 34.9 percent of net income before taxes for the second quarter of 2017 compared to $30.5 million or 31.5 percent of net income before taxes for the second quarter of 2016 and $38.1 million or 30.1 percent of net income before taxes for the first quarter of 2017.

The Company implemented a new accounting standard in the first quarter of 2017 that includes the tax effect of equity compensation in income tax expense that previously was included in stockholders' equity. The accounting standard was adopted prospectively without restatement of prior periods. Excluding this change, tax expense would have been 33.7 percent of net income before taxes for the second quarter of 2017 and 33.2 percent of net income before taxes for the first quarter of 2017.

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 $17 million at June 30, 2017, $17 million at March 31, 2017 and $13 million at June 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 support assets of the operating lines of business tends to insulate them from interest rate risk.

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

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

As shown in Table 8, net income attributable to our lines of business increased $23.7 million or 35 percent over the second quarter of 2016. Net interest revenue grew by $31.4 million over the prior year. Other operating revenue decreased $1.3 million while operating expenses decreased $1.4 million and net charge-offs were down $5.9 million.

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

| | Three Months Ended | | Six Months Ended | |
|---|---|---|---|---|
| | June 30, | | June 30, | |
| | 2017 | 2016 | 2017 | 2016 |
| Commercial Banking | $68,299 | $52,836 | $132,215 | $89,890 |
| Consumer Banking | 7,422 | 4,231 | 12,166 | 4,342 |
| Wealth Management | 15,824 | 10,780 | 30,108 | 17,758 |
| Subtotal | 91,545 | 67,847 | 174,489 | 111,990 |
| Funds Management and other | (3,398) | (2,046) | 2,014 | (3,625) |
| Total | $88,147 | $65,801 | $176,503 | $108,365 |

Commercial Banking

Commercial Banking contributed $68.3 million to consolidated net income in the second quarter of 2017, an increase of $15.5 million or 29 percent over the second quarter of 2016. The increase in Commercial Banking's contribution was largely due to net interest revenue.

Table 9 -- Commercial Banking
(Dollars in thousands)

| | Three Months Ended June 30, | | Increase (Decrease) | Six Months Ended June 30, | | Increase (Decrease) |
|---|---|---|---|---|---|---|
| | 2017 | 2016 | | 2017 | 2016 | |
| Net interest revenue from external sources | $144,164 | $118,480 | $25,684 | $278,868 | $235,116 | $43,752 |
| Net interest expense from internal sources | (20,347) | (14,575) | (5,772) | (37,140) | (29,208) | (7,932) |
| Total net interest revenue | 123,817 | 103,905 | 19,912 | 241,728 | 205,908 | 35,820 |
| Net loans charged off (recovered) | 1,228 | 6,852 | (5,624) | (234) | 28,423 | (28,657) |
| Net interest revenue after net loans charged off (recovered) | 122,589 | 97,053 | 25,536 | 241,962 | 177,485 | 64,477 |
| | | | | | | |
| Fees and commissions revenue | 49,792 | 51,028 | (1,236) | 94,265 | 96,504 | (2,239) |
| Other gains, net | 5,986 | 469 | 5,517 | 7,783 | 101 | 7,682 |
| Other operating revenue | 55,778 | 51,497 | 4,281 | 102,048 | 96,605 | 5,443 |
| | | | | | | |
| Personnel expense | 28,005 | 27,520 | 485 | 55,033 | 54,147 | 886 |
| Non-personnel expense | 31,123 | 25,074 | 6,049 | 56,532 | 54,516 | 2,016 |
| Other operating expense | 59,128 | 52,594 | 6,534 | 111,565 | 108,663 | 2,902 |
| | | | | | | |
| Net direct contribution | 119,239 | 95,956 | 23,283 | 232,445 | 165,427 | 67,018 |
| Gain on financial instruments, net | 3 | — | 3 | 41 | — | 41 |
| Gain (loss) on repossessed assets, net | 1,403 | (598) | 2,001 | 1,398 | (680) | 2,078 |
| Corporate expense allocations | 8,862 | 8,883 | (21) | 17,493 | 17,627 | (134) |
| Income before taxes | 111,783 | 86,475 | 25,308 | 216,391 | 147,120 | 69,271 |
| Federal and state income tax | 43,484 | 33,639 | 9,845 | 84,176 | 57,230 | 26,946 |
| Net income | $68,299 | $52,836 | $15,463 | $132,215 | $89,890 | $42,325 |
| | | | | | | |
| Average assets | $17,596,273 | $16,973,663 | $622,610 | $17,517,960 | $16,971,339 | $546,621 |
| Average loans | 14,177,635 | 13,571,602 | 606,033 | 14,097,588 | 13,444,470 | 653,118 |
| Average deposits | 8,652,811 | 8,403,408 | 249,403 | 8,642,326 | 8,430,579 | 211,747 |
| Average invested capital | 1,239,492 | 1,167,840 | 71,652 | 1,226,041 | 1,160,485 | 65,556 |

Net interest revenue increased $19.9 million or 19 percent over the prior year. Growth in net interest revenue was primarily due to a $606 million or 4 percent increase in average loan balances and increased yields on commercial loans due to rising short-term interest rates. Average deposit balances increased $249 million or 3 percent. 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 decreased $1.2 million or 2 percent compared to the second quarter of 2016, primarily due to a $1.4 million decline in customer energy derivatives trading and a $1.3 million decline in loan syndication fees. This decline was partially offset by increases in deposit service fees and transaction card revenue from our TransFund electronic fund transfer network and other revenue from the operation of repossessed oil and gas properties.

Operating expenses increased $6.5 million or 12 percent compared to the second quarter of 2016. Personnel expense increased $485 thousand or 2 percent. Non-personnel expense increased $6.0 million or 24 percent. Net repossession expense increased $2.7 million related mainly to the repossession of oil and gas properties. Deposit insurance expense increased $1.7 million due to increased granularity in the allocation to the segments.

The average outstanding balance of loans attributed to Commercial Banking grew by $606 million or 4 percent over the second quarter of 2016 to $14.2 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 second quarter of 2017, an increase of $249 million or 3 percent compared to the second 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 $7.4 million to consolidated net income for the second quarter of 2017, up $3.2 million over the second quarter of 2016. Growth in net interest revenue of $4.1 million was offset by a decrease in other operating revenue of $5.3 million while non-personnel expense decreased by $6.4 million.

Table 10 -- Consumer Banking
(Dollars in thousands)

| | Three Months Ended June 30, | | Increase (Decrease) | Six Months Ended June 30, | | Increase (Decrease) |
|---|---|---|---|---|---|---|
| | 2017 | 2016 | | 2017 | 2016 | |
| Net interest revenue from external sources | $23,503 | $22,349 | $ 1,154 | $44,632 | $43,799 | $ 833 |
| Net interest revenue from internal sources | 11,837 | 8,876 | 2,961 | 22,789 | 18,229 | 4,560 |
| Total net interest revenue | 35,340 | 31,225 | 4,115 | 67,421 | 62,028 | 5,393 |
| Net loans charged off | 926 | 1,318 | (392) | 2,198 | 3,020 | (822) |
| Net interest revenue after net loans charged off | 34,414 | 29,907 | 4,507 | 65,223 | 59,008 | 6,215 |
| | | | | | | |
| Fees and commissions revenue | 52,081 | 57,170 | (5,089) | 99,472 | 111,341 | (11,869) |
| Other gains (losses), net | 21 | 270 | (249) | (64) | 128 | (192) |
| Other operating revenue | 52,102 | 57,440 | (5,338) | 99,408 | 111,469 | (12,061) |
| | | | | | | |
| Personnel expense | 25,545 | 26,228 | (683) | 50,944 | 51,072 | (128) |
| Non-personnel expense | 30,164 | 36,578 | (6,414) | 58,298 | 67,452 | (9,154) |
| Total other operating expense | 55,709 | 62,806 | (7,097) | 109,242 | 118,524 | (9,282) |
| | | | | | | |
| Net direct contribution | 30,807 | 24,541 | 6,266 | 55,389 | 51,953 | 3,436 |
| Gain on financial instruments, net | 5,224 | 15,045 | (9,821) | 3,557 | 31,626 | (28,069) |
| Change in fair value of mortgage servicing rights | (6,943) | (16,283) | 9,340 | (5,087) | (44,271) | 39,184 |
| Gain (loss) on repossessed assets, net | 98 | 252 | (154) | (39) | 406 | (445) |
| Corporate expense allocations | 17,039 | 16,630 | 409 | 33,908 | 32,608 | 1,300 |
| Income before taxes | 12,147 | 6,925 | 5,222 | 19,912 | 7,106 | 12,806 |
| Federal and state income tax | 4,725 | 2,694 | 2,031 | 7,746 | 2,764 | 4,982 |
| Net income | $7,422 | $4,231 | $ 3,191 | $12,166 | $4,342 | $ 7,824 |
| | | | | | | |
| Average assets | $8,845,398 | $8,774,881 | $ 70,517 | $8,747,524 | $8,731,085 | $ 16,439 |
| Average loans | 1,945,981 | 1,888,692 | 57,289 | 1,936,916 | 1,886,298 | 50,618 |
| Average deposits | 6,662,838 | 6,634,362 | 28,476 | 6,622,367 | 6,605,127 | 17,240 |
| Average invested capital | 282,932 | 266,561 | 16,371 | 280,454 | 262,762 | 17,692 |

Net interest revenue from Consumer Banking activities grew by $4.1 million or 13 percent over the the second quarter of 2016 primarily due to increased rates received on deposit balances sold to the Funds Management unit. Average loan balances grew by $57 million or 3 percent and average deposits were largely unchanged from prior year.

Fees and commissions revenue decreased $5.1 million or 9 percent compared to the second quarter of 2016, primarily due to a $4.6 million decrease in mortgage banking revenue. Mortgage loan production volumes decreased $998 million. 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 $7.1 million or 11 percent compared to the second quarter of 2016. Personnel expenses decreased $683 thousand or 3 percent. Non-personnel expense decreased $6.4 million or 18 percent compared to the prior year. Mortgage banking costs were down $3.7 million primarily due to improvement in the estimated loss rates

on outstanding claims on servicing certain defaulted residential mortgage loans guaranteed by U.S. government agencies as well as lower prepayments of loans serviced for others. Other expense decreased $1.3 million primarily due to a legal settlement in the second quarter of 2016. Professional fees and services were down $1.4 million.

Changes in the fair value of our mortgage servicing rights, net of economic hedge, resulted in a $1.1 million decrease in Consumer Banking net income in the second quarter of 2017 compared to a $756 thousand decrease in Consumer Banking net income in the second quarter of 2016.

Corporate expense allocations increased $409 thousand or 3% over the second quarter of 2016.

Average consumer deposits were largely unchanged compared to the second quarter of 2016. Higher-costing time deposit balances decreased $135 million or 12 percent, offset by a $95 million or 6 percent increase in demand deposit balances, a $37 million or 9 percent increase in savings account balances and a $32 million or 1 percent increase in interest-bearing transaction accounts.

Wealth Management

Wealth Management contributed $15.8 million to consolidated net income in the second quarter of 2017, up $5.0 million or 47 percent over the second quarter of 2016 largely due to growth in net interest revenue.

Table 11 -- Wealth Management
(Dollars in thousands)

| | Three Months Ended June 30, | | Increase (Decrease) | Six Months Ended June 30, | | Increase (Decrease) |
|---|---|---|---|---|---|---|
| | 2017 | 2016 | | 2017 | 2016 | |
| Net interest revenue from external sources | $10,474 | $6,271 | $4,203 | $21,960 | $12,349 | $9,611 |
| Net interest revenue from internal sources | 10,325 | 7,193 | 3,132 | 19,181 | 14,857 | 4,324 |
| Total net interest revenue | 20,799 | 13,464 | 7,335 | 41,141 | 27,206 | 13,935 |
| Net loans charged off (recovered) | (93) | (239) | 146 | (53) | (390) | 337 |
| Net interest revenue after net loans charged off (recovered) | 20,892 | 13,703 | 7,189 | 41,194 | 27,596 | 13,598 |
| | | | | | | |
| Fees and commissions revenue | 75,553 | 75,467 | 86 | 149,474 | 144,187 | 5,287 |
| Other gains, net | 16 | 305 | (289) | 253 | 331 | (78) |
| Other operating revenue | 75,569 | 75,772 | (203) | 149,727 | 144,518 | 5,209 |
| | | | | | | |
| Personnel expense | 45,477 | 48,147 | (2,670) | 90,264 | 93,266 | (3,002) |
| Non-personnel expense | 15,138 | 13,267 | 1,871 | 30,761 | 28,832 | 1,929 |
| Other operating expense | 60,615 | 61,414 | (799) | 121,025 | 122,098 | (1,073) |
| | | | | | | |
| Net direct contribution | 35,846 | 28,061 | 7,785 | 69,896 | 50,016 | 19,880 |
| Corporate expense allocations | 9,947 | 10,417 | (470) | 20,619 | 20,952 | (333) |
| Income before taxes | 25,899 | 17,644 | 8,255 | 49,277 | 29,064 | 20,213 |
| Federal and state income tax | 10,075 | 6,864 | 3,211 | 19,169 | 11,306 | 7,863 |
| Net income | $15,824 | $10,780 | $5,044 | $30,108 | $17,758 | $12,350 |
| | | | | | | |
| Average assets | $6,763,093 | $5,765,390 | $997,703 | $6,960,872 | $5,665,218 | $1,295,654 |
| Average loans | 1,312,857 | 1,098,178 | 214,679 | 1,289,846 | 1,094,252 | 195,594 |
| Average deposits | 5,531,091 | 4,521,031 | 1,010,060 | 5,556,680 | 4,608,522 | 948,158 |
| Average invested capital | 268,322 | 240,693 | 27,629 | 258,698 | 236,798 | 21,900 |

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Net interest revenue for the second quarter of 2017 increased $7.3 million or 55 percent over the second quarter of 2016, primarily due to an increase in the size of the U.S. agency mortgage-backed securities portfolio related to a new trading group that began operations during the third quarter of 2016 and growth in deposit balances sold to the Funds Management unit. Average deposit balances grew by $1.0 billion or 22 percent over the second quarter of 2016. Non-interest bearing demand deposits grew by $285 million or 26 percent, interest-bearing transaction account balances increased $677 million or 25 percent and time deposit balances grew by $44 million or 6 percent. Average loan balances increased $215 million or 20 percent over the prior year.

Fees and commissions revenue was relatively unchanged compared to the second quarter of 2016. Brokerage and trading revenue decreased by $6.0 million or 18 percent primarily due to lower volumes of U.S. agency residential mortgage-backed and municipal securities sold to our institutional customers. Fiduciary and asset management revenue increased $7.0 million or 20 percent over the prior year primarily due to growth in assets under management, improved pricing discipline and decreased fee waivers.

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 second quarter of 2017, the Wealth Management division participated in 74 state and municipal bond underwritings that totaled $1.4 billion. As a participant, the Wealth Management division was responsible for facilitating the sale of approximately $397 million of these underwritings. The Wealth Management division also participated in 6 corporate debt underwritings that totaled $2.3 billion. Our interest in these underwritings was $47 million. In the second quarter of 2016, the Wealth Management division participated in 136 state and municipal bond underwritings that totaled approximately $4.2 billion. Our interest in these underwritings totaled approximately $803 million. The Wealth Management division also participated in two corporate debt underwritings that totaled $350 million. Our interest in these underwritings was $44 million.

Operating expense decreased $799 thousand or 1 percent compared to the second quarter of 2016. Personnel expenses decreased $2.7 million primarily due to decreased incentive compensation expense. Non-personnel expense increased $1.9 million primarily due to a $1.3 million increase in data processing and communications expense.

Corporate expense allocations decreased $470 thousand or 5 percent from 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 June 30, 2017, December 31, 2016 and June 30, 2016.

At June 30, 2017, the carrying value of investment (held-to-maturity) securities was $490 million and the fair value was $516 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 $100 million of the $199 million portfolio of Texas school construction bonds is also guaranteed by the Texas Permanent School Fund Guarantee Program supervised by the State Board of Education for the State of Texas.

Available for sale securities, which may be sold prior to maturity, are carried at fair value. Unrealized gains or losses, net of deferred taxes, are recorded as accumulated other comprehensive income in shareholders' equity. The amortized cost of available for sale securities totaled $8.3 billion at June 30, 2017, a $118 million decrease compared to

March 31, 2017. At June 30, 2017, the available for sale securities portfolio consisted primarily of U.S. government agency residential mortgage-backed securities with an amortized cost of $5.4 billion and U.S. government agency commercial mortgage-backed securities with an amortized cost of $2.8 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 June 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.

We also hold amortized cost of $87 million in residential mortgage-backed securities privately issued by publicly-owned financial institutions, a decrease of $6.7 million from March 31, 2017. The decrease was due to cash payments received during the quarter. The fair value of our portfolio of privately issued residential mortgage-backed securities totaled $103 million at June 30, 2017.

The aggregate gross amount of unrealized losses on available for sale securities totaled $50 million at June 30, 2017, compared to $68 million at March 31, 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 second 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 $274 million at June 30, 2017. Holdings of FHLB stock increased $27 million compared to March 31, 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 $313 million of bank-owned life insurance at June 30, 2017. This investment is expected to provide a long-term source of earnings to support existing employee benefit programs. Approximately $285 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 June 30, 2017, the fair value of investments held in separate accounts was approximately $290 million. As the underlying fair value of the investments held in a separate account at June 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 June 30, 2017, an increase of $192 million over March 31, 2017. The outstanding balance of commercial loans increased by $311 million, partially offset by a $182 million decrease in commercial real estate loan balances. Residential mortgage loans decreased $7.1 million and personal loans grew by $70 million.

Table 12 -- Loans
(In thousands)

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30,2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Commercial: | | | | | |
| Energy | $2,847,240 | $2,537,112 | $2,497,868 | $2,520,804 | $2,818,656 |
| Services | 2,958,827 | 3,013,375 | 3,108,990 | 2,936,599 | 2,830,864 |
| Healthcare | 2,221,518 | 2,265,604 | 2,201,916 | 2,085,046 | 2,051,146 |
| Wholesale/retail | 1,543,695 | 1,506,243 | 1,576,818 | 1,602,030 | 1,532,957 |
| Manufacturing | 546,137 | 543,430 | 514,975 | 499,486 | 595,403 |
| Other commercial and industrial | 520,538 | 461,346 | 490,257 | 476,198 | 527,411 |
| Total commercial | 10,637,955 | 10,327,110 | 10,390,824 | 10,120,163 | 10,356,437 |
| | | | | | |
| Commercial real estate: | | | | | |
| Retail | 722,805 | 745,046 | 761,888 | 801,377 | 795,419 |
| Multifamily | 952,380 | 922,991 | 903,272 | 873,773 | 787,200 |
| Office | 862,973 | 860,889 | 798,888 | 752,705 | 769,112 |
| Industrial | 693,635 | 871,463 | 871,749 | 838,021 | 645,586 |
| Residential construction and land development | 141,592 | 135,994 | 135,533 | 159,946 | 157,576 |
| Other commercial real estate | 315,207 | 334,680 | 337,716 | 367,776 | 427,073 |
| Total commercial real estate | 3,688,592 | 3,871,063 | 3,809,046 | 3,793,598 | 3,581,966 |
| | | | | | |
| Residential mortgage: | | | | | |
| Permanent mortgage | 989,040 | 977,743 | 1,006,820 | 969,558 | 969,007 |
| Permanent mortgages guaranteed by U.S. government agencies | 191,729 | 204,181 | 199,387 | 190,309 | 192,732 |
| Home equity | 758,429 | 764,350 | 743,625 | 712,926 | 719,184 |
| Total residential mortgage | 1,939,198 | 1,946,274 | 1,949,832 | 1,872,793 | 1,880,923 |
| | | | | | |
| Personal | 917,900 | 847,459 | 839,958 | 678,232 | 587,423 |
| | | | | | |
| Total | $17,183,645 | $16,991,906 | $16,989,660 | $16,464,786 | $16,406,749 |

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 $10.6 billion or 62 percent of the loan portfolio at June 30, 2017, an increase of $311 million over March 31, 2017 primarily due to growth in energy loan balances. Other commercial and industrial loans increased by $59 million and wholesale/retail sector loan balances increased by $37 million. This growth was offset by a $55 million decrease in service sector loan balances and a $44 million decrease in healthcare sector loan balances.

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

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

| | Oklahoma | Texas | New Mexico | Arkansas | Colorado | Arizona | Kansas/Missouri | Other | Total |
|---|---|---|---|---|---|---|---|---|---|
| Energy | $537,606 | $1,464,660 | $14,847 | $4,178 | $347,932 | $9,110 | $77,788 | $391,119 | $2,847,240 |
| Services | 650,748 | 873,279 | 195,368 | 5,184 | 306,628 | 209,729 | 332,001 | 385,890 | 2,958,827 |
| Healthcare | 277,652 | 383,698 | 138,205 | 96,924 | 119,288 | 127,803 | 272,382 | 805,566 | 2,221,518 |
| Wholesale/retail | 385,275 | 519,826 | 45,333 | 36,136 | 61,464 | 64,504 | 87,736 | 343,421 | 1,543,695 |
| Manufacturing | 102,594 | 186,172 | 1,492 | 13,583 | 39,541 | 31,760 | 106,832 | 64,163 | 546,137 |
| Other commercial and industrial | 97,919 | 132,119 | 2,438 | 58,396 | 26,947 | 28,780 | 80,232 | 93,707 | 520,538 |
| Total commercial loans | $2,051,794 | $3,559,754 | $397,683 | $214,401 | $901,800 | $471,686 | $956,971 | $2,083,866 | $10,637,955 |

The majority of the collateral securing our commercial loan portfolio is located within our geographical footprint with 33 percent concentrated in the Texas market and 19 percent concentrated in the Oklahoma market. At June 30, 2017, the Other category is primarily composed of California - $303 million or 3 percent of the commercial loan portfolio, Louisiana - $194 million or 2 percent of the commercial loan portfolio, Florida - $159 million or 1 percent of the commercial loan portfolio, Pennsylvania - $115 million or 1 percent of the commercial loan portfolio and Tennessee - $108 million or 1 percent of the commercial loan portfolio. All other states individually represent one percent or less of total commercial loans.

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

Outstanding energy loans totaled $2.8 billion or 17 percent of total loans at June 30, 2017. Unfunded energy loan commitments of $2.7 billion at June 30, 2017 were largely unchanged compared to March 31, 2017. Approximately $2.4 billion of energy loans were to oil and gas producers, up $362 million over March 31, 2017. The majority of this portfolio is first lien, senior secured, reserve-based lending, which we believe is the lowest risk form of energy lending. 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 58 percent of the committed production loans are secured by properties primarily producing oil and 42 percent of the committed production loans are secured by properties primarily producing natural gas. Loans to midstream oil and gas companies totaled $277 million at June 30,

2017, a decrease of $39 million compared to March 31, 2017. Loans to borrowers that provide services to the energy industry totaled $178 million at June 30, 2017, largely unchanged compared to the prior quarter. Loans to other energy borrowers, including those engaged in wholesale or retail energy sales, totaled $38 million, a $15 million decrease 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, finance and insurance, educational services, loans to entities providing services for real estate and construction and professional services. Service sector loans decreased by $55 million compared to March 31, 2017. Loans to governmental entities totaled $562 million at June 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 June 30, 2017, the outstanding principal balance of these loans totaled $4.0 billion. Substantially all of these loans are to borrowers with local market relationships. We serve as the agent lender in approximately 18 percent of our shared national credits, based on dollars committed. We hold shared 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 32 percent and 12 percent of the total commercial real estate portfolio at June 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 $3.7 billion or 21 percent of the loan portfolio at June 30, 2017. The outstanding balance of commercial real estate loans decreased $182 million during the second quarter of 2017. Loans secured by industrial properties decreased $178 million. Retail sector loans decreased $22 million. Multifamily residential loans increased $29 million. 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 | $73,978 | $272,460 | $107,535 | $6,526 | $30,853 | $27,747 | $ 25,354 | $178,352 | $722,805 |
| Multifamily | 110,567 | 428,929 | 13,801 | 25,191 | 64,959 | 56,347 | 113,529 | 139,057 | 952,380 |
| Office | 96,167 | 226,147 | 77,153 | 2,119 | 64,825 | 72,175 | 58,330 | 266,057 | 862,973 |
| Industrial | 81,871 | 192,427 | 25,791 | — | 16,233 | 11,753 | 48,457 | 317,103 | 693,635 |
| Residential construction and land development | 25,500 | 36,465 | 18,330 | 1,850 | 15,500 | 9,536 | 17,006 | 17,405 | 141,592 |
| Other commercial real estate | 53,010 | 40,603 | 22,784 | 4,282 | 14,721 | 38,051 | 30,168 | 111,588 | 315,207 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Total commercial real estate loans | $441,093 | $1,197,031 | $265,394 | $39,968 | $207,091 | $215,609 | $ 292,844 | $1,029,562 | $3,688,592 |

The Other category is primarily composed of California and Utah which represent $146 million or 4 percent and $120 million or 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.

Based on Moody's U.S. Retail Industry Classifications, approximately 60 percent of $723 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 $653 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 March 31, 2017. In general, we sell the majority of our conforming fixed rate loan originations in the secondary market and retain the majority of our non-conforming and adjustable-rate mortgage loans. We have no concentration in sub-prime residential mortgage loans. Our mortgage loan portfolio does not include payment option adjustable rate mortgage loans or adjustable rate mortgage loans with initial rates that are below market. Collateral for 96 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 June 30, 2017, $192 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 $12 million compared to March 31, 2017.

Home equity loans totaled $758 million at June 30, 2017, a $5.9 million decrease compared to March 31, 2017. Our home equity loan portfolio is primarily composed of first-lien, fully amortizing home equity loans. Home equity loans generally require a minimum FICO score of 700 and a maximum DTI of 50 percent. The maximum loan amount available for our home equity loan products is generally $400 thousand. Revolving loans have a 10 year revolving period followed by a 15 year term of amortizing repayment. Interest-only home equity loans have a 5 year revolving period followed by a 15 year term of amortizing repayments and may not be extended for any additional revolving time. All other home equity loans may be extended at management's discretion for an additional 5 year revolving term subject to an update of certain credit information. A summary of our home equity loan portfolio at June 30, 2017 by lien position and amortizing status follows in Table 15.

Table 15 -- Home Equity Loans
(In thousands)

| | Revolving | Amortizing | Total |
|---|---|---|---|
| First lien | $ 70,650 | $ 421,861 | $ 492,511 |
| Junior lien | 135,771 | 130,147 | 265,918 |
| Total home equity | $ 206,421 | $ 552,008 | $ 758,429 |

Personal loans totaled $918 million, a $70 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.

The distribution of residential mortgage and personal loans at June 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 | $181,030 | $413,293 | $40,810 | $13,864 | $162,013 | $93,997 | $ 49,766 | $34,267 | $989,040 |
| Permanent mortgages guaranteed by U.S. government agencies | 54,187 | 25,912 | 46,426 | 5,975 | 5,968 | 1,881 | 14,555 | 36,825 | 191,729 |
| Home equity | 394,081 | 136,667 | 97,977 | 5,141 | 38,029 | 8,236 | 75,642 | 2,656 | 758,429 |
| Total residential mortgage | $629,298 | $575,872 | $185,213 | $24,980 | $206,010 | $104,114 | $ 139,963 | $73,748 | $1,939,198 |
| | | | | | | | | | |
| Personal | $305,856 | $385,087 | $11,615 | $11,993 | $58,918 | $54,434 | $ 76,967 | $13,030 | $917,900 |

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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)

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30,2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Bank of Oklahoma: | | | | | |
| Commercial | $3,369,967 | $3,189,183 | $3,370,259 | $3,545,924 | $3,698,215 |
| Commercial real estate | 667,932 | 691,332 | 684,381 | 795,806 | 781,458 |
| Residential mortgage | 1,398,021 | 1,404,054 | 1,407,197 | 1,401,166 | 1,415,766 |
| Personal | 318,016 | 310,708 | 303,823 | 271,420 | 246,229 |
| Total Bank of Oklahoma | 5,753,936 | 5,595,277 | 5,765,660 | 6,014,316 | 6,141,668 |
| | | | | | |
| Bank of Texas: | | | | | |
| Commercial | 4,339,634 | 4,148,316 | 4,022,455 | 3,903,218 | 3,901,632 |
| Commercial real estate | 1,360,164 | 1,452,988 | 1,415,011 | 1,400,709 | 1,311,408 |
| Residential mortgage | 232,074 | 231,647 | 233,981 | 229,345 | 222,548 |
| Personal | 354,222 | 312,092 | 306,748 | 278,167 | 233,304 |
| Total Bank of Texas | 6,286,094 | 6,145,043 | 5,978,195 | 5,811,439 | 5,668,892 |
| | | | | | |
| Bank of Albuquerque: | | | | | |
| Commercial | 369,370 | 407,403 | 399,256 | 398,147 | 398,427 |
| Commercial real estate | 324,405 | 307,927 | 284,603 | 299,785 | 322,956 |
| Residential mortgage | 103,849 | 106,432 | 108,058 | 110,478 | 114,226 |
| Personal | 12,439 | 11,305 | 11,483 | 11,333 | 10,569 |
| Total Bank of Albuquerque | 810,063 | 833,067 | 803,400 | 819,743 | 846,178 |
| | | | | | |
| Bank of Arkansas: | | | | | |
| Commercial | 85,020 | 88,010 | 86,577 | 83,544 | 81,227 |
| Commercial real estate | 73,943 | 74,469 | 73,616 | 72,649 | 69,235 |
| Residential mortgage | 6,395 | 6,829 | 7,015 | 6,936 | 6,874 |
| Personal | 11,993 | 6,279 | 6,524 | 6,757 | 7,025 |
| Total Bank of Arkansas | 177,351 | 175,587 | 173,732 | 169,886 | 164,361 |
| | | | | | |
| Colorado State Bank & Trust: | | | | | |
| Commercial | 1,065,780 | 998,216 | 1,018,208 | 1,013,314 | 1,076,620 |
| Commercial real estate | 255,379 | 266,218 | 265,264 | 254,078 | 237,569 |
| Residential mortgage | 63,346 | 62,313 | 59,631 | 59,838 | 59,425 |
| Personal | 56,187 | 49,523 | 50,372 | 42,901 | 35,064 |
| Total Colorado State Bank & Trust | 1,440,692 | 1,376,270 | 1,393,475 | 1,370,131 | 1,408,678 |
| | | | | | |
| Bank of Arizona: | | | | | |
| Commercial | 617,759 | 643,222 | 686,253 | 680,447 | 670,814 |
| Commercial real estate | 705,858 | 737,088 | 747,409 | 726,542 | 639,112 |
| Residential mortgage | 37,034 | 36,737 | 36,265 | 39,206 | 38,998 |
| Personal | 55,528 | 51,386 | 52,553 | 31,205 | 24,248 |

| | | | | | |
|---|---|---|---|---|---|
| Total Bank of Arizona | 1,416,179 | 1,468,433 | 1,522,480 | 1,477,400 | 1,373,172 |
| | | | | | |
| Mobank: | | | | | |
| Commercial | 790,425 | 852,760 | 807,816 | 495,569 | 529,502 |
| Commercial real estate | 300,911 | 341,041 | 338,762 | 244,029 | 220,228 |
| Residential mortgage | 98,479 | 98,262 | 97,685 | 25,824 | 23,086 |
| Personal | 109,515 | 106,166 | 108,455 | 36,449 | 30,984 |
| Total Mobank | 1,299,330 | 1,398,229 | 1,352,718 | 801,871 | 803,800 |
| | | | | | |
| Total BOK Financial loans | $17,183,645 | $16,991,906 | $16,989,660 | $16,464,786 | $16,406,749 |

Loan Commitments

We enter into certain off-balance sheet arrangements in the normal course of business. These arrangements included unfunded loan commitments, which totaled $9.6 billion and standby letters of credit, which totaled $615 million at June 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 $317 thousand of the outstanding standby letters of credit were issued on behalf of customers whose loans are nonperforming at June 30, 2017.

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

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30,2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Loan commitments | $9,632,911 | $9,403,641 | $9,404,665 | $8,697,322 | $8,508,606 |
| Standby letters of credit | 614,852 | 595,746 | 585,472 | 499,990 | 491,002 |
| Mortgage loans sold with recourse | 133,896 | 134,631 | 139,486 | 139,306 | 145,403 |

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 $82 million to borrowers in Oklahoma, $14 million to borrowers in Arkansas and $13 million to borrowers in New Mexico. An accrual related to this off-balance sheet risk is included in Other liabilities in the consolidated balances sheets and totaled $3.9 million at June 30, 2017 and $4.0 million at March 31, 2017.

We also have an off-balance sheet obligation to repurchase residential mortgage loans sold to government sponsored entities through our mortgage banking activities due to standard representations and warranties made under contractual agreements as described further in Note 6 to the Consolidated Financial Statements. For the period from 2010 through the second quarter of 2017 combined, approximately 17 percent of repurchase requests have currently resulted in actual repurchases or indemnification by the Company. The accrual for credit losses related to potential loan repurchases under representations and warranties totaled $1.6 million at June 30, 2017 and $2.6 million at March 31, 2017.

Customer Derivative Programs

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

The customer derivative programs create credit risk for potential amounts due to the Company from our customers and from the counterparties. Customer credit risk is monitored through existing credit policies and procedures. The effects of changes in commodity prices, interest rates or foreign exchange rates are evaluated across a range of possible scenarios to determine the maximum exposure we are willing to have individually to any

customer. Customers may also be required to provide cash margin or other collateral in conjunction with our credit agreements to further limit our credit risk.

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

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

Derivative contracts are carried at fair value. At June 30, 2017, the net fair values of derivative contracts, before consideration of cash margin, reported as assets under these programs totaled $265 million compared to $304 million at March 31, 2017. At June 30, 2017, the fair value of our derivative contracts included $162 million for foreign exchange contracts, $36 million for energy contracts, $30 million for interest rate swaps and $29 million of to-be-announced residential mortgage-backed securities. The aggregate net fair value of derivative contracts, before consideration of cash margin, held under these programs reported as liabilities totaled $257 million at June 30, 2017 and $296 million at March 31, 2017.

At June 30, 2017, total derivative assets were reduced by $24 million of cash collateral received from counterparties and total derivative liabilities were reduced by $21 million of cash collateral paid to counterparties related to instruments executed with the same counterparty under a master netting agreement.

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

The fair value of derivative contracts reported as assets under these programs, net of cash margin held by the Company, by category of debtor at June 30, 2017 follows in Table 19.

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

| | |
|---|---|
| Banks and other financial institutions | $111,723 |
| Customers | 95,002 |
| Exchanges and clearing organizations | 33,379 |
| Fair value of customer risk management program asset derivative contracts, net | $240,104 |

At June 30, 2017, our largest derivative exposure was to an exchange for energy derivative contracts which totaled $14 million.

Our customer derivative program also introduces liquidity and capital risk. We are required to provide cash margin to certain counterparties when the net negative fair value of the contracts exceeds established limits. Also, changes in commodity prices affect the amount of regulatory capital we are required to hold as support for the fair value of our derivative assets. These risks are modeled as part of the management of these programs. Based on current prices, a decrease in market prices equivalent to $24.22 per barrel of oil would increase the fair value of derivative assets by $9.1 million. An increase in prices equivalent to $67.53 per barrel of oil would increase the fair value of derivative assets by $208 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 June 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 June 30, 2017, changes in interest rates would not materially impact regulatory capital or liquidity needed to support this portion of our customer derivative program.

Summary of Loan Loss Experience

We maintain an allowance for loan losses and an accrual for off-balance sheet credit risk. At June 30, 2017, the combined allowance for loan losses and off-balance sheet credit losses totaled $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. At March 31, 2017, the combined allowance for credit losses was $258 million or 1.52 percent of outstanding loans and 131 percent of nonaccruing loans, excluding loans guaranteed by U.S. government agencies. The allowance for loan losses was $249 million and the accrual for off-balance sheet credit losses was $9.4 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 second quarter of 2017. No provision for credit losses was necessary in the first quarter of 2017 based on continued improvements in credit metric trends largely driven by energy price stability. A $20 million provision for credit losses was recorded in the second quarter of 2016 due primarily to the effects of falling energy prices.

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

| | Three Months Ended | | | | |
|---|---|---|---|---|---|
| | June 30, 2017 | March 31, 2017 | December 31, 2016 | September 30, 2016 | June 30, 2016 |
| Allowance for loan losses: | | | | | |
| Beginning balance | $248,710 | $246,159 | $245,103 | $243,259 | $233,156 |
| Loans charged off: | | | | | |
| Commercial | (1,703) | (424) | (81) | (6,266) | (7,355) |
| Commercial real estate | (76) | — | — | — | — |
| Residential mortgage | (40) | (236) | (208) | (285) | (345) |
| Personal | (1,053) | (1,493) | (1,362) | (1,550) | (1,145) |
| Total | (2,872) | (2,153) | (1,651) | (8,101) | (8,845) |
| Recoveries of loans previously charged off: | | | | | |
| Commercial | 283 | 1,182 | 839 | 177 | 223 |
| Commercial real estate | 208 | 735 | 395 | 521 | 282 |
| Residential mortgage | 169 | 228 | 986 | 650 | 200 |
| Personal | 554 | 755 | 593 | 690 | 681 |
| Total | 1,214 | 2,900 | 2,813 | 2,038 | 1,386 |
| Net loans recovered (charged off) | (1,658) | 747 | 1,162 | (6,063) | (7,459) |
| Provision for loan losses | 3,009 | 1,804 | (106) | 7,907 | 17,562 |
| Ending balance | $250,061 | $248,710 | $246,159 | $245,103 | $243,259 |
| Accrual for off-balance sheet credit losses: | | | | | |
| Beginning balance | $9,440 | $11,244 | $11,138 | $9,045 | $6,607 |
| Provision for off-balance sheet credit losses | (3,009) | (1,804) | 106 | 2,093 | 2,438 |
| Ending balance | $6,431 | $9,440 | $11,244 | $11,138 | $9,045 |
| Total combined provision for credit losses | $— | $— | $— | $10,000 | $20,000 |
| Allowance for loan losses to loans outstanding at period-end | 1.46% | 1.46% | 1.45% | 1.49% | 1.48% |
| Net charge-offs (recoveries) (annualized) to average loans | 0.04% | (0.02)% | (0.03)% | 0.15% | 0.18% |
| Total provision for credit losses (annualized) to average loans | —% | —% | —% | 0.24% | 0.49% |
| Recoveries to gross charge-offs | 42.27% | 134.70% | 170.38% | 25.16% | 15.67% |
| Accrual for off-balance sheet credit losses to off-balance sheet credit commitments | 0.06% | 0.09% | 0.11% | 0.12% | 0.10% |
| Combined allowance for credit losses to loans outstanding at period-end | 1.49% | 1.52% | 1.52% | 1.56% | 1.54% |

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 June 30, 2017, impaired loans totaled $428 million, including $73 million with specific allowances of $9.7 million and $355 million with no specific allowances. At March 31, 2017, impaired loans totaled $402 million, including $52 million of impaired loans with specific allowances of $3.5 million and $350 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 $57 million of impaired energy loans required no allowance for credit losses based on the adequacy of collateral. In addition, $76 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 $213 million at June 30, 2017, a decrease of $4.9 million compared to March 31, 2017. The general allowance attributed to the commercial loan segment decreased $6.1 million, partially offset by an $859 thousand increase in the general allowance attributed to the personal loan segment.

Nonspecific allowances are maintained for risks beyond factors specific to a particular portfolio segment or loan class. These factors include trends in the economy in our primary lending areas, concentrations in loans with large balances and other relevant factors. Nonspecific allowances totaled $27 million at June 30, 2017, unchanged compared to March 31, 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.

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 $327 million at June 30, 2017 and wereprimarily composed of $226 million or 8 percent of energy loans, $33 million or 1 percent of healthcare sector loans, $17 million or 1 percent of service sector loans, $16 million or 3 percent of manufacturing sector loans and $10 million or 1 percent of wholesale/retail sector loans. Potential problem loans totaled $413 million at March 31, 2017.

Based on regulatory guidelines, other loans especially mentioned are in compliance with the original terms of the agreement but may have a weakness that deserves management's close attention. Other loans especially mentioned totaled $199 million at June 30, 2017 and were composed primarily of $120 million or 4 percent of outstanding energy loans, $34 million or 2 percent of outstanding healthcare loans, $16 million or 1 percent of outstanding wholesale/retail sector loans and $12 million or less than 1 percent of outstanding services loans. Other loans especially mentioned totaled $233 million at March 31, 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 results of the stress test are factored into our expectation that the loan loss provision could range from $0 to $10 million for 2017. This expectation is based upon current observed conditions. The portion of the combined allowance for credit losses attributable to the energy portfolio totaled 2.84 percent of outstanding energy loans at June 30, 2017, compared to 3.37 percent of outstanding energy loans at March 31, 2017.

Net Loans Charged Off

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

BOK Financial had net charge-offs of $1.7 million in the second quarter of 2017, compared to net recoveries of $747 thousand in the first quarter of 2017 and net loans charged off of $7.5 million in the second quarter of 2016. The ratio of net loans charged off to average loans on an annualized basis was 0.04 percent for the second quarter of 2017, compared with (0.02) percent for the first quarter of 2017 and 0.18 percent for the second quarter of 2016.

Net charge-offs of commercial loans were $1.4 million in the second quarter of 2017, primarily due to a single healthcare borrower. Commercial loans had a net recovery of $758 thousand in the first quarter of 2017. Net commercial real estate loan recoveries were $132 thousand in the second quarter of 2017, compared to net recoveries of $735 thousand in the first quarter of 2017. Net charge-offs of residential mortgage loans were $129 thousand and net charge-offs of personal loans were $499 thousand for the second quarter. Personal loan net charge-offs include deposit account overdraft losses.

Nonperforming Assets

Table 21 -- Nonperforming Assets
(In thousands)

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30,2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Nonaccruing loans: | | | | | |
| Commercial | $197,157 | $156,825 | $178,953 | $176,464 | $181,989 |
| Commercial real estate | 3,775 | 4,475 | 5,521 | 7,350 | 7,780 |
| Residential mortgage | 44,235 | 46,081 | 46,220 | 52,452 | 57,061 |
| Personal | 272 | 235 | 290 | 686 | 354 |
| Total nonaccruing loans | 245,439 | 207,616 | 230,984 | 236,952 | 247,184 |
| Accruing renegotiated loans guaranteed by U.S. government agencies | 80,624 | 83,577 | 81,370 | 80,306 | 78,806 |
| Real estate and other repossessed assets | 39,436 | 42,726 | 44,287 | 31,941 | 24,054 |
| Total nonperforming assets | $365,499 | $333,919 | $356,641 | $349,199 | $350,044 |
| Total nonperforming assets excluding those guaranteed by U.S. government agencies | $275,823 | $240,234 | $263,425 | $253,461 | $251,497 |
| | | | | | |
| Nonaccruing loans by loan portfolio segment and class: | | | | | |
| Commercial: | | | | | |
| Energy | $123,992 | $110,425 | $132,499 | $142,966 | $168,145 |
| Services | 7,754 | 7,713 | 8,173 | 8,477 | 9,388 |
| Wholesale / retail | 10,620 | 11,090 | 11,407 | 2,453 | 2,772 |
| Manufacturing | 9,656 | 5,907 | 4,931 | 274 | 293 |
| Healthcare | 24,505 | 909 | 825 | 855 | 875 |
| Other commercial and industrial | 20,630 | 20,781 | 21,118 | 21,439 | 516 |
| Total commercial | 197,157 | 156,825 | 178,953 | 176,464 | 181,989 |
| | | | | | |
| Commercial real estate: | | | | | |
| Residential construction and land development | 2,051 | 2,616 | 3,433 | 3,739 | 4,261 |
| Retail | 301 | 314 | 326 | 1,249 | 1,265 |
| Office | 396 | 413 | 426 | 882 | 606 |
| Multifamily | 10 | 24 | 38 | 51 | 65 |
| Industrial | — | 76 | 76 | 76 | 76 |
| Other commercial real estate | 1,017 | 1,032 | 1,222 | 1,353 | 1,507 |
| Total commercial real estate | 3,775 | 4,475 | 5,521 | 7,350 | 7,780 |
| | | | | | |
| Residential mortgage: | | | | | |
| Permanent mortgage | 23,415 | 24,188 | 22,855 | 25,956 | 27,228 |
| Permanent mortgage guaranteed by U.S. government agencies | 9,052 | 10,108 | 11,846 | 15,432 | 19,741 |
| Home equity | 11,768 | 11,785 | 11,519 | 11,064 | 10,092 |
| Total residential mortgage | 44,235 | 46,081 | 46,220 | 52,452 | 57,061 |
| Personal | 272 | 235 | 290 | 686 | 354 |
| Total nonaccruing loans | $245,439 | $207,616 | $230,984 | $236,952 | $247,184 |

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30,2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Nonaccruing loans as % of outstanding balance for class: | | | | | |
| Commercial: | | | | | |
| Energy | 4.35 % | 4.35 % | 5.30 % | 5.67 % | 5.97 % |
| Services | 0.26 % | 0.26 % | 0.26 % | 0.29 % | 0.33 % |
| Wholesale / retail | 0.69 % | 0.74 % | 0.72 % | 0.15 % | 0.18 % |
| Manufacturing | 1.77 % | 1.09 % | 0.96 % | 0.05 % | 0.05 % |
| Healthcare | 1.10 % | 0.04 % | 0.04 % | 0.04 % | 0.04 % |
| Other commercial and industrial | 3.96 % | 4.50 % | 4.31 % | 4.50 % | 0.10 % |
| Total commercial | 1.85 % | 1.52 % | 1.72 % | 1.74 % | 1.76 % |
| | | | | | |
| Commercial real estate: | | | | | |
| Residential construction and land development | 1.45 % | 1.92 % | 2.53 % | 2.34 % | 2.70 % |
| Retail | 0.04 % | 0.04 % | 0.04 % | 0.16 % | 0.16 % |
| Office | 0.05 % | 0.05 % | 0.05 % | 0.12 % | 0.08 % |
| Multifamily | — % | — % | — % | 0.01 % | 0.01 % |
| Industrial | — % | 0.01 % | 0.01 % | 0.01 % | 0.01 % |
| Other commercial real estate | 0.32 % | 0.31 % | 0.36 % | 0.37 % | 0.35 % |
| Total commercial real estate | 0.10 % | 0.12 % | 0.14 % | 0.19 % | 0.22 % |
| | | | | | |
| Residential mortgage: | | | | | |
| Permanent mortgage | 2.37 % | 2.47 % | 2.27 % | 2.68 % | 2.81 % |
| Permanent mortgage guaranteed by U.S. government agencies | 4.72 % | 4.95 % | 5.94 % | 8.11 % | 10.24 % |
| Home equity | 1.55 % | 1.54 % | 1.55 % | 1.55 % | 1.40 % |
| Total residential mortgage | 2.28 % | 2.37 % | 2.37 % | 2.80 % | 3.03 % |
| Personal | 0.03 % | 0.03 % | 0.03 % | 0.10 % | 0.06 % |
| Total nonaccruing loans | 1.43 % | 1.22 % | 1.36 % | 1.44 % | 1.51 % |
| | | | | | |
| Ratios: | | | | | |
| Allowance for loan losses to nonaccruing loans[1] | 105.78 % | 125.92 % | 112.33 % | 110.65 % | 106.95 % |
| Accruing loans 90 days or more past due[1] | $ 1,414 | $ 95 | $ 5 | $ 3,839 | $ 2,899 |

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

Nonperforming assets totaled $365 million or 2.12 percent of outstanding loans and repossessed assets at June 30, 2017. Nonaccruing loans totaled $245 million, accruing renegotiated residential mortgage loans totaled $81 million and real estate and other repossessed assets totaled $39 million. All accruing renegotiated residential mortgage loans and $9.1 million of nonaccruing loans are guaranteed by U.S. government agencies. Excluding assets guaranteed by U.S. government agencies, nonperforming assets increased $36 million over the second quarter primarily due to an increase in nonaccruing healthcare and 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 six months ended June 30, 2017 follows in Table 22.

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

| | Three Months Ended June 30, 2017 | | | |
|---|---|---|---|---|
| | Nonaccruing Loans | Renegotiated Loans | Real Estate and Other Repossessed Assets | Total Nonperforming Assets |
| Balance, March 31, 2017 | $207,616 | $ 83,577 | $ 42,726 | $ 333,919 |
| Additions | 58,768 | 15,032 | — | 73,800 |
| Transfers from premises and equipment | — | — | 452 | 452 |
| Payments | (15,230) | (833) | — | (16,063) |
| Charge-offs | (2,872) | — | — | (2,872) |
| Net gains, losses and write-downs | — | — | 1,694 | 1,694 |
| Foreclosure of nonperforming loans | (688) | — | 688 | — |
| Foreclosure of loans guaranteed by U.S. government agencies | (1,580) | (2,752) | — | (4,332) |
| Proceeds from sales | — | (14,662) | (5,829) | (20,491) |
| Net transfers to nonaccruing loans | — | — | — | — |
| Return to accrual status | (618) | — | — | (618) |
| Other, net | 43 | 262 | (295) | 10 |
| Balance, June 30, 2017 | $245,439 | $ 80,624 | $ 39,436 | $ 365,499 |

| | Six Months Ended June 30, 2017 | | | |
|---|---|---|---|---|
| | Nonaccruing Loans | Renegotiated Loans | Real Estate and Other Repossessed Assets | Total Nonperforming Assets |
| Balance, Dec. 31, 2016 | $230,984 | $ 81,370 | $ 44,287 | $ 356,641 |
| Additions | 81,732 | 26,354 | — | 108,086 |
| Transfers from premises and equipment | — | — | 452 | 452 |
| Payments | (50,162) | (1,786) | — | (51,948) |
| Charge-offs | (5,025) | — | — | (5,025) |
| Net gains, losses and write-downs | — | — | 1,604 | 1,604 |
| Foreclosure of nonperforming loans | (1,597) | — | 1,597 | — |
| Foreclosure of loans guaranteed by U.S. government agencies | (3,980) | (4,290) | — | (8,270) |
| Proceeds from sales | — | (21,406) | (7,702) | (29,108) |
| Return to accrual status | (6,556) | — | — | (6,556) |
| Other, net | 43 | 382 | (802) | (377) |
| Balance, June 30, 2017 | $245,439 | $ 80,624 | $ 39,436 | $ 365,499 |

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 $197 million or 1.85 percent of total commercial loans at June 30, 2017 and $157 million or 1.52 percent of commercial loans at March 31, 2017. There were $54 million in newly identified nonaccruing commercial loans during the quarter, offset by $12 million in payments and $1.7 million of charge-offs. Newly identified nonaccruing commercial loans were primarily healthcare and energy loans.

Nonaccruing commercial loans at June 30, 2017 were primarily composed of $124 million or 4.35 percent of total energy loans, $25 million or 1.10 percent of total healthcare sector loans, $21 million or 3.96 percent of total other commercial and industrial sector loans and $11 million or 0.69 percent of wholesale/retail sector loans.

Commercial Real Estate

Nonaccruing commercial real estate loans totaled $3.8 million or 0.10 percent of outstanding commercial real estate loans at June 30, 2017, down from $4.5 million or 0.12 percent of outstanding commercial real estate loans at March 31, 2017. Newly identified nonaccruing commercial real estate loans of $195 thousand were offset by $819 thousand of cash payments received and $76 thousand in charge-offs. There were no foreclosures of nonaccruing commercial real estate loans during the second quarter.

Nonaccruing commercial real estate loans were primarily composed of $2.1 million or 1.45 percent of residential construction and land development loans.

Residential Mortgage and Personal

Nonaccruing residential mortgage loans totaled $44 million or 2.28 percent of outstanding residential mortgage loans at June 30, 2017, a $1.8 million decrease compared to March 31, 2017. Newly identified nonaccruing residential

mortgage loans totaling $3.3 million were offset by $2.3 million of foreclosures, $2.2 million of payments and $40 thousand of loans charged off during the quarter.

Nonaccruing residential mortgage loans primarily consist of non-guaranteed permanent residential mortgage loans, which totaled $23 million or 2.37 percent of outstanding non-guaranteed permanent residential mortgage loans at June 30, 2017. Nonaccruing home equity loans totaled $12 million or 1.55 percent of total home equity loans.

Payments of accruing residential mortgage loans and personal loans may be delinquent. The composition of residential mortgage loans and personal loans past due but still accruing is included in the following Table 23. Substantially all non-guaranteed residential loans past due 90 days or more are nonaccruing. Residential mortgage loans 30 to 59 days past due decreased $3.2 million in the second quarter to $3.6 million at June 30, 2017. Residential mortgage loans 60 to 89 days past due increased by $1.1 million. Personal loans past due 30 to 59 days increased by $57 thousand and personal loans 60 to 89 days increased $184 thousand.

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

| | June 30, 2017 | | | March 31, 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] | $132 | $1,026 | $2,024 | $— | $— | $5,364 |
| Home equity | — | 362 | 1,564 | 9 | 266 | 1,376 |
| Total residential mortgage | $132 | $1,388 | $3,588 | 9 | $266 | $6,740 |
| | | | | | | |
| Personal | $— | $289 | $487 | $37 | $105 | $430 |

[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 $39 million at June 30, 2017, a decrease of $3.3 million compared to March 31, 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 | $ 3,065 | $305 | $ — | $ 493 | $1,450 | $692 | $ 131 | $357 | $6,493 |
| Developed commercial real estate properties | 71 | — | 2,147 | — | 446 | 198 | 1,296 | — | 4,158 |
| Undeveloped land | 1,152 | 1,215 | — | — | — | 135 | 1,197 | — | 3,699 |
| Residential land development properties | 67 | — | 210 | — | — | 343 | 2 | — | 622 |
| Oil and gas properties | — | 24,433 | | | | | — | — | 24,433 |
| Other | 8 | 23 | — | — | — | — | — | — | 31 |
| Total real estate and other repossessed assets | $ 4,363 | $25,976 | $ 2,357 | $ 493 | $1,896 | $1,368 | $ 2,626 | $357 | $39,436 |

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

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 second quarter of 2017, approximately 68 percent of our funding was provided by deposit accounts, 19 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 second quarter of 2017 totaled $22.1 billion, a $277 million decrease compared to the first quarter of 2017. Interest-bearing transaction account balances decreased $480 million and time deposit balances decreased $55 million. Demand deposit balances grew by $237 million during the second quarter of 2017.

Table 25 - Average Deposits by Line of Business
(In thousands)

| | Three Months Ended | | | | |
|---|---|---|---|---|---|
| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 | June 30, 2016 |
| Commercial Banking | $8,652,811 | $8,631,724 | $8,543,532 | $8,317,341 | $8,403,408 |
| Consumer Banking | 6,662,838 | 6,581,446 | 6,659,380 | 6,660,514 | 6,634,362 |
| Wealth Management | 5,531,091 | 5,582,554 | 5,333,095 | 4,913,409 | 4,521,031 |
| Subtotal | 20,846,740 | 20,795,724 | 20,536,007 | 19,891,264 | 19,558,801 |
| Funds Management and other | 1,245,591 | 1,573,698 | 1,167,409 | 873,750 | 908,931 |
| Total | $22,092,331 | $22,369,422 | $21,703,416 | $20,765,014 | $20,467,732 |

Average Commercial Banking deposit balances were largely unchanged compared to the first quarter of 2017. Average demand deposit balances increased $202 million, offset by a $182 million decrease in the average balances of interest-bearing transaction accounts. Average deposit balances attributed to commercial and industrial customers grew by $113 million, offset by $53 million decrease in balances attributed to energy customers and a $36 million decrease in average balances attributed to healthcare 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 $81 million. Demand deposit balances grew by $75 million, partially offset by a $35 million decrease in time deposit balances. Interest-bearing transaction and savings account balanaces also grew over the prior quarter.

Average Wealth Management deposits decreased $51 million compared to the first quarter of 2017. A $142 million decrease in interest-bearing transaction account balances was partially offset by a $90 million increase in demand deposit balances.

Average deposits attributed to Funds Management and Other decreased $328 million.

Average time deposits for the second quarter of 2017 included $590 million of brokered deposits, an increase of $12 million over the first quarter of 2017. Average interest-bearing transaction accounts for the second quarter included $1.3 billion of brokered deposits, a decrease of $14 million compared to the first quarter of 2017.

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

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

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Bank of Oklahoma: | | | | | |
| Demand | $4,353,421 | $4,320,666 | $3,993,170 | $4,158,273 | $4,020,181 |
| Interest-bearing: | | | | | |
| Transaction | 5,998,787 | 6,114,288 | 6,345,536 | 5,701,983 | 5,741,302 |
| Savings | 263,664 | 265,014 | 241,696 | 242,959 | 247,984 |
| Time | 1,170,014 | 1,189,144 | 1,118,355 | 1,091,464 | 1,167,271 |
| Total interest-bearing | 7,432,465 | 7,568,446 | 7,705,587 | 7,036,406 | 7,156,557 |
| Total Bank of Oklahoma | 11,785,886 | 11,889,112 | 11,698,757 | 11,194,679 | 11,176,738 |
| | | | | | |
| Bank of Texas: | | | | | |
| Demand | 3,121,890 | 3,091,258 | 3,137,009 | 2,734,981 | 2,677,253 |
| Interest-bearing: | | | | | |
| Transaction | 2,272,185 | 2,317,576 | 2,388,812 | 2,240,040 | 2,035,634 |
| Savings | 91,491 | 89,640 | 83,101 | 84,642 | 83,862 |
| Time | 502,128 | 511,037 | 535,642 | 528,380 | 516,231 |
| Total interest-bearing | 2,865,804 | 2,918,253 | 3,007,555 | 2,853,062 | 2,635,727 |
| Total Bank of Texas | 5,987,694 | 6,009,511 | 6,144,564 | 5,588,043 | 5,312,980 |
| | | | | | |
| Bank of Albuquerque: | | | | | |
| Demand | 612,117 | 593,117 | 627,979 | 584,681 | 530,853 |
| Interest-bearing: | | | | | |
| Transaction | 558,523 | 623,677 | 590,571 | 555,326 | 573,690 |
| Savings | 54,136 | 53,683 | 49,963 | 54,480 | 49,200 |
| Time | 229,616 | 233,506 | 238,408 | 244,706 | 250,068 |
| Total interest-bearing | 842,275 | 910,866 | 878,942 | 854,512 | 872,958 |
| Total Bank of Albuquerque | 1,454,392 | 1,503,983 | 1,506,921 | 1,439,193 | 1,403,811 |
| | | | | | |
| Bank of Arkansas: | | | | | |
| Demand | 40,511 | 42,622 | 26,389 | 32,203 | 30,607 |
| Interest-bearing: | | | | | |
| Transaction | 129,848 | 106,804 | 105,232 | 313,480 | 278,335 |
| Savings | 2,135 | 2,304 | 2,192 | 2,051 | 1,853 |
| Time | 14,876 | 15,067 | 16,696 | 17,534 | 18,911 |
| Total interest-bearing | 146,859 | 124,175 | 124,120 | 333,065 | 299,099 |
| Total Bank of Arkansas | 187,370 | 166,797 | 150,509 | 365,268 | 329,706 |
| | | | | | |
| Colorado State Bank & Trust: | | | | | |
| Demand | 577,617 | 601,778 | 576,000 | 517,063 | 528,124 |
| Interest-bearing: | | | | | |
| Transaction | 626,343 | 610,510 | 616,679 | 623,055 | 625,240 |
| Savings | 35,651 | 37,801 | 32,866 | 31,613 | 31,509 |
| Time | 228,458 | 234,740 | 242,782 | 247,667 | 254,164 |
| Total interest-bearing | 890,452 | 883,051 | 892,327 | 902,335 | 910,913 |
| Total Colorado State Bank & Trust | 1,468,069 | 1,484,829 | 1,468,327 | 1,419,398 | 1,439,037 |

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Bank of Arizona: | | | | | |
| Demand | 366,866 | 342,854 | 366,755 | 418,718 | 396,837 |
| Interest-bearing: | | | | | |
| Transaction | 154,457 | 180,254 | 305,099 | 303,750 | 302,297 |
| Savings | 3,638 | 3,858 | 2,973 | 2,959 | 3,198 |
| Time | 19,911 | 26,112 | 27,765 | 27,935 | 28,681 |
| Total interest-bearing | 178,006 | 210,224 | 335,837 | 334,644 | 334,176 |
| Total Bank of Arizona | 544,872 | 553,078 | 702,592 | 753,362 | 731,013 |
| | | | | | |
| Mobank: | | | | | |
| Demand | 496,473 | 514,278 | 508,418 | 235,445 | 240,755 |
| Interest-bearing: | | | | | |
| Transaction | 346,996 | 406,105 | 513,176 | 86,526 | 112,371 |
| Savings | 13,603 | 13,424 | 12,679 | 1,645 | 1,656 |
| Time | 31,119 | 34,242 | 42,152 | 11,945 | 11,735 |
| Total interest-bearing | 391,718 | 453,771 | 568,007 | 100,116 | 125,762 |
| Total Mobank | 888,191 | 968,049 | 1,076,425 | 335,561 | 366,517 |
| Total BOK Financial deposits | $22,316,474 | $22,575,359 | $22,748,095 | $21,095,504 | $20,759,802 |

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 $22 million at June 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 $5.5 billion during the quarter, compared to $5.7 billion in the first quarter of 2017.

At June 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 June 30, 2017 | | | | Three Months Ended March 31, 2017 | | |
|---|---|---|---|---|---|---|---|---|
| | Jun 30, 2017 | Average Balance During the Quarter | Rate | Maximum Outstanding At Any Month End During the Quarter | Mar 31, 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 | $7,217 | $7,217 | 3.32 % | $ 7,217 |
| Other | 878 | 867 | 11.06% | $ 881 | 847 | 913 | 10.83% | 871 |
| Total other borrowings | 878 | 6,951 | 5.14 % | | 8,064 | 8,130 | 5.64 % | |
| Subordinated debentures | 144,658 | 144,654 | 5.55 % | $ 144,658 | 144,649 | 144,644 | 5.68 % | 144,649 |
| Total parent company and other non-bank subsidiaries | 145,536 | 151,605 | 5.53 % | | 152,713 | 152,774 | 5.68 % | |
| BOKF, NA: | | | | | | | | |
| Funds purchased | 67,990 | 63,263 | 0.61 % | 67,990 | 47,629 | 55,508 | 0.47 % | 50,154 |
| Repurchase agreements | 396,333 | 427,353 | 0.06 % | 489,814 | 508,352 | 523,561 | 0.02 % | 536,094 |
| Other borrowings: | | | | | | | | |
| Federal Home Loan Bank advances | 5,200,000 | 5,532,967 | 1.07 % | 5,600,000 | 5,200,000 | 5,691,111 | 0.80 % | 5,700,000 |
| GNMA repurchase liability | 16,056 | 16,734 | 4.65 % | 17,693 | 15,532 | 23,392 | 4.61 % | 24,139 |
| Other | 15,409 | 15,379 | 2.40 % | 15,409 | 15,351 | 15,322 | 2.41 % | 15,351 |
| Total other borrowings | 5,231,465 | 5,565,080 | 1.09 % | | 5,230,883 | 5,729,825 | 0.82 % | |
| Total BOKF, NA | 5,695,788 | 6,055,696 | 1.01 % | | 5,786,864 | 6,308,894 | 0.75 % | |
| Total Other Borrowed Funds | $5,841,324 | $6,207,301 | 1.12 % | | $5,939,577 | $6,461,668 | 0.87 % | |

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

Parent Company

At June 30, 2017, cash and interest-bearing cash and cash equivalents held by the parent company totaled $187 million. The primary sources of liquidity for BOK Financial are cash on hand and dividends from BOKF, NA. Dividends from the bank are limited by various banking regulations to net profits, as defined, for the year plus retained profits for the two preceding years. Dividends are further restricted by minimum capital requirements. At June 30, 2017, based upon the most restrictive limitations as well as management's internal capital policy, the bank could declare up to $283 million of dividends without regulatory approval. Dividend constraints may be alleviated through increases in retained earnings, capital issuances or changes in risk weighted assets. Future losses or increases in required regulatory capital at the bank could affect its ability to pay dividends to the parent company.

Our equity capital at June 30, 2017 was $3.4 billion, an increase of $79 million over March 31, 2017. Net income less cash dividends paid increased equity $59 million during the second quarter of 2017. Accumulated other comprehensive income increased $13 million primarily related to the impact on changes in interest rates on the net unrealized gain (loss) of the available for sale securities portfolio. 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.

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 June 30, 2017, a cumulative total of 2,879,243 shares have been repurchased under this authorization. No shares were repurchased in the second 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 | June 30, 2017 | Mar. 31, 2017 | June 30, 2016 |
|---|---|---|---|---|---|---|
| Risk-based capital: | | | | | | |
| Common equity Tier 1 | 4.50 % | 2.50 % | 7.00 % | 11.76 % | 11.59 % | 11.86 % |
| Tier 1 capital | 6.00 % | 2.50 % | 8.50 % | 11.76 % | 11.59 % | 11.86 % |
| Total capital | 8.00 % | 2.50 % | 10.50 % | 13.36 % | 13.25 % | 13.51 % |
| Tier 1 Leverage | 4.00 % | N/A | 4.00 % | 9.27 % | 8.89 % | 9.06 % |
| | | | | | | |
| Average total equity to average assets | | | | 10.53 % | 10.10 % | 10.46 % |
| Tangible common equity ratio | | | | 9.24 % | 8.88 % | 9.33 % |

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)

| | June 30, 2017 | Mar. 31, 2017 | Dec. 31, 2016 | Sept. 30, 2016 | June 30, 2016 |
|---|---|---|---|---|---|
| Tangible common equity ratio: | | | | | |
| Total shareholders' equity | $3,422,469 | $3,341,744 | $3,274,854 | $3,398,311 | $3,368,833 |
| Less: Goodwill and intangible assets, net | 487,452 | 488,294 | 495,830 | 424,716 | 426,111 |
| Tangible common equity | 2,935,017 | 2,853,450 | 2,779,024 | 2,973,595 | 2,942,722 |
| Total assets | 32,263,532 | 32,628,932 | 32,772,281 | 32,779,231 | 31,970,450 |
| Less: Goodwill and intangible assets, net | 487,452 | 488,294 | 495,830 | 424,716 | 426,111 |
| Tangible assets | $31,776,080 | $32,140,638 | $32,276,451 | $32,354,515 | $31,544,339 |
| Tangible common equity ratio | 9.24 % | 8.88 % | 8.61 % | 9.19 % | 9.33 % |

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 unpledged 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 | |
|---|---|---|---|---|
| | June 30, | | June 30, | |
| | 2017 | 2016 | 2017 | 2016 |
| Anticipated impact over the next twelve months on net interest revenue | $(104) | $(483) | $(17,632) | $(24,425) |
| | (0.01)% | (0.06)% | (2.07)% | (3.18)% |

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

Management performs a stress test to measure market risk due to changes in interest rates inherent in its MSR portfolio and hedges. The stress test shocks applicable interest rates up and down 50 basis points and calculates an

estimated change in fair value, net of economic hedging activity, that may result. The Board has approved a $20 million market risk limit for mortgage servicing rights, net of economic hedges.

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

| | June 30, 2017 | | 2016 | |
|---|---|---|---|---|
| | Up 50 bp | Down 50 bp | Up 50 bp | Down 50 bp |
| MSR Asset | $25,977 | $(31,851) | $31,043 | $(53,564) |
| MSR Hedge | (31,507) | 32,312 | (28,934) | 31,098 |
| Net Exposure | (5,530) | 461 | 2,109 | (22,466) |

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 June 30, | | | | Six Months Ended June 30, | | | |
|---|---|---|---|---|---|---|---|---|
| | 2017 | | 2016 | | 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] | $(3) | $(1,439) | $(3,835) | $(740) | $117 | $(1,316) | $(3,916) | $(591) |
| Low[2] | 1,030 | (679) | (288) | 724 | 1,030 | (398) | (288) | 1,815 |
| High[3] | (810) | (2,377) | (6,858) | (2,656) | (810) | (2,377) | (6,858) | (2,953) |
| Period End | (263) | (1,025) | (1,328) | (1,423) | (263) | (1,025) | (1,328) | (1,423) |

[1] Average represents the simple average of each daily value observed during the reporting period.
[2] Low represents least risk of loss in fair value measured as the smallest negative value or the largest positive value observed daily during the reporting period.
[3] High represents the greatest risk of loss in fair value measured as the largest negative value or the smallest positive value observed daily during the reporting period.

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

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

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

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

Table 33 -- BOKFS Trading Sensitivity Analysis
(Dollars in thousands)

| | Three Months Ended June 30, | | | | Six Months Ended June 30, | | | |
|---|---|---|---|---|---|---|---|---|
| | 2017 | | 2016 | | 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] | $(1,359) | $1,592 | $(3,389) | $3,118 | $(1,991) | $2,241 | $(2,984) | $2,721 |
| Low[2] | (219) | 3,833 | (2,208) | 2,009 | 86 | 5,210 | 146 | 5,274 |
| High[3] | (2,916) | 91 | (4,211) | 2,092 | (4,386) | 2 | (5,607) | (107) |
| Period End | (1,842) | 1,727 | (3,055) | 3,001 | (1,842) | 1,727 | (3,055) | 3,001 |

[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,” var such words and similar expressions are intended to identify such forward-looking statements. Management judgments relating to and discussion of the provision and allowance for credit losses, allowance for uncertain tax positions, accruals for loss contingencies and valuation of mortgage servicing rights involve judgments as to expected events and are inherently forward-looking statements. Assessments that BOK Financial’s acquisitions 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.

Consolidated Statements of Earnings (Unaudited)

| (In thousands, except share and per share data) | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| Interest revenue | 2017 | 2016 | 2017 | 2016 |
| Loans | $168,952 | $141,560 | $329,847 | $280,672 |
| Residential mortgage loans held for sale | 2,386 | 3,508 | 4,222 | 6,208 |
| Trading securities | 3,339 | 616 | 8,522 | 1,140 |
| Investment securities | 4,005 | 4,217 | 8,176 | 8,604 |
| Available for sale securities | 43,363 | 43,872 | 86,735 | 89,339 |
| Fair value option securities | 3,539 | 2,062 | 5,919 | 4,651 |
| Restricted equity securities | 4,399 | 3,863 | 8,708 | 8,174 |
| Interest-bearing cash and cash equivalents | 5,198 | 2,569 | 9,442 | 5,275 |
| Total interest revenue | 235,181 | 202,267 | 461,571 | 404,063 |
| Interest expense | | | | |
| Deposits | 12,622 | 9,997 | 23,976 | 20,539 |
| Borrowed funds | 15,352 | 8,780 | 27,181 | 16,752 |
| Subordinated debentures | 2,003 | 878 | 4,028 | 1,588 |
| Total interest expense | 29,977 | 19,655 | 55,185 | 38,879 |
| Net interest revenue | 205,204 | 182,612 | 406,386 | 365,184 |
| Provision for credit losses | — | 20,000 | — | 55,000 |
| Net interest revenue after provision for credit losses | 205,204 | 162,612 | 406,386 | 310,184 |
| Other operating revenue | | | | |
| Brokerage and trading revenue | 31,764 | 39,530 | 65,387 | 71,871 |
| Transaction card revenue | 35,296 | 34,950 | 67,423 | 67,304 |
| Fiduciary and asset management revenue | 41,808 | 34,813 | 80,439 | 66,869 |
| Deposit service charges and fees | 23,354 | 22,618 | 46,384 | 45,160 |
| Mortgage banking revenue | 30,276 | 34,884 | 55,467 | 66,984 |
| Other revenue | 14,984 | 13,352 | 26,736 | 25,256 |
| Total fees and commissions | 177,482 | 180,147 | 341,836 | 343,444 |
| Other gains, net | 6,108 | 1,307 | 9,735 | 2,867 |
| Gain (loss) on derivatives, net | 3,241 | 10,766 | 2,791 | 17,904 |
| Gain (loss) on fair value option securities, net | 1,984 | 4,279 | 844 | 13,722 |
| Change in fair value of mortgage servicing rights | (6,943) | (16,283) | (5,087) | (44,271) |
| Gain on available for sale securities, net | 380 | 5,326 | 2,429 | 9,290 |
| Total other operating revenue | 182,252 | 185,542 | 352,548 | 342,956 |
| Other operating expense | | | | |
| Personnel | 143,744 | 139,213 | 280,169 | 272,775 |
| Business promotion | 7,738 | 6,703 | 14,455 | 12,399 |
| Professional fees and services | 12,419 | 14,158 | 23,836 | 25,917 |
| Net occupancy and equipment | 21,125 | 19,677 | 42,749 | 38,443 |
| Insurance | 689 | 7,129 | 7,093 | 14,394 |
| Data processing and communications | 36,330 | 32,802 | 71,232 | 64,819 |
| Printing, postage and supplies | 4,140 | 3,889 | 7,991 | 7,796 |
| Net losses (gains) and operating expenses of repossessed assets | 2,267 | 1,588 | 3,276 | 2,658 |
| Amortization of intangible assets | 1,803 | 2,624 | 3,605 | 3,783 |
| Mortgage banking costs | 12,072 | 15,746 | 25,075 | 28,076 |
| Other expense | 8,558 | 7,856 | 16,115 | 22,895 |
| Total other operating expense | 250,885 | 251,385 | 495,596 | 493,955 |

| | | | | |
|---|---|---|---|---|
| Net income before taxes | 136,571 | 96,769 | 263,338 | 159,185 |
| Federal and state income taxes | 47,705 | 30,497 | 85,808 | 51,925 |
| Net income | 88,866 | 66,272 | 177,530 | 107,260 |
| Net income (loss) attributable to non-controlling interests | 719 | 471 | 1,027 | (1,105) |
| Net income attributable to BOK Financial Corporation shareholders | $88,147 | $65,801 | $176,503 | $108,365 |
| Earnings per share: | | | | |
| Basic | $1.35 | $1.00 | $2.70 | $1.64 |
| Diluted | $1.35 | $1.00 | $2.69 | $1.64 |
| Average shares used in computation: | | | | |
| Basic | 64,729,752 | 65,245,887 | 64,722,744 | 65,271,214 |
| Diluted | 64,793,134 | 65,302,926 | 64,788,322 | 65,317,177 |
| Dividends declared per share | $0.44 | $0.43 | $0.88 | $0.86 |

See accompanying notes to consolidated financial statements.

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

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2017 | 2016 | 2017 | 2016 |
| Net income | $88,866 | $66,272 | $177,530 | $107,260 |
| Other comprehensive income before income taxes: | | | | |
| Net change in unrealized gain (loss) | 21,958 | 45,475 | 33,369 | 166,566 |
| Reclassification adjustments included in earnings: | | | | |
| Interest revenue, Investment securities, Taxable securities | — | (43) | — | (112) |
| Gain on available for sale securities, net | (380) | (5,326) | (2,429) | (9,290) |
| Other comprehensive income before income taxes | 21,578 | 40,106 | 30,940 | 157,164 |
| Federal and state income taxes | 8,393 | 15,583 | 12,009 | 61,119 |
| Other comprehensive income, net of income taxes | 13,185 | 24,523 | 18,931 | 96,045 |
| Comprehensive income | 102,051 | 90,795 | 196,461 | 203,305 |
| Comprehensive income (loss) attributable to non-controlling interests | 719 | 471 | 1,027 | (1,105) |
| Comprehensive income attributable to BOK Financial Corp. shareholders | $101,332 | $90,324 | $195,434 | $204,410 |

See accompanying notes to consolidated financial statements.

Consolidated Balance Sheets
(In thousands, except share data)

| | Jun 30, 2017 (Unaudited) | Dec 31, 2016 (Footnote 1) | Jun 30, 2016 (Unaudited) |
|---|---|---|---|
| Assets | | | |
| Cash and due from banks | $561,587 | $620,846 | $498,713 |
| Interest-bearing cash and cash equivalents | 2,078,831 | 1,916,651 | 1,907,838 |
| Trading securities | 441,414 | 337,628 | 211,622 |
| Investment securities (fair value: June 30, 2017 – $515,675; December 31, 2016 – $565,493 ; June 30, 2016 – $599,062) | 490,426 | 546,145 | 560,711 |
| Available for sale securities | 8,341,041 | 8,676,829 | 8,830,689 |
| Fair value option securities | 445,169 | 77,046 | 263,265 |
| Restricted equity securities | 311,033 | 307,240 | 319,639 |
| Residential mortgage loans held for sale | 287,259 | 301,897 | 430,728 |
| Loans | 17,183,645 | 16,989,660 | 16,406,749 |
| Allowance for loan losses | (250,061) | (246,159) | (243,259) |
| Loans, net of allowance | 16,933,584 | 16,743,501 | 16,163,490 |
| Premises and equipment, net | 321,038 | 325,849 | 315,199 |
| Receivables | 295,042 | 772,952 | 173,638 |
| Goodwill | 446,697 | 448,899 | 382,739 |
| Intangible assets, net | 40,755 | 46,931 | 43,372 |
| Mortgage servicing rights | 245,239 | 247,073 | 190,747 |
| Real estate and other repossessed assets, net of allowance (June 30, 2017 – $8,576; December 31, 2016 – $9,562; June 30, 2016 – $9,448) | 39,436 | 44,287 | 24,054 |
| Derivative contracts, net | 280,289 | 689,872 | 883,673 |
| Cash surrender value of bank-owned life insurance | 312,774 | 308,430 | 307,860 |
| Receivable on unsettled securities sales | 33,177 | 7,188 | 142,820 |
| Other assets | 358,741 | 353,017 | 319,653 |
| Total assets | $32,263,532 | $32,772,281 | $31,970,450 |
| | | | |
| Liabilities and Equity | | | |
| Liabilities: | | | |
| Noninterest-bearing demand deposits | $9,568,895 | $9,235,720 | $8,424,609 |
| Interest-bearing deposits: | | | |
| Transaction | 10,087,139 | 10,865,105 | 9,668,869 |
| Savings | 464,318 | 425,470 | 419,262 |
| Time | 2,196,122 | 2,221,800 | 2,247,061 |
| Total deposits | 22,316,474 | 22,748,095 | 20,759,801 |
| Funds purchased | 67,990 | 57,929 | 56,780 |
| Repurchase agreements | 396,333 | 668,661 | 472,683 |
| Other borrowings | 5,232,343 | 4,846,072 | 5,830,736 |
| Subordinated debentures | 144,658 | 144,640 | 371,812 |
| Accrued interest, taxes and expense | 133,198 | 146,704 | 197,742 |
| Derivative contracts, net | 285,819 | 664,531 | 719,159 |
| Due on unsettled securities purchases | 32,636 | 6,508 | 11,757 |
| Other liabilities | 204,536 | 182,784 | 147,242 |
| Total liabilities | 28,813,987 | 29,465,924 | 28,567,712 |
| Shareholders' equity: | | | |
| | 4 | 4 | 4 |

| | | | |
|---|---|---|---|
| Common stock ($.00006 par value; 2,500,000,000 shares authorized; shares issued and outstanding: June 30, 2017 – 75,089,152; December 31, 2016 – 74,993,407; June 30, 2016 – 74,817,155) | | | |
| Capital surplus | 1,017,495 | 1,006,535 | 990,106 |
| Retained earnings | 2,942,447 | 2,823,334 | 2,755,766 |
| Treasury stock (shares at cost: June 30, 2017 – 9,672,749; December 31, 2016 – 9,655,975; June 30, 2016 – 8,950,838) | (545,441 ) | (544,052 ) | (494,675 ) |
| Accumulated other comprehensive income (loss) | 7,964 | (10,967 ) | 117,632 |
| Total shareholders’ equity | 3,422,469 | 3,274,854 | 3,368,833 |
| Non-controlling interests | 27,076 | 31,503 | 33,905 |
| Total equity | 3,449,545 | 3,306,357 | 3,402,738 |
| Total liabilities and equity | $32,263,532 | $32,772,281 | $31,970,450 |

See accompanying notes to consolidated financial statements.

Consolidated Statements of Changes in Equity (Unaudited)
(In thousands)

| | Common Stock | | Capital Surplus | Retained Earnings | Treasury Stock | | Accumulated Other Comprehensive Income (Loss) | Total Shareholders' Equity | Non-Controlling Interests | Total Equity |
|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | | | Shares | Amount | | | | |
| Balance, Dec. 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) | — | — | — | 108,365 | — | — | — | 108,365 | (1,105) | 107,260 |
| Other comprehensive income | — | — | — | — | — | — | 96,045 | 96,045 | — | 96,045 |
| Repurchase of common stock | — | — | — | — | 305 | (17,770) | — | (17,770) | — | (17,770) |
| Share-based compensation plans: | | | | | | | | | | |
| Stock options exercised | 39 | — | 2,016 | — | — | — | — | 2,016 | — | 2,016 |
| Non-vested shares awarded, net | 248 | — | — | — | — | — | — | — | — | — |
| Vesting of non-vested shares | — | — | — | — | 10 | 260 | — | 260 | — | 260 |
| Tax effect from equity compensation, net | — | — | 351 | — | — | — | — | 351 | — | 351 |
| Share-based compensation | — | — | 5,730 | — | — | — | — | 5,730 | — | 5,730 |
| Cash dividends on common stock | — | — | — | (56,720) | — | — | — | (56,720) | — | (56,720) |
| Capital calls and distributions, net | — | — | — | — | — | — | — | — | (2,073) | (2,073) |
| Balance, June 30, 2016 | 74,817 | $4 | $990,106 | $2,755,766 | 8,951 | $(494,675) | $117,632 | $3,368,833 | $33,905 | $3,402,738 |
| Balance, Dec. 31, 2016 | 74,993 | $4 | $1,006,535 | $2,823,334 | 9,656 | $(544,052) | $(10,967) | $3,274,854 | $31,503 | $3,306,357 |
| Net income (loss) | — | — | — | 176,503 | — | — | — | 176,503 | 1,027 | 177,530 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Other comprehensive income | — | — | — | — | — | — | 18,931 | 18,931 | — | 18,931 |
| Share-based compensation plans: | | | | | | | | | | |
| Stock options exercised | 41 | — | 1,977 | — | — | — | — | 1,977 | — | 1,977 |
| Non-vested shares awarded, net | 55 | — | — | — | — | — | — | — | — | — |
| Vesting of non-vested shares | — | — | — | — | 17 | (1,389) | — | (1,389) | — | (1,389) |
| Share-based compensation | — | — | 8,983 | — | — | — | — | 8,983 | — | 8,983 |
| Cash dividends on common stock | — | — | — | (57,390) | — | — | — | (57,390) | — | (57,390) |
| Capital calls and distributions, net | — | — | — | — | — | — | — | — | (5,454) | (5,454) |
| Balance, June 30, 2017 | 75,089 | $4 | $1,017,495 | $2,942,447 | 9,673 | $(545,441) | $7,964 | $3,422,469 | $27,076 | $3,449,545 |

See accompanying notes to consolidated financial statements.

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

| | Six Months Ended June 30, | |
|---|---|---|
| | 2017 | 2016 |
| Cash Flows From Operating Activities: | | |
| Net income | $177,530 | $107,260 |
| Adjustments to reconcile net income to net cash provided by operating activities: | | |
| Provision for credit losses | — | 55,000 |
| Change in fair value of mortgage servicing rights due to market changes | 5,087 | 44,271 |
| Change in the fair value of mortgage servicing rights due to loan runoff | 16,261 | 17,942 |
| Net unrealized gains from derivative contracts | (5,928) | (15,459) |
| Share-based compensation | 8,983 | 5,730 |
| Depreciation and amortization | 25,864 | 23,532 |
| Net amortization of securities discounts and premiums | 15,377 | 21,814 |
| Net realized gains on financial instruments and other net gains | (4,351) | (9,787) |
| Net gain on mortgage loans held for sale | (25,229) | (37,151) |
| Mortgage loans originated for sale | (1,613,997) | (3,062,859) |
| Proceeds from sale of mortgage loans held for sale | 1,651,018 | 2,981,973 |
| Capitalized mortgage servicing rights | (19,514) | (34,355) |
| Change in trading and fair value option securities | (472,682) | 90,484 |
| Change in receivables | 479,774 | (9,698) |
| Change in other assets | (17,548) | (4,740) |
| Change in accrued interest, taxes and expense | (19,703) | 20,299 |
| Change in other liabilities | 27,420 | (8,854) |
| Net cash provided by operating activities | 228,362 | 185,402 |
| Cash Flows From Investing Activities: | | |
| Proceeds from maturities or redemptions of investment securities | 71,654 | 52,463 |
| Proceeds from maturities or redemptions of available for sale securities | 899,096 | 721,432 |
| Purchases of investment securities | (18,802) | (18,599) |
| Purchases of available for sale securities | (1,242,070) | (1,155,261) |
| Proceeds from sales of available for sale securities | 700,412 | 795,140 |
| Change in amount receivable on unsettled securities transactions | (25,989) | (102,627) |
| Loans originated, net of principal collected | (159,924) | (481,085) |
| Net payments on derivative asset contracts | 420,996 | (204,041) |
| Acquisitions, net of cash acquired | — | (7,700) |
| Proceeds from disposition of assets | 127,699 | 78,629 |
| Purchases of assets | (106,362) | (107,241) |
| Net cash provided by investing activities | 666,710 | (428,890) |
| Cash Flows From Financing Activities: | | |
| Net change in demand deposits, transaction deposits and savings accounts | (405,943) | (169,354) |
| Net change in time deposits | (25,678) | (159,003) |
| Net change in other borrowed funds | 64,833 | 259,359 |
| Issuance of subordinated debentures | — | 145,390 |
| Net proceeds on derivative liability contracts | (422,016) | 196,225 |
| Net change in derivative margin accounts | 27,327 | (188,823) |
| Change in amount due on unsettled security transactions | 26,128 | (5,140) |
| Issuance of common and treasury stock, net | 588 | 2,276 |
| Repurchase of common stock | — | (17,770) |

| | | |
|---|---|---|
| Dividends paid | (57,390) | (56,720) |
| Net cash provided by (used in) financing activities | (792,151) | 6,440 |
| Net increase (decrease) in cash and cash equivalents | 102,921 | (237,048) |
| Cash and cash equivalents at beginning of period | 2,537,497 | 2,643,599 |
| Cash and cash equivalents at end of period | $2,640,418 | $2,406,551 |
| | | |
| Supplemental Cash Flow Information: | | |
| Cash paid for interest | $54,881 | $40,213 |
| Cash paid for taxes | $60,654 | $14,671 |
| Net loans and bank premises transferred to repossessed real estate and other assets | $2,049 | $5,372 |
| Residential mortgage loans guaranteed by U.S. government agencies that became eligible for repurchase during the period | $59,171 | $49,325 |
| Conveyance of other real estate owned guaranteed by U.S. government agencies | $22,602 | $29,512 |

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements (Unaudited)

(1) Significant Accounting Policies

Basis of Presentation

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

The unaudited consolidated financial statements include accounts of BOK Financial and its subsidiaries, principally BOKF, NA (“the Bank”), BOK Financial Securities, Inc., 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 six-month period ended June 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 most fees and commissions revenue will not be affected. The Company continues to evaluate the impact of ASU 2014-09 on Fiduciary and Asset Management Revenue and Transaction Card Revenue, which represents 19% of gross revenue and 43% of fees and commissions revenue for the first half of 2017. Timing of revenue recognition and gross versus net presentation may be affected. 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.

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. The Company is evaluating the impact the adoption of ASU 2016-08 will have on the Company's financial statements along with ASU 2014-09.

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 June 30, 2017, the Company had $3.2 million of 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 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 $2.3 million in the first six 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.

(2) Securities
Trading Securities

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

| | June 30, 2017 | | December 31, 2016 | | June 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 | $20,954 | $ (9) | $6,234 | $ (4) | $18,909 | $ (8) |
| U.S. government agency residential mortgage-backed securities | 365,171 | (1,032) | 310,067 | 635 | 122,306 | 363 |
| Municipal and other tax-exempt securities | 45,444 | 230 | 14,427 | 50 | 52,721 | 262 |
| Other trading securities | 9,845 | (175) | 6,900 | 57 | 17,686 | 169 |
| Total trading securities | $441,414 | $ (986) | $337,628 | $ 738 | $211,622 | $ 786 |

Investment Securities

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

| | June 30, 2017 | | | |
|---|---|---|---|---|
| | Amortized | Fair | Gross Unrealized[1] | |
| | Cost | Value | Gain | Loss |
| Municipal and other tax-exempt | $267,375 | $270,531 | $3,384 | $(228) |
| U.S. government agency residential mortgage-backed securities – Other | 18,035 | 18,642 | 668 | (61) |
| Other debt securities | 205,016 | 226,502 | 22,040 | (554) |
| Total investment securities | $490,426 | $515,675 | $26,092 | $(843) |

[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.

| | June 30, 2016 | | | |
|---|---|---|---|---|
| | Amortized | Fair | Gross Unrealized[1] | |
| | Cost | Value | Gain | Loss |
| Municipal and other tax-exempt | $334,551 | $340,700 | $6,234 | $(85) |
| U.S. government agency residential mortgage-backed securities – Other | 23,750 | 25,233 | 1,483 | — |
| Other debt securities | 202,410 | 233,129 | 30,723 | (4) |
| Total investment securities | $560,711 | $599,062 | $38,440 | $(89) |

[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 June 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 | $90,415 | $122,560 | $10,739 | $43,661 | $267,375 | 3.48 |
| Fair value | 90,436 | 122,914 | 11,220 | 45,961 | 270,531 | |
| Nominal yield[1] | 1.66 % | 2.12 % | 4.88 % | 5.05 % | 2.55 % | |
| Other debt securities: | | | | | | |
| Amortized cost | 14,286 | 45,638 | 130,279 | 14,813 | 205,016 | 6.59 |
| Fair value | 14,482 | 48,973 | 148,415 | 14,632 | 226,502 | |
| Nominal yield | 3.84 % | 4.95 % | 5.75 % | 4.46 % | 5.35 % | |
| Total fixed maturity securities: | | | | | | |
| Amortized cost | $104,701 | $168,198 | $141,018 | $58,474 | $472,391 | 4.83 |
| Fair value | 104,918 | 171,887 | 159,635 | 60,593 | 497,033 | |
| Nominal yield | 1.95 % | 2.89 % | 5.69 % | 4.90 % | 3.77 % | |
| Residential mortgage-backed securities: | | | | | | |
| Amortized cost | | | | | $18,035 | [3] |
| Fair value | | | | | 18,642 | |
| Nominal yield[4] | | | | | 2.76 % | |
| Total investment securities: | | | | | | |
| Amortized cost | | | | | $490,426 | |
| Fair value | | | | | 515,675 | |
| Nominal yield | | | | | 3.73 % | |

[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.

[4] 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):

| | June 30, 2017 | | | | |
|---|---|---|---|---|---|
| | Amortized | Fair | Gross Unrealized[1] | | |
| | Cost | Value | Gain | Loss | OTTI[2] |
| U.S. Treasury | $1,000 | $998 | $— | $(2) | $ — |
| Municipal and other tax-exempt | 32,885 | 32,765 | 293 | (413) | — |
| Residential mortgage-backed securities: | | | | | |
| U. S. government agencies: | | | | | |
| FNMA | 3,005,920 | 3,008,531 | 24,213 | (21,602) | — |
| FHLMC | 1,412,376 | 1,412,472 | 7,785 | (7,689) | — |
| GNMA | 938,086 | 936,365 | 3,641 | (5,362) | — |
| Other | 25,000 | 25,009 | 52 | (43) | — |
| Total U.S. government agencies | 5,381,382 | 5,382,377 | 35,691 | (34,696) | — |
| Private issue: | | | | | |
| Alt-A loans | 38,334 | 46,903 | 8,569 | — | — |
| Jumbo-A loans | 48,322 | 56,480 | 8,158 | — | — |
| Total private issue | 86,656 | 103,383 | 16,727 | — | — |
| Total residential mortgage-backed securities | 5,468,038 | 5,485,760 | 52,418 | (34,696) | — |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,788,543 | 2,782,070 | 7,804 | (14,277) | — |
| Other debt securities | 4,400 | 4,152 | — | (248) | — |
| Perpetual preferred stock | 12,562 | 16,568 | 4,006 | — | — |
| Equity securities and mutual funds | 17,572 | 18,728 | 1,219 | (63) | — |
| Total available for sale securities | $8,325,000 | $8,341,041 | $65,740 | $(49,699) | $ — |

[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.

| | December 31, 2016 | | | | |
|---|---|---|---|---|---|
| | Amortized | Fair | Gross Unrealized[1] | | |
| | Cost | Value | Gain | Loss | OTTI[2] |
| 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.

| | June 30, 2016 | | | | |
|---|---|---|---|---|---|
| | Amortized | Fair | Gross Unrealized[1] | | |
| | Cost | Value | Gain | Loss | OTTI[2] |
| U.S. Treasury | $1,000 | $1,004 | $4 | $— | $— |
| Municipal and other tax-exempt | 50,170 | 50,262 | 805 | (713) | — |
| Residential mortgage-backed securities: | | | | | |
| U. S. government agencies: | | | | | |
| FNMA | 2,908,698 | 2,988,974 | 80,549 | (273) | — |
| FHLMC | 1,746,661 | 1,785,332 | 38,869 | (198) | — |
| GNMA | 921,928 | 925,962 | 4,646 | (612) | — |
| Total U.S. government agencies | 5,577,287 | 5,700,268 | 124,064 | (1,083) | — |
| Private issue: | | | | | |
| Alt-A loans | 49,522 | 54,536 | 5,461 | — | (447) |
| Jumbo-A loans | 65,787 | 71,777 | 6,355 | (36) | (329) |
| Total private issue | 115,309 | 126,313 | 11,816 | (36) | (776) |
| Total residential mortgage-backed securities | 5,692,596 | 5,826,581 | 135,880 | (1,119) | (776) |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 2,854,306 | 2,911,946 | 57,762 | (122) | — |
| Other debt securities | 4,400 | 4,151 | — | (249) | — |
| Perpetual preferred stock | 15,562 | 17,931 | 2,369 | — | — |
| Equity securities and mutual funds | 17,270 | 18,814 | 1,558 | (14) | — |
| Total available for sale securities | $8,635,304 | $8,830,689 | $198,378 | $(2,217) | $(776) |

[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.

The amortized cost and fair values of available for sale securities at June 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 | 0.55 |
| Fair value | 998 | — | — | — | 998 | |
| Nominal yield | 0.87 % | — % | — % | — % | 0.87 % | |
| Municipal and other tax-exempt: | | | | | | |
| Amortized cost | $8,981 | $6,380 | $1,028 | $16,496 | $32,885 | 8.87 |
| Fair value | 9,021 | 6,497 | 1,081 | 16,166 | 32,765 | |
| Nominal yield[1] | 4.24 % | 3.91 % | 6.72 % | 2.28 %[6] | 3.27 % | |
| Commercial mortgage-backed securities: | | | | | | |
| Amortized cost | $58,263 | $880,459 | $1,571,735 | $278,086 | $2,788,543 | 6.98 |
| Fair value | 58,147 | 879,286 | 1,568,732 | 275,905 | 2,782,070 | |
| Nominal yield | 1.20 % | 1.83 % | 1.84 % | 1.88 % | 1.82 % | |
| Other debt securities: | | | | | | |
| Amortized cost | $— | $— | $— | $4,400 | $4,400 | 30.16 |
| Fair value | — | — | — | 4,152 | 4,152 | |
| Nominal yield | — % | — % | — % | 1.71 %[6] | 1.71 % | |
| Total fixed maturity securities: | | | | | | |
| Amortized cost | $68,244 | $886,839 | $1,572,763 | $298,982 | $2,826,828 | 7.03 |
| Fair value | 68,166 | 885,783 | 1,569,813 | 296,223 | 2,819,985 | |
| Nominal yield | 1.60 % | 1.85 % | 1.85 % | 1.90 % | 1.83 % | |
| Residential mortgage-backed securities: | | | | | | |
| Amortized cost | | | | | $5,468,038 | [2] |
| Fair value | | | | | 5,485,760 | |
| Nominal yield[4] | | | | | 1.94 % | |
| Equity securities and mutual funds: | | | | | | |
| Amortized cost | | | | | $30,134 | [3] |
| Fair value | | | | | 35,296 | |
| Nominal yield | | | | | — % | |
| Total available-for-sale securities: | | | | | | |
| Amortized cost | | | | | $8,325,000 | |
| Fair value | | | | | 8,341,041 | |
| Nominal yield | | | | | 1.90 % | |

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

[2] The average expected lives of mortgage-backed securities were 3.9 years 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 June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2017 | 2016 | 2017 | 2016 |
| Proceeds | $460,402 | $325,758 | $700,412 | $795,140 |
| Gross realized gains | 2,763 | 5,326 | 4,855 | 9,290 |
| Gross realized losses | (2,383) | — | (2,426) | — |
| Related federal and state income tax expense | 148 | 2,072 | 945 | 3,614 |

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):

| | June 30, 2017 | Dec. 31, 2016 | June 30, 2016 |
|---|---|---|---|
| Investment: | | | |
| Amortized cost | $251,684 | $322,208 | $287,166 |
| Fair value | 255,097 | 323,808 | 293,625 |
| | | | |
| Available for sale: | | | |
| Amortized cost | 6,327,666 | 7,353,116 | 7,502,361 |
| Fair value | 6,317,623 | 7,327,470 | 7,657,916 |

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

Temporarily Impaired Securities as of June 30, 2017
(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 | 82 | $111,078 | $ 149 | $3,000 | $ 79 | $114,078 | $ 228 |
| U.S. government agency residential mortgage-backed securities – Other | 1 | 3,810 | 61 | — | — | 3,810 | 61 |
| Other debt securities | 22 | 8,384 | 554 | — | — | 8,384 | 554 |
| Total investment securities | 105 | $123,272 | $ 764 | $3,000 | $ 79 | $126,272 | $ 843 |

| | Number of Securities | Less Than 12 Months | | 12 Months or Longer | | Total | |
|---|---|---|---|---|---|---|---|
| | | Fair Value | Unrealized Loss | Fair Value | Unrealized Loss | Fair Value | Unrealized Loss |
| Available for sale: | | | | | | | |
| U.S. Treasury | 1 | $997 | $ 2 | $— | $ — | $997 | $ 2 |
| Municipal and other tax-exempt | 13 | $1,957 | $ 1 | $4,655 | $ 412 | $6,612 | $ 413 |
| Residential mortgage-backed securities: | | | | | | | |
| U. S. government agencies: | | | | | | | |
| FNMA | 75 | 1,381,687 | 20,288 | 87,371 | 1,314 | 1,469,058 | 21,602 |
| FHLMC | 42 | 731,853 | 7,213 | 16,388 | 476 | 748,241 | 7,689 |
| GNMA | 21 | 291,806 | 3,766 | 76,605 | 1,596 | 368,411 | 5,362 |
| Other | 1 | 19,957 | 43 | — | — | 19,957 | 43 |
| Total U.S. government agencies | 139 | 2,425,303 | 31,310 | 180,364 | 3,386 | 2,605,667 | 34,696 |
| Private issue: | | | | | | | |
| Alt-A loans | — | — | — | — | — | — | — |
| Jumbo-A loans | — | — | — | — | — | — | — |
| Total private issue | — | — | — | — | — | — | — |
| Total residential mortgage-backed securities | 139 | 2,425,303 | 31,310 | 180,364 | 3,386 | 2,605,667 | 34,696 |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 121 | 1,388,406 | 12,690 | 78,828 | 1,587 | 1,467,234 | 14,277 |
| Other debt securities | 2 | — | — | 4,152 | 248 | 4,152 | 248 |
| Perpetual preferred stocks | — | — | — | — | — | — | — |
| Equity securities and mutual funds | 91 | 1,668 | 22 | 887 | 41 | 2,555 | 63 |
| Total available for sale securities | 367 | $3,818,331 | $ 44,025 | $268,886 | $ 5,674 | $4,087,217 | $ 49,699 |

Temporarily Impaired Securities as of December 31, 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 | 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 | | 12 Months or Longer | | Total | |
|---|---|---|---|---|---|---|---|
| | | Fair Value | Unrealized Loss | Fair Value | Unrealized Loss | Fair Value | Unrealized Loss |
| Available for sale: | | | | | | | |
| U.S. Treasury | 1 | $999 | $ 1 | $— | $ — | $999 | $ 1 |
| Municipal and other tax-exempt | 24 | $15,666 | $ 22 | $4,689 | $ 378 | $20,355 | $ 400 |
| Residential mortgage-backed securities: | | | | | | | |
| 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 June 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 | 19 | $11,915 | $ 20 | $4,378 | $ 65 | $16,293 | $ 85 |
| U.S. government agency residential mortgage-backed securities – Other | — | — | — | — | — | — | — |
| Other debt securities | 1 | — | — | 858 | 4 | 858 | 4 |
| Total investment securities | 20 | $11,915 | $ 20 | $5,236 | $ 69 | $17,151 | $ 89 |

| | 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] | 17 | $375 | $ — | $10,289 | $ 713 | $10,664 | $ 713 |
| Residential mortgage-backed securities: | | | | | | | |
| U. S. government agencies: | | | | | | | |
| FNMA | 4 | 97,910 | 267 | 15,401 | 6 | 113,311 | 273 |
| FHLMC | 1 | — | — | 22,338 | 198 | 22,338 | 198 |
| GNMA | 11 | 349,631 | 612 | — | — | 349,631 | 612 |
| Total U.S. government agencies | 16 | 447,541 | 879 | 37,739 | 204 | 485,280 | 1,083 |
| Private issue[1]: | | | | | | | |
| Alt-A loans | 5 | 8,513 | 241 | 8,291 | 206 | 16,804 | 447 |
| Jumbo-A loans | 9 | 7,076 | 36 | 7,877 | 329 | 14,953 | 365 |
| Total private issue | 14 | 15,589 | 277 | 16,168 | 535 | 31,757 | 812 |
| Total residential mortgage-backed securities | 30 | 463,130 | 1,156 | 53,907 | 739 | 517,037 | 1,895 |
| Commercial mortgage-backed securities guaranteed by U.S. government agencies | 11 | 103,955 | 37 | 65,857 | 85 | 169,812 | 122 |
| Other debt securities | 2 | — | — | 4,151 | 249 | 4,151 | 249 |
| Perpetual preferred stocks | — | — | — | — | — | — | — |
| Equity securities and mutual funds | 30 | — | — | 889 | 14 | 889 | 14 |
| Total available for sale securities | 90 | $567,460 | $ 1,193 | $135,093 | $ 1,800 | $702,553 | $ 2,993 |

[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. Based on this evaluation as of June 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):

| | June 30, 2017 | | Dec. 31, 2016 | | June 30, 2016 | |
|---|---|---|---|---|---|---|
| | Fair Value | Net Unrealized Gain (Loss) | Fair Value | Net Unrealized Gain (Loss) | Fair Value | Net Unrealized Gain (Loss) |
| U.S. Treasury | $— | $ — | $— | $ — | $25,306 | $ (43 ) |
| U.S. government agency residential mortgage-backed securities | 445,169 | 1,247 | 77,046 | (1,777 ) | 237,959 | 4,476 |
| Total | $445,169 | $ 1,247 | $77,046 | $ (1,777 ) | $263,265 | $ 4,433 |

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):

| | June 30, 2017 | Dec. 31, 2016 | June 30, 2016 |
|---|---|---|---|
| Federal Reserve stock | $36,676 | $36,498 | $36,283 |
| Federal Home Loan Bank stock | 274,113 | 270,541 | 283,155 |
| Other | 244 | 201 | 201 |
| Total | $311,033 | $307,240 | $319,639 |

(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 June 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 June 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 | $16,174,687 | $57,948 | $(29,034) | $28,914 | $— | $28,914 |
| Interest rate swaps | 1,450,193 | 29,932 | — | 29,932 | (2,206) | 27,726 |
| Energy contracts | 891,480 | 56,824 | (20,546) | 36,278 | (21,267) | 15,011 |
| Agricultural contracts | 45,250 | 3,541 | (1,027) | 2,514 | — | 2,514 |
| Foreign exchange contracts | 169,529 | 162,429 | — | 162,429 | (7) | 162,422 |
| Equity option contracts | 100,159 | 4,437 | — | 4,437 | (920) | 3,517 |
| Total customer risk management programs | 18,831,298 | 315,111 | (50,607) | 264,504 | (24,400) | 240,104 |
| Internal risk management programs | 10,680,498 | 40,185 | — | 40,185 | — | 40,185 |
| Total derivative contracts | $29,511,796 | $355,296 | $(50,607) | $304,689 | $(24,400) | $280,289 |

| | 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 | $16,174,687 | $53,829 | $(29,034) | $24,795 | $— | $24,795 |
| Interest rate swaps | 1,450,193 | 29,982 | — | 29,982 | (15,396) | 14,586 |
| Energy contracts | 874,625 | 53,895 | (20,546) | 33,349 | — | 33,349 |
| Agricultural contracts | 45,262 | 3,538 | (1,027) | 2,511 | (2,511) | — |
| Foreign exchange contracts | 169,553 | 162,276 | — | 162,276 | (3,188) | 159,088 |
| Equity option contracts | 100,159 | 4,437 | — | 4,437 | — | 4,437 |
| Total customer risk management programs | 18,814,479 | 307,957 | (50,607) | 257,350 | (21,095) | 236,255 |
| Internal risk management programs | 8,310,950 | 49,564 | — | 49,564 | — | 49,564 |
| Total derivative contracts | $27,125,429 | $357,521 | $(50,607) | $306,914 | $(21,095) | $285,819 |

[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 June 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 | $18,774,134 | $183,118 | $(67,383) | $115,735 | $— | $115,735 |
| Interest rate swaps | 1,299,985 | 54,978 | — | 54,978 | (1,100) | 53,878 |
| Energy contracts | 757,669 | 59,103 | (33,996) | 25,107 | (155) | 24,952 |
| Agricultural contracts | 50,848 | 2,488 | (1,609) | 879 | (37) | 842 |
| Foreign exchange contracts | 701,436 | 675,804 | — | 675,804 | (5,054) | 670,750 |
| Equity option contracts | 116,901 | 4,236 | — | 4,236 | (478) | 3,758 |
| Total customer risk management programs | 21,700,973 | 979,727 | (102,988) | 876,739 | (6,824) | 869,915 |
| Internal risk management programs | 1,337,000 | 13,758 | — | 13,758 | — | 13,758 |
| Total derivative contracts | $23,037,973 | $993,485 | $(102,988) | $890,497 | $(6,824) | $883,673 |

| | 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 | $18,662,334 | $ | | | | |