BOK FINANCIAL CORP ET AL
Form 10-Q
July 31, 2018

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

FORM 10-Q
(Mark One)
ý QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended June 30, 2018
OR
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____________ to ______________

Commission File No. 0-19341

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

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

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

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

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

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

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

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

Emerging growth company ¨

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

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: 65,439,090 shares of common stock ($.00006 par value) as of June 30, 2018.

BOK Financial Corporation
Form 10-Q
Quarter Ended June 30, 2018

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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 $114.4 million or $1.75 per diluted share for the second quarter of 2018, compared to $88.1 million or $1.35 per diluted share for the second quarter of 2017 and $105.6 million or $1.61 per diluted share for the first quarter of 2018.

On June 18, 2018, the Company announced the signing of a definitive merger agreement with CoBiz Financial Inc. CoBiz is headquartered in Denver with a presence in Colorado and Arizona and has approximately $3.8 billion in assets. Upon completion of the merger, CoBiz shareholders will receive 0.17 shares of BOK Financial common stock and $5.70 in cash for each share of CoBiz common stock. The merger is subject to customary closing conditions including regulatory approval.

Highlights of the second quarter of 2018 included:

- Net interest revenue totaled $238.6 million, up from $205.2 million in the second quarter of 2017 and $219.7 million in the first quarter of 2018. The increase in net interest revenue over the prior year was driven by both improving yields and growth in average earning assets. Net interest margin was 3.17 percent for the second quarter of 2018. Net interest margin was 2.89 percent for the second quarter of 2017 and 2.99 percent for the first quarter of 2018. Average earning assets were $30.3 billion for the second quarter of 2018 compared to $29.2 billion for the second quarter of 2017.
- Fees and commissions revenue totaled $157.9 million. Adoption of the new revenue recognition accounting standard in the first quarter of 2018 resulted in interchange fees we pay to issuing banks being netted against transaction card revenue. Previously these fees were included in data processing and communications expense. Excluding this impact, fees and commissions revenue decreased $9.4 million compared to the second quarter of 2017. Brokerage and trading revenue decreased $5.3 million while mortgage banking revenue decreased $3.9 million, both affected by rising interest rates. Fees and commissions revenue decreased $1.1 million compared to the first quarter of 2018. Modest changes in revenue from other business lines was offset by decreased brokerage and trading revenue.
- Other operating expense totaled $246.5 million, a $5.8 million or 2 percent increase over the second quarter of 2017 on a comparable basis. Personnel expense decreased $4.8 million, primarily due to decreased incentive compensation expense. Non-personnel expense increased $10.6 million due largely to an increase in deposit insurance expense as a result of credits in the second quarter of 2017 along with increased project and acquisition costs. Operating expense increased $2.0 million compared to the first quarter of 2018 on a comparable basis. Personnel expense decreased $1.0 million and non-personnel expense increased $3.0 million. Professional fees and services expense and mortgage banking costs were higher in the second quarter.
- Income tax expense was $33.3 million or 22.4 percent of net income before taxes for the second quarter of 2018 compared to $47.7 million or 34.9 percent for the second quarter of 2017. Beginning January 1, 2018, the Tax Cuts and Jobs Act ("the Act") decreased the corporate income tax rate from 35% to 21%.
- The Company recorded no provision for credit losses in the second quarter of 2018. A $5.0 million negative provision for credit losses was recorded in the first quarter of 2018. Net charge-offs totaled $10.5 million or 0.24 percent of average loans on an annualized basis in the second quarter of 2018 compared to net charge-offs of $1.3 million or 0.03 percent of average loans on an annualized basis for the first quarter of 2018. Net charge-offs were $26.9 million or 0.16 percent of average loans over the last four quarters.
- The combined allowance for credit losses totaled $218 million or 1.21 percent of outstanding loans at June 30, 2018 compared to $228 million or 1.32 percent of outstanding loans at March 31, 2018.
- Nonperforming assets that are not guaranteed by U.S. government agencies totaled $186 million or 1.04 percent of outstanding loans and repossessed assets at June 30, 2018 and $195 million or 1.13 percent of outstanding loans and repossessed assets at March 31, 2018. Potential problem loans decreased $82 million to $140 million at June 30, 2018.
- Average loan balances grew by $490 million over the previous quarter, primarily due to growth in commercial and commercial real estate loan balances. Period-end outstanding loan balances totaled $18.0 billion at June 30, 2018, an

increase of more than $665 million over March 31, 2018.

- Average deposits were largely unchanged compared to the previous quarter. Average demand deposit balances increased $72 million, while interest-bearing transaction deposit balances decreased $155 million. Period-end deposits were $22.2 billion at June 30, 2018, a $36 million decrease compared to March 31, 2018.
- The common equity Tier 1 capital ratio at June 30, 2018 was 11.92 percent. Other regulatory capital ratios were Tier 1 capital ratio, 11.92 percent, total capital ratio, 13.26 percent, and leverage ratio, 9.57 percent. At March 31, 2018, the common equity Tier 1 capital ratio was 12.06 percent, the Tier 1 capital ratio was 12.06 percent, total capital ratio was 13.49 percent, and leverage ratio was 9.40 percent.
- The company paid a regular cash dividend of $29.3 million or $0.45 per common share during the second quarter of 2018. On July 24, 2018, the board of directors approved an increase in the quarterly cash dividend to $0.50 per common share payable on or about August 27, 2018 to shareholders of record as of August 13, 2018.
- The company repurchased 8,257 common shares at an average price of $99.84 per share during the second quarter of 2018. The company repurchased 82,583 common shares at an average price of $91.83 per share during the first quarter of 2018.

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 $238.6 million for the second quarter of 2018, up from $205.2 million in the second quarter of 2017 and $219.7 million in the first quarter of 2018. Net interest margin was 3.17 percent for the second quarter of 2018, 2.89 percent for the second quarter of 2017 and 2.99 percent for the first quarter of 2018. Recoveries of foregone interest on nonaccruing loans added $5.3 million or 7 basis points to net interest margin in the second quarter of 2018. Recoveries of foregone interest were not significant in the first quarter of 2018 or the second quarter of 2017. The discussion following excludes the impact of recoveries of foregone interest in the second quarter of 2018 on net interest margin.

In addition to the impact of foregone interest recoveries on the second quarter of 2018, net interest margin was 4 basis points lower in the second quarter of 2018 compared to the second quarter of 2017 due to the impact of lower effective tax rates from the implementation of the Tax Cut and Jobs Act on the tax-equivalent yield of our tax-exempt loans and securities. However, net interest margin was 4 basis points higher in the second quarter of 2018 as we reduced our excess cash balances at the Federal Reserve. Beginning in 2014, the Company increased borrowings from the Federal Home Loan Banks, depositing the excess cash balances in the Federal Reserve to earn a spread. In conjunction with the Federal Reserve's monetary policy normalization, this spread narrowed in the second quarter of 2018.

Tax-equivalent net interest revenue increased $31.0 million over the second quarter of 2017. Table 1 shows the effect on net interest revenue from changes in average balances and interest rates for various types of earning assets and interest-bearing liabilities. Changes in interest rates and yields increased net interest revenue by $20.5 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 $10.5 million due to growth in average assets. Growth in the average balances of trading securities and loans was partially offset by decreases in interest-bearing cash and cash equivalents.

The tax-equivalent yield on earning assets was 3.84 percent, up 54 basis points over the second quarter of 2017, primarily due to increases in short-term interest rates resulting from three 25 basis point increases in the federal funds rate by the Federal Reserve. Loan yields increased 65 basis points to 4.68 percent. The yield on interest-bearing cash and cash equivalents increased 82 basis points. The available for sale securities portfolio yield was up 19 basis points to 2.30 percent. Funding costs were up 48 basis points over the second quarter of 2017. The cost of interest-bearing deposits increased 26 basis points and the cost of other borrowed funds increased 82 basis points. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities was 37 basis points for the second quarter of 2018, up 15 basis points over the second quarter of 2017.

Average earning assets for the second quarter of 2018 increased $1.1 billion or 4 percent over the second quarter of 2017. The average balance of trading securities grew by $1.0 billion, primarily due to expansion of U.S. agency residential mortgage-backed securities trading activities. Average loans, net of allowance for loan losses, increased $650 million, due primarily to growth in commercial loans. Restricted equity security balances were up $53 million. Interest-bearing cash and cash equivalent balances decreased $334 million. Available for sale securities decreased

$221 million. Investment securities balances decreased $100 million.

Average deposits decreased $37 million compared to the second quarter of 2017. Demand deposit balances decreased $115 million and time deposit balances decreased $66 million. Interest-bearing transaction account balances increased $102 million and savings account balances increased $42 million. Average borrowed funds increased $1.0 billion over the second quarter of 2017, primarily due to the net impact of increased borrowings from the Federal Home Loan Banks. Funds purchased and repurchase agreement balances also increased over the prior year.

The yield on average earning assets was 3.84 percent, a 23 basis point increase over the prior quarter. The loan portfolio yield also increased 23 basis points to 4.68 percent. The yield on the available for sale securities portfolio increased 7 basis points to 2.30 percent. The yield on interest-bearing cash and cash equivalents increased 29 basis points. Funding costs were 1.11 percent, up 18 basis points. The cost of interest-bearing deposits increased 9 basis points to 0.66 percent. The cost of other borrowed funds was up 34 basis points to 1.84 percent. The benefit to net interest margin from earning assets funded by non-interest bearing liabilities increased 6 basis points over the prior quarter.

Average earning assets increased $423 million over the first quarter of 2018. Trading securities balances increased $549 million. Average loan balances grew by $490 million. Average interest-bearing cash and cash equivalents balances decreased $386 million. Fair value option securities held as an economic hedge of our mortgage servicing rights decreased $139 million. Available for sale securities decreased $74 million.

Average deposits decreased $72 million compared to the previous quarter. Interest-bearing transaction account balances decreased by $155 million. Demand deposit balances increased $72 million. The average balance of borrowed funds increased $231 million over the first quarter of 2018, primarily due to increased borrowings from the Federal Home Loan Banks and funds purchased and 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 82% of our commercial and commercial real estate loan portfolios are either variable rate or fixed rate that will reprice within one year. These loans are funded primarily by deposit accounts that are either non-interest bearing, or that reprice more slowly than the loans. The result is a balance sheet that would be asset sensitive, which means that assets generally reprice more quickly than liabilities. One of the strategies that we use to manage toward a relative rate-neutral position is to purchase fixed-rate residential mortgage-backed securities issued primarily by U.S. government agencies and fund them with market-rate-sensitive liabilities. The liability-sensitive nature of this strategy provides an offset to the asset-sensitive characteristics of our loan portfolio. We also may use derivative instruments to manage our interest rate risk. For the remainder of 2018, we expect low-to-mid single digit expansion in net interest margin for each 25 basis point increase in the federal funds rate.

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

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

	Three Months Ended June 30, 2018 / 2017			Six Months Ended June 30, 2018 / 2017		
		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	$2,542	$(1,215)	$ 3,757	$6,280	$(1,190)	$ 7,470
Trading securities	9,567	8,625	942	12,007	12,203	(196)
Investment securities:						
Taxable securities	(86)	(24)	(62)	(143)	45	(188)
Tax-exempt securities	(661)	(609)	(52)	(1,346)	(1,160)	(186)
Total investment securities	(747)	(633)	(114)	(1,489)	(1,115)	(374)
Available for sale securities:						
Taxable securities	4,402	247	4,155	7,290	(1,009)	8,299
Tax-exempt securities	(584)	(354)	(230)	(1,119)	(681)	(438)
Total available for sale securities	3,818	(107)	3,925	6,171	(1,690)	7,861
Fair value option securities	388	93	295	2,827	1,725	1,102
Restricted equity securities	1,009	817	192	1,817	1,376	441
Residential mortgage loans held for sale	(53)	(260)	207	(45)	(438)	393
Loans	40,127	6,745	33,382	65,682	8,062	57,620
Total tax-equivalent interest revenue	56,651	14,065	42,586	93,250	18,933	74,317
Interest expense:						
Transaction deposits	7,556	164	7,392	13,836	(29)	13,865
Savings deposits	—	4	(4)	1	9	(8)
Time deposits	785	(193)	978	1,369	(492)	1,861
Funds purchased and repurchase agreements	618	81	537	1,044	39	1,005
Other borrowings	16,637	3,532	13,105	29,831	5,223	24,608
Subordinated debentures	45	(1)	46	23	1	22
Total interest expense	25,641	3,587	22,054	46,104	4,751	41,353
Tax-equivalent net interest revenue	31,010	10,478	20,532	47,146	14,182	32,964
Change in tax-equivalent adjustment	(2,348)			(4,766)		
Net interest revenue	$33,358			$51,912		

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

Other Operating Revenue

Other operating revenue was $156.4 million for the second quarter of 2018, a $15.6 million decrease compared to the second quarter of 2017 and largely unchanged compared to the first quarter of 2018. Fees and commissions revenue decreased $9.4 million compared to the second quarter of 2017 and was very consistent compared to the prior quarter.

Table 2 – Other Operating Revenue
(In thousands)

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar 31, 2018	Increase (Decrease)	% Increase (Decrease)
Brokerage and trading revenue	$26,488	$31,764	$(5,276)	(17)%	$30,648	$(4,160)	(14)%
Transaction card revenue[1]	20,975	20,009	966	5%	20,990	(15)	—%
Fiduciary and asset management revenue	41,699	41,808	(109)	—%	41,832	(133)	—%
Deposit service charges and fees	27,827	28,422	(595)	(2)%	27,161	666	2%
Mortgage banking revenue	26,346	30,276	(3,930)	(13)%	26,025	321	1%
Other revenue	14,518	14,984	(466)	(3)%	12,330	2,188	18%
Total fees and commissions revenue	157,853	167,263	(9,410)	(6)%	158,986	(1,133)	(1)%
Other gains (losses), net	3,983	6,108	(2,125)	N/A	(664)	4,647	N/A
Loss on derivatives, net	(3,057)	3,241	(6,298)	N/A	(5,685)	2,628	N/A
Loss on fair value option securities, net	(3,341)	1,984	(5,325)	N/A	(17,564)	14,223	N/A
Change in fair value of mortgage servicing rights	1,723	(6,943)	8,666	N/A	21,206	(19,483)	N/A
Gain (loss) on available for sale securities, net	(762)	380	(1,142)	N/A	(290)	(472)	N/A
Total other operating revenue	$156,399	$172,033	$(15,634)	(9)%	$155,989	$410	—%
Non-GAAP Reconciliation:[1]							
Transaction card revenue on income statement	$20,975	$30,228	N/A	N/A	$20,990	N/A	N/A
Netting adjustment	—	(10,219)	N/A	N/A	—	N/A	N/A
Transaction card revenue after netting adjustment	$20,975	$20,009	966	5%	$20,990	(15)	—%

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

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

Fees and commissions revenue

Diversified sources of fees and commissions revenue are a significant part of our business strategy and represented 40 percent of total revenue for the second quarter of 2018, excluding provision for credit losses and gains and losses on other assets, securities and derivatives and the change in the fair value of mortgage servicing rights. We believe that a variety of fee revenue sources provides an offset to changes in interest rates, values in the equity markets, commodity prices and consumer spending, all of which can be volatile. As an example of this strength, many of the economic factors such as rising interest rates resulting in growth in net interest revenue or fiduciary and asset management revenue, may also decrease mortgage production volumes. We expect growth in other operating revenue to come through offering new products and services and by further development of our presence in other markets. However, current and future economic conditions, regulatory constraints, increased competition and saturation in our existing markets could affect the rate of future increases.

Brokerage and Trading Revenue

Brokerage and trading revenue, which includes revenues from trading, customer hedging, retail brokerage and investment banking, decreased $5.3 million or 17 percent compared to the second quarter of 2017.

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 $6.3 million for the second quarter of 2018, a $3.7 million or 37 percent decrease compared to the second quarter of 2017. Rising mortgage interest rates narrowed trading margins and slowed turnover of our trading inventory. However, the longer average hold time of trading securities increased net interest revenue by $3.1 million.

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 $9.8 million for the second quarter of 2018, a $1.8 million or 16 percent decrease compared to the second quarter of 2017.

Revenue earned from retail brokerage transactions decreased $1.2 million or 20 percent compared to the second quarter of 2017 to $4.8 million. Retail brokerage revenue includes fees and commissions earned on sales of fixed income securities, annuities, mutual funds and other financial instruments to retail customers. Revenue is primarily based on the volume of customer transactions and applicable commission rate for each product type. The implementation of the new Department of Labor ("DOL") fiduciary rule in the second quarter of 2017 has negatively impacted retail brokerage revenue.

Investment banking revenue, which includes fees earned upon completion of underwriting and financial advisory services and loan syndication fees, totaled $5.5 million for the second quarter of 2018, a $1.5 million or 37 percent increase over the second quarter of 2017. Changes in investment banking revenue are primarily related to the timing and volume of completed transactions.

Brokerage and trading revenue decreased $4.2 million compared to the first quarter of 2018, largely driven by a decrease in trading revenue due primarily to customer reaction to higher interest rates.

Transaction Card Revenue

Transaction card revenue depends largely on the volume and amount of transactions processed, the number of TransFund automated teller machine (“ATM”) locations and the number of merchants served. Transaction card revenue increased $966 thousand or 5 percent over the second quarter of 2017, primarily due to increases in transaction volumes. Transaction card was largely unchanged compared to the first quarter of 2018. The increase in transaction card revenue from the first quarter of 2018 due to an early customer termination fee was matched in the second quarter of 2017 with a seasonal increase in the volume of transactions processed.

Fiduciary and Asset Management Revenue

Fiduciary and asset management revenue is earned through managing or holding of assets for customers and executing transactions or providing related services. Approximately 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 was largely unchanged compared to the second quarter of 2017 and the first quarter of 2018.

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, 2018			June 30, 2017			Mar. 31, 2018		
	Balance	Revenue[1]	Margin[2]	Balance	Revenue[1]	Margin[2]	Balance	Revenue[1]	Margin[2]
Managed fiduciary assets:									
Personal	$7,791,094	$23,307	1.20 %	$7,581,555	$21,698	1.14 %	$7,577,717	22,632	1.19 %
Institutional	13,448,068	5,596	0.17 %	12,265,037	5,475	0.18 %	13,322,472	5,469	0.16 %
Total managed fiduciary assets	21,239,162	28,903	0.54 %	19,846,592	27,173	0.55 %	20,900,189	28,101	0.54 %
Non-managed assets:									
Fiduciary	25,292,738	12,426	0.20 %	25,242,561	14,049	0.22 %	25,748,101	12,997	0.20 %
Non-fiduciary	16,422,810	370	0.01 %	16,579,586	586	0.01 %	16,321,458	734	0.02 %
Safekeeping and brokerage assets under administration	15,918,736	—	— %	16,143,023	—	— %	15,909,241	—	— %
Total non-managed assets	57,634,284	12,796	0.09 %	57,965,170	14,635	0.10 %	57,978,800	13,731	0.09 %
Total assets under management or administration	$78,873,446	$41,699	0.21 %	$77,811,762	$41,808	0.21 %	$78,878,989	$41,832	0.21 %

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, 2018 and 2017 follows:

Table 4 -- Changes in Assets Under Management or Administration

	Three Months Ended	
	June 30,	
	2018	2017
Beginning balance	$78,878,989	$77,418,956
Net inflows (outflows)	(746,477)	(918,076)
Net change in fair value	740,934	1,310,882
Ending balance	$78,873,446	$77,811,762

Mortgage Banking Revenue

Mortgage banking revenue decreased $3.9 million or 13 percent compared to the second quarter of 2017 due to a decrease in mortgage production revenue. Mortgage loan production volumes decreased $157 million or 18 percent. Production volumes decreased compared to the prior year as average primary mortgage interest rates were up 56 basis points over the second quarter of 2017. Mortgage servicing revenue was relatively consistent compared to the second quarter of 2017. The outstanding principal balance of mortgage loans serviced for others totaled $22.0 billion, consistent with the second quarter of 2017.

Table 5 – Mortgage Banking Revenue
(In thousands)

	Three Months Ended June 30, 2018	2017	Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2018	Increase (Decrease)	% Increase (Decrease)
Mortgage production revenue	$9,915	$13,840	$(3,925)	(28)%	$9,452	$463	5 %
Mortgage loans funded for sale	$773,910	$902,978			$664,958		
Add: Current period end outstanding commitments	251,231	362,088			298,318		
Less: Prior period end outstanding commitments	298,318	381,732			222,919		
Total mortgage production volume	$726,823	$883,334	$(156,511)	(18)%	$740,357	$(13,534)	(2)%
Mortgage loan refinances to mortgage loans funded for sale	22 %	33 %	(1,100) bps		42 %	(2,000) bps	
Gains on sale margin	1.36 %	1.57 %	(21) bps		1.28 %	8 bps	
Primary mortgage interest rates:							
Average	4.54 %	3.98 %	56 bps		4.28 %	26 bps	
Period end	4.55 %	3.88 %	67 bps		4.44 %	11 bps	
Mortgage servicing revenue	$16,431	$16,436	$(5)	— %	$16,573	$(142)	(1)%
Average outstanding principal balance of mortgage loans serviced for others	21,986,065	22,055,127	(69,062)	— %	22,027,726	(41,661)	— %
Average mortgage servicing revenue rates	0.30 %	0.30 %	—		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 $4.0 million in the second quarter of 2018 compared to net gains of $6.1 million in the second quarter of 2017. The second quarter of 2017 included the sale of a merchant banking investment. Other net losses totaled $664 thousand in the first quarter of 2018.

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.

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

	Three Months Ended		
	June 30, 2018	Mar. 31, 2018	June 30, 2017
Gain (loss) on mortgage hedge derivative contracts, net	$(3,070)	$(5,698)	$3,241
Gain (loss) on fair value option securities, net	(3,341)	(17,564)	1,984
Gain (loss) on economic hedge of mortgage servicing rights, net	(6,411)	(23,262)	5,225
Gain (loss) on change in fair value of mortgage servicing rights	1,723	21,206	(6,943)
Loss on changes in fair value of mortgage servicing rights, net of economic hedges included in other operating revenue	(4,688)	(2,056)	(1,718)
Net interest revenue on fair value option securities[1]	1,203	1,800	1,965
Total economic benefit (cost) of changes in the fair value of mortgage servicing rights, net of economic hedges	$(3,485)	$(256)	$247

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

During the second quarter of 2018, we changed certain assumptions used in our prepayment speed model to better align with current market expectations. During the second quarter of 2018 the fair value of our mortgage servicing rights was reduced by $3.7 million due primarily to an update of assumptions in our prepayment model designed to better align our model with current market behavior and observed portfolio performance.

Other Operating Expense

Other operating expense for the second quarter of 2018 totaled $246.5 million, an increase of $5.8 million or 2 percent compared to the second quarter of 2017. Personnel expense decreased $4.8 million or 3 percent. Non-personnel expense increased $10.6 million or 11 percent compared to the prior year.

Other operating expense increased $2.0 million over the previous quarter. Personnel expense decreased $1.0 million and non-personnel expense increased $3.0 million.

Table 7 – Other Operating Expense
(In thousands)

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	Increase (Decrease)	% Increase (Decrease)	Three Months Ended Mar. 31, 2018	Increase (Decrease)	% Increase (Decrease)
Regular compensation	$86,231	$83,630	$ 2,601	3 %	$84,991	$ 1,240	1 %
Incentive compensation:							
Cash-based	31,933	29,954	1,979	7 %	29,549	2,384	8 %
Share-based	(1,361)	7,380	(8,741)	(118)%	2,902	(4,263)	(147)%
Deferred compensation	900	1,000	(100)	N/A	44	856	N/A
Total incentive compensation	31,472	38,334	(6,862)	(18)%	32,495	(1,023)	(3)%
Employee benefits	21,244	21,780	(536)	(2)%	22,461	(1,217)	(5)%
Total personnel expense	138,947	143,744	(4,797)	(3)%	139,947	(1,000)	(1)%
Business promotion	7,686	7,738	(52)	(1)%	6,010	1,676	28 %
Professional fees and services	14,978	12,419	2,559	21 %	10,200	4,778	47 %
Net occupancy and equipment	22,761	21,125	1,636	8 %	24,046	(1,285)	(5)%
Insurance	6,245	689	5,556	806 %	6,593	(348)	(5)%
Data processing and communications[1]	27,739	26,111	1,628	6 %	27,817	(78)	— %
Printing, postage and supplies	4,011	4,140	(129)	(3)%	4,089	(78)	(2)%
Net losses (gains) and operating expenses of repossessed assets	2,722	2,267	455	20 %	7,705	(4,983)	(65)%
Amortization of intangible assets	1,386	1,803	(417)	(23)%	1,300	86	7 %
Mortgage banking costs	12,890	12,072	818	7 %	10,149	2,741	27 %
Other expense	7,111	8,558	(1,447)	(17)%	6,574	537	8 %
Total other operating expense	$246,476	$240,666	$ 5,810	2 %	$244,430	$ 2,046	1 %
Average number of employees (full-time equivalent)	4,875	4,910	(35)	(1)%	4,899	(24)	— %
Non-GAAP Reconciliation:[1]							
Data processing and communications expense on income statement	27,739	36,330	N/A	N/A	27,817	N/A	N/A
Netting adjustment	—	(10,219)	N/A	N/A	—	N/A	N/A
Data processing and communications expense after netting adjustment	27,739	26,111	N/A	N/A	27,817	N/A	N/A

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

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

Personnel expense

Regular compensation, which consists of salaries and wages, overtime pay and temporary personnel costs, increased $2.6 million or 3 percent over the second quarter of 2017. The average number of employees was relatively unchanged compared to the prior year. Standard annual merit increases in regular compensation were effective for the majority of our staff on March 1.

Incentive compensation decreased $6.9 million or 18 percent compared to the second quarter of 2017, primarily due to decreased share-based compensation expense based on changes in assumptions of certain performance-based equity awards. 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 are variable based on changes in the the fair value of BOK Financial common shares.

Cash-based incentive compensation plans are either intended to provide current rewards to employees who generate long-term business opportunities for the Company based on growth in loans, deposits, customer relationships and other measurable metrics or intended to compensate employees with commissions on completed transactions. Cash-based incentive compensation expense increased $2.0 million or 7 percent over the second quarter of 2017.

Employee benefits expense decreased $536 thousand or 2 percent compared to the second quarter of 2017.
Personnel expense decreased $1.0 million compared to the first quarter of 2018. Incentive compensation expense decreased $1.0 million. Regular compensation expense increased $1.2 million. A $2.3 million seasonal decrease in payroll tax expense was partially offset by a $1.3 million increase in employee healthcare costs. The Company is self-insured and these costs may be volatile.

Non-personnel operating expense

Non-personnel operating expense increased $10.6 million or 11 percent compared to the second quarter of 2017.

Deposit insurance expense increased $5.6 million over the second quarter of 2017. The second quarter of 2017 included $5.1 million in credits related to the revision of certain inputs to the assessment calculation filed for years 2013 through 2016.

Professional fees and services expense increased $2.6 million or 21 percent mainly due to the inclusion of CoBiz acquisition costs and an increase in Consumer Banking related project costs in the second quarter of 2018.

Data processing and communications expense increased $1.6 million or 6 percent. Occupancy and equipment expense increased $1.6 million or 8 percent. These increases were primarily related to increased project costs and data processing transaction activity.
Non-personnel expense increased $3.0 million compared to the first quarter of 2018. Professional fees and services expense increased $4.8 million mainly due to expenses related to project costs of $1.8 million, CoBiz acquisition expenses of $1.0 million and $953 thousand in seasonal tax preparation charges from trust operations. Mortgage banking costs increased $2.7 million primarily due to a $1.9 million increase in accruals related to default servicing and loss mitigation costs on loans serviced for others.
Net losses and operating expenses of repossessed assets decreased $5.0 million, primarily due to a write-down of a set of repossessed oil and gas properties in the first quarter of 2018.

Income Taxes

The Company's income tax expense was $33.3 million or 22.4 percent of net income before taxes for the second quarter of 2018 compared to $47.7 million or 34.9 percent of net income before taxes for the second quarter of 2017 and $30.9 million or 22.7 percent of net income before taxes for the first quarter of 2018.

The Tax Cut and Jobs Act ("the Act") enacted on December 22, 2017 reduced the federal corporate tax rate from 35 percent to 21 percent beginning January 1, 2018. The Company continues to evaluate the impact the Act will have on its financial position and results of operations, including recognition and measurement of deferred tax assets and liabilities and the determination of effective current and deferred federal and state income tax rates. We initially recorded provisional adjustments of $11.7 million as a charge to income tax expense in the fourth quarter of 2017. We recorded an additional $1.9 million of net income tax expense for changes in provisional adjustments identified in the first quarter of 2018. No adjustments to provisional amounts were made during the second quarter of 2018.

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

BOK Financial operates in numerous jurisdictions, which requires judgment regarding the allocation of income, expense and earnings under various laws and regulations of each of these taxing jurisdictions. Each jurisdiction may audit our tax returns and may take different positions with respect to these allocations. The reserve for uncertain tax positions was $20 million at June 30, 2018, $20 million at March 31, 2018 and $17 million at June 30, 2017.

Lines of Business

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

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

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

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

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

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

As shown in Table 8, net income attributable to our lines of business was up $20.4 million or 22% percent over the second quarter of 2017. Net interest revenue grew by $25.6 million over the prior year, primarily due to loan growth. Other operating revenue decreased by $12.4 million primarily due to decreased mortgage banking revenue and brokerage and trading revenue. The second quarter of 2017 included a gain on a merchant banking investment. Operating expense decreased by $153 thousand. Income tax expense attributable to the lines of business was down $23 million, primarily due to lower corporate tax rates related to tax reform.

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Commercial Banking	$87,577	$71,345	$166,822	$139,756
Consumer Banking	6,102	6,332	15,478	9,577
Wealth Management	20,119	15,689	39,728	29,848
Subtotal	113,798	93,366	222,028	179,181
Funds Management and other	574	(5,219)	(2,094)	(2,678)
Total	$114,372	$88,147	$219,934	$176,503

Commercial Banking

Commercial Banking contributed $87.6 million to consolidated net income in the second quarter of 2018, an increase of $16.2 million or 23 percent over the second quarter of 2017. Growth in net interest revenue was partially offset by higher net charge-offs. In addition, the second quarter of 2017 included a $5.6 million gain on the sale of a merchant banking investment.

Table 9 -- Commercial Banking
(Dollars in thousands)

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	Increase (Decrease)	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017	Increase (Decrease)
Net interest revenue from external sources	$182,127	$154,377	$27,750	$342,541	$301,753	$40,788
Net interest expense from internal sources	(37,102)	(21,715)	(15,387)	(65,445)	(39,831)	(25,614)
Total net interest revenue	145,025	132,662	12,363	277,096	261,922	15,174
Net loans charged off (recovered)	10,108	1,228	8,880	10,735	(236)	10,971
Net interest revenue after net loans charged off (recovered)	134,917	131,434	3,483	266,361	262,158	4,203
Fees and commissions revenue[1]	42,874	40,303	2,571	82,891	76,303	6,588
Other gains (losses), net	173	5,831	(5,658)	(169)	7,473	(7,642)
Other operating revenue	43,047	46,134	(3,087)	82,722	83,776	(1,054)
Personnel expense	29,584	28,271	1,313	58,505	55,633	2,872
Non-personnel expense[1]	17,899	21,021	(3,122)	35,445	37,361	(1,916)
Other operating expense	47,483	49,292	(1,809)	93,950	92,994	956
Net direct contribution	130,481	128,276	2,205	255,133	252,940	2,193
Gain on financial instruments, net	9	3	6	16	41	(25)
Gain (loss) on repossessed assets, net	(67)	1,403	(1,470)	(4,232)	1,398	(5,630)
Corporate expense allocations	11,269	8,955	2,314	23,776	17,674	6,102
Income before taxes	119,154	120,727	(1,573)	227,141	236,705	(9,564)
Federal and state income tax	31,577	49,382	(17,805)	60,319	96,949	(36,630)
Net income	$87,577	$71,345	$16,232	$166,822	$139,756	$27,066
Average assets	$18,072,155	$17,791,671	$280,484	$17,933,756	$17,716,738	$217,018
Average loans	14,900,918	14,390,452	510,466	14,665,144	14,297,634	367,510
Average deposits	8,379,584	8,696,691	(317,107)	8,521,231	8,688,028	(166,797)
Average invested capital	1,345,840	1,290,167	55,673	1,352,648	1,313,997	38,651

1 Fees and commission revenue for 2017 has been adjusted on a comparable basis with 2018 (Non-GAAP measure) to net $10.2 million and $19.4 million of interchange fees paid to issuing banks on card transactions processed by our TransFund merchant processing services for the three and six months ended June 30, 2017, respectively. The discussion following is based on this comparable basis.

Net interest revenue increased $12.4 million or 9 percent over the prior year. Growth in net interest revenue was primarily due to yields on commercial loans rising in excess of funding costs and a $510 million or 4 percent increase in average loan balances. Yields on deposits sold to the funds management unit also went up due to the increase in short-term interest rates. Net loans charged-off increased $8.9 million. Over half of 2018 net charge-offs was from an energy loan previously identified as impaired and appropriately reserved.

Fees and commissions revenue increased $2.6 million or 6 percent over the second quarter of 2017, primarily due to increases in transaction card volumes. In addition, loan syndication fees and commercial deposit service charges and fees were up over the prior year.

Operating expenses decreased $1.8 million or 4 percent percent compared to the second quarter of 2017. Personnel expense increased $1.3 million or 5 percent, primarily due to incentive compensation expense. Non-personnel expense decreased $3.1 million or 15 percent.

Corporate expense allocations were up $2.3 million or 26 percent over the prior year, primarily due to enhancements of activity based costing drivers to better reflect services being utilized by the Commercial Banking line of business.

The average outstanding balance of loans attributed to Commercial Banking were up $510 million or 4 percent over the second quarter of 2017 to $14.9 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 $8.4 billion for the second quarter of 2018, a 4% decrease compared to the second quarter of 2017. See Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital for further discussion of change.

Consumer Banking

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

Consumer Banking contributed $6.1 million to consolidated net income for the second quarter of 2018, a decrease of $230 thousand compared to the second quarter of 2017. Growth in net interest revenue was partially offset by decreased mortgage banking revenue. Changes in the fair value of mortgage servicing rights, net of economic hedges, decreased pre-tax net income for second quarter of 2018 $4.7 million compared to a $1.7 million decrease in pre-tax net income in the second quarter of 2017.

Table 10 -- Consumer Banking
(Dollars in thousands)

	Three Months Ended June 30, 2018	Three Months Ended June 30, 2017	Increase (Decrease)	Six Months Ended June 30, 2018	Six Months Ended June 30, 2017	Increase (Decrease)
Net interest revenue from external sources	$21,746	$20,756	$990	$43,499	$39,348	$4,151
Net interest revenue from internal sources	17,548	13,447	4,101	32,772	25,864	6,908
Total net interest revenue	39,294	34,203	5,091	76,271	65,212	11,059
Net loans charged off	1,139	926	213	2,440	2,199	241
Net interest revenue after net loans charged off	38,155	33,277	4,878	73,831	63,013	10,818
Fees and commissions revenue	46,332	50,745	(4,413)	91,296	95,939	(4,643)
Other losses, net	(12)	(1)	(11)	(27)	(60)	33
Other operating revenue	46,320	50,744	(4,424)	91,269	95,879	(4,610)
Personnel expense	24,995	25,133	(138)	49,336	50,052	(716)
Non-personnel expense	30,911	29,992	919	56,424	57,939	(1,515)
Total other operating expense	55,906	55,125	781	105,760	107,991	(2,231)
Net direct contribution	28,569	28,896	(327)	59,340	50,901	8,439
Gain (loss) on financial instruments, net	(6,411)	5,224	(11,635)	(29,672)	3,557	(33,229)
Change in fair value of mortgage servicing rights	1,723	(6,943)	8,666	22,929	(5,087)	28,016
Gain (loss) on repossessed assets, net	174	98	76	66	(39)	105
Corporate expense allocations	15,867	16,912	(1,045)	31,897	33,658	(1,761)
Income before taxes	8,188	10,363	(2,175)	20,766	15,674	5,092
Federal and state income tax	2,086	4,031	(1,945)	5,288	6,097	(809)
Net income	$6,102	$6,332	$(230)	$15,478	$9,577	$5,901
Average assets	$8,353,558	$8,441,831	$(88,273)	$8,410,513	$8,360,022	$50,491
Average loans	1,716,259	1,733,165	(16,906)	1,731,115	1,736,870	(5,755)
Average deposits	6,579,635	6,618,958	(39,323)	6,558,980	6,576,664	(17,684)

Average invested capital	293,420	298,165	(4,745)	284,797	300,990	(16,193)

Net interest revenue from Consumer Banking activities grew by $5.1 million or 15 percent over the the second quarter of 2017, primarily due to increased rates received on deposit balances sold to the Funds Management unit.

Fees and commissions revenue decreased $4.4 million or 9 percent compared to the second quarter of 2017. Higher interest rates in the second quarter of 2018 decreased mortgage loan production volumes and gains on sale margin were lower compared to the prior year.

Operating expenses increased $781 thousand or 1 percent over the second quarter of 2017. Personnel expenses were largely unchanged compared to the second quarter of 2017. Non-personnel expenses increased $919 thousand or 3 percent over the prior year. Professional fees increased $904 thousand. Mortgage banking costs were up $818 thousand, primarily due to a decrease in accruals related to default servicing and loss mitigation costs on loans serviced for others. These increases were partially offset by lower data processing and communications expense and miscellaneous expense.

Corporate expense allocations were $1.0 million or 6 percent lower than the prior year.

Average consumer deposits were largely unchanged compared to the second quarter of 2017. Demand deposit balances grew by $126 million or 7 percent and savings deposit balances were up $42 million or 10 percent. Higher-costing time deposit balances decreased $129 million or 13 percent and interest-bearing transaction account balances decreased $79 million or 2 percent.

Wealth Management

Wealth Management contributed $20.1 million to consolidated net income in the second quarter of 2018, up $4.4 million or 28 percent over the second quarter of 2017. Growth in net interest revenue was partially offset by a decrease in brokerage and trading revenue.

Table 11 -- Wealth Management
(Dollars in thousands)

	Three Months Ended June 30,		Increase (Decrease)	Six Months Ended June 30,		Increase (Decrease)
	2018	2017		2018	2017	
Net interest revenue from external sources	$18,754	$10,475	$8,279	$34,161	$21,960	$12,201
Net interest revenue from internal sources	10,232	10,325	(93)	20,164	19,181	983
Total net interest revenue	28,986	20,800	8,186	54,325	41,141	13,184
Net loans charged off (recovered)	(105)	(92)	(13)	(153)	(53)	(100)
Net interest revenue after net loans charged off (recovered)	29,091	20,892	8,199	54,478	41,194	13,284
Fees and commissions revenue	70,489	75,553	(5,064)	145,296	149,474	(4,178)
Other gains, net	153	16	137	113	253	(140)
Other operating revenue	70,642	75,569	(4,927)	145,409	149,727	(4,318)
Personnel expense	45,653	45,477	176	92,600	90,264	2,336
Non-personnel expense	15,838	15,139	699	31,695	30,761	934
Other operating expense	61,491	60,616	875	124,295	121,025	3,270
Net direct contribution	38,242	35,845	2,397	75,592	69,896	5,696
Corporate expense allocations	11,142	9,947	1,195	22,097	20,619	1,478
Income before taxes	27,100	25,898	1,202	53,495	49,277	4,218
Federal and state income tax	6,981	10,209	(3,228)	13,767	19,429	(5,662)
Net income	$20,119	$15,689	$4,430	$39,728	$29,848	$9,880
Average assets	$8,495,557	$6,960,872	$1,534,685	$8,296,780	$6,960,872	$1,335,908
Average loans	1,413,170	1,289,846	123,324	1,401,613	1,289,846	111,767
Average deposits	5,834,669	5,556,680	277,989	5,749,045	5,556,680	192,365
Average invested capital	248,367	230,228	18,139	249,827	230,228	19,599

Net interest revenue increased $8.2 million or 39 percent over the second quarter of 2017. Average trading securities increased $1.0 billion and average loans attributed to the Wealth Management segment increased $123 million or 10 percent. Average deposit balances increased by $278 million or 5 percent over the second quarter of 2017, primarily due to a $217 million or 6 percent increase in interest-bearing transaction account balances and a $75 million or 10 percent increase in time deposit balances.

Fees and commissions revenue decreased $5.1 million or 7 percent compared to the second quarter of 2017. Rising mortgage interest rates narrowed margins on securities and slowed turnover of our trading inventory.

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 2018, the Wealth Management division participated in 93 state and municipal bond underwritings that totaled $1.3 billion. As a participant, the Wealth Management division was responsible for facilitating the sale of approximately $493 million of these underwritings. The Wealth Management division also participated in 6 corporate debt underwritings that totaled $3.0 billion. Our interest in these underwritings was $55 million. In the second quarter of 2017, the Wealth Management division participated in 74 state and municipal bond underwritings that totaled approximately $1.4 billion. Our interest in these underwritings totaled approximately $397 million. The Wealth Management division also participated in 6 corporate debt underwritings that totaled $2.3 billion. Our interest in these underwritings was $47 million.

Operating expense increased $875 thousand or 1 percent over the second quarter of 2017. Personnel expense was largely unchanged compared to the prior year. Non-personnel expense increased $699 thousand or 5 percent.

Corporate expense allocations were up $1.2 million or 12 percent over 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, 2018, December 31, 2017 and June 30, 2017.

We hold an inventory of trading securities in support of sales to a variety of customers, including banks, corporations, insurance companies, money managers and others. Trading securities increased $617 million to $1.9 billion during the second quarter of 2018 in response to expanded relationships with mortgage loan originator clients as well as slower inventory turnover rates. As discussed in the Market Risk section of this report, trading activities involve risk of loss from adverse price movement. We mitigate this risk within board-approved limits through the use of derivative contracts, short-sales and other techniques. These limits remain unchanged from levels set before our expanded trading activities.

At June 30, 2018, the carrying value of investment (held-to-maturity) securities was $392 million and the fair value was $403 million. Investment securities consist primarily of long-term, fixed rate Oklahoma and Texas municipal bonds, taxable Texas school construction bonds and residential mortgage-backed securities issued by U.S. government agencies. The investment security portfolio is diversified among issuers. The largest obligation of any single issuer is $30 million. Substantially all of these bonds are general obligations of the issuers. Approximately $92 million of the $199 million portfolio of Texas school construction bonds is also guaranteed by the Texas Permanent School Fund Guarantee Program supervised by the State Board of Education for the State of Texas.

Available for sale securities, which may be sold prior to maturity, are carried at fair value. Unrealized gains or losses, net of deferred taxes, are recorded as accumulated other comprehensive income in shareholders' equity. The amortized cost of available for sale securities totaled $8.3 billion at June 30, 2018, a $54 million decrease compared to March 31, 2018. At June 30, 2018, the available for sale securities portfolio consisted primarily of U.S. government agency residential mortgage-backed securities and U.S. government agency commercial mortgage-backed securities. Both residential and commercial mortgage-backed securities have credit risk from delinquency or default of the underlying loans. We mitigate this risk by primarily investing in securities issued by U.S. government agencies. Principal and interest payments on the underlying loans are fully guaranteed. Commercial mortgage-backed securities have prepayment penalties similar to commercial loans.

A primary risk of holding residential mortgage-backed securities comes from extension during periods of rising interest rates or prepayment during periods of falling interest rates. We evaluate this risk through extensive modeling of risk both before making an investment and throughout the life of the security. Our best estimate of the duration of the combined residential mortgage-backed securities portfolio held in investment and available for sale securities at June 30, 2018 is 3.5 years. Management estimates the duration extends to 4.2 years assuming an immediate 200 basis point upward shock. The estimated duration contracts to 3.2 years assuming a 50 basis point decline in the current low rate environment.

The aggregate gross amount of unrealized losses on available for sale securities totaled $205 million at June 30, 2018, compared to $177 million at March 31, 2018. On a quarterly basis, we perform an evaluation on debt securities to determine if the unrealized losses are temporary as more fully described in Note 2 of the Consolidated Financial Statements. No other-than-temporary impairment charges were recognized in earnings during the second quarter of 2018.

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

Loans

The aggregate loan portfolio before allowance for loan losses totaled $18.0 billion at June 30, 2018, up more than $665 million over March 31, 2018, primarily due to growth in commercial and commercial real estate loan balances. Personal loan balances grew slightly while residential mortgage loans were largely unchanged.

Table 12 -- Loans
(In thousands)

	June 30, 2018	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017
Commercial:					
Energy	$3,147,219	$2,969,618	$2,930,156	$2,867,981	$2,847,240
Services	2,944,499	2,928,294	2,986,949	2,967,513	2,958,827
Healthcare	2,353,722	2,359,928	2,314,753	2,239,451	2,221,518
Wholesale/retail	1,699,554	1,531,576	1,471,256	1,658,098	1,543,695
Manufacturing	647,816	559,695	496,774	519,446	546,137
Other commercial and industrial	556,229	570,556	534,087	543,445	520,538