KENNEDY DOUGLAS L
Form 4
December 07, 2017

FORM 4

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

OMB APPROVAL

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
KENNEDY DOUGLAS L

(Last) (First) (Middle)

500 HILLS DRIVE, SUITE 300, PO BOX 700

(Street)

BEDMINSTER, NJ 07921-0700

(City) (State) (Zip)

2. Issuer Name **and** Ticker or Trading Symbol
PEAPACK GLADSTONE FINANCIAL CORP [PGC]

3. Date of Earliest Transaction (Month/Day/Year)
12/04/2017

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

__X__ Director _____ 10% Owner
__X__ Officer (give title below) _____ Other (specify below)
President & CEO

6. Individual or Joint/Group Filing(Check Applicable Line)
_X_ Form filed by One Reporting Person
___ Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1.Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	12/04/2017		F		2,339	D	$ 35.06	180,179.749	D (2)	
Common Stock								7,109.0802 (1)	I	401 (K)
Common Stock								3,833.717	I	Employee Stock Purchase Plan

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (*e.g.*, puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Underlying Securities (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Nu Deriv Secur Bene Owne Follo Repo Trans (Instr
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares		

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
KENNEDY DOUGLAS L 500 HILLS DRIVE, SUITE 300 PO BOX 700 BEDMINSTER, NJ 07921-0700	X		President & CEO	

Signatures

Douglas L. Kennedy	12/07/2017
**Signature of Reporting Person	Date

Explanation of Responses:

* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) Includes 401 (K) contributions to purchase PGC stock.

(2) 18,284 shares held in trust

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34,776

35,651

37,801

32,866

31,613

Time

231,927

228,458

234,740

242,782

247,667

Total interest-bearing

895,510

890,452

883,051

892,327

902,335

Total Colorado State Bank & Trust

1,435,810

1,468,069

1,484,829

1,468,327

1,419,398

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

In addition to deposits, liquidity is provided primarily by federal funds purchased, securities repurchase agreements and Federal Home Loan Bank borrowings. Federal funds purchased consist primarily of unsecured, overnight funds acquired from other financial institutions. Funds are primarily purchased from bankers' banks and Federal Home Loan banks from across the country. The largest single source of wholesale federal funds purchased totaled $13 million at September 30, 2017. Securities repurchase agreements generally mature within 90 days and are secured by certain available for sale securities. Federal Home Loan Bank borrowings are generally short term and are secured by a blanket pledge of eligible collateral (generally unencumbered U.S. Treasury and agency mortgage-backed securities, 1-4 family residential mortgage loans, multifamily and other qualifying commercial real estate loans). Amounts borrowed from the Federal Home Loan Bank of Topeka averaged $6.1 billion during the quarter, up from $5.5 billion in the second quarter of 2017.

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

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

Table 27 -- Borrowed Funds
(In thousands)

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

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

Parent Company

At September 30, 2017, cash and interest-bearing cash and cash equivalents held by the parent company totaled $162 million. The primary sources of liquidity for BOK Financial are cash on hand and dividends from BOKF, NA. Dividends from the bank are limited by various banking regulations to net profits, as defined, for the year plus retained profits for the two preceding years. Dividends are further restricted by minimum capital requirements. At September 30, 2017, based upon the most restrictive limitations as well as management's internal capital policy, the bank could declare up to $343 million of dividends without regulatory approval. Dividend constraints may be alleviated through increases in retained earnings, capital issuances or changes in risk weighted assets. Future losses or increases in required regulatory capital at the bank could affect its ability to pay dividends to the parent company.

Our equity capital at September 30, 2017 was $3.5 billion, an increase of $66 million over June 30, 2017. Net income less cash dividends paid increased equity $57 million during the third quarter of 2017. Capital is managed to maximize long-term value to the shareholders. Factors considered in managing capital include projections of future earnings, asset growth and acquisition strategies, and regulatory and debt covenant requirements. Capital management may include subordinated debt or perpetual preferred stock issuance, share repurchase and stock and cash dividends.

On October 27, 2015, the board of directors authorized the Company to purchase up to five million common shares, subject to market conditions, securities law and other regulatory compliance limitations. As of September 30, 2017, a cumulative total of 2,879,243 shares have been repurchased under this authorization. No shares were repurchased in the third quarter of 2017.
BOK Financial and BOKF, NA are subject to various capital requirements administered by federal agencies. Failure to meet minimum capital requirements can result in certain mandatory and possibly additional discretionary actions by regulators that could have a material impact on operations. These capital requirements include quantitative measures of assets, liabilities and off-balance sheet items. The capital standards are also subject to qualitative judgments by the regulators.
Effective January 1, 2015 for BOK Financial, regulatory capital rules establish a 7 percent threshold for the common equity Tier 1 ratio consisting of a minimum level plus capital conservation buffer. The Company has elected to exclude unrealized gains and losses from available for sale securities from its calculation of Tier 1 capital, consistent with the treatment under previous capital rules.

A summary of minimum capital requirements, including capital conservation buffer follows in Table 28. A bank which falls below these levels, including the capital conservation buffer, would be subject to regulatory restrictions on capital distributions (including but not limited to dividends and share repurchases) and executive bonus payments.

The capital ratios for BOK Financial on a consolidated basis are presented in Table 28.

Table 28 -- Capital Ratios

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

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

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

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

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

Off-Balance Sheet Arrangements

See Note 7 to the Consolidated Financial Statements for a discussion of the Company’s significant off-balance sheet commitments.

Market Risk

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

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

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

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

Explanation of Responses:

Interest Rate Risk – Other than Trading

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

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

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

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

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

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

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

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

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

Trading Activities

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

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

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

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

	Three Months Ended September 30, 2017		2016		Nine Months Ended September 30, 2017		2016	
	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp	Up 50 bp	Down 50 bp
Average[1]	$(167)	$(881)	$(590)	$(449)	$21	$(1,172)	$(2,778)	$(542)
Low[2]	1,314	187	930	1,055	1,314	187	930	1,815
High[3]	(1,533)	(1,993)	(2,563)	(2,030)	(1,553)	(2,377)	(6,858)	(2,953)
Period End	(744)	(374)	(76)	360	(744)	(374)	(76)	360

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

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

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

BOK Financial enters into trading activities both as an intermediary for customers and for its own account. As an intermediary, we take positions in securities, generally residential mortgage-backed securities, government agency securities and municipal bonds. These securities are purchased for resale to customers, which include individuals, corporations, foundations and financial institutions. On a limited basis, we may also take trading positions in U.S. Treasury securities, residential mortgage-backed securities, and municipal bonds to enhance returns on securities portfolios. Both of these activities involve interest rate, liquidity and price risk. BOK Financial has an insignificant exposure to foreign exchange risk and does not take positions in commodity derivatives.

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

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

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

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

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

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

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

Controls and Procedures

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

Forward-Looking Statements

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

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

See accompanying notes to consolidated financial statements.

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

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

See accompanying notes to consolidated financial statements.

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Consolidated Balance Sheets
(In thousands, except share data)

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

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

See accompanying notes to consolidated financial statements.

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

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

See accompanying notes to consolidated financial statements.

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

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

Repurchase of common stock	—	(17,771)
Dividends paid	(86,481)	(84,832)
Net cash provided by (used in) financing activities	(219,339)	775,547
Net increase (decrease) in cash and cash equivalents	(63,515)	(26,705)
Cash and cash equivalents at beginning of period	2,537,497	2,643,599
Cash and cash equivalents at end of period	$2,473,982	$2,616,894
Supplemental Cash Flow Information:		
Cash paid for interest	$89,901	$61,522
Cash paid for taxes	$95,967	$43,096
Net loans and bank premises transferred to repossessed real estate and other assets	$4,649	$20,580
Residential mortgage loans guaranteed by U.S. government agencies that became eligible for repurchase during the period	$101,299	$79,710
Conveyance of other real estate owned guaranteed by U.S. government agencies	$32,033	$50,855

See accompanying notes to consolidated financial statements.

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Notes to Consolidated Financial Statements (Unaudited)

(1) Significant Accounting Policies

Basis of Presentation

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

The unaudited consolidated financial statements include accounts of BOK Financial and its subsidiaries, principally BOKF, NA (“the Bank”), BOK Financial Securities, Inc., The Milestone Group, Inc. and Cavanal Hill Investment Management Inc. Operating divisions of the Bank include Bank of Albuquerque, Bank of Arizona, Bank of Arkansas, Bank of Oklahoma, Bank of Texas, Colorado State Bank and Trust, Mobank, BOK Financial Mortgage and the TransFund electronic funds network.

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

The financial information should be read in conjunction with BOK Financial’s 2016 Form 10-K filed with the Securities and Exchange Commission, which contains audited financial statements. Amounts presented as of December 31, 2016 have been derived from the audited financial statements included in BOK Financial’s 2016 Form 10-K but do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. Operating results for the nine-month period ended September 30, 2017 are not necessarily indicative of the results that may be expected for the year ending December 31, 2017.

Newly Adopted and Pending Accounting Policies

Financial Accounting Standards Board (“FASB”)

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

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

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

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

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

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

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

On February 25, 2016, the FASB issued ASU 2016-02 to increase transparency and comparability by recognizing lease assets and liabilities on the balance sheet and disclosing key information about leasing arrangements. Lessees will be required to recognize an obligation for future lease payments measured on a discounted basis and a right-of-use asset. The ASU is effective for the Company for interim and annual periods beginning after December 15, 2018 and requires transition through a modified retrospective approach for leases existing at or entered into after January 1, 2017. The Company is evaluating the impact the adoption of ASU 2016-02 will have on the Company's financial statements.

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

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

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

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

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

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

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

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

(2) Securities
Trading Securities

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

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

Investment Securities

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

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

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

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

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

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

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

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The amortized cost and fair values of investment securities at September 30, 2017, by contractual maturity, are as shown in the following table (dollars in thousands):

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

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

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

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

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.

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Available for Sale Securities

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

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

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

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

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	December 31, 2016				
	Amortized	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.

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

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

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

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The amortized cost and fair values of available for sale securities at September 30, 2017, by contractual maturity, are as shown in the following table (dollars in thousands):

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

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

2 The average expected lives of mortgage-backed securities were 4.0 years 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.

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

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

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

	Sept. 30, 2017	Dec. 31, 2016	Sept. 30, 2016
Investment:			
Amortized cost	$237,525	$322,208	$301,754
Fair value	241,208	323,808	307,264
Available for sale:			
Amortized cost	6,559,615	7,353,116	7,098,721
Fair value	6,551,240	7,327,470	7,213,520

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

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

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Temporarily Impaired Securities as of September 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	63	$80,235	$ 70	$9,795	$ 95	$90,030	$ 165
U.S. government agency residential mortgage-backed securities – Other	1	3,578	62	—	—	3,578	62
Other debt securities	28	10,022	566	427	24	10,449	590
Total investment securities	92	$93,835	$ 698	$10,222	$ 119	$104,057	$ 817

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

Temporarily Impaired Securities as of December 31, 2016
(In thousands)

	Number of Securities	Less Than 12 Months		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.

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Temporarily Impaired Securities as of September 30, 2016
(In thousands)

	Number of Securities	Less Than 12 Months		12 Months or Longer		Total	
		Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Investment:							
Municipal and other tax-exempt	75	$100,624	$ 106	$4,359	$ 76	$104,983	$ 182
U.S. government agency residential mortgage-backed securities – Other	—	—	—	—	—	—	—
Other debt securities	3	444	6	856	4	1,300	10
Total investment securities	78	$101,068	$ 112	$5,215	$ 80	$106,283	$ 192

	Number of Securities	Less Than 12 Months		12 Months or Longer		Total	
		Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Available for sale:							
U.S. Treasury	—	$—	$ —	$—	$ —	$—	$ —
Municipal and other tax-exempt[1]	20	2,210	3	6,396	450	8,606	453
Residential mortgage-backed securities:							
U. S. government agencies:							
FNMA	14	365,201	1,712	14,229	52	379,430	1,764
FHLMC	6	122,713	91	20,306	258	143,019	349
GNMA	16	230,043	1,157	212,705	191	442,748	1,348
Total U.S. government agencies	36	717,957	2,960	247,240	501	965,197	3,461
Private issue[1]:							
Alt-A loans	5	8,231	141	7,773	63	16,004	204
Jumbo-A loans	1	6,583	26	—	—	6,583	26
Total private issue	6	14,814	167	7,773	63	22,587	230
Total residential mortgage-backed securities	42	732,771	3,127	255,013	564	987,784	3,691
Commercial mortgage-backed securities guaranteed by U.S. government agencies	33	372,805	1,656	60,851	166	433,656	1,822
Other debt securities	2	—	—	4,151	249	4,151	249
Perpetual preferred stocks	—	—	—	—	—	—	—
Equity securities and mutual funds	33	86	—	886	17	972	17
Total available for sale securities	130	$1,107,872	$ 4,786	$327,297	$ 1,446	$1,435,169	$ 6,232

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

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

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Fair Value Option Securities

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

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

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

Restricted Equity Securities

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

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

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(3) Derivatives

Derivative instruments may be used by the Company as part of its internal risk management programs or may be offered to customers. All derivative instruments are carried at fair value and changes in fair value are reported in earnings as they occur. Credit risk is also considered in determining fair value.

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

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

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

Customer Risk Management Programs

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

Internal Risk Management Programs

BOK Financial may use derivative contracts in managing its interest rate sensitivity, as part of its economic hedge of the change in the fair value of mortgage servicing rights and as an economic hedge of trading securities. As of September 30, 2017, derivative contracts under the internal risk management programs were primarily used as part of the economic hedges of the change in the fair value of the mortgage servicing rights and trading securities.

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

The following table summarizes the fair values of derivative contracts recorded as “derivative contracts” assets and liabilities in the balance sheet at September 30, 2017 (in thousands):

	Assets					
	Notional[1]	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	$14,244,442	$38,875	$(9,547)	$29,328	$—	$29,328
Interest rate swaps	1,368,210	27,016	—	27,016	(2,820)	24,196
Energy contracts	983,794	45,368	(35,166)	10,202	(238)	9,964
Agricultural contracts	60,745	1,870	(1,172)	698	—	698
Foreign exchange contracts	252,525	249,788	—	249,788	—	249,788
Equity option contracts	101,841	4,871	—	4,871	(920)	3,951
Total customer risk management programs	17,011,557	367,788	(45,885)	321,903	(3,978)	317,925
Internal risk management programs	11,941,260	34,634	—	34,634	—	34,634
Total derivative contracts	$28,952,817	$402,422	$(45,885)	$356,537	$(3,978)	$352,559

	Liabilities					
	Notional[1]	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	$14,244,442	$34,948	$(9,547)	$25,401	$(374)	$25,027
Interest rate swaps	1,368,230	27,056	—	27,056	(16,599)	10,457
Energy contracts	939,350	42,744	(35,166)	7,578	—	7,578
Agricultural contracts	60,746	1,846	(1,172)	674	—	674
Foreign exchange contracts	249,269	245,925	—	245,925	(1,395)	244,530
Equity option contracts	101,841	4,871	—	4,871	—	4,871
Total customer risk management programs	16,963,878	357,390	(45,885)	311,505	(18,368)	293,137
Internal risk management programs	9,180,531	43,190	—	43,190	—	43,190
Total derivative contracts	$26,144,409	$400,580	$(45,885)	$354,695	$(18,368)	$336,327

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

The following table summarizes the fair values of derivative contracts recorded as "derivative contracts" assets and liabilities in the balance sheet at December 31, 2016 (in thousands):

	Assets					
	Notional [1]	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	$16,949,152	$180,695	$(60,555)	$120,140	$—	$120,140
Interest rate swaps	1,403,408	34,442	—	34,442	(4,567)	29,875
Energy contracts	835,566	64,140	(28,298)	35,842	(71)	35,771
Agricultural contracts	53,209	1,382	(515)	867	—	867
Foreign exchange contracts	580,886	494,349	—	494,349	(5,183)	489,166
Equity option contracts	100,924	4,357	—	4,357	(730)	3,627
Total customer risk management programs	19,923,145	779,365	(89,368)	689,997	(10,551)	679,446
Internal risk management programs	2,514,169	10,426	—	10,426	—	10,426
Total derivative contracts	$22,437,314	$789,791	$(89,368)	$700,423	$(10,551)	$689,872

	Liabilities					
	Notional [1]	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	$16,637,532	$176,928	$(60,555)	$116,373	$—	$116,373
Interest rate swaps	1,403,408	34,442	—	34,442	(11,977)	22,465
Energy contracts	820,365	64,306	(28,298)	36,008	(31,534)	4,474
Agricultural contracts	53,216	1,365	(515)	850	(769)	81
Foreign exchange contracts	580,712	494,695	—	494,695	(3,630)	491,065
Equity option contracts	100,924	4,357	—	4,357	—	4,357
Total customer risk management programs	19,596,157	776,093	(89,368)	686,725	(47,910)	638,815
Internal risk management programs	2,582,202	25,716	—	25,716	—	25,716
Total derivative contracts	$22,178,359	$801,809	$(89,368)	$712,441	$(47,910)	$664,531

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

The following table summarizes the fair values of derivative contracts recorded as "derivative contracts" assets and liabilities in the balance sheet at September 30, 2016 (in thousands):

	Assets					
	Notional[1]	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	$20,078,974	$90,999	$ (38,678)	$52,321	$—	$52,321
Interest rate swaps	1,323,045	49,279	—	49,279	(794)	48,485
Energy contracts	729,202	41,775	(28,464)	13,311	(288)	13,023
Agricultural contracts	53,002	3,950	(1,571)	2,379	(1,076)	1,303
Foreign exchange contracts	550,828	536,264	—	536,264	(7,577)	528,687
Equity option contracts	103,464	4,654	—	4,654	(730)	3,924
Total customer risk management programs	22,838,515	726,921	(68,713)	658,208	(10,465)	647,743
Internal risk management programs	2,298,038	7,335	—	7,335	—	7,335
Total derivative contracts	$25,136,553	$734,256	$ (68,713)	$665,543	$(10,465)	$655,078

	Liabilities					
	Notional[1]	Gross Fair Value	Netting Adjustments	Net Fair Value Before Cash Collateral	Cash Collateral	Fair Value Net of Cash Collateral
Customer risk management programs:						
Interest rate contracts						
To-be-announced residential mortgage-backed securities	$19,776,883	$86,812	$ (38,678)	$48,134	$(39,042)	$9,092
Interest rate swaps	1,323,045	49,518	—	49,518	(34,457)	15,061
Energy contracts	695,835	40,888	(28,464)	12,424	(3,857)	8,567
Agricultural contracts	52,997	3,943	(1,571)	2,372	—	2,372
Foreign exchange contracts	550,943	536,660	—	536,660	(5,396)	531,264
Equity option contracts	103,464	4,654	—	4,654	—	4,654
Total customer risk management programs	22,503,167	722,475	(68,713)	653,762	(82,752)	571,010
Internal risk management programs	1,485,691	2,977	—	2,977	—	2,977
Total derivative contracts	$23,988,858	$725,452	$ (68,713)	$656,739	$(82,752)	$573,987

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

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

	Three Months Ended			
	September 30, 2017		September 30, 2016	
	Brokerage and Trading Revenue	Gain (Loss) on Derivatives, Net	Brokerage and Trading Revenue	Gain (Loss)on Derivatives, Net
Customer risk management programs:				
Interest rate contracts				
To-be-announced residential mortgage-backed securities	$9,181	$ —	$11,584	$ —
Interest rate swaps	767	—	710	—
Energy contracts	378	—	1,222	—
Agricultural contracts	38	—	25	—
Foreign exchange contracts	164	—	218	—
Equity option contracts	—	—	—	—
Total customer risk management programs	10,528	—	13,759	—
Internal risk management programs	(711)	1,033	(1,608)	2,226
Total derivative contracts	$9,817	$ 1,033	$12,151	$ 2,226

	Nine Months Ended			
	September 30, 2017		September 30, 2016	
	Brokerage and Trading Revenue	Gain (Loss) on Derivatives, Net	Brokerage and Trading Revenue	Gain (Loss) on Derivatives, Net
Customer risk management programs:				
Interest rate contracts				
To-be-announced residential mortgage-backed securities	$26,413	$ —	$28,886	$ —
Interest rate swaps	1,891	—	1,758	—
Energy contracts	4,917	—	4,667	—
Agricultural contracts	58	—	86	—
Foreign exchange contracts	524	—	730	—
Equity option contracts	—	—	—	—
Total customer risk management programs	33,803	—	36,127	—
Internal risk management programs	5,307	3,824	(1,617)	20,130
Total derivative contracts	$39,110	$ 3,824	$34,510	$ 20,130

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(4) Loans and Allowances for Credit Losses

Loans

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

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

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

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

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

Loan origination and commitment fees and direct loan acquisition and origination costs are deferred and amortized as an adjustment to yield over the life of the loan or over the commitment period, as applicable.

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

Guaranteed loans may be modified in TDRs in accordance with U.S. government agency guidelines. Interest continues to accrue based on the modified rate. Guaranteed loans may either be resold into GNMA pools after a performance period specified by the programs or foreclosed and conveyed to the guarantors.

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

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

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

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

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

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

Commercial

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

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

The commercial loan portfolio segment is further divided into loan classes. The energy loan class totaled $2.9 billion or 17 percent of total loans at September 30, 2017, including $2.3 billion of outstanding loans to energy producers. Approximately 57 percent of committed production loans are secured by properties primarily producing oil and 43 percent are secured by properties producing natural gas. The services loan class totaled $3.0 billion or 17 percent of total loans at September 30, 2017. Approximately $1.5 billion of loans in the services category consist of loans with individual balances of less than $10 million. Businesses included in the services class include governmental, educational services, consumer services, loans to entities providing services for real estate and construction and commercial services. The healthcare loan class totaled $2.2 billion or 13 percent of total loans at September 30, 2017. The healthcare loan class consists primarily of loans for the development and operation of senior housing and care facilities, including independent living, assisted living and skilled nursing. Healthcare also includes loans to hospitals and other medical service providers.

Commercial Real Estate

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

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

Residential Mortgage and Personal

Residential mortgage loans provide funds for our customers to purchase or refinance their primary residence or to borrow against the equity in their home. Residential mortgage loans are secured by a first or second mortgage on the customer’s primary residence. Personal loans consist primarily of loans secured by the cash surrender value of insurance policies and marketable securities. It also includes direct loans secured by and for the purchase of automobiles, recreational and marine equipment as well as unsecured loans. Residential mortgage and personal loans are made in accordance with underwriting policies we believe to be conservative and are fully documented. Loans may be individually underwritten or credit scored based on size and other criteria. Credit scoring is assessed based on significant credit characteristics including credit history, residential and employment stability. Residential mortgage loans retained in the Company’s portfolio are primarily composed of various mortgage programs to support customer relationships including jumbo mortgage loans, non-builder construction loans and special loan programs for high net worth individuals and certain professionals. Jumbo loans may be fixed or variable rate and are fully amortizing. Jumbo loans generally conform to government sponsored entity standards, except that the loan size exceeds maximums required under these standards. These loans generally require a minimum FICO score of 720 and a maximum debt-to-income ratio (“DTI”) of 38 percent. Loan-to-value (“LTV”) ratios are tiered from 60 percent to 100 percent, depending on the market. Special mortgage programs include fixed and variable fully amortizing loans tailored to the needs of certain healthcare professionals. Variable rate loans are fully indexed at origination and may have fixed rates for three to ten years, then adjust annually thereafter.

At September 30, 2017, residential mortgage loans included $187 million of loans guaranteed by U.S. government agencies previously sold into GNMA mortgage pools. These loans either have been repurchased or are eligible to be repurchased by the Company when certain defined delinquency criteria are met. Although payments on these loans generally are past due more than 90 days, interest continues to accrue based on the government guarantee.

Home equity loans totaled $744 million at September 30, 2017. Approximately 64 percent of the home equity loan portfolio is comprised of first lien loans and 36 percent of the home equity portfolio is comprised of junior lien loans. Junior lien loans are distributed 47 percent to amortizing term loans and 53 percent to revolving lines of credit. Home equity loans generally require a minimum FICO score of 700 and a maximum DTI of 40 percent. The maximum loan amount available for our home equity loan products is generally $400 thousand. Revolving loans have a 5 year revolving period followed by a 15 year term of amortizing repayments. Interest-only home equity loans may not be extended for any additional revolving time. All other home equity loans may be extended at management's discretion for an additional 5 year revolving term, subject to an update of certain credit information.

Credit Commitments

Commitments to extend credit are agreements to lend to a customer as long as there is no violation of conditions established in the contract. Commitments generally have fixed expiration dates or other termination clauses and may require payment of a fee. At September 30, 2017, outstanding commitments totaled $9.7 billion. Because some commitments are expected to expire before being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. BOK Financial uses the same credit policies in making commitments as it does loans.

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

Standby letters of credit are conditional commitments issued to guarantee the performance of a customer to a third party. Because the credit risk involved in issuing standby letters of credit is essentially the same as that involved in extending loan commitments, BOK Financial uses the same credit policies in evaluating the creditworthiness of the customer. Additionally, BOK Financial uses the same evaluation process in obtaining collateral on standby letters of credit as it does for loan commitments. The term of these standby letters of credit is defined in each commitment and typically corresponds with the underlying loan commitment. At September 30, 2017, outstanding standby letters of credit totaled $666 million. Commercial letters of credit are used to facilitate customer trade transactions with the drafts being drawn when the underlying transaction is consummated. At September 30, 2017, outstanding commercial letters of credit totaled $2.3 million.

Allowances for Credit Losses

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

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

The allowance for loan losses consists of specific allowances attributed to impaired loans that have not yet been charged down to amounts we expect to recover, general allowances for unimpaired loans based on estimated loss rates by loan class and nonspecific allowances based on general economic conditions, risk concentration and related factors. There have been no material changes in the approach or techniques utilized in developing the allowance for loan losses and the accrual for off-balance sheet credit losses for the three and nine months ended September 30, 2017.

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

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

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

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

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

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

The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the three months ended September 30, 2017 is summarized as follows (in thousands):

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

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The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the nine months ended September 30, 2017 is summarized as follows (in thousands):

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

The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the three months ended September 30, 2016 is summarized as follows (in thousands):

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

The activity in the allowance for loan losses and the allowance for off-balance sheet credit losses related to loan commitments and standby letters of credit for the nine months ended September 30, 2016 is summarized as follows (in thousands):

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

The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at September 30, 2017 is as follows (in thousands):

	Collectively Measured for Impairment		Individually Measured for Impairment		Total	
	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance
Commercial	$ 10,619,034	$ 123,517	$ 176,900	$ 13,284	$ 10,795,934	$ 136,801
Commercial real estate	3,515,167	56,405	2,975	—	3,518,142	56,405
Residential mortgage	1,900,244	18,393	45,506	—	1,945,750	18,393
Personal	946,753	8,026	255	—	947,008	8,026
Total	16,981,198	206,341	225,636	13,284	17,206,834	219,625
Nonspecific allowance	—	—	—	—	—	28,078
Total	$ 16,981,198	$ 206,341	$ 225,636	$ 13,284	$ 17,206,834	$ 247,703

The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at December 31, 2016 is as follows (in thousands):

	Collectively Measured for Impairment		Individually Measured for Impairment		Total	
	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance
Commercial	$ 10,211,871	$ 139,416	$ 178,953	$ 797	$ 10,390,824	$ 140,213
Commercial real estate	3,803,525	50,749	5,521	—	3,809,046	50,749
Residential mortgage	1,903,612	18,178	46,220	46	1,949,832	18,224
Personal	839,668	8,773	290	—	839,958	8,773
Total	16,758,676	217,116	230,984	843	16,989,660	217,959

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

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The allowance for loan losses and recorded investment of the related loans by portfolio segment for each impairment measurement method at September 30, 2016 is as follows (in thousands):

	Collectively Measured for Impairment		Individually Measured for Impairment		Total	
	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance	Recorded Investment	Related Allowance
Commercial	$9,943,699	$ 134,968	$176,464	$ 6,502	$10,120,163	$ 141,470
Commercial real estate	3,786,248	49,817	7,350	—	3,793,598	49,817
Residential mortgage	1,820,341	18,527	52,452	62	1,872,793	18,589
Personal	677,546	7,041	686	—	678,232	7,041
Total	16,227,834	210,353	236,952	6,564	16,464,786	216,917
Nonspecific allowance	—	—	—	—	—	28,186
Total	$16,227,834	$ 210,353	$236,952	$ 6,564	$16,464,786	$ 245,103

Credit Quality Indicators

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

The allowance for loan losses and recorded investment of the related loans by portfolio segment for risk graded and non-risk graded loans at September 30, 2017 is as follows (in thousands):

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

The allowance for loan losses and recorded investment of the related loans by portfolio segment for risk graded and non-risk graded loans at December 31, 2016 is as follows (in thousands):

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

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

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

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

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

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

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

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

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

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

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

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

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Impaired Loans

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

A summary of impaired loans follows (in thousands):

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

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

[1] All permanent mortgage loans guaranteed by U.S. government agencies are considered impaired as we do not expect full collection of contractual principal and interest. At September 30, 2017, $8.9 million of these loans were nonaccruing and $178 million were accruing based on the guarantee by U.S. government agencies.

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

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

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

[1] All permanent mortgage loans guaranteed by U.S. government agencies are considered impaired as we do not expect full collection of contractual principal and interest. At December 31, 2016, $12 million of these loans were nonaccruing and $188 million were accruing based on the guarantee by U.S. government agencies.

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

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

1 All permanent mortgage loans guaranteed by U.S. government agencies are considered impaired as we do not expect full collection of contractual principal and interest. At September 30, 2016, $15 million of these loans were nonaccruing and $175 million were accruing based on the guarantee by U.S. government agencies.

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Troubled Debt Restructurings

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Nonaccrual & Past Due Loans

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

A summary of loans currently performing, loans past due and accruing and nonaccrual loans as of September 30, 2017 is as follows (in thousands):

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

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

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

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

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

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(5) Acquisitions

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

Residential Mortgage Loan Production

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

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

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

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

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

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Mortgage banking revenue was as follows (in thousands):

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

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

Residential Mortgage Servicing

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

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

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

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

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

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

	Purchased	Originated	Total
Balance, June 30, 2016	$ 4,067	$ 186,680	$ 190,747
Additions, net	—	21,990	21,990
Change in fair value due to scheduled payments and full-balance payoffs	(753)	(10,690)	(11,443)
Change in fair value due to market assumption changes	251	2,076	2,327
Balance, September 30, 2016	$ 3,565	$ 200,056	$ 203,621

	Purchased	Originated	Total
Balance, December 31, 2015	$ 9,911	$ 208,694	$ 218,605
Additions, net	—	56,345	56,345
Change in fair value due to scheduled payments and full-balance payoffs	(2,109)	(27,276)	(29,385)
Change in fair value due to market assumption changes	(4,237)	(37,707)	(41,944)
Balance, September 30, 2016	$ 3,565	$ 200,056	$ 203,621

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

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

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

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

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

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

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

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(7) Commitments and Contingent Liabilities

Litigation Contingencies

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

BOK Financial currently owns 252,233 Visa Class B shares which are convertible into 415,755 shares of Visa Class A shares after the final settlement of all covered litigation. Class B shares may be diluted in the future if the escrow fund is not adequate to cover future covered litigation costs. Therefore, no value has been currently assigned to the Class B shares and no value may be assigned until the Class B shares are converted into a known number of Class A shares.

On June 24, 2015, the Bank received a complaint alleging that an employee had colluded with a bond issuer and an individual in misusing revenues pledged to municipal bonds for which the Bank served as trustee under the bond indenture. The Company conducted an investigation and concluded that employees in one of its Corporate Trust offices had, with respect to a single group of affiliated bond issuances, violated Company policies and procedures by waiving financial covenants, granting forbearances and accepting without disclosure to the bondholders, debt service payments from sources other than pledged revenues. The relationship manager was terminated. The Company reported the circumstances to, and cooperated with an investigation by, the Securities and Exchange Commission ("SEC"). On December 28, 2015, in an action brought by the SEC, the United States District Court for the District of New Jersey entered a judgment against the principals involved in issuing the bonds, precluding the principals from denying the alleged violations of the federal securities laws and requiring the principals to pay all outstanding principal, accrued interest, and other amounts required under the bond documents (now estimated to be approximately $48 million, less the value of the facilities securing repayment of the bonds), subject to oversight by a court appointed monitor. On September 7, 2016, the Bank agreed, and the SEC entered, a consent order finding that the Bank had violated Section 17(a) of the Securities Act of 1933 and Section 10(b) of the Securities Exchange Act and requiring the Bank to disgorge $1,067,721 of fees and pay a civil penalty of $600,000. The Bank has disgorged the fees and paid the penalty.

On August 26, 2016, the Bank was sued in the United States District Court for New Jersey by two bondholders in a putative class action on behalf of all holders of the bonds alleging the Bank participated in the fraudulent sale of securities by the principals. On September 14, 2016, the Bank was sued in the District Court of Tulsa County, Oklahoma by 19 bondholders alleging the Bank participated in the fraudulent sale of securities by the principals. Management has been advised by counsel that the Bank has valid defenses to the claims.

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

On March 14, 2017, the Bank was sued in the United States District Court for the Northern District of Oklahoma by bondholders in a second putative class action representing a different set of municipal securities. The bondholders in this second action allege two individuals purchased facilities from the principals who are the subject of the SEC New Jersey proceedings by means of the fraudulent sale of $60 million of municipal securities for which the Bank also served as indenture trustee. The bondholders allege the Bank failed to disclose that the seller of the purchased facilities had engaged in the conduct complained of in the New Jersey action. The Bank properly performed all duties as indenture trustee of this second set of municipal securities, timely commenced proceedings against the issuer of the securities when default occurred, is cooperating with the SEC in actions against the two principals, is not a target of the SEC proceedings, and has been advised by counsel that the Bank has valid defenses to the claims of these bondholders. It is the opinion of management that no loss is probable at this time.

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

On March 30, 2017, two deposit customers of the Bank sued the Bank in the District Court of Harris County, Texas. A judgment creditor had served a garnishment summons on the Bank. The deposit customers allege that, because the Bank was unable to produce adequate documentation of ownership of a series of deposit accounts at the Bank owned by them, they were compelled to enter into a settlement agreement with the judgment creditor pursuant to which the Bank paid $4.2 million from the accounts to the judgment creditor. The two deposit customers seek $7 million. Management has been advised by counsel that a loss is not probable and that the amount of the liability, if any, cannot be quantified at this time.
On March 7, 2017, a plaintiff filed a putative class action in the United States District Court for the Northern District of Texas alleging an extended overdraft fee charged by BOKF, NA is interest and exceeds permitted rates. BOKF, NA was previously sued in a class action in the United States District Court for the Northern District of Oklahoma making the same allegations. Pursuant to a motion to dismiss, the Northern District of Oklahoma Court action was dismissed. Other courts considering the question whether extended overdraft fees are interest have likewise determined such fees are not interest. BOKF, NA has moved to dismiss the action. Management is advised by counsel that a loss is not probable and that the loss, if any, cannot be reasonably estimated.

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

Alternative Investment Commitments

The Company sponsors two private equity funds and invests in several tax credit entities and other funds as permitted by banking regulations. Consolidation of these investments is based on the variable interest model determined by the nature of the entity. Variable interest entities are generally defined as entities that either do not have sufficient equity to finance their activities without support from other parties or whose equity investors lack a controlling financial interest. Variable interest entities are consolidated based on the determination that the Company is the primary beneficiary including the power to direct the activities that most significantly impact the variable interest's economic performance and the obligation to absorb losses of the variable interest or the right to receive benefits of the variable interest that could be significant to the variable interest.

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

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

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

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

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

	September 30, 2017				
	Loans	Other assets	Other liabilities	Other borrowings	Non-controlling interests
Consolidated:					
Private equity funds	$—	$15,621	$—	$ —	$ 12,806
Tax credit entities	10,000	11,119	—	10,963	10,000
Other	—	15,618	1,588	3,104	2,819
Total consolidated	$10,000	$42,358	$1,588	$ 14,067	$ 25,625
Unconsolidated:					
Tax credit entities	$65,247	$145,479	$61,364	$ —	$ —
Other	—	32,462	13,657	—	—
Total unconsolidated	$65,247	$177,941	$75,021	$ —	$ —

	December 31, 2016				
	Loans	Other assets	Other liabilities	Other borrowings	Non-controlling interests
Consolidated:					
Private equity funds	$—	$17,357	$—	$ —	$ 13,237
Tax credit entities	10,000	11,585	—	10,964	10,000
Other	—	29,783	3,189	1,092	8,266
Total consolidated	$10,000	$58,725	$3,189	$ 12,056	$ 31,503
Unconsolidated:					
Tax credit entities	$44,488	$143,715	$63,329	$ —	$ —
Other	—	31,675	15,028	—	—
Total unconsolidated	$44,488	$175,390	$78,357	$ —	$ —

	September 30, 2016				
	Loans	Other assets	Other liabilities	Other borrowings	Non-controlling interests
Consolidated:					
Private equity funds	$—	$18,420	$—	$ —	$ 15,946
Tax credit entities	10,000	11,740	—	10,964	10,000
Other	—	30,978	2,346	1,063	8,154
Total consolidated	$10,000	$61,138	$2,346	$ 12,027	$ 34,100
Unconsolidated:					
Tax credit entities	$39,849	$129,715	$57,026	$ —	$ —
Other	—	30,272	13,653	—	—
Total unconsolidated	$39,849	$159,987	$70,679	$ —	$ —

Other Commitments and Contingencies

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

(8) Shareholders' Equity

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

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

Accumulated Other Comprehensive Income (Loss)

AOCI includes unrealized gains and losses on available for sale ("AFS") securities and non-credit related unrealized losses on AFS securities for which an other-than-temporary impairment has been recorded in earnings. AOCI also includes unrealized gains on AFS securities that were transferred from AFS to investment securities in the third quarter of 2011. Such amounts are being amortized over the estimated remaining life of the security as an adjustment to yield, offsetting the related amortization of premium on the transferred securities. Unrealized losses on employee benefit plans will be reclassified into income as pension plan costs are recognized over the remaining service period of plan participants. Gains and losses in AOCI are net of deferred income taxes.

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

	Unrealized Gain (Loss) on			
	Available for Sale Securities	Investment Securities Transferred from AFS	Employee Benefit Plans	Total
Balance, December 31, 2015	$23,284	$ 68	$(1,765)	$21,587
Net change in unrealized gain (loss)	133,108	—	—	133,108
Reclassification adjustments included in earnings:				
Interest revenue, Investment securities, Taxable securities	—	(112)	—	(112)
Gain on available for sale securities, net	(11,684)	—	—	(11,684)
Other comprehensive income (loss), before income taxes	121,424	(112)	—	121,312
Federal and state income taxes[1]	47,216	(44)	—	47,172
Other comprehensive income (loss), net of income taxes	74,208	(68)	—	74,140
Balance, September 30, 2016	$97,492	$ —	$(1,765)	$95,727
Balance, December 31, 2016	$(9,087)	$ —	$(1,880)	$(10,967)
Net change in unrealized gain (loss)	33,876	—	5	33,881
Reclassification adjustments included in earnings:				
Gain on available for sale securities, net	(4,916)	—	—	(4,916)
Other comprehensive income, before income taxes	28,960	—	5	28,965
Federal and state income taxes[1]	11,239		2	11,241

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

[1] Calculated using a 39 percent effective tax rate.

(9) Earnings Per Share

(In thousands, except share and per share amounts)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	2016	2017	2016
Numerator:				
Net income attributable to BOK Financial Corp. shareholders	$85,649	$ 74,277	$262,152	$ 182,642
Less: Earnings allocated to participating securities	888	916	2,817	2,275
Numerator for basic earnings per share – income available to common shareholders	84,761	73,361	259,335	180,367
Effect of reallocating undistributed earnings of participating securities	1	1	2	1
Numerator for diluted earnings per share – income available to common shareholders	$84,762	$ 73,362	$259,337	$ 180,368
Denominator:				
Weighted average shares outstanding	65,423,258	65,895,430	65,432,313	66,031,497
Less: Participating securities included in weighted average shares outstanding	680,436	810,038	702,922	822,723
Denominator for basic earnings per common share	64,742,822	65,085,392	64,729,391	65,208,774
Dilutive effect of employee stock compensation plans[1]	62,350	72,449	64,502	54,792
Denominator for diluted earnings per common share	64,805,172	65,157,841	64,793,893	65,263,566
Basic earnings per share	$1.31	$ 1.13	$4.01	$ 2.77
Diluted earnings per share	$1.31	$ 1.13	$4.00	$ 2.76
[1] Excludes employee stock options with exercise prices greater than current market price.	—	—	—	—

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(10) Reportable Segments

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

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

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

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

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

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

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

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

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

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(11) Fair Value Measurements

Fair value is defined by applicable accounting guidance as the price to sell an asset or transfer a liability in an orderly transaction between market participants in the principal market for the given asset or liability at the measurement date based on market conditions at that date. Certain assets and liabilities are recorded in the Company's financial statements at fair value. Some are recorded on a recurring basis and some on a non-recurring basis.

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

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

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

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

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

Transfers between levels are recognized as of the end of the reporting period. There were no transfers in or out of quoted prices in active markets for identical instruments to significant other observable inputs or significant unobservable inputs during the three and nine months ended September 30, 2017 and 2016, respectively. Transfers between significant other observable inputs and significant unobservable inputs during the three and nine months ended September 30, 2017 and 2016 are included in the summary of changes in recurring fair values measured using unobservable inputs.

The underlying methods used by the third-party pricing services are considered in determining the primary inputs used to determine fair values. Management has evaluated the methodologies employed by the third-party pricing services by comparing the price provided by the pricing service with other sources, including brokers' quotes, sales or purchases of similar instruments and discounted cash flows to establish a basis for reliance on the pricing service values. Significant differences between the pricing service provided value and other sources are discussed with the pricing service to understand the basis for their values. Based on all observable inputs, management may adjust prices obtained from third-party pricing services to more appropriately reflect the prices that would be received to sell assets or paid to transfer liabilities in orderly transactions in the current market. No significant adjustments were made to prices provided by third-party pricing services at September 30, 2017, December 31, 2016 or September 30, 2016.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The fair value of financial assets and liabilities measured on a recurring basis was as follows as of September 30, 2017 (in thousands):

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

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

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

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The fair value of financial assets and liabilities measured on a recurring basis was as follows as of December 31, 2016 (in thousands):

	Total	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Trading securities:				
U.S. government agency debentures	$ 6,234	$ —	$ 6,234	$ —
U.S. government agency residential mortgage-backed securities	310,067	—	310,067	—
Municipal and other tax-exempt securities	14,427	—	14,427	—
Other trading securities	6,900	—	6,900	—
Total trading securities	337,628	—	337,628	—
Available for sale securities:				
U.S. Treasury	999	999	—	—
Municipal and other tax-exempt securities	40,993	—	35,204	5,789
U.S. government agency residential mortgage-backed securities	5,460,386	—	5,460,386	—
Privately issued residential mortgage-backed securities	115,535	—	115,535	—
Commercial mortgage-backed securities guaranteed by U.S. government agencies	3,017,933	—	3,017,933	—
Other debt securities	4,152	—	—	4,152
Perpetual preferred stock	18,474	—	18,474	—
Equity securities and mutual funds	18,357	3,495	14,862	—
Total available for sale securities	8,676,829	4,494	8,662,394	9,941
Fair value option securities – U.S. government agency residential mortgage-backed securities	77,046	—	77,046	—
Residential mortgage loans held for sale	301,897	—	290,280	11,617
Mortgage servicing rights[1]	247,073	—	—	247,073
Derivative contracts, net of cash collateral[2]	689,872	7,541	682,331	—
Liabilities:				
Derivative contracts, net of cash collateral[2]	664,531	6,972	657,559	—

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

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

The fair value of financial assets and liabilities measured on a recurring basis was as follows as of September 30, 2016 (in thousands):

	Total	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Trading securities:				
U.S. government agency debentures	$ 15,705	$ —	$ 15,705	$ —
U.S. government agency residential mortgage-backed securities	464,749	—	464,749	—
Municipal and other tax-exempt securities	54,856	—	54,856	—
Other trading securities	11,305	—	11,305	—
Total trading securities	546,615	—	546,615	—
Available for sale securities:				
U.S. Treasury	1,002	1,002	—	—
Municipal and other tax-exempt securities	42,092	—	36,379	5,713
U.S. government agency residential mortgage-backed securities	5,668,672	—	5,668,672	—
Privately issued residential mortgage-backed securities	121,603	—	121,603	—
Commercial mortgage-backed securities guaranteed by U.S. government agencies	2,986,495	—	2,986,495	—
Other debt securities	4,151	—	—	4,151
Perpetual preferred stock	19,578	—	19,578	—
Equity securities and mutual funds	18,690	3,544	15,146	—
Total available for sale securities	8,862,283	4,546	8,847,873	9,864
Fair value option securities:				
U.S. Treasury	222,409	222,409	—	—
U.S. government agency residential mortgage-backed securities	—	—	—	—
Total fair value option securities	222,409	222,409	—	—
Residential mortgage loans held for sale	447,592	—	438,291	9,301
Mortgage servicing rights[1]	203,621	—	—	203,621
Derivative contracts, net of cash collateral[2]	655,078	5,575	649,503	—
Liabilities:				
Derivative contracts, net of cash collateral[2]	573,987	1,308	572,679	—

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

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

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

Securities

The fair values of trading, available for sale and fair value option securities are based on quoted prices for identical instruments in active markets, when available. If quoted prices for identical instruments are not available, fair values are based on significant other observable inputs such as quoted prices of comparable instruments or interest rates and credit spreads, yield curves, volatilities, prepayment speeds and loss severities.

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

Derivatives

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

Credit risk is considered in determining the fair value of derivative instruments. Management determines fair value adjustments based on various risk factors including but not limited to counterparty credit rating or equivalent loan grading, derivative contract notional size, price volatility of the underlying commodity, duration of the derivative contracts and expected loss severity. Expected loss severity is based on historical losses for similarly risk graded commercial loan customers. Decreases in counterparty credit rating or grading and increases in price volatility and expected loss severity all tend to increase the credit quality adjustment which reduces the fair value of asset contracts. The reduction in fair value is recognized in earnings during the current period.

We also consider our own credit risk in determining the fair value of derivative contracts. Changes in our credit rating would affect the fair value of our derivative liabilities. In the event of a credit downgrade, the fair value of our derivative liabilities would increase. The change in the fair value would be recognized in earnings in the current period.

Residential Mortgage Loans Held for Sale

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

Other Assets - Private Equity Funds

The fair value of the portfolio investments of the Company's two private equity funds is based upon net asset value reported by the underlying funds, as adjusted by the general partner when necessary, as a practical expedient to measure the fair value of the investments in the underlying funds. The Company's private equity funds provide customers alternative investment opportunities as limited partners of the funds. As fund of funds, the private equity funds invest in other limited partnerships or limited liability companies that invest substantially all of their assets in U.S. companies pursuing diversified investment strategies including early-stage venture capital, distressed securities and corporate or asset buy-outs. Private equity fund assets are long-term, illiquid investments. No secondary market exists for these assets. The private equity funds typically invest in funds that provide no redemption rights to investors. The fair value of the private equity investments may only be realized through cash distributions from the underlying funds.

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

The following represents the changes for the three and nine months ended September 30, 2017 related to assets measured at fair value on a recurring basis using significant unobservable inputs (in thousands):

	Available for Sale Securities Municipal and other tax-exempt securities	Available for Sale Securities Other debt securities	Residential mortgage loans held for sale
Balance, June 30, 2017	$4,655	$ 4,152	$ 12,735
Transfer to Level 3 from Level 2[1]	—	—	176
Purchases	—	—	—
Proceeds from sales	—	—	(847)
Redemptions and distributions	—	—	—
Gain recognized in earnings:			
Mortgage banking revenue	—	—	36
Other comprehensive income:			
Net change in unrealized gain	130	1	—
Balance, September 30, 2017	$4,785	$ 4,153	$ 12,100

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

	Available for Sale Securities Municipal and other tax-exempt	Available for Sale Securities Other debt securities	Residential mortgage loans held for sale
Balance, December 31, 2016	$5,789	$ 4,152	$ 11,617
Transfer to Level 3 from Level 2[1]	—	—	2,916
Purchases	—	—	—
Proceeds from sales	—	—	(2,549)
Redemptions and distributions	(1,100)	—	—
Gain (loss) recognized in earnings:			
Mortgage banking revenue	—	—	116
Other comprehensive income (loss):			
Net change in unrealized gain (loss)	96	1	—
Balance, September 30, 2017	$4,785	$ 4,153	$ 12,100

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

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The following represents the changes for the three and six months ended September 30, 2016 related to assets measured at fair value on a recurring basis using significant unobservable inputs (in thousands):

	Available for Sale Securities Municipal and other tax-exempt securities	Other debt securities	Residential mortgage loans held for sale
Balance, June 30, 2016	$9,600	$ 4,151	$ 9,749
Transfer to Level 3 from Level 2[1]	—	—	442
Purchases	—	—	—
Proceeds from sales	—	—	(1,003)
Redemptions and distributions	(3,975)	—	—
Gain (loss) recognized in earnings:			
Mortgage banking revenue	—	—	113
Other comprehensive income (loss):			
Net change in unrealized gain (loss)	88	—	—
Balance, September 30, 2016	$5,713	$ 4,151	$ 9,301

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

	Available for Sale Securities Municipal and other tax-exempt	Other debt securities	Residential mortgage loans held for sale
Balance, December 31, 2015	$9,610	$ 4,151	$ 7,874
Transfer to Level 3 from Level 2[1]	—	—	3,982
Purchases	—	—	—
Proceeds from sales	—	—	(2,365)
Redemptions and distributions	(3,975)	—	—
Gain (loss) recognized in earnings			
Mortgage banking revenue	—	—	(190)
Other comprehensive income (loss):			
Net change in unrealized gain (loss)	78	—	—
Balance, September 30, 2016	$5,713	$ 4,151	$ 9,301

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

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

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

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

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

3 Represents fair value as a percentage of par value.

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

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

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

						94.34% - 94.36 (94.36%)
Residential mortgage loans held for sale	N/A	12,431	11,617	Quoted prices of loans sold in securitization transactions, with a liquidity discount applied	Liquidity discount applied to the market value of a mortgage loans qualifying for sale to U.S. government agencies.	93.45%

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

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

3 Represents fair value as a percentage of par value.

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

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

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

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

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

3 Represents fair value as a percentage of par value.

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

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

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

The following represents the carrying value of assets measured at fair value on a non-recurring basis (and related losses) during the period. The carrying value represents only those assets with a balance at September 30, 2017 for which the fair value was adjusted during the nine months ended September 30, 2017:

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

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

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The following represents the carrying value of assets measured at fair value on a non-recurring basis (and related losses) during the period. The carrying value represents only those assets with a balance at September 30, 2016 for which the fair value was adjusted during the nine months ended September 30, 2016:

	Carrying Value at September 30, 2016			Fair Value Adjustments for the Three Months Ended September 30, 2016 Recognized in:		Nine Months Ended September 30, 2016 Recognized in:	
	Quoted Prices in Active Markets for Identical Instruments	Significant Other Observable Inputs	Significant Unobservable Inputs	Gross charge-offs against allowance for loan losses	Net losses and expenses of repossessed assets, net	Gross charge-offs against allowance for loan losses	Net losses and expenses of repossessed assets, net
Impaired loans	$ —	$ 436	$ 23,089	$ 6,334	$ —	$ 30,200	$ —
Real estate and other repossessed assets	—	6,048	1,927	—	480	—	1,260

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

A summary of quantitative information about Non-recurring Fair Value Measurements based on Significant Unobservable Inputs (Level 3) as of September 30, 2017 follows (in thousands):

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

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

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

	Fair Value	Valuation Technique(s)	Unobservable Input	Range (Weighted Average)
Impaired loans	$ 23,089	Discounted cash flows	Recoverable oil and gas reserves, forward-looking commodity prices, estimated operating costs	23% - 59% (43%)[1]
Real estate and other repossessed assets	1,927	Appraised value, as adjusted	Marketability adjustments off appraised value2	68% - 80% (71%)

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

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

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Fair Value of Financial Instruments

The following table presents the carrying values and estimated fair values of all financial instruments, including those financial assets and liabilities that are not measured and reported at fair value on a recurring basis or non-recurring basis as of September 30, 2017 (dollars in thousands):

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

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

The following table presents the carrying values and estimated fair values of all financial instruments, including those financial assets and liabilities that are not measured and reported at fair value on a recurring basis or non-recurring basis as of December 31, 2016 (dollars in thousands):

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

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

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The following table presents the carrying values and estimated fair values of all financial instruments, including those financial assets and liabilities that are not measured and reported at fair value on a recurring basis or non-recurring basis as of September 30, 2016 (dollars in thousands):

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

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

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

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

Cash and Cash Equivalents

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

Securities

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

Loans

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

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

Deposits

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

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

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

Other Borrowings and Subordinated Debentures

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

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

Off-Balance Sheet Instruments

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

Fair Value Election

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

(12) Federal and State Income Taxes

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

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

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

(13) Subsequent Events

The Company evaluated events from the date of the consolidated financial statements on September 30, 2017 through the issuance of those consolidated financial statements included in this Quarterly Report on Form 10-Q. No events were identified requiring recognition in and/or disclosure in the consolidated financial statements.

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

(In Thousands, Except Per Share Data)	Nine Months Ended					
	September 30, 2017			September 30, 2016		
	Average Balance	Revenue/ Expense	Yield/ Rate	Average Balance	Revenue/ Expense	Yield/ Rate
Assets						
Interest-bearing cash and cash equivalents	$2,020,003	$15,817	1.05%	$2,040,978	$7,926	0.52%
Trading securities	508,741	13,008	3.55%	264,525	4,659	2.48%
Investment securities						
Taxable	220,892	8,886	5.36%	227,136	9,244	5.43%
Tax-exempt	280,910	5,300	2.52%	340,292	5,713	2.24%
Total investment securities	501,802	14,186	3.77%	567,428	14,957	3.52%
Available for sale securities						
Taxable	8,407,421	130,426	2.09%	8,831,032	130,790	2.02%
Tax-exempt	51,891	2,019	5.58%	70,205	2,605	5.15%
Total available for sale securities	8,459,312	132,445	2.11%	8,901,237	133,395	2.04%
Fair value option securities	526,714	10,985	2.77%	361,623	6,182	2.11%
Restricted equity securities	312,365	13,534	5.78%	316,563	12,684	5.34%
Residential mortgage loans held for sale	240,822	6,317	3.55%	379,174	9,823	3.49%
Loans	17,174,450	523,764	4.08%	16,235,071	436,966	3.59%
Allowance for loan losses	(250,538)			(242,508)		
Loans, net of allowance	16,923,912	523,764	4.14%	15,992,563	436,966	3.65%
Total earning assets	29,493,671	730,056	3.32%	28,824,091	626,592	2.92%
Receivable on unsettled securities sales	72,888			141,957		
Cash and other assets	3,210,879			3,083,135		
Total assets	$32,777,438			$32,049,183		
Liabilities and equity						
Interest-bearing deposits:						
Transaction	$10,246,125	$19,713	0.26%	$9,666,048	$9,994	0.14%
Savings	455,740	272	0.08%	411,568	295	0.10%
Time	2,213,090	18,521	1.12%	2,286,844	20,062	1.17%
Total interest-bearing deposits	12,914,955	38,506	0.40%	12,364,460	30,351	0.33%
Funds purchased	56,161	276	0.66%	83,668	142	0.23%
Repurchase agreements	436,882	240	0.07%	598,631	214	0.05%
Other borrowings	5,825,764	47,026	1.08%	6,002,018	25,587	0.57%
Subordinated debentures	144,653	6,098	5.64%	238,415	4,056	2.27%
Total interest-bearing liabilities	19,378,415	92,146	0.64%	19,287,192	60,350	0.42%
Non-interest bearing demand deposits	9,277,820			8,255,859		
Due on unsettled securities purchases	131,571			150,994		
Other liabilities	581,901			1,001,282		
Total equity	3,407,731			3,353,856		
Total liabilities and equity	$32,777,438			$32,049,183		
Tax-equivalent Net Interest Revenue		$637,910	2.68%		$566,242	2.50%
Tax-equivalent Net Interest Revenue to Earning Assets			2.90%			2.64%
Less tax-equivalent adjustment		13,072			13,212	
Net Interest Revenue		624,838			553,030	
Provision for credit losses		—			65,000	
Other operating revenue		528,258			530,266	

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

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

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

(In Thousands, Except Per Share Data)	Three Months Ended					
	September 30, 2017			June 30, 2017		
	Average Balance	Revenue/ Expense	Yield/ Rate	Average Balance	Revenue/ Expense	Yield/ Rate
Assets						
Interest-bearing cash and cash equivalents	$1,965,645	$6,375	1.29%	$2,007,746	$5,198	1.04%
Trading securities	491,613	4,122	3.47%	456,028	3,517	3.23%
Investment securities						
Taxable	221,609	2,942	5.31%	219,385	2,931	5.34%
Tax-exempt	254,096	1,650	2.60%	279,987	1,757	2.51%
Total investment securities	475,705	4,592	3.86%	499,372	4,688	3.76%
Available for sale securities						
Taxable	8,381,536	44,579	2.16%	8,332,709	42,920	2.09%
Tax-exempt	46,817	566	5.27%	51,348	725	6.09%
Total available for sale securities	8,428,353	45,145	2.17%	8,384,057	43,645	2.11%
Fair value option securities	684,571	5,066	2.97%	476,102	3,539	2.92%
Restricted equity securities	328,677	4,826	5.87%	295,743	4,399	5.95%
Residential mortgage loans held for sale	256,343	2,095	3.36%	245,401	2,386	3.92%
Loans	17,256,663	187,506	4.31%	17,129,533	172,139	4.03%
Allowance for loan losses	(250,590)			(251,632)		
Loans, net of allowance	17,006,073	187,506	4.38%	16,877,901	172,139	4.09%
Total earning assets	29,636,980	259,727	3.50%	29,242,350	239,511	3.30%
Receivable on unsettled securities sales	76,622			79,248		
Cash and other assets	3,294,568			3,046,973		
Total assets	$33,008,170			$32,368,571		
Liabilities and equity						
Interest-bearing deposits:						
Transaction	$10,088,522	$8,062	0.32%	$10,087,640	$6,437	0.26%
Savings	464,130	90	0.08%	461,586	95	0.08%
Time	2,176,820	6,378	1.16%	2,204,422	6,090	1.11%
Total interest-bearing deposits	12,729,472	14,530	0.45%	12,753,648	12,622	0.40%
Funds purchased	49,774	116	0.92%	63,263	96	0.61%
Repurchase agreements	361,512	140	0.15%	427,353	68	0.06%
Other borrowings	6,162,641	20,105	1.29%	5,572,031	15,188	1.09%
Subordinated debentures	144,663	2,070	5.68%	144,654	2,003	5.55%
Total interest-bearing liabilities	19,448,062	36,961	0.75%	18,960,949	29,977	0.63%
Non-interest bearing demand deposits	9,389,849			9,338,683		
Due on unsettled securities purchases	145,155			157,438		
Other liabilities	540,463			502,068		
Total equity	3,484,641			3,409,433		
Total liabilities and equity	$33,008,170			$32,368,571		
Tax-equivalent Net Interest Revenue		$222,766	2.75%		$209,534	2.67%
Tax-equivalent Net Interest Revenue to Earning Assets			3.01%			2.89%
Less tax-equivalent adjustment		4,314			4,330	
Net Interest Revenue		218,452			205,204	
Provision for credit losses		—			—	

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

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

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

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

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

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

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

PART II. Other Information

Item 1. Legal Proceedings

See discussion of legal proceedings at Note 7 to the Consolidated Financial Statements.
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

The following table provides information with respect to purchases made by or on behalf of the Company or any "affiliated purchaser" (as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934), of the Company's common stock during the three months ended September 30, 2017.

Period	Total Number of Shares Purchased[2]	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs[1]	Maximum Number of Shares that May Yet Be Purchased Under the Plans
July 1 to July 31, 2017	—	$ ——		2,120,757
August 1 to August 31, 2017	—	$ ——		2,120,757
September 1 to September 30, 2017	—	$ ——		2,120,757
Total	—		—	

1 On October 1, 2015, the Company's board of directors authorized the Company to repurchase up to five million shares of the Company's common stock. As of September 30, 2017, the Company had repurchased 2,879,243 shares under this plan. Future repurchases of the Company's common stock will vary based on market conditions, regulatory limitations and other factors.

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

Item 6. Exhibits

31.1 Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

31.2 Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

32 Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

101 Interactive data files pursuant to Rule 405 of Regulation S-T: (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Earnings, (iii) the Consolidated Statements of Changes in Equity, (iv) the Consolidated Statement of Cash Flows and (v) the Notes to Consolidated Financial Statements

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

Signatures

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

BOK FINANCIAL CORPORATION
(Registrant)

Date: October 31, 2017

/s/ Steven E. Nell
Steven E. Nell
Executive Vice President and
Chief Financial Officer

/s/ John C. Morrow
John C. Morrow
Senior Vice President and
Chief Accounting Officer

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