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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2018

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

For the transition period from to

Commission file number: 001-31343

Associated Banc-Corp

(Exact name of registrant as specified in its charter)

Wisconsin	**39-1098068**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
433 Main Street Green Bay, Wisconsin	**54301**
(Address of principal executive offices)	(Zip Code)

(920) 491-7500

(Registrant's telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☑	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
Emerging growth company ☐	

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☑

APPLICABLE ONLY TO CORPORATE ISSUERS:

The number of shares outstanding of registrant's common stock, par value $0.01 per share, at October 24th, 2018 was 165,782,364.

ASSOCIATED BANC-CORP
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PART I - FINANCIAL INFORMATION

ITEM 1. Financial Statements:

ASSOCIATED BANC-CORP
Consolidated Balance Sheets

	September 30, 2018 (Unaudited)	December 31, 2017 (Audited)
	(In Thousands, except share and per share data)	
Assets		
Cash and due from banks	$ 374,168	$ 483,666
Interest-bearing deposits in other financial institutions	147,848	199,702
Federal funds sold and securities purchased under agreements to resell	24,325	32,650
Investment securities held to maturity, at amortized cost	2,661,755	2,282,853
Investment securities available for sale, at fair value	4,054,197	4,043,446
Federal Home Loan Bank and Federal Reserve Bank stocks, at cost	220,825	165,331
Residential loans held for sale	134,361	85,544
Commercial loans held for sale	30,452	—
Loans	22,867,112	20,784,991
Allowance for loan losses	(236,250)	(265,880)
Loans, net	22,630,861	20,519,111
Bank and corporate owned life insurance	661,009	591,057
Tax credit and other investments	132,355	147,099
Trading assets	140,328	69,675
Premises and equipment, net	358,926	330,963
Goodwill	1,168,922	976,239
Mortgage servicing rights, net	67,872	58,384
Other intangible assets, net	78,069	15,580
Other assets	602,730	482,294
Total assets	$ 33,489,002	$ 30,483,594
Liabilities and Stockholders' Equity		
Noninterest-bearing demand deposits	$ 5,421,270	$ 5,478,416
Interest-bearing deposits	19,410,342	17,307,546
Total deposits	24,831,612	22,785,962
Federal funds purchased and securities sold under agreements to repurchase	166,556	324,815
Commercial paper	43,604	67,467
FHLB advances	3,332,655	3,184,168
Other long-term funding	795,215	497,282
Trading liabilities	138,940	67,660
Accrued expenses and other liabilities	383,381	318,797
Total liabilities	29,691,963	27,246,151
Stockholders' Equity		
Preferred equity	256,716	159,929
Common equity		
Common stock	1,752	1,618
Surplus	1,834,017	1,454,188
Retained earnings	1,977,925	1,819,230
Accumulated other comprehensive income (loss)	(135,520)	(62,758)
Treasury stock, at cost	(137,852)	(134,764)
Total common equity	3,540,322	3,077,514
Total stockholders' equity	3,797,038	3,237,443
Total liabilities and stockholders' equity	$ 33,489,002	$ 30,483,594
Preferred shares issued	264,458	165,000
Preferred shares authorized (par value $1.00 per share)	750,000	750,000
Common shares issued	175,202,679	161,751,975
Common shares authorized (par value $0.01 per share)	250,000,000	250,000,000
Treasury shares of common stock	5,909,467	8,908,448

Numbers may not sum due to rounding.

See accompanying notes to consolidated financial statements.

Item 1. Financial Statements Continued:

ASSOCIATED BANC-CORP
Consolidated Statements of Income (Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	(In Thousands, except per share data)			
Interest Income				
Interest and fees on loans	$ 249,649	$ 196,972	$ 716,329	$ 554,867
Interest and dividends on investment securities:				
Taxable	29,895	24,162	90,622	71,295
Tax-exempt	11,883	8,268	31,883	24,540
Other interest	4,036	2,492	9,366	5,581
Total interest income	295,464	231,894	848,201	656,283
Interest Expense				
Interest on deposits	50,116	27,778	121,959	65,882
Interest on Federal funds purchased and securities sold under agreements to repurchase	504	768	1,564	2,107
Interest on other short-term funding	38	70	150	239
Interest on FHLB advances	19,318	8,612	53,720	20,209
Interest on long-term funding	6,095	4,544	15,183	13,632
Total interest expense	76,072	41,772	192,576	102,068
Net Interest Income	219,392	190,122	655,625	554,215
Provision for credit losses	(5,000)	5,000	(1,000)	26,000
Net interest income after provision for credit losses	224,392	185,122	656,625	528,215
Noninterest Income				
Insurance commissions and fees	21,636	19,815	68,279	62,288
Service charges on deposit account fees	16,904	16,268	49,714	48,654
Card-based and loan fees	14,090	12,619	41,899	38,848
Trust and asset management fees	14,140	12,785	40,946	37,066
Brokerage commission and fees	7,084	4,392	21,253	13,071
Mortgage banking, net	4,012	6,585	16,640	16,191
Capital markets, net	5,099	4,610	15,189	12,535
Bank and corporate owned life insurance	3,540	6,580	10,705	13,094
Asset gains (losses), net[(a)]	(1,037)	(16)	1,353	(716)
Investment securities gains (losses), net	30	3	(1,985)	359
Other	2,802	2,254	7,529	6,746
Total noninterest income	88,300	85,895	271,522	248,136
Noninterest Expense				
Personnel	124,476	108,098	366,141	321,946
Occupancy	14,519	12,294	44,947	40,345
Technology	17,563	15,233	54,730	45,126
Equipment	5,838	5,232	17,347	15,951
Business development and advertising	8,213	7,764	21,973	20,751
Legal and professional	5,476	6,248	17,173	16,125
Card issuance and loan costs	3,677	3,330	10,154	8,924
Foreclosure / OREO expense, net	950	906	2,694	3,593
FDIC assessment	7,750	7,800	24,250	23,800
Other intangible amortization	2,233	450	5,926	1,459
Acquisition related costs[(b)]	2,271	—	29,983	—
Other	11,445	10,072	33,318	29,413
Total noninterest expense	204,413	177,427	628,636	527,434
Income before income taxes	108,279	93,590	299,510	248,917
Income tax expense	22,349	28,589	54,932	69,663
Net Income	85,929	65,001	244,578	179,254
Preferred stock dividends	2,409	2,339	7,077	7,008
Net income available to common equity	$ 83,521	$ 62,662	$ 237,501	$ 172,246
Earnings per common share:				
Basic	$ 0.49	$ 0.41	$ 1.40	$ 1.13
Diluted	$ 0.48	$ 0.41	$ 1.38	$ 1.11
Average common shares outstanding:				
Basic	170,516	150,565	168,249	150,983
Diluted	172,802	152,968	170,876	153,782

Numbers may not sum due to rounding.

(a) The three months ended September 30, 2018 include approximately $1 million of Bank Mutual acquisition related asset losses net of asset gains; the nine months ended September 30, 2018 include approximately $2 million of Bank Mutual acquisition related asset losses net of asset gains.

(b) Includes Bank Mutual acquisition related costs only.

See accompanying notes to consolidated financial statements.

Item 1. Financial Statements Continued:

ASSOCIATED BANC-CORP
Consolidated Statements of Comprehensive Income (Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	($ in Thousands)			
Net income	$ 85,929	$ 65,001	$ 244,578	$ 179,254
Other comprehensive income, net of tax				
Investment securities available for sale				
Net unrealized gains (losses)	(21,345)	(1,986)	(82,099)	16,384
Net unrealized gain (loss) on available for sale securities transferred to held to maturity securities	—	—	—	(14,738)
Amortization of net unrealized gain (loss) on available for sale securities transferred to held to maturity securities	(52)	76	(684)	(2,499)
Reclassification adjustment for net losses (gains) realized in net income[1]	(30)	—	1,985	—
Reclassification from OCI due to change in accounting principle	—	—	(84)	—
Reclassification of certain tax effects from OCI	—	—	(8,419)	—
Income tax (expense) benefit	5,456	734	20,796	328
Other comprehensive income (loss) on investment securities available for sale	(15,971)	(1,176)	(68,505)	(525)
Defined benefit pension and postretirement obligations				
Amortization of prior service cost	(37)	(38)	(112)	(113)
Amortization of actuarial loss (gains)	551	621	1,480	1,596
Reclassification of certain tax effects from OCI	—	—	(5,235)	—
Income tax (expense) benefit	(174)	(225)	(390)	(567)
Other comprehensive income (loss) on pension and postretirement obligations	340	358	(4,257)	916
Total other comprehensive income (loss)	(15,631)	(818)	(72,762)	391
Comprehensive income	$ 70,298	$ 64,183	$ 171,816	$ 179,645

Numbers may not sum due to rounding.
(1) Includes only available for sale securities.

See accompanying notes to consolidated financial statements.

Item 1. Financial Statements Continued:

ASSOCIATED BANC-CORP
Consolidated Statements of Changes in Stockholders' Equity (Unaudited)

	Preferred Equity	Common Stock	Surplus	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Total
	(In Thousands, except per share data)						
Balance, December 31, 2016	$ 159,929	$ 1,630	$ 1,459,498	$ 1,695,764	$ (54,679)	$ (170,830)	$ 3,091,312
Comprehensive income							
Net income	—	—	—	179,254	—	—	179,254
Other comprehensive income	—	—	—	—	391	—	391
Comprehensive income							179,645
Common stock issued							
Stock-based compensation plans, net	—	—	1,952	(20,768)	—	41,276	22,460
Purchase of common stock returned to authorized but unissued	—	(15)	(37,016)	—	—	—	(37,031)
Purchase of treasury stock	—	—	—	—	—	(8,613)	(8,613)
Cash dividends							
Common stock, $0.36 per share	—	—	—	(55,058)	—	—	(55,058)
Preferred stock	—	—	—	(7,008)	—	—	(7,008)
Stock-based compensation expense, net	—	—	16,860	—	—	—	16,860
Other	—	—	1,034	—	—	—	1,034
Balance, September 30, 2017	$ 159,929	$ 1,615	$ 1,442,328	$ 1,792,184	$ (54,288)	$ (138,167)	$ 3,203,601
Balance, December 31, 2017	$ 159,929	$ 1,618	$ 1,454,188	$ 1,819,230	$ (62,758)	$ (134,764)	$ 3,237,443
Comprehensive income							
Net income	—	—	—	244,578	—	—	244,578
Other comprehensive income	—	—	—	—	(59,024)	—	(59,024)
Adoption of new accounting standards	—	—	—	—	(13,738)	—	(13,738)
Comprehensive income							171,816
Common stock issued							
Stock-based compensation plans, net	—	—	3,134	(15,737)	—	29,996	17,393
Acquisitions	—	137	396,975	—	—	91,296	488,408
Purchase of common stock returned to authorized but unissued	—	(14)	(33,061)	—	—	—	(33,075)
Purchase of treasury stock	—	—	—	—	—	(124,380)	(124,380)
Cash dividends							
Common stock, $0.45 per share	—	—	—	(77,431)	—	—	(77,431)
Preferred stock	—	—	—	(7,077)	—	—	(7,077)
Issuance of preferred stock	97,315	—	—	—	—	—	97,315
Redemption of preferred stock	(528)	—	—	(118)	—	—	(646)
Common stock warrants exercised	—	11	(11)	—	—	—	—
Stock-based compensation expense, net	—	—	12,792	—	—	—	12,792
Tax Act reclassification	—	—	—	13,654	—	—	13,654
Change in accounting principle	—	—	—	84	—	—	84
Other	—	—	—	742	—	—	742
Balance, September 30, 2018	$ 256,716	$ 1,752	$ 1,834,017	$ 1,977,925	$ (135,520)	$ (137,852)	$ 3,797,038

Numbers may not sum due to rounding.

See accompanying notes to consolidated financial statements.

Item 1. Financial Statements Continued:

ASSOCIATED BANC-CORP
Consolidated Statements of Cash Flows (Unaudited)

	Nine Months Ended September 30,	
	2018	2017
	($ in Thousands)	
Cash Flow From Operating Activities		
Net income	$ 244,578	$ 179,254
Adjustments to reconcile net income to net cash provided by operating activities		
Provision for credit losses	(1,000)	26,000
Depreciation and amortization	36,273	35,054
Addition to (recovery of) valuation allowance on mortgage servicing rights, net	(669)	286
Amortization of mortgage servicing rights	7,143	7,635
Amortization of other intangible assets	5,926	1,459
Amortization and accretion on earning assets, funding, and other, net	10,468	27,230
Net amortization of tax credit investments	14,388	14,685
Losses (gains) on sales of investment securities, net	1,985	(359)
Asset (gains) losses, net	(1,353)	716
(Gain) loss on mortgage banking activities, net	(15,412)	(3,762)
Mortgage loans originated and acquired for sale	(847,619)	(466,135)
Proceeds from sales of mortgage loans held for sale	826,929	551,697
Pension Contribution	(41,877)	(6,242)
Changes in certain assets and liabilities		
(Increase) decrease in interest receivable	(14,791)	(9,765)
Increase (decrease) in interest payable	4,671	3,410
Increase (decrease) in cash collateral	21,932	1,396
Net change in other assets and other liabilities	51,171	(46,278)
Net cash provided by operating activities	302,743	316,281
Cash Flow From Investing Activities		
Net increase in loans	(322,589)	(991,334)
Purchases of		
Available for sale securities	(737,580)	(701,080)
Held to maturity securities	(553,258)	(121,596)
Federal Home Loan Bank and Federal Reserve Bank stocks	(267,432)	(195,356)
Premises, equipment, and software, net of disposals	(42,941)	(32,925)
Proceeds from		
Sales of available for sale securities	601,130	—
Sales of held to maturity securities	—	16,059
Sale of Federal Home Loan Bank and Federal Reserve Bank stocks	231,964	162,911
Prepayments, calls, and maturities of available for sale investment securities	487,858	551,962
Prepayments, calls, and maturities of held to maturity investment securities	168,125	151,565
Sales, prepayments, calls, and maturities of other assets	24,243	10,833
Net change in tax credit investments	(32,690)	(35,027)
Net cash (paid) received in acquisition	59,472	(217)
Net cash used in investing activities	(383,698)	(1,184,205)
Cash Flow From Financing Activities		
Net increase (decrease) in deposits	204,700	445,003
Net increase (decrease) in short-term funding	(528,285)	(65,418)
Net increase (decrease) in short-term FHLB advances	121,000	38,000
Repayment of long-term FHLB advances	(1,900,012)	(115,017)
Proceeds from long-term FHLB advances	1,841,776	500,000
Proceeds from issuance of long-term funding	300,000	—
Proceeds from issuance of preferred shares	97,315	—
Proceeds from issuance of common stock for stock-based compensation plans	17,393	22,460
Redemption of preferred shares	(646)	—
Purchase of common stock returned to authorized but unissued	(33,075)	(37,031)
Purchase of treasury stock	(124,380)	(8,613)
Cash dividends on common stock	(77,431)	(55,058)
Cash dividends on preferred stock	(7,077)	(7,008)
Net cash provided by (used in) financing activities	(88,722)	717,318
Net increase (decrease) in cash, cash equivalents, and restricted cash	(169,677)	(150,606)
Cash, cash equivalents, and restricted cash at beginning of period	716,018	642,233
Cash, cash equivalents, and restricted cash at end of period	$ 546,341	$ 491,627
Supplemental disclosures of cash flow information		
Cash paid for interest	$ 185,875	$ 98,151
Cash paid for income taxes	17,335	61,959
Loans and bank premises transferred to other real estate owned	20,781	5,872
Capitalized mortgage servicing rights	7,826	4,822
Loans transferred into held for sale from portfolio, net	56,550	75,289
Acquisition		
Fair value of assets acquired, including cash and cash equivalents	2,567,560	—
Fair value ascribed to goodwill and intangible assets	261,142	217
Fair value of liabilities assumed	2,340,294	—
Equity issued in acquisition	488,408	—

Numbers may not sum due to rounding.

See accompanying notes to consolidated financial statements.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the statement of financial position that sum to the total of the same sum amounts shown in the statement of cash flows.

	Nine Months Ended September 30,	
	2018	2017
	($ in Thousands)	
Cash and cash equivalents	$ 457,728	$ 423,392
Restricted cash	88,613	68,235
Total cash, cash equivalents, and restricted cash shown in the statement of cash flows	$ 546,341	$ 491,627

Amounts included in restricted cash represent required reserve balances with the Federal Reserve Bank, included in cash and due from banks on the face of the Consolidated Balance Sheet.

Item 1. Financial Statements Continued:

ASSOCIATED BANC-CORP
Notes to Consolidated Financial Statements

These interim consolidated financial statements have been prepared according to the rules and regulations of the Securities and Exchange Commission and, therefore, certain information and footnote disclosures normally presented in accordance with U.S. generally accepted accounting principles have been omitted or abbreviated. The information contained in the consolidated financial statements and footnotes in Associated Banc-Corp's 2017 Annual Report on Form 10-K, should be referred to in connection with the reading of these unaudited interim financial statements.

Note 1 Basis of Presentation

In the opinion of management, the accompanying unaudited consolidated financial statements contain all adjustments necessary to present fairly the financial position, results of operations and comprehensive income, changes in stockholders' equity, and cash flows of Associated Banc-Corp (individually referred to herein as the "Parent Company," and together with all of its subsidiaries and affiliates, collectively referred to herein as the "Corporation") for the periods presented, and all such adjustments are of a normal recurring nature. The consolidated financial statements include the accounts of all subsidiaries. All significant intercompany transactions and balances have been eliminated in consolidation. The results of operations for the interim periods are not necessarily indicative of the results to be expected for the full year.

In preparing the consolidated financial statements, management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities as of the date of the balance sheet and revenues and expenses for the period. Actual results could differ significantly from those estimates. Estimates that are particularly susceptible to significant change include the determination of the allowance for loan losses, goodwill impairment assessment, mortgage servicing rights valuation, and income taxes. Management has evaluated subsequent events for potential recognition or disclosure.

Within the tables presented, certain columns and rows may not sum due to the use of rounded numbers for disclosure purposes.

Note 2 Acquisitions

Bank Mutual Acquisition

On February 1, 2018, the Corporation completed its acquisition of Bank Mutual Corporation ("Bank Mutual") in a stock transaction valued at approximately $482 million. Bank Mutual was a diversified financial services company headquartered in Milwaukee, Wisconsin. The merger resulted in a combined company with a larger market presence in markets the Corporation currently operates in, as well as expansion into nearly a dozen new markets. The merger is also expected to provide significant efficiency opportunities and economies of scale associated with a larger financial institution.

Under the terms of the Agreement and Plan of Merger dated July 20, 2017 (the "Merger Agreement"), Bank Mutual's shareholders received 0.422 shares of the Corporation's common stock for each share of Bank Mutual common stock. The Corporation issued approximately 19.5 million shares for a total deal value of approximately $482 million based on the closing sale price of a share of common stock of the Corporation on January 31, 2018. The Corporation completed the conversion of Bank Mutual in the second quarter of 2018. The banking subsidiary of Bank Mutual merged with and into Associated Bank, N.A. on June 24, 2018.

The acquisition of Bank Mutual constituted a business combination. The merger has been accounted for using the acquisition method of accounting and, accordingly, assets acquired, liabilities assumed, and consideration exchanged were recorded at estimated fair value on the acquisition date. The determination of estimated fair values required management to make certain estimates that are subjective in nature and may require adjustments upon the availability of new information regarding facts and circumstances which existed at the date of acquisition (i.e., appraisals) for up to a year following the acquisition. The Corporation continues to review information relating to events or circumstances existing at the acquisition date. Management anticipates that this review could result in adjustments to the acquisition date valuation amounts presented herein but does not anticipate that these adjustments will be material.

Goodwill related to the Bank Mutual acquisition increased $6 million during the second quarter of 2018 and an additional $2 million during the third quarter of 2018 to $175 million. Upon review of information relating to events and circumstances existing at the acquisition date, and in accordance with applicable accounting guidance, the Corporation remeasured select previously reported fair value amounts. Based on updated appraisal information, the fair value of premises and equipment decreased by $6 million and $2 million during the second and third quarters of 2018, respectively. Additionally, during the second quarter of 2018, the fair value of loans was increased by less than $1 million due to an updated appraisal and other adjustments. Goodwill created by the acquisition of Bank Mutual is not tax deductible. See Note 8 for additional information on goodwill, as well as the carrying amount and amortization of core deposit and other intangible assets related to the Bank Mutual acquisition.

The following table presents the estimated fair values of the assets acquired and liabilities assumed as of the acquisition date related to Bank Mutual.

	Purchase Accounting Adjustments	February 1, 2018
	($ in Thousands)	
Assets		
Cash and cash equivalents	$ —	$ 78,052
Investment securities	(6,238)	452,867
Federal Home Loan Bank stock, at cost	—	20,026
Loans	(48,043)	1,875,877
Premises and equipment, net	2,930	42,689
Bank owned life insurance	(24)	65,390
Goodwill		175,499
Core deposit intangibles (included in other intangible assets, net on the face of the Consolidated Balance Sheet)	58,100	58,100
Other real estate owned (included in other assets on the face of the Consolidated Balance Sheet)	199	4,848
Others assets	$ 7,054	$ 47,158
Total assets		$ 2,820,506
Liabilities		
Deposits	$ 2,498	$ 1,840,950
Other borrowings	1,875	431,886
Other liabilities	$ 4,487	$ 65,982
Total liabilities		$ 2,338,818
Total consideration paid		$ 481,688

The following is a description of the methods used to determine the fair value of significant assets and liabilities presented on the balance sheet above.

Loans: Fair values for loans were based on a discounted cash flow methodology that considered factors including the type of loan and related collateral, classification status, fixed or variable interest rate, term of loan, amortization status and current discount rates. Loans were grouped together according to similar characteristics when applying various valuation techniques.

Core deposit intangible ("CDI"): This intangible asset represents the value of the relationships with deposit customers. The fair value was estimated based on a discounted cash flow methodology that gave appropriate consideration to expected customer attrition rates, net maintenance cost of the deposit base, alternative cost of funds, and the interest costs associated with customer deposits. The CDI is being amortized on a straight-line basis over 10 years.

Time deposits: The fair values for time deposits are estimated using a discounted cash flow calculation that applies interest rates currently being offered to the contractual interest rates on such time deposits.

Federal Home Loan Bank ("FHLB") borrowings: The fair values of FHLB advances are estimated based on quoted market prices for the instrument if available, or for similar instruments if not available, or by using discounted cash flow analyses, based on current incremental borrowing rates for similar types of instruments.

See Note 13 for additional information on fair value measurements.

Other Acquisitions

During the second quarter of 2018, the Corporation completed the acquisition of Anderson Insurance & Investment Agency, Inc. ("Anderson"), an independent insurance agency based in Minneapolis, Minnesota. Anderson adds a range of complementary services and significant expertise in workers' compensation and executive risk management services. The transaction was valued at approximately $10 million. As a result of the acquisition, the Corporation recorded goodwill of approximately $7 million and added approximately $3 million of other intangibles related to customer relationships associated with the Anderson acquisition. The other intangibles related to the acquisition are being amortized on a straight-line basis over 7 years. See Note 8 for more information on goodwill and other intangible assets.

During the first quarter of 2018, the Corporation completed the acquisition of Diversified Insurance Solutions ("Diversified"). The acquisition improved Associated Benefits and Risk Consulting's ability to achieve greater scale in the Metro Milwaukee

market and to further expand its Wisconsin employee benefits and property and casualty market position and capabilities. The transaction was valued at approximately $19 million. As a result of the acquisition, the Corporation recorded goodwill of approximately $10 million and other intangibles of approximately $8 million. The other intangibles related to the acquisition are being amortized on a straight-line basis over 10 years. See Note 8 for more information on goodwill and other intangible assets.

Note 3 Summary of Significant Accounting Policies

The accounting and reporting policies of the Corporation conform to U.S. generally accepted accounting principles and to general practice within the financial services industry. A discussion of these policies can be found in Note 1 Summary of Significant Accounting Policies section included in the Corporation’s 2017 Annual Report on Form 10-K. There have been two changes to the Corporation's significant accounting policies since December 31, 2017.

Business combinations

The Corporation accounts for its acquisitions using the purchase accounting method. Purchase accounting requires the total purchase price to be allocated to the estimated fair values of assets acquired and liabilities assumed, including certain intangible assets that must be recognized. Typically, this allocation results in the purchase price exceeding the fair value of net assets acquired, which is recorded as goodwill. Core deposit intangibles are a measure of the value of checking, money market and savings deposits acquired in business combinations accounted for under the purchase method. Core deposit intangibles and other identified intangibles with finite useful lives are amortized using the straight line method over their estimated useful lives of up to ten years.

Loans that the Corporation acquires in connection with acquisitions are recorded at fair value with no carryover of the related allowance for credit losses. Fair value of the loans involves estimating the amount and timing of principal and interest cash flows expected to be collected on the loans and discounting those cash flows at a market rate of interest. The excess of cash flows expected at acquisition over the estimated fair value is referred to as the accretable discount and is recognized into interest income over the remaining life of the loan when there is a reasonable expectation about the amount and timing of such cash flows. If a reasonable expectation on the amount or timing of such cash flows can't be determined, accretion of the fair value discount for nonperforming loans will be recognized using the cost recovery method of accounting.

The difference between contractually required payments at acquisition and the cash flows expected to be collected at acquisition is referred to as the non-accretable discount. The non-accretable discount includes estimated future credit losses expected to be incurred over the life of the loan. Subsequent decreases to the expected cash flows will require the Corporation to evaluate the need for an additional allowance for credit losses. Subsequent improvement in expected cash flows will result in the reversal of a corresponding amount of the non-accretable discount which the Corporation will then reclassify as accretable discount that will be recognized into interest income over the remaining life of the loan.

The Corporation accounts for performing loans acquired in business combinations using the contractual cash flows method of recognizing discount accretion based on the acquired loans’ contractual cash flows. Purchased performing loans are recorded at fair value, including credit, interest, and liquidity discounts. The fair value discount is accreted as an adjustment to yield over the estimated lives of the loans. There is no allowance for loan losses established at the acquisition date for purchased performing loans. A provision for loan losses is recorded for any further deterioration in these loans subsequent to the acquisition.

Revenue Recognition

The Corporation recognizes revenue in accordance with ASC 606, "Revenue from Contracts with Customers." ASC 606 requires the Corporation to follow a five step process: (1) identify the contract(s) with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue when (or as) the entity satisfies a performance obligation. Revenue recognition under ASC 606 depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for the goods or services.

New Accounting Pronouncements Adopted

Standard	Description	Date of adoption	Effect on financial statements
ASU 2018-02 Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income	The FASB issued an amendment to allow a reclassification from accumulated other comprehensive income to retained earnings for the stranded tax effects resulting from the Tax Cuts and Jobs Act of 2017. The amendments in this update are effective for all entities for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption of the update was permitted and should be applied in the period of adoption or retrospectively to each period in which the effect of the change in the U.S. federal corporate income tax rate related to the Tax Cuts and Jobs Act of 2017 is recognized.	1st Quarter 2018	The Corporation has elected to early adopt this amendment. During the first quarter of 2018, the Corporation reclassified approximately $14 million from accumulated other comprehensive income to retained earnings as a result of the Tax Cuts and Jobs Act. No material impact on results of operations, financial position, or liquidity. See Consolidated Statements of Comprehensive Income and the Statement of Changes in Stockholders' Equity.
ASU 2017-12 Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities	The FASB issued an amendment to better align a company's financial reporting for hedging activities with the economic objectives of those activities for both financial (e.g., interest rate) and commodity risks. The provisions create more transparency around how economic results are presented, both on the face of the financial statements and in the footnotes. It also contains targeted improvements to simplify the application of hedge accounting guidance. This amendment is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Entities should apply the amendment on a modified retrospective transition method in which the cumulative effect of the change will be recognized within equity in the consolidated balance sheet as of the date of adoption. Early adoption was permitted, including in an interim period. If an entity early adopts in an interim period, any adjustments should be reflected as of the beginning of the fiscal year that includes the interim period.	1st Quarter 2018	The Corporation has elected to early adopt this amendment. No material impact on results of operations, financial position, or liquidity. See Note 10 for expanded disclosures.
ASU 2017-07 Compensation — Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost	The FASB issued an amendment to improve the presentation of net periodic pension cost and net periodic postretirement benefit cost, including a requirement that employers disaggregate the service cost component from the other components of net benefit cost. In addition, the amendments provide explicit guidance on how to present the service cost component and the other components of net benefit cost in the income statement and allow only the service cost component of net benefit cost to be eligible for capitalization. This amendment was effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Entities should apply the amendment retrospectively to each period presented and prospectively only for the capitalization component. Early adoption is permitted, but should be within the first interim period if interim financial statements are issued.	1st Quarter 2018	No impact on results of operations, financial position, or liquidity. The update required retrospective restatement. For the full year 2017, the Corporation reclassified approximately $9 million from personnel expense to other noninterest expense for the non-service cost components of net periodic pension cost and net periodic postretirement benefit cost. See Note 14 for expanded disclosure.
ASU 2017-01 Business Combinations (Topic 805): Clarifying the Definition of a Business	The FASB issued amendments to clarify the definition of a business in order to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets versus businesses. The new standard narrows the definition of a business by adding three principal clarifications if: (1) substantially all the fair value of the gross assets in the asset group is concentrated in either a single identifiable asset or group of similar identifiable assets the transaction does not involve a business, (2) the asset group does not include a minimum of an input and a substantive process, it does not represent a business, and (3) the integrated set of activities (including its inputs and processes) does not create, or have the ability to create, goods or services to customers, investment income (e,g. dividends or interest) or other revenues, then it is not a business. The overall intention is to provide consistency in applying the guidance, reduce the costs of application, and make the definition of a business more operable. This amendment was effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Entities should apply the amendment prospectively on or after the effective date.	1st Quarter 2018	No material impact on results of operations, financial position, or liquidity.
ASU 2016-18 Statement of Cash Flows (Topic 230): Restricted Cash	The FASB issued an amendment to improve GAAP by providing guidance on the presentation of restricted cash or restricted cash equivalents in the statement of cash flows, in order to reduce diversity in practice. The amendment requires that a statement of cash flow explain the change during the period in the total cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included in cash and cash equivalents when reconciling the beginning and end of period total amounts shown on the statement of cash flow. This amendment was effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Entities should apply the amendment retrospectively to each period presented. Early adoption is permitted, including in an interim period.	1st Quarter 2018	No impact on results of operations, financial position, or liquidity. See Consolidated Statements of Cash Flows.

Standard	Description	Date of adoption	Effect on financial statements
ASU 2016-16 Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory	The FASB issued an amendment requiring an entity to recognize income tax consequences on an intra-entity transfer of an asset other than inventory at the time the transaction occurs. This amendment was effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Entities should apply the amendment by means of a cumulative-effect adjustment to retained earnings as of the beginning of the fiscal year of adoption. Early adoption is permitted for all entities in the first interim period if an entity issues interim financial statements.	1st Quarter 2018	No material impact on results of operations, financial position, or liquidity.
ASU 2016-15 Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments	The FASB issued an amendment to provide clarification on where to classify cash flows involving certain cash receipts and cash payments. Under the new guidance, cash payments for debt prepayment or debt extinguishment costs should be classified as cash outflows from financing activities. The new guidance also details the specific classification of contingent consideration cash payments made after a business combination depending on the timing of payments. Lastly, cash proceeds received from corporate owned life insurance policies (including bank owned life insurance) should be classified as cash inflows from investing, while the cash payments for the premiums may be classified as cash outflows from investing, operating, or a combination of both. This amendment was effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Entities should apply the amendment retrospectively to each period presented. Early adoption is permitted, including in an interim period; however, all of the amendments must be adopted in the same period.	1st Quarter 2018	No material impact on results of operations, financial position, or liquidity.
ASU 2016-01 Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities	The FASB issued an amendment to address certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. This amendment supersedes the guidance to classify equity securities with readily determinable fair values into different categories, requires equity securities to be measured at fair value with changes in the fair value recognized through net income, and simplifies the impairment assessment of equity investments without readily determinable fair values. The amendment requires public business entities that are required to disclose the fair value of financial instruments measured at amortized cost on the balance sheet to measure that fair value using the exit price notion. The amendment requires an entity to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option. The amendment requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset on the balance sheet or in the accompanying notes to the financial statements. The amendment reduces diversity in current practice by clarifying 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. This amendment was effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Entities are required to apply the amendment by means of a cumulative-effect adjustment as of the beginning of the fiscal year of adoption, with the exception of the amendment related to equity securities without readily determinable fair values, which should be applied prospectively to equity investments that exist as of the date of adoption.	1st Quarter 2018	The Corporation has adopted this amendment using the cumulative-effect adjustment as of the beginning of the fiscal year of adoption. No material impact on the result of operations, financial position or liquidity. In 2008, the Corporation received Visa Class B restricted shares as part of Visa's initial public offering. Based on the existing transfer restriction and the uncertainty of the covered litigation, the approximately 119 thousand Class B shares remaining that the Corporation owned as of September 30, 2018 are carried at a zero cost basis. See Consolidated Statements of Comprehensive Income and Note 13 Fair Value Measurements.
ASU 2014-09 Revenue from Contracts with Customers (Topic 606)	The FASB issued an amendment to clarify the principles for recognizing revenue and to develop a common revenue standard. The standard outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The core principle of the revenue model is that "an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services." In applying the revenue model to contracts within its scope, an entity should apply the following steps: (1) identify the contract(s) with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue when (or as) the entity satisfies a performance obligation. The standard applies to all contracts with customers except those that are within the scope of other topics in the FASB Codification. The standard also requires significantly expanded disclosures about revenue recognition. The amendment was originally to be effective for annual reporting periods beginning after December 15, 2016 (including interim reporting periods within those periods); however, in July 2015, the FASB approved a one year deferral of the effective date to December 31, 2017.	1st Quarter 2018	The Corporation chose to adopt this amendment using the modified retrospective approach with no material impact on the Corporation's results of operations, financial position, or liquidity. See Note 17 for expanded disclosure requirements.

Note 4 Earnings Per Common Share

Earnings per common share are calculated utilizing the two-class method. Basic earnings per common share are calculated by dividing the sum of distributed earnings to common shareholders and undistributed earnings allocated to common shareholders by the weighted average number of common shares outstanding. Diluted earnings per common share are calculated by dividing the sum of distributed earnings to common shareholders and undistributed earnings allocated to common shareholders by the weighted average number of common shares outstanding adjusted for the dilutive effect of common stock awards (outstanding stock options and unvested restricted stock awards) and common stock warrants. Presented below are the calculations for basic and diluted earnings per common share.

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2018	2017	2018	2017
	(In Thousands, except per share data)			
Net income	$ 85,929	$ 65,001	$ 244,578	$ 179,254
Preferred stock dividends	(2,409)	(2,339)	(7,077)	(7,008)
Net income available to common equity	$ 83,521	$ 62,662	$ 237,501	$ 172,246
Common shareholder dividends	(25,486)	(18,149)	(77,035)	(54,726)
Unvested share-based payment awards	(128)	(105)	(396)	(332)
Undistributed earnings	$ 57,907	$ 44,408	$ 160,070	$ 117,188
Undistributed earnings allocated to common shareholders	57,620	44,150	159,297	116,418
Undistributed earnings allocated to unvested share-based payment awards	288	258	772	770
Undistributed earnings	$ 57,907	$ 44,408	$ 160,070	$ 117,188
Basic				
Distributed earnings to common shareholders	$ 25,486	$ 18,149	$ 77,035	$ 54,726
Undistributed earnings allocated to common shareholders	57,620	44,150	159,297	116,418
Total common shareholders earnings, basic	$ 83,106	$ 62,299	$ 236,332	$ 171,144
Diluted				
Distributed earnings to common shareholders	$ 25,486	$ 18,149	$ 77,035	$ 54,726
Undistributed earnings allocated to common shareholders	57,620	44,150	159,297	116,418
Total common shareholders earnings, diluted	$ 83,106	$ 62,299	$ 236,332	$ 171,144
Weighted average common shares outstanding	170,516	150,565	168,249	150,983
Effect of dilutive common stock awards	2,188	1,815	2,101	2,081
Effect of dilutive common stock warrants	98	588	526	718
Diluted weighted average common shares outstanding	172,802	152,968	170,876	153,782
Basic earnings per common share	$ 0.49	$ 0.41	$ 1.40	$ 1.13
Diluted earnings per common share	$ 0.48	$ 0.41	$ 1.38	$ 1.11

Anti-dilutive common stock options of approximately 1.4 million and 1.0 million for the three months ended September 30, 2018 and 2017, respectively, and 1.4 million and 1.0 million for the nine months ended September 30, 2018 and 2017, respectively, were excluded from the earnings per common share calculation.

Note 5 Stock-Based Compensation

The fair value of stock options granted is estimated on the date of grant using a Black-Scholes option pricing model, while the fair value of restricted stock awards is their fair market value on the date of grant. The fair values of stock options and restricted stock awards are amortized as compensation expense on a straight-line basis over the vesting period of the grants. For retirement eligible colleagues, expenses related to stock options and restricted stock awards are fully recognized on the date the colleague meets the definition of normal or early retirement. Compensation expense recognized is included in personnel expense in the consolidated statements of income.

Performance awards are based on performance goals of earnings per share and total shareholder return with vesting ranging from a minimum of 25% to a maximum of 150% of the target award. Performance awards are valued utilizing a Monte Carlo simulation model to estimate fair value of the awards at the grant date.

Assumptions are used in estimating the fair value of stock options granted. The weighted average expected life of the stock option represents the period of time stock options are expected to be outstanding and is estimated using historical data of stock option

exercises and forfeitures. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. The expected volatility is based on the implied volatility of the Corporation's stock.

The following assumptions were used in estimating the fair value for options granted in the first nine months of 2018 and full year 2017.

	2018	2017
Dividend yield	2.50%	2.00%
Risk-free interest rate	2.60%	2.00%
Weighted average expected volatility	22.00%	25.00%
Weighted average expected life	5.75 years	5.5 years
Weighted average per share fair value of options	$4.47	$5.30

A summary of the Corporation's stock option activity for the nine months ended September 30, 2018 is presented below.

Stock Options	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value(a)
Outstanding at December 31, 2017	5,118,687	$ 18.02	6.48	$ 38,028
Granted	938,740	24.50		
Assumed from Bank Mutual acquisition	370,051	14.35		
Exercised	(966,213)	16.57		
Forfeited or expired	(63,313)	25.17		
Outstanding at September 30, 2018	5,397,952	$ 19.07	6.48	$ 37,423
Options Exercisable at September 30, 2018	3,253,556	$ 16.89	5.24	$ 29,649

(a) $ in Thousands

Intrinsic value represents the amount by which the fair market value of the underlying stock exceeds the exercise price of the stock option. For the nine months ended September 30, 2018, the intrinsic value of stock options exercised was approximately $10 million. For the nine months ended September 30, 2017, the intrinsic value of the stock options exercised was $12 million. The total fair value of stock options vested was $4 million for both the nine months ended September 30, 2018 and September 30, 2017. The Corporation recognized compensation expense for the vesting of stock options of $3 million for both the nine months ended September 30, 2018 and September 30, 2017. Included in compensation expense for 2018 was less than $1 million of expense for the accelerated vesting of stock options granted to retirement eligible colleagues. At September 30, 2018, the Corporation had approximately $5 million of unrecognized compensation expense related to stock options that is expected to be recognized over the remaining requisite service periods that extend through first quarter 2022.

The following table summarizes information about the Corporation's restricted stock activity for the nine months ended September 30, 2018.

Restricted Stock	Shares	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2017	2,026,071	$ 19.68
Granted	592,371	24.72
Vested	(568,441)	18.33
Forfeited	(50,478)	22.25
Outstanding at September 30, 2018	1,999,523	$ 21.94

The Corporation amortizes the expense related to restricted stock awards as compensation expense over the vesting period specified in the grant's award agreement. Performance-based restricted stock awards granted during 2017 and 2018 will vest ratably over a three year period. Service-based restricted stock awards granted during 2017 and 2018 will vest ratably over a four year period. Expense for restricted stock awards issued of approximately $10 million was recorded for the nine months ended September 30, 2018 and $14 million was recorded for the nine months ended September 30, 2017. Included in compensation expense for 2018 was approximately $1 million of expense for the accelerated vesting of restricted stock awards granted to retirement eligible colleagues. The Corporation had $21 million of unrecognized compensation costs related to restricted stock awards at September 30, 2018, that is expected to be recognized over the remaining requisite service periods that extend through first quarter 2022.

The Corporation has the ability to issue shares from treasury or new shares upon the exercise of stock options or the granting of restricted stock awards. The Board of Directors has authorized management to repurchase shares of the Corporation's common

stock in the market, to be made available for issuance in connection with the Corporation’s employee incentive plans and for other corporate purposes. The repurchase of shares will be based on market and investment opportunities, capital levels, growth prospects, and regulatory constraints. Such repurchases may occur from time to time in open market purchases, block transactions, private transactions, accelerated share repurchase programs, or similar facilities.

Note 6 Investment Securities

Investment securities are generally classified as available for sale or held to maturity at the time of purchase. The majority of the Corporation's investment securities are mortgage-related securities issued by the Government National Mortgage Association (“GNMA”) or government-sponsored enterprises ("GSE") such as the Federal National Mortgage Association (“FNMA”) and the Federal Home Loan Mortgage Corporation (“FHLMC”). A portion of the portfolio is also comprised of asset-backed securities backed by student loans made under the Federal Family Education Loan Program ("FFELP"). The amortized cost and fair values of securities available for sale and held to maturity were as follows.

September 30, 2018	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	($ in Thousands)			
Investment securities available for sale				
U. S. Treasury securities	$ 1,001	$ —	$ (4)	$ 997
Residential mortgage-related securities				
FNMA / FHLMC	320,148	2,658	(6,132)	316,674
GNMA	2,259,538	—	(79,528)	2,180,010
Private-label	1,022	—	(4)	1,018
GNMA commercial mortgage-related securities	1,306,802	—	(55,824)	1,250,978
FFELP asset backed securities	298,282	1,766	(101)	299,947
Other debt securities	3,000	—	—	3,000
Other equity securities	1,573	—	—	1,573
Total investment securities available for sale	$ 4,191,366	$ 4,424	$ (141,593)	$ 4,054,197
Investment securities held to maturity				
Obligations of state and political subdivisions (municipal securities)	$ 1,682,162	$ 1,216	$ (33,332)	$ 1,650,046
Residential mortgage-related securities				
FNMA / FHLMC	95,603	162	(3,266)	92,499
GNMA	367,536	1,753	(15,337)	353,952
GNMA commercial mortgage-related securities	516,454	8,092	(26,026)	498,520
Total investment securities held to maturity	$ 2,661,755	$ 11,223	$ (77,961)	$ 2,595,017

December 31, 2017	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	($ in Thousands)			
Investment securities available for sale				
U. S. Treasury securities	$ 1,003	$ —	$ (7)	$ 996
Residential mortgage-related securities				
FNMA / FHLMC	457,680	9,722	(2,634)	464,768
GNMA	1,944,453	275	(31,378)	1,913,350
Private-label	1,067	—	(8)	1,059
GNMA commercial mortgage-related securities	1,547,173	5	(33,901)	1,513,277
FFELP asset backed securities	144,322	867	(13)	145,176
Other debt securities	3,200	—	(12)	3,188
Other equity securities	1,519	127	(14)	1,632
Total investment securities available for sale	$ 4,100,417	$ 10,996	$ (67,967)	$ 4,043,446
Investment securities held to maturity				
Obligations of state and political subdivisions (municipal securities)	$ 1,281,320	$ 13,899	$ (3,177)	$ 1,292,042
Residential mortgage-related securities				
FNMA / FHLMC	40,995	398	(489)	40,904
GNMA	414,440	2,700	(6,400)	410,740
GNMA commercial mortgage-related securities	546,098	9,546	(15,756)	539,888
Total investment securities held to maturity	$ 2,282,853	$ 26,543	$ (25,822)	$ 2,283,574

The expected maturities of investment securities available for sale and held to maturity at September 30, 2018 are shown below. Expected maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

	Available for Sale		Held to Maturity	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
	($ in Thousands)			
Due in one year or less	$ 2,001	$ 1,997	$ 48,561	$ 48,871
Due after one year through five years	2,000	2,000	188,337	186,335
Due after five years through ten years	—	—	385,908	377,705
Due after ten years	—	—	1,059,355	1,037,135
Total debt securities	4,001	3,997	1,682,162	1,650,046
Residential mortgage-related securities				
FNMA / FHLMC	320,148	316,674	95,603	92,499
GNMA	2,259,538	2,180,010	367,536	353,952
Private-label	1,022	1,018	—	—
GNMA commercial mortgage-related securities	1,306,802	1,250,978	516,454	498,520
FFELP asset backed securities	298,282	299,947	—	—
Equity securities	1,573	1,573	—	—
Total investment securities	$ 4,191,366	$ 4,054,197	$ 2,661,755	$ 2,595,017
Ratio of Fair Value to Amortized Cost		96.7%		97.5%

The proceeds from the sale of investment securities for the nine months ended September 30, 2018 and 2017 are shown below.

	Nine Months Ended September 30,	
	2018	2017
	($ in Thousands)	
Gross gains on available for sale securities	$ 1,954	$ —
Gross gains on held to maturity securities	—	364
Total gains	1,954	364
Gross losses on available for sale securities	(3,938)	—
Gross losses on held to maturity securities	$ —	$ (5)
Total losses	$ (3,938)	$ (5)
Investment securities gains (losses), net	$ (1,985)	$ 359
Proceeds from sales of investment securities	$ 601,130	$ 16,059

During 2018, the Corporation executed a strategy to improve the yield on securities and increase interest income during the current and future calendar years. During the third quarter of 2018, the Corporation sold mortgage-related securities totaling approximately $108 million at a slight gain with all proceeds reinvested into higher-yielding securities. The taxable equivalent yield of the securities sold was 3.08% while the reinvestment was at 3.51%. During the first six months of 2018, the Corporation also sold $40 million of lower yielding GNMA commercial mortgage-related securities.

In addition, on the acquisition date, the Corporation sold Bank Mutual's entire $453 million securities portfolio. The Corporation reinvested these funds into municipal securities. This strategy was completed during August 2018.

During the first nine months of 2017, the Corporation sold approximately $16 million of municipal securities classified as held to maturity due to credit concerns stemming from budgetary pressure and continued credit rating deterioration concerns in the State of Illinois.

Investment securities with a carrying value of approximately $3.7 billion and $3.1 billion at September 30, 2018 , and December 31, 2017, respectively, were pledged to secure certain deposits or for other purposes as required or permitted by law.

The following represents gross unrealized losses and the related fair value of investment securities available for sale and held to maturity, aggregated by investment category and length of time individual securities have been in a continuous unrealized loss position, at September 30, 2018.

	Less than 12 months			12 months or more			Total	
September 30, 2018	Number of Securities	Unrealized Losses	Fair Value	Number of Securities	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value
				($ in Thousands)				
Investment securities available for sale								
U.S. Treasury securities	—	$ —	$ —	1	$ (4)	$ 997	$ (4)	$ 997
Residential mortgage-related securities								
FNMA / FHLMC	18	(583)	60,527	14	(5,549)	172,119	(6,132)	232,646
GNMA	47	(29,687)	1,150,098	47	(49,841)	1,029,912	(79,528)	2,180,010
Private-label	—	—	—	1	(4)	1,018	(4)	1,018
GNMA commercial mortgage-related securities	4	(2,397)	63,846	89	(53,427)	1,187,406	(55,824)	1,251,252
FFELP asset backed securities	6	(101)	67,798	—	—	—	(101)	67,798
Total	75	$ (32,768)	$1,342,269	152	$ (108,825)	$2,391,452	$ (141,593)	$3,733,721
Investment securities held to maturity								
Obligations of state and political subdivisions (municipal securities)	1,288	$ (22,552)	$1,026,504	228	$ (10,779)	$ 187,493	$ (33,332)	$1,213,997
Residential mortgage-related securities								
FNMA / FHLMC	22	(1,798)	64,876	18	(1,469)	25,980	(3,266)	90,856
GNMA	39	(2,676)	89,367	46	(12,662)	262,952	(15,337)	352,319
GNMA commercial mortgage-related securities	1	(951)	28,308	24	(25,074)	470,212	(26,026)	498,520
Total	1,350	$ (27,976)	$1,209,055	316	$ (49,983)	$ 946,637	$ (77,961)	$2,155,692

For comparative purposes, the following represents gross unrealized losses and the related fair value of investment securities available for sale and held to maturity, aggregated by investment category and length of time that individual securities have been in a continuous unrealized loss position, at December 31, 2017.

December 31, 2017	Less than 12 months			12 months or more			Total	
	Number of Securities	Unrealized Losses	Fair Value	Number of Securities	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value
	($ in Thousands)							
Investment securities available for sale								
U.S. Treasury securities	1	$ (7)	$ 996	—	$ —	$ —	$ (7)	$ 996
Residential mortgage-related securities								
FNMA / FHLMC	9	(572)	69,939	9	(2,062)	142,093	(2,634)	212,032
GNMA	44	(8,927)	1,028,221	25	(22,451)	737,198	(31,378)	1,765,419
Private-label	—	—	—	1	(8)	1,059	(8)	1,059
GNMA commercial mortgage-related securities	33	(5,554)	480,514	70	(28,347)	1,026,642	(33,901)	1,507,156
FFELP asset backed securities	1	(13)	12,158	—	—	—	(13)	12,158
Other debt securities	1	(12)	188	—	—	—	(12)	188
Other equity securities	3	(14)	1,487	—	—	—	(14)	1,487
Total	92	$ (15,099)	$1,593,503	105	$ (52,868)	$1,906,992	$ (67,967)	$3,500,495
Investment securities held to maturity								
Obligations of state and political subdivisions (municipal securities)	157	$ (746)	$ 122,761	132	$ (2,431)	$ 127,043	$ (3,177)	$ 249,804
Residential mortgage-related securities								
FNMA / FHLMC	8	(73)	13,143	10	(417)	16,262	(490)	29,405
GNMA	35	(3,373)	268,388	18	(3,026)	120,892	(6,399)	389,280
GNMA commercial mortgage-related securities	2	(299)	52,997	23	(15,457)	486,891	(15,756)	539,888
Total	202	$ (4,491)	$ 457,289	183	$ (21,331)	$ 751,088	$ (25,822)	$1,208,377

The Corporation reviews the investment securities portfolio on a quarterly basis to monitor its exposure to other-than-temporary impairment. A determination as to whether a security's decline in fair value is other-than-temporary takes into consideration numerous factors and the relative significance of any single factor can vary by security. Some factors the Corporation may consider in the other-than-temporary impairment analysis include the length of time and extent to which the security has been in an unrealized loss position, changes in security ratings, financial condition and near-term prospects of the issuer, as well as security and industry specific economic conditions.

Based on the Corporation's evaluation, management does not believe any unrealized loss at September 30, 2018 represents an other-than-temporary impairment as these unrealized losses are primarily attributable to changes in interest rates and the current market conditions, and not credit deterioration. The unrealized losses reported for municipal securities relate to various state and local political subdivisions and school districts. The unrealized losses at September 30, 2018 for mortgage-related securities is due to the increase in overall interest rates. The U.S. Treasury 3 year and 5 year rates increased by 90 basis points ("bp") and 74 bp, respectively, from December 31, 2017. The Corporation does not intend to sell nor does it believe that it will be required to sell the securities in an unrealized loss position before recovery of their amortized cost basis.

Federal Home Loan Bank ("FHLB") and Federal Reserve Bank stocks: The Corporation is required to maintain Federal Reserve stock and FHLB stock as a member of both the Federal Reserve System and the FHLB, and in amounts as required by these institutions. These equity securities are "restricted" in that they can only be sold back to the respective institutions or another member institution at par. Therefore, they are less liquid than other marketable equity securities and their fair value is equal to amortized cost. At September 30, 2018 and December 31, 2017, the Corporation had FHLB stock of $144 million and $89 million, respectively. The Corporation had Federal Reserve Bank stock of $77 million and $76 million at September 30, 2018 and December 31, 2017, respectively.

Note 7 Loans

The period end loan composition was as follows.

	September 30, 2018[(a)]	December 31, 2017
	($ in Thousands)	
Commercial and industrial	$ 7,159,941	$ 6,399,693
Commercial real estate — owner occupied	867,682	802,209
Commercial and business lending	8,027,622	7,201,902
Commercial real estate — investor	3,924,499	3,315,254
Real estate construction	1,416,209	1,451,684
Commercial real estate lending	5,340,708	4,766,938
Total commercial	13,368,330	11,968,840
Residential mortgage	8,227,649	7,546,534
Home equity	901,275	883,804
Other consumer	369,858	385,813
Total consumer	9,498,782	8,816,151
Total loans	$ 22,867,112	$ 20,784,991

(a) Includes $13 million of purchased credit-impaired loans

The following table presents commercial and consumer loans by credit quality indicator at September 30, 2018.

	Pass	Special Mention	Potential Problem	Nonaccrual	Total
	($ in Thousands)				
Commercial and industrial	$ 6,886,363	$ 78,964	$ 144,468	$ 50,146	$ 7,159,941
Commercial real estate - owner occupied	823,615	6,762	32,526	4,779	867,682
Commercial and business lending	7,709,978	85,725	176,994	54,925	8,027,622
Commercial real estate - investor	3,790,423	64,509	49,842	19,725	3,924,499
Real estate construction	1,401,585	10,078	3,392	1,154	1,416,209
Commercial real estate lending	5,192,008	74,587	53,234	20,879	5,340,708
Total commercial	12,901,986	160,312	230,228	75,804	13,368,330
Residential mortgage	8,154,521	1,159	6,073	65,896	8,227,649
Home equity	887,690	1,113	148	12,324	901,275
Other consumer	369,192	598	—	68	369,858
Total consumer	9,411,403	2,870	6,221	78,288	9,498,782
Total	$ 22,313,389	$ 163,182	$ 236,449	$ 154,092	$ 22,867,112

The following table presents commercial and consumer loans by credit quality indicator at December 31, 2017.

	Pass	Special Mention	Potential Problem	Nonaccrual	Total
	($ in Thousands)				
Commercial and industrial	$ 6,015,884	$ 157,245	$ 113,778	$ 112,786	$ 6,399,693
Commercial real estate - owner occupied	723,291	14,181	41,997	22,740	802,209
Commercial and business lending	6,739,175	171,426	155,775	135,526	7,201,902
Commercial real estate - investor	3,266,389	24,845	19,291	4,729	3,315,254
Real estate construction	1,421,504	29,206	—	974	1,451,684
Commercial real estate lending	4,687,893	54,051	19,291	5,703	4,766,938
Total commercial	11,427,068	225,477	175,066	141,229	11,968,840
Residential mortgage	7,490,860	426	1,616	53,632	7,546,534
Home equity	868,958	1,137	195	13,514	883,804
Other consumer	384,990	652	—	171	385,813
Total consumer	8,744,808	2,215	1,811	67,317	8,816,151
Total	$ 20,171,876	$ 227,692	$ 176,877	$ 208,546	$ 20,784,991

Factors that are important to managing overall credit quality are sound loan underwriting and administration, systematic monitoring of existing loans and commitments, effective loan review on an ongoing basis, early identification of potential problems, and appropriate allowance for loan losses, allowance for unfunded commitments, nonaccrual, and charge off policies.

For commercial loans, management has determined the pass credit quality indicator to include credits that exhibit acceptable financial statements, cash flow, and leverage. If any risk exists, it is mitigated by the loan structure, collateral, monitoring, or control. For consumer loans, performing loans include credits that are performing in accordance with the original contractual terms. Loans are considered past due if the required principal and interest payments have not been received as of the date such payments were due. Special mention credits have potential weaknesses that deserve management's attention. If left uncorrected, these potential weaknesses may result in deterioration of the repayment prospects for the credit. Potential problem loans are considered inadequately protected by the current net worth and paying capacity of the obligor or the collateral pledged. These loans generally have a well-defined weakness, or weaknesses, that may jeopardize liquidation of the debt and are characterized by the distinct possibility that the Corporation will sustain some loss if the deficiencies are not corrected. Lastly, management considers a loan to be impaired when it is probable that the Corporation will be unable to collect all amounts due according to the original contractual terms of the note agreement, including both principal and interest. Management has determined that commercial and consumer loan relationships that have nonaccrual status or have had their terms restructured in a troubled debt restructuring meet this impaired loan definition. Commercial loans classified as special mention, potential problem, and nonaccrual are reviewed at a minimum on a quarterly basis, while pass and performing rated credits are reviewed on an annual basis or more frequently if the loan renewal is less than one year or if otherwise warranted.

The following table presents loans by past due status at September 30, 2018.

	Accruing					
	Current	30-59 Days Past Due	60-89 Days Past Due	90 Days or More Past Due	Nonaccrual[(a)]	Total
	($ in Thousands)					
Commercial and industrial	$ 7,103,744	$ 5,592	$ 140	$ 319	$ 50,146	$ 7,159,941
Commercial real estate - owner occupied	856,777	5,589	537	—	4,779	867,682
Commercial and business lending	7,960,521	11,181	677	319	54,925	8,027,622
Commercial real estate - investor	3,904,401	373	—	—	19,725	3,924,499
Real estate construction	1,414,538	517	—	—	1,154	1,416,209
Commercial real estate lending	5,318,939	890	—	—	20,879	5,340,708
Total commercial	13,279,460	12,071	677	319	75,804	13,368,330
Residential mortgage	8,152,854	7,829	1,070	—	65,896	8,227,649
Home equity	880,871	6,989	1,091	—	12,324	901,275
Other consumer	365,955	1,249	730	1,856	68	369,858
Total consumer	9,399,680	16,067	2,891	1,856	78,288	9,498,782
Total	$ 22,679,140	$ 28,138	$ 3,568	$ 2,175	$ 154,092	$ 22,867,112

(a) Of the total nonaccrual loans, $92 million or 60% were current with respect to payment at September 30, 2018.

The following table presents loans by past due status at December 31, 2017.

	Accruing					
	Current	30-59 Days Past Due	60-89 Days Past Due	90 Days or More Past Due	Nonaccrual[a]	Total
	($ in Thousands)					
Commercial and industrial	$ 6,286,369	$ 170	$ 101	$ 267	$ 112,786	$ 6,399,693
Commercial real estate - owner occupied	779,421	48	—	—	22,740	802,209
Commercial and business lending	7,065,790	218	101	267	135,526	7,201,902
Commercial real estate - investor	3,310,000	374	—	151	4,729	3,315,254
Real estate construction	1,450,459	168	83	—	974	1,451,684
Commercial real estate lending	4,760,459	542	83	151	5,703	4,766,938
Total commercial	11,826,249	760	184	418	141,229	11,968,840
Residential mortgage	7,483,350	9,186	366	—	53,632	7,546,534
Home equity	863,465	5,688	1,137	—	13,514	883,804
Other consumer	382,186	1,227	780	1,449	171	385,813
Total consumer	8,729,001	16,101	2,283	1,449	67,317	8,816,151
Total	$ 20,555,250	$ 16,861	$ 2,467	$ 1,867	$ 208,546	$ 20,784,991

(a) Of the total nonaccrual loans, $135 million or 65% were current with respect to payment at December 31, 2017.

The following table presents impaired loans individually evaluated under ASC Topic 310, excluding $13 million of purchased credit-impaired loans, at September 30, 2018.

	Recorded Investment	Unpaid Principal Balance	Related Allowance	Average Recorded Investment	Interest Income Recognized
			($ in Thousands)		
Loans with a related allowance					
Commercial and industrial	$ 57,935	$ 68,894	$ 6,013	$ 70,339	$ 1,121
Commercial real estate — owner occupied	3,746	3,752	20	15,460	143
Commercial and business lending	61,681	72,646	6,033	85,799	1,264
Commercial real estate — investor	2,069	2,148	287	14,929	13
Real estate construction	440	516	74	451	22
Commercial real estate lending	2,509	2,664	361	15,380	35
Total commercial	64,190	75,310	6,394	101,179	1,299
Residential mortgage	40,797	44,197	5,937	41,589	1,321
Home equity	9,692	10,689	3,327	9,846	431
Other consumer	1,186	1,188	123	1,188	2
Total consumer	51,675	56,074	9,387	52,623	1,754
Total loans[(a)]	$ 115,865	$ 131,384	$ 15,781	$ 153,802	$ 3,053
Loans with no related allowance					
Commercial and industrial	$ 28,311	$ 41,615	$ —	$ 31,955	$ (348)
Commercial real estate — owner occupied	3,772	4,823	—	4,043	—
Commercial and business lending	32,083	46,438	—	35,998	(348)
Commercial real estate — investor	9,917	14,230	—	993	892
Real estate construction	—	—	—	—	—
Commercial real estate lending	9,917	14,230	—	993	892
Total commercial	42,000	60,668	—	36,991	544
Residential mortgage	9,925	10,047	—	10,504	172
Home equity	778	796	—	1,277	5
Other consumer	—	—	—	—	—
Total consumer	10,703	10,843	—	11,781	177
Total loans[(a)]	$ 52,703	$ 71,511	$ —	$ 48,772	$ 721
Total					
Commercial and industrial	$ 86,246	$ 110,509	$ 6,013	$ 102,294	$ 773
Commercial real estate — owner occupied	7,518	8,575	20	19,503	143
Commercial and business lending	93,764	119,084	6,033	121,797	916
Commercial real estate — investor	11,986	16,378	287	15,922	905
Real estate construction	440	516	74	451	22
Commercial real estate lending	12,426	16,894	361	16,373	927
Total commercial	106,190	135,978	6,394	138,170	1,843
Residential mortgage	50,722	54,244	5,937	52,093	1,493
Home equity	10,470	11,485	3,327	11,123	436
Other consumer	1,186	1,188	123	1,188	2
Total consumer	62,378	66,917	9,387	64,404	1,931
Total loans[(a)]	$ 168,568	$ 202,895	$ 15,781	$ 202,574	$ 3,774

(a) The net recorded investment (defined as recorded investment, net of the related allowance) of the impaired loans represented 75% of the unpaid principal balance at September 30, 2018.

The following table presents impaired loans individually evaluated under ASC Topic 310 at December 31, 2017.

	Recorded Investment	Unpaid Principal Balance	Related Allowance	Average Recorded Investment	Interest Income Recognized
			($ in Thousands)		
Loans with a related allowance					
Commercial and industrial	$ 81,649	$ 83,579	$ 10,838	$ 58,494	$ 2,629
Commercial real estate — owner occupied	23,796	23,937	2,973	12,124	736
Commercial and business lending	105,445	107,516	13,811	70,618	3,365
Commercial real estate — investor	17,823	17,862	1,597	16,924	1,694
Real estate construction	467	578	86	484	29
Commercial real estate lending	18,290	18,440	1,683	17,408	1,723
Total commercial	123,735	125,956	15,494	88,026	5,088
Residential mortgage	40,561	42,922	6,512	40,411	1,614
Home equity	10,250	10,986	3,718	10,521	549
Other consumer	1,135	1,138	122	1,140	3
Total consumer	51,946	55,046	10,352	52,072	2,166
Total loans[a]	$ 175,681	$ 181,002	$ 25,846	$ 140,098	$ 7,254
Loans with no related allowance					
Commercial and industrial	$ 60,595	$ 82,839	$ —	$ 89,275	$ 492
Commercial real estate — owner occupied	2,438	2,829	—	1,948	36
Commercial and business lending	63,033	85,668	—	91,223	528
Commercial real estate — investor	1,295	1,295	—	—	45
Real estate construction	—	—	—	—	—
Commercial real estate lending	1,295	1,295	—	—	45
Total commercial	64,328	86,963	—	91,223	573
Residential mortgage	6,925	7,204	—	4,999	217
Home equity	641	645	—	540	7
Other consumer	—	—	—	—	—
Total consumer	7,566	7,849	—	5,539	224
Total loans[a]	$ 71,894	$ 94,812	$ —	$ 96,762	$ 797
Total					
Commercial and industrial	$ 142,244	$ 166,418	$ 10,838	$ 147,769	$ 3,121
Commercial real estate — owner occupied	26,234	26,766	2,973	14,072	772
Commercial and business lending	168,478	193,184	13,811	161,841	3,893
Commercial real estate — investor	19,118	19,157	1,597	16,924	1,739
Real estate construction	467	578	86	484	29
Commercial real estate lending	19,585	19,735	1,683	17,408	1,768
Total commercial	188,063	212,919	15,494	179,249	5,661
Residential mortgage	47,486	50,126	6,512	45,410	1,831
Home equity	10,891	11,631	3,718	11,061	556
Other consumer	1,135	1,138	122	1,140	3
Total consumer	59,512	62,895	10,352	57,611	2,390
Total loans[a]	$ 247,575	$ 275,814	$ 25,846	$ 236,860	$ 8,051

(a) The net recorded investment (defined as recorded investment, net of the related allowance) of the impaired loans represented 80% of the unpaid principal balance at December 31, 2017.

Troubled Debt Restructurings ("Restructured Loans")

Loans are considered restructured loans if concessions have been granted to borrowers that are experiencing financial difficulty. The following table presents nonaccrual and performing restructured loans by loan portfolio.

	September 30, 2018		December 31, 2017	
	Performing Restructured Loans	Nonaccrual Restructured Loans[(a)]	Performing Restructured Loans	Nonaccrual Restructured Loans[(a)]
	($ in Thousands)			
Commercial and industrial	$ 38,885	$ 142	$ 30,047	$ 1,776
Commercial real estate — owner occupied	3,746	—	3,989	—
Commercial real estate — investor	350	9,917	14,389	—
Real estate construction	218	222	310	157
Residential mortgage	16,986	20,952	17,068	18,991
Home equity	7,792	2,515	7,705	2,537
Other consumer	1,177	9	1,110	25
Total	$ 69,154	$ 33,757	$ 74,618	$ 23,486

(a) Nonaccrual restructured loans have been included within nonaccrual loans.

The Corporation had a recorded investment of approximately $10 million in loans modified in troubled debt restructurings during the nine months ended September 30, 2018, of which $4 million were in accrual status and approximately $6 million were in nonaccrual pending a sustained period of repayment.

The following table provides the number of loans modified in a troubled debt restructuring by loan portfolio, the recorded investment and unpaid principal balance for the nine months ended September 30, 2018 and 2017.

	Nine Months Ended September 30, 2018			Nine Months Ended September 30, 2017		
	Number of Loans	Recorded Investment[(a)]	Unpaid Principal Balance[(b)]	Number of Loans	Recorded Investment[(a)]	Unpaid Principal Balance[(b)]
	($ in Thousands)					
Commercial and industrial	6	$ 1,954	$ 1,995	19	$ 11,387	$ 15,898
Commercial real estate — owner occupied	—	—	—	2	710	710
Commercial real estate — investor	1	958	1,022	—	—	—
Residential mortgage	29	5,655	5,733	48	4,445	4,638
Home equity	32	1,552	1,582	35	934	1,182
Other consumer	3	19	21	—	—	—
Total	71	$ 10,138	$ 10,353	104	$ 17,476	$ 22,428

(a) Represents post-modification outstanding recorded investment.
(b) Represents pre-modification outstanding recorded investment.

Restructured loan modifications may include payment schedule modifications, interest rate concessions, maturity date extensions, modification of note structure (A/B Note), non-reaffirmed Chapter 7 bankruptcies, principal reduction, or some combination of these concessions. During the nine months ended September 30, 2018 , restructured loan modifications of commercial and industrial, commercial real estate, and real estate construction loans primarily included maturity date extensions and payment schedule modifications. Restructured loan modifications of home equity and residential mortgage loans primarily included maturity date extensions, interest rate concessions, non-reaffirmed Chapter 7 bankruptcies, or a combination of these concessions for the nine months ended September 30, 2018.

The following table provides the number of loans modified in a troubled debt restructuring during the previous twelve months which subsequently defaulted during the nine months ended September 30, 2018 and 2017 and the recorded investment in these restructured loans as of September 30, 2018 and 2017.

	Nine Months Ended September 30, 2018		Nine Months Ended September 30, 2017	
	Number of Loans	Recorded Investment	Number of Loans	Recorded Investment
	($ in Thousands)			
Commercial and industrial	3	$ —	1	$ 1
Residential mortgage	12	2,579	21	1,335
Home equity	28	1,599	14	371
Total	43	$ 4,178	36	$ 1,707

All loans modified in a troubled debt restructuring are evaluated for impairment. The nature and extent of the impairment of restructured loans, including those which have experienced a subsequent payment default, is considered in the determination of an appropriate level of the allowance for loan losses.

Allowance for Credit Losses

The allowance for credit losses is comprised of the allowance for loan losses and the allowance for unfunded commitments. The level of the allowance for loan losses represents management's estimate of an amount appropriate to provide for probable credit losses in the loan portfolio at the balance sheet date. The allowance for unfunded commitments is maintained at a level believed by management to be sufficient to absorb estimated probable losses related to unfunded credit facilities (including unfunded loan commitments and letters of credit) and is included in accrued expenses and other liabilities on the consolidated balance sheets. See Note 12 for additional information on the allowance for unfunded commitments.

The following table presents a summary of the changes in the allowance for loan losses by portfolio segment for the nine months ended September 30, 2018.

($ in Thousands)	Commercial and industrial	Commercial real estate - owner occupied	Commercial real estate - investor	Real estate construction	Residential mortgage	Home equity	Other consumer	Total
December 31, 2017	$ 123,068	$ 10,352	$ 41,059	$ 34,370	$ 29,607	$ 22,126	$ 5,298	$ 265,880
Charge offs	(29,707)	(1,361)	(5,278)	(298)	(1,310)	(2,508)	(3,923)	(44,385)
Recoveries	9,609	354	139	340	1,049	2,171	593	14,255
Net Charge offs	(20,098)	(1,007)	(5,139)	42	(261)	(337)	(3,330)	(30,130)
Provision for loan losses	2,643	105	5,737	(7,676)	(1,884)	(2,101)	3,676	500
September 30, 2018	$ 105,613	$ 9,451	$ 41,657	$ 26,737	$ 27,461	$ 19,687	$ 5,644	$ 236,250
Allowance for loan losses								
Individually evaluated for impairment	$ 6,013	$ 20	$ 287	$ 74	$ 5,937	$ 3,327	$ 123	$ 15,781
Collectively evaluated for impairment	99,600	9,431	41,370	26,663	21,524	16,360	5,521	220,469
Acquired and accounted for under ASC 310-30[(a)]	—	—	—	—	—	—	—	—
Total allowance for loan losses	$ 105,613	$ 9,451	$ 41,657	$ 26,737	$ 27,461	$ 19,687	$ 5,644	$ 236,250
Loans								
Individually evaluated for impairment	$ 86,246	$ 7,518	$ 11,986	$ 440	$ 50,722	$ 10,470	$ 1,186	$ 168,568
Collectively evaluated for impairment	7,071,043	858,747	3,904,266	1,415,745	8,176,217	890,721	368,672	22,685,411
Acquired and accounted for under ASC 310-30[(a)]	2,652	1,416	8,247	24	710	84	—	13,133
Total loans	$ 7,159,941	$ 867,682	$ 3,924,499	$ 1,416,209	$ 8,227,649	$ 901,275	$ 369,858	$ 22,867,112

(a) Loans acquired in business combinations and accounted for under ASC Subtopic 310-30 "Receivables — Loans and Debt Securities Acquired with Deteriorated Credit Quality."

For comparison purposes, a summary of the changes in the allowance for loan losses by portfolio segment for the year ended December 31, 2017, was as follows.

($ in Thousands)	Commercial and industrial	Commercial real estate - owner occupied	Commercial real estate - investor	Real estate construction	Residential mortgage	Home equity	Other consumer	Total
December 31, 2016	$ 140,126	$ 14,034	$ 45,285	$ 26,932	$ 27,046	$ 20,364	$ 4,548	$ 278,335
Charge offs	(44,533)	(344)	(991)	(604)	(2,611)	(2,724)	(4,439)	(56,246)
Recoveries	11,465	173	242	74	927	3,194	716	16,791
Net Charge offs	(33,068)	(171)	(749)	(530)	(1,684)	470	(3,723)	(39,455)
Provision for loan losses	16,010	(3,511)	(3,477)	7,968	4,245	1,292	4,473	27,000
December 31, 2017	$ 123,068	$ 10,352	$ 41,059	$ 34,370	$ 29,607	$ 22,126	$ 5,298	$ 265,880
Allowance for loan losses								
Individually evaluated for impairment	$ 10,838	$ 2,973	$ 1,597	$ 86	$ 6,512	$ 3,718	$ 122	$ 25,846
Collectively evaluated for impairment	112,230	7,379	39,462	34,284	23,095	18,408	5,176	240,034
Total allowance for loan losses	$ 123,068	$ 10,352	$ 41,059	$ 34,370	$ 29,607	$ 22,126	$ 5,298	$ 265,880
Loans								
Individually evaluated for impairment	$ 142,244	$ 26,234	$ 19,118	$ 467	$ 47,486	$ 10,891	$ 1,135	$ 247,575
Collectively evaluated for impairment	6,257,449	775,975	3,296,136	1,451,217	7,499,048	872,913	384,678	20,537,416
Total loans	$ 6,399,693	$ 802,209	$ 3,315,254	$ 1,451,684	$ 7,546,534	$ 883,804	$ 385,813	$ 20,784,991

The allowance related to the oil and gas portfolio was $10 million at September 30, 2018 and represented 1.4% of total oil and gas loans.

($ in Millions)	Nine Months Ended September 30, 2018	Year Ended December 31, 2017
Balance at beginning of period	$ 27	$ 38
Charge offs	(24)	(25)
Recoveries	3	—
Net Charge offs	(20)	(25)
Provision for loan losses	3	14
Balance at end of period	$ 10	$ 27
Allowance for loan losses		
Individually evaluated for impairment	$ —	$ 5
Collectively evaluated for impairment	10	22
Total allowance for loan losses	$ 10	$ 27
Loans		
Individually evaluated for impairment	$ 32	$ 77
Collectively evaluated for impairment	700	523
Total loans	$ 731	$ 600

The following table presents a summary of the changes in the allowance for unfunded commitments.

	Nine Months Ended September 30, 2018	Year Ended December 31, 2017
	($ in Thousands)	
Allowance for Unfunded Commitments		
Balance at beginning of period	$ 24,400	$ 25,400
Provision for unfunded commitments	(1,500)	(1,000)
Amount recorded at acquisition	2,436	—
Balance at end of period	$ 25,336	$ 24,400

Loans Acquired in Acquisition

Loans acquired in a business combination are recorded at estimated fair value on their purchase date without a carryover of the related allowance for loan and lease losses. Acquired loans are segregated into two types:

- Performing loans are accounted for in accordance with ASC Topic 310-20 "Nonrefundable Fees and Other Costs" as these loans do not have evidence of credit deterioration since origination.
- Nonperforming loans are accounted for in accordance with ASC Topic 310-30 as they display significant credit deterioration since origination.

For performing loans the difference between the estimated fair value of the loans and the principal outstanding is accreted over the remaining life of the loans.

In accordance with ASC 310-30, purchased credit-impaired loans are pooled by loan type and the difference between contractually required payments at acquisition and the cash flows expected to be collected is referred to as the non-accretable difference. Further, any excess of cash flows expected at acquisition over the estimated fair value is referred to as the accretable yield and is recognized into interest income over the remaining life of the loan pools when there is a reasonable expectation about the amount and timing of such cash flows. If a reasonable expectation on the amount or timing of such cash flows cannot be determined, accretion of the fair value discount for nonperforming loans will be recognized using the cost recovery method of accounting.

Changes in the accretable yield for loans acquired and accounted for under ASC Topic 310-30 were as follows for the nine months ended September 30, 2018 and for the year ended December 31, 2017

	Nine Months Ended September 30, 2018	Year Ended December 31, 2017
	($ in Thousands)	
Changes in Accretable Yield		
Balance at beginning of period	$ —	$ —
Purchases	4,853	—
Accretion	(310)	—
Net reclassification from non-accretable yield	144	—
Other[(a)]	(5)	—
Balance at end of period	$ 4,681	$ —

(a) Primarily includes charge-offs which are accounted for under ASC Subtopic 310-30 "Receivables — Loans and Debt Securities Acquired with Deteriorated Credit Quality."

For loans acquired, the fair value of purchased credit-impaired loans, on the acquisition date, was determined based on assigned risk ratings, expected cash flows and the fair value of loan collateral. The fair value of loans that were non-impaired was determined based on estimates of losses on defaults and other market factors.

At September 30, 2018, the Corporation had a total of approximately $27 million in net unaccreted purchase discount, of which approximately $21 million was related to performing loans and approximately $6 million was related to the Corporation's purchased credit-impaired loans.

Note 8 Goodwill and Other Intangible Assets

Goodwill

Goodwill is not amortized but is instead subject to impairment tests on at least an annual basis, and more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount.

The Corporation conducted its most recent annual impairment testing in May 2018, utilizing a qualitative assessment. Factors that management considered in this assessment included macroeconomic conditions, industry and market considerations, overall financial performance of the Corporation and each reporting unit (both current and projected), changes in management strategy, and changes in the composition or carrying amount of net assets. In addition, management considered the changes in both the Corporation’s common stock price and in the overall bank common stock index (based on the S&P 400 Regional Bank Sub-Industry Index), as well as the Corporation’s earnings per common share trend over the past year. Based on these assessments, management concluded that the 2018 annual qualitative impairment assessment indicated that it is more likely than not that the estimated fair value exceeded the carrying value (including goodwill) for each reporting unit. Therefore, a step one quantitative analysis was not required. There have been no events since the May 2018 impairment testing that have changed the Corporation's impairment assessment conclusion. There were no impairment charges recorded in 2017 or the first nine months of 2018.

At September 30, 2018, the Corporation had goodwill of $1.2 billion, compared to $976 million at December 31, 2017. Goodwill increased $175 million related to the Bank Mutual acquisition, $10 million related to the acquisition of Diversified, and $7 million related to the acquisition of Anderson. See Note 2 for additional information on the Corporation's acquisitions.

Other Intangible Assets

The Corporation has other intangible assets that are amortized, consisting of core deposit intangibles, other intangibles (primarily related to customer relationships acquired in connection with the Corporation's insurance agency acquisitions), and mortgage servicing rights. During the first quarter of 2018, the Corporation added approximately $58 million of core deposit intangibles as a result of the Bank Mutual acquisition. In addition, the Corporation added approximately $8 million of other intangibles relating to customer relationships associated with the Diversified acquisition. During the second quarter of 2018, the Corporation added approximately $3 million of other intangibles related to customer relationships associated with the Anderson acquisition. See Note 2 for additional information on the Corporation's acquisitions. For core deposit intangibles and other intangibles, changes in the gross carrying amount, accumulated amortization, and net book value were as follows.

	Nine Months Ended September 30, 2018	Year Ended December 31, 2017
	($ in Thousands)	
Core deposit intangibles		
Gross carrying amount	$ 58,100	$ 4,385
Accumulated amortization	(3,873)	(4,385)
Net book value	$ 54,227	$ —
Additions during the periods	$ 58,100	$ —
Amortization during the year	$ 3,873	$ 112
Other intangibles		
Gross carrying amount	$ 44,931	$ 34,572
Reductions due to sale	(43)	—
Accumulated amortization	(21,045)	(18,992)
Net book value	$ 23,843	$ 15,580
Additions during the period	$ 10,359	$ 2,162
Amortization during the year	$ 2,053	$ 1,847

The Corporation sells residential mortgage loans in the secondary market and typically retains the right to service the loans sold. Mortgage servicing rights are amortized in proportion to and over the period of estimated net servicing income and assessed for impairment at each reporting date.

The Corporation evaluates its mortgage servicing rights asset for impairment at minimum on a quarterly basis. Impairment is assessed based on fair value at each reporting date using estimated prepayment speeds of the underlying mortgage loans serviced and stratifications based on the risk characteristics of the underlying loans (predominantly loan type and note interest rate). As mortgage interest rates fall, prepayment speeds are usually faster and the value of the mortgage servicing rights asset generally decreases, requiring additional valuation reserve. Conversely, as mortgage interest rates rise, prepayment speeds are usually slower and the value of the mortgage servicing rights asset generally increases, requiring less valuation reserve. A valuation allowance is established, through a charge to earnings, to the extent the amortized cost of the mortgage servicing rights exceeds the estimated fair value by stratification. If it is later determined that all or a portion of the temporary impairment no longer exists for a stratification, the valuation is reduced through a recovery to earnings. An other-than-temporary impairment (i.e., recoverability is considered remote when considering interest rates and loan pay off activity) is recognized as a write-down of the mortgage servicing rights asset and the related valuation allowance (to the extent a valuation allowance is available) and then against earnings. A direct write-down permanently reduces the carrying value of the mortgage servicing rights asset and valuation allowance, precluding subsequent recoveries. See Note 12 for a discussion of the recourse provisions on sold residential mortgage loans. See Note 13 which further discusses fair value measurement relative to the mortgage servicing rights asset.

A summary of changes in the balance of the mortgage servicing rights asset and the mortgage servicing rights valuation allowance was as follows.

	Nine Months Ended September 30, 2018		Year Ended December 31, 2017	
	($ in Thousands)			
Mortgage servicing rights				
Mortgage servicing rights at beginning of period	$	59,168	$	62,085
Additions from acquisition		8,136		—
Additions		7,826		7,167
Amortization		(7,143)		(10,084)
Mortgage servicing rights at end of period	$	67,987	$	59,168
Valuation allowance at beginning of period		(784)		(609)
(Additions) recoveries, net		669		(175)
Valuation allowance at end of period		(115)		(784)
Mortgage servicing rights, net	$	67,872	$	58,384
Fair value of mortgage servicing rights	$	87,120	$	64,387
Portfolio of residential mortgage loans serviced for others (“servicing portfolio”)	$	8,547,230	$	7,646,846
Mortgage servicing rights, net to servicing portfolio		0.79%		0.76%
Mortgage servicing rights expense [(a)]	$	6,474	$	10,259

(a) Includes the amortization of mortgage servicing rights and additions / recoveries to the valuation allowance of mortgage servicing rights, and is a component of mortgage banking, net in the consolidated statements of income.

The following table shows the estimated future amortization expense for amortizing intangible assets. The projections of amortization expense are based on existing asset balances, the current interest rate environment, and prepayment speeds as of September 30, 2018 . The actual amortization expense the Corporation recognizes in any given period may be significantly different depending upon acquisition or sale activities, changes in interest rates, prepayment speeds, market conditions, regulatory requirements, and events or circumstances that indicate the carrying amount of an asset may not be recoverable.

Estimated Amortization Expense	Core Deposit Intangibles		Other Intangibles		Mortgage Servicing Rights	
			($ in Thousands)			
Three Months Ending December 31, 2018	$	1,453	$	780	$	2,362
2019		5,810		2,824		9,029
2020		5,810		2,707		7,892
2021		5,810		2,682		6,873
2022		5,810		2,659		5,995
2023		5,810		2,640		5,246
Beyond 2023		23,724		9,551		30,590
Total Estimated Amortization Expense	$	54,227	$	23,843	$	67,987

Note 9 Short and Long-Term Funding

The following table presents the components of short-term funding (funding with original contractual maturities of one year or less), long-term funding (funding with original contractual maturities greater than one year), and FHLB advances (funding based on original contractual maturities).

	September 30, 2018	December 31, 2017
	($ in Thousands)	
Short-Term Funding		
Federal funds purchased	$ 25,890	$ 141,950
Securities sold under agreements to repurchase	140,666	182,865
Federal funds purchased and securities sold under agreements to repurchase	166,556	324,815
Commercial paper	43,604	67,467
Total short-term funding	$ 210,159	$ 392,282
Long-Term Funding		
Senior notes, at par	$ 550,000	$ 250,000
Subordinated notes, at par	250,000	250,000
Other long-term funding and capitalized costs	(4,785)	(2,718)
Total long-term funding	795,215	497,282
Total short and long-term funding, excluding FHLB advances	$ 1,005,375	$ 889,564
FHLB Advances		
Short-term FHLB advances	$ 405,000	$ 284,000
Long-term FHLB advances	2,927,655	2,900,168
Total FHLB advances	$ 3,332,655	$ 3,184,168
Total short and long-term funding	$ 4,338,030	$ 4,073,732

Securities Sold Under Agreements to Repurchase ("Repurchase Agreements")

The Corporation enters into agreements under which it sells securities subject to an obligation to repurchase the same or similar securities. Under these arrangements, the Corporation may transfer legal control over the assets but still retain effective control through an agreement that both entitles and obligates the Corporation to repurchase the assets. The obligation to repurchase the securities is reflected as a liability on the Corporation's consolidated balance sheets, while the securities underlying the repurchase agreements remain in the respective investment securities asset accounts (i.e., there is no offsetting or netting of the investment securities assets with the repurchase agreement liabilities). See Note 11 for additional disclosures on balance sheet offsetting.

The Corporation utilizes securities sold under agreements to repurchase to facilitate the needs of its customers. As of September 30, 2018, the Corporation pledged agency mortgage-related securities with a fair value of $237 million as collateral for the repurchase agreements. Securities pledged as collateral under repurchase agreements are maintained with the Corporation's safekeeping agents and are monitored on a daily basis due to the market risk of fair value changes in the underlying securities. The Corporation generally pledges excess securities to ensure there is sufficient collateral to satisfy short-term fluctuations in both the repurchase agreement balances and the fair value of the underlying securities.

The remaining contractual maturity of the securities sold under agreements to repurchase in the consolidated balance sheets as of September 30, 2018 and December 31, 2017 are presented in the following table.

	Remaining Contractual Maturity of the Agreements				
	Overnight and Continuous	Up to 30 days	30-90 days	Greater than 90 days	Total
	($ in Thousands)				
September 30, 2018					
Repurchase agreements					
Agency mortgage-related securities	$ 140,666	$ —	$ —	$ —	$ 140,666
Total	$ 140,666	$ —	$ —	$ —	$ 140,666
December 31, 2017					
Repurchase agreements					
Agency mortgage-related securities	$ 182,865	$ —	$ —	$ —	$ 182,865
Total	$ 182,865	$ —	$ —	$ —	$ 182,865

Long-Term Funding

Senior Notes

In August 2018, Associated Bank, N.A. issued $300 million of senior notes, due August 2021, and callable July 2021. The senior notes have a fixed coupon interest rate of 3.50% and were issued at a discount.

In November 2014, the Corporation issued $250 million of senior notes, due November 2019, and callable October 2019. The senior notes have a fixed coupon interest rate of 2.75% and were issued at a discount.

Subordinated Notes

In November 2014, the Corporation issued $250 million of 10-year subordinated notes, due January 2025, and callable October 2024. The subordinated notes have a fixed coupon interest rate of 4.25% and were issued at a discount.

FHLB Advances

At September 30, 2018, the Corporation had $3.3 billion of FHLB advances, up $148 million from December 31, 2017.

As of September 30, 2018, the Corporation had $2.6 billion of putable FHLB advances with a one-time option where the FHLB can call the advance prior to the contractual maturity. The contractual weighted average life to the put date of these advances was 1.2 years, with put dates ranging from 2019 through 2020. The weighted average life to contractual maturity on these advances was 7.8 years, with those dates ranging from 2023 through 2028. As of September 30, 2018, it is anticipated that all of these advances will be called by the FHLB on their put date.

The original contractual maturity or next put date of the Corporation's FHLB advances as of September 30, 2018 and December 31, 2017 are presented in the following table.

	September 30, 2018		December 31, 2017	
	Amount	Weighted Average Contractual Coupon Rate	Amount	Weighted Average Contractual Coupon Rate
	($ in Thousands)			
Maturity or put date 1 year or less	$ 1,371,059	1.76%	$ 2,434,000	1.26%
After 1 but within 2	1,662,019	2.29%	750,013	1.23%
After 2 but within 3	216,289	2.53%	155	4.91%
After 3 years	83,289	2.62%	—	—%
FHLB advances and overall rate	$ 3,332,655	2.10%	$ 3,184,168	1.26%

Note 10 Derivative and Hedging Activities

The Corporation is exposed to certain risk arising from both its business operations and economic conditions. The Corporation principally manages its exposures to a wide variety of business and operational risks through management of its core business activities. The Company manages economic risks, including interest rate, liquidity, and credit risk primarily by managing the amount, sources, and duration of its assets and liabilities and the use of derivative financial instruments. Specifically, the Corporation enters into derivative financial instruments to manage exposures that arise from business activities that result in the receipt or payment of future known and uncertain cash amounts, the value of which are determined by interest rates. The Corporation's derivative financial instruments are used to manage differences in the amount, timing, and duration of the Corporation's known or expected cash receipts and its known or expected cash payments principally related to the Corporation's assets.

The contract or notional amount of a derivative is used to determine, along with the other terms of the derivative, the amounts to be exchanged between the counterparties. The Corporation is exposed to credit risk in the event of nonperformance by counterparties to financial instruments. To mitigate the counterparty risk, interest rate and commodity-related instruments generally contain language outlining collateral pledging requirements for each counterparty. Collateral must be posted when the market value exceeds certain mutually agreed upon threshold limits. The Corporation pledged $33 million of investment securities as collateral at September 30, 2018, and pledged $24 million of investment securities as collateral at December 31, 2017. Federal regulations require the Corporation to clear all LIBOR interest rate swaps through a clearing house if it can be cleared. As such, the Corporation is required to pledge cash collateral for the margin. At September 30, 2018, the Corporation posted $37 million of cash collateral for the margin compared to $22 million at December 31, 2017.

Fair Value Hedges of Interest Rate Risk

The Corporation is exposed to changes in the fair value of certain of its pools of prepayable fixed-rate assets due to changes in benchmark interest rates. The Corporation uses interest rate swaps to manage its exposure to changes in fair value on these instruments attributable to changes in the designated benchmark interest rate. Interest rate swaps designated as fair value hedges involve the payment of fixed-rate amounts to a counterparty in exchange for the Corporation receiving variable-rate payments over the life of the agreements without the exchange of the underlying notional amount.

For derivatives designated and that qualify as fair value hedges, the gain or loss on the derivative as well as the offsetting loss or gain on the hedged item attributable to the hedged risk are recognized in interest income.

Derivatives to Accommodate Customer Needs

The Corporation also facilitates customer borrowing activity by entering into various derivative contracts which are designated as free standing derivative contracts. Free standing derivative products are entered into primarily for the benefit of commercial customers seeking to manage their exposures to interest rate risk, foreign currency, and commodity prices. These derivative contracts are not designated against specific assets and liabilities on the balance sheet or forecasted transactions and, therefore, do not qualify for hedge accounting treatment. Such derivative contracts are carried at fair value on the consolidated balance sheets with changes in the fair value recorded as a component of Capital markets, net, and typically include interest rate-related instruments (swaps and caps), foreign currency exchange forwards, and commodity contracts. See Note 11 for additional information and disclosures on balance sheet offsetting.

Interest rate-related instruments: The Corporation provides interest rate risk management services to commercial customers, primarily forward interest rate swaps and caps. The Corporation’s market risk from unfavorable movements in interest rates related to these derivative contracts is generally economically hedged by concurrently entering into offsetting derivative contracts. The offsetting derivative contracts have identical notional values, terms and indices.

Foreign currency exchange forwards: The Corporation provides foreign currency exchange services to customers, primarily forward contracts. The Corporation's customers enter into a foreign currency exchange forward with the Corporation as a means for them to mitigate exchange rate risk. The Corporation mitigates its risk by then entering into an offsetting foreign currency exchange derivative contract.

Commodity contracts: Commodity contracts are entered into primarily for the benefit of commercial customers seeking to manage their exposure to fluctuating commodity prices. The Corporation mitigates its risk by then entering into an offsetting commodity derivative contract.

Mortgage Derivatives

Interest rate lock commitments to originate residential mortgage loans held for sale and forward commitments to sell residential mortgage loans are considered derivative instruments, and the fair value of these commitments is recorded on the consolidated balance sheets with the changes in fair value recorded as a component of mortgage banking, net.

Written and Purchased Options (Time Deposit)

Historically, the Corporation had entered into written and purchased option derivative instruments to facilitate an equity linked time deposit product (the “Power CD”), which the Corporation ceased offering in September 2013. The Power CD was a time deposit that provided the purchaser a guaranteed return of principal at maturity plus a potential equity return (a written option), while the Corporation received a known stream of funds based on the equity return (a purchased option). The written and purchased options are mirror derivative instruments, which are carried at fair value on the consolidated balance sheets.

The table below identifies the balance sheet category and fair values of the Corporation's derivative instruments.

($ in Thousands)	September 30, 2018			December 31, 2017		
	Notional Amount	Fair Value	Balance Sheet Category	Notional Amount	Fair Value	Balance Sheet Category
Derivatives not designated as hedging instruments						
Interest rate-related instruments — customer and mirror	$ 2,712,813	$ 68,916	Trading assets	$ 2,183,687	$ 28,494	Trading assets
Interest rate-related instruments — customer and mirror	2,712,813	(68,103)	Trading liabilities	2,183,687	(28,035)	Trading liabilities
Foreign currency exchange forwards	124,137	1,974	Trading assets	124,851	2,495	Trading assets
Foreign currency exchange forwards	119,748	(1,840)	Trading liabilities	118,094	(2,339)	Trading liabilities
Commodity contracts	401,849	69,439	Trading assets	457,868	38,686	Trading assets
Commodity contracts	401,968	(68,997)	Trading liabilities	457,108	(37,286)	Trading liabilities
Interest rate lock commitments (mortgage)	259,762	1,685	Other assets	222,736	1,538	Other assets
Forward commitments (mortgage)	271,561	1,352	Other assets	164,567	(313)	Other liabilities
Purchased options (time deposit)	21,269	577	Other assets	31,063	1,175	Other assets
Written options (time deposit)	21,269	(577)	Other liabilities	31,063	(1,175)	Other liabilities
Derivatives designated as hedging instruments						
Interest Rate Products	500,000	4,902	Other assets	—	—	—

The following table presents amounts that were recorded on the balance sheet related to cumulative basis adjustment for fair value hedges.

($ in Thousands)	Line Item in the Statement of Financial Position in Which the Hedged Item is Included	
	Carrying Amount of the Hedged Assets/(Liabilities)	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets/(Liabilities)
	September 30, 2018	
Loans and investment securities receivables [(a)]	$ 495,069	$ (4,931)
Total	$ 495,069	$ (4,931)

(a) These amounts include the amortized cost basis of closed portfolios used to designated hedging relationships in which the hedged item is the last layer expected to be remaining at the end of the hedging relationship. At September 30, 2018, the amortized cost basis of the closed portfolios used in these hedging relationships was $1.1 billion; the negative cumulative basis adjustments associated with these hedging relationships was $5 million; and the amounts of the designated hedged items were $500 million.

The table below identifies the effect of fair value hedge accounting on the Corporation's statement of performance during the nine months ended September 30, 2018.

($ in Thousands)	Location and Amount of Gain or (Loss) Recognized in Income on Fair Value and Cash Flow Hedging Relationships			
	Nine Months Ended September 30, 2018		Year Ended December 31, 2017	
	Interest Income	Other Income (Expense)	Interest Income	Other Income (Expense)
Total amounts of income and expense line items presented in the statement of financial performance in which the effects of fair value or cash flow hedges are recorded	$ (30)	$ —	$ —	$ —
The effects of fair value and cash flow hedging: Gain or (loss) on fair value hedging relationships in Subtopic 815-20				
Interest contracts				
Hedged items	(4,931)	—	—	—
Derivatives designated as hedging instruments	4,902	—	—	—

The table below identifies the effect of derivatives not designated as hedging instruments on the Corporation's statement of income during the nine months ended September 30, 2018.

($ in Thousands)	Income Statement Category of Gain / (Loss) Recognized in Income	For the Nine Months Ended September 30, 2018	2017
Derivative Instruments			
Interest rate-related instruments — customer and mirror, net	Capital markets, net	$ 354	$ (115)
Interest rate lock commitments (mortgage)	Mortgage banking, net	147	2,523
Forward commitments (mortgage)	Mortgage banking, net	1,665	(2,674)
Foreign currency exchange forwards	Capital markets, net	(22)	(39)
Commodity contracts	Capital markets, net	(958)	476

Note 11 Balance Sheet Offsetting

Interest Rate-Related Instruments and Commodity Contracts ("Interest and Commodity Agreements")

The Corporation enters into interest rate-related instruments to facilitate the interest rate risk management strategies of commercial customers. The Corporation also enters into commodity contracts to manage commercial customers' exposure to fluctuating commodity prices. The Corporation mitigates these risks by entering into equal and offsetting interest and commodity agreements with highly rated third party financial institutions. The Corporation is party to master netting arrangements with its financial institution counterparties that creates a single net settlement of all legal claims or obligations to pay or receive the net amount of settlement of the individual interest and commodity agreements. Collateral, usually in the form of investment securities and cash, is posted by the counterparty with net liability positions in accordance with contract thresholds. The Corporation does not offset assets and liabilities under these arrangements for financial statement presentation purposes. See Note 10 for additional information on the Corporation's derivative and hedging activities.

Securities Sold Under Agreements to Repurchase ("Repurchase Agreements")

The Corporation enters into agreements under which it sells securities subject to an obligation to repurchase the same or similar securities. These repurchase agreements are accounted for as collateralized financing arrangements (i.e., secured borrowings) and not as a sale and subsequent repurchase of securities (i.e., there is no offsetting or netting of the investment securities assets with the repurchase agreement liabilities). The right of set-off for a repurchase agreement resembles a secured borrowing, whereby the collateral would be used to settle the fair value of the repurchase agreement should the Corporation be in default (e.g., fails to make an interest payment to the counterparty). In addition, the Corporation does not enter into reverse repurchase agreements; therefore, there is no such offsetting to be done with the repurchase agreements. See Note 9 for additional disclosures on repurchase agreements.

The following table presents the assets and liabilities subject to an enforceable master netting arrangement. The interest and commodity agreements the Corporation has with its commercial customers are not subject to an enforceable master netting arrangement, and therefore, are excluded from this table.

				Gross amounts not offset in the balance sheet		
($ in Thousands)	Gross amounts of recognized assets	Gross amounts offset in the balance sheet	Net amounts presented in the balance sheet	Derivative liability available for offset	Collateral received	Net amount
Derivative assets: [(a)]						
September 30, 2018	**$ 78,124**	**$ —**	**$ 78,124**	**$ (26,385)**	**$ (50,134)**	**$ 1,605**
December 31, 2017	29,503	—	29,503	(16,140)	(13,234)	129

				Gross amounts not offset in the balance sheet		
($ in Thousands)	Gross amounts of recognized liabilities	Gross amounts offset in the balance sheet	Net amounts presented in the balance sheet	Derivative asset available for offset	Collateral pledged	Net amount
Derivative liabilities [(b)]						
September 30, 2018	**$ 64,591**	**$ —**	**$ 64,591**	**$ (26,385)**	**$ (37,480)**	**$ 726**
December 31, 2017	37,164	—	37,164	(16,140)	(20,662)	362

(a) Includes interest and commodity instrument assets.
(b) Includes interest and commodity instrument liabilities.

Note 12 Commitments, Off-Balance Sheet Arrangements, Legal Proceedings and Regulatory Matters

The Corporation utilizes a variety of financial instruments in the normal course of business to meet the financial needs of its customers and to manage its own exposure to fluctuations in interest rates. These financial instruments include lending-related and other commitments (see below) as well as derivative instruments (see Note 10). The following is a summary of lending-related commitments.

	September 30, 2018	December 31, 2017
	($ in Thousands)	
Commitments to extend credit, excluding commitments to originate residential mortgage loans held for sale[(a)(b)]	$ 8,471,141	$ 8,027,187
Commercial letters of credit[(a)]	9,122	11,886
Standby letters of credit[(c)]	260,092	235,361

(a) These off-balance sheet financial instruments are exercisable at the market rate prevailing at the date the underlying transaction will be completed and, thus, are deemed to have no current fair value, or the fair value is based on fees currently charged to enter into similar agreements and is not material at September 30, 2018 or December 31, 2017.
(b) Interest rate lock commitments to originate residential mortgage loans held for sale are considered derivative instruments and are disclosed in Note 10.
(c) The Corporation has established a liability of $3 million at September 30, 2018 and $2 million at December 31, 2017, as an estimate of the fair value of these financial instruments.

Lending-related Commitments

As a financial services provider, the Corporation routinely enters into commitments to extend credit. Such commitments are subject to the same credit policies and approval process accorded to loans made by the Corporation, with each customer's creditworthiness evaluated on a case-by-case basis. The commitments generally have fixed expiration dates or other termination clauses and may require the payment of a fee. The Corporation's exposure to credit loss in the event of nonperformance by the other party to these financial instruments is represented by the contractual amount of those instruments. The amount of collateral obtained, if deemed necessary by the Corporation upon extension of credit, is based on management's credit evaluation of the customer. Since a significant portion of commitments to extend credit are subject to specific restrictive loan covenants or may expire without being drawn upon, the total commitment amounts do not necessarily represent future cash flow requirements. An allowance for unfunded commitments is maintained at a level believed by management to be sufficient to absorb estimated probable losses related to unfunded commitments (including unfunded loan commitments and letters of credit). The allowance for unfunded commitments totaled $25 million at September 30, 2018 and $24 million at December 31, 2017, and is included in accrued expenses and other liabilities on the consolidated balance sheets.

Lending-related commitments include commitments to extend credit, commitments to originate residential mortgage loans held for sale, commercial letters of credit, and standby letters of credit. Commitments to extend credit are legally binding agreements to lend to customers at predetermined interest rates, as long as there is no violation of any condition established in the contracts. Interest rate lock commitments to originate residential mortgage loans held for sale and forward commitments to sell residential mortgage loans are considered derivative instruments, and the fair value of these commitments is recorded on the consolidated balance sheets. The Corporation's derivative and hedging activity is further described in Note 10. Commercial and standby letters of credit are conditional commitments issued to guarantee the performance of a customer to a third party. Commercial letters of credit are issued specifically to facilitate commerce and typically result in the commitment being drawn on when the underlying transaction is consummated between the customer and the third party, while standby letters of credit generally are contingent upon the failure of the customer to perform according to the terms of the underlying contract with the third party.

Other Commitments

The Corporation invests in unconsolidated projects including low-income housing, new market tax credit projects, and historic tax credit projects to promote the revitalization of primarily low-to-moderate-income neighborhoods throughout the local communities of its bank subsidiary. As a limited partner in these unconsolidated projects, the Corporation is allocated tax credits and deductions associated with the underlying projects. The aggregate carrying value of these investments at September 30, 2018 was $132 million, compared to $147 million at December 31, 2017.

The Corporation has principal investment commitments to provide capital-based financing to private and public companies through either direct investments in specific companies or through investment funds and partnerships. The timing of future cash requirements to fund such principal investment commitments is generally dependent on the investment cycle, whereby privately held companies are funded by private equity investors and ultimately sold, merged, or taken public through an initial offering, which can vary based on overall market conditions, as well as the nature and type of industry in which the companies operate. The Corporation also invests in loan pools that support CRA loans. The timing of future cash requirements to fund these pools is dependent upon loan demand, which can vary over time. The aggregate carrying value of these investments at September 30, 2018 was $25 million, compared to $23 million at December 31, 2017, included in other assets on the consolidated balance sheets.

Related to these investments, the Corporation had remaining commitments to fund $85 million at September 30, 2018, and $119 million at December 31, 2017.

Legal Proceedings

The Corporation is party to various pending and threatened claims and legal proceedings arising in the normal course of business activities, some of which involve claims for substantial amounts. Although there can be no assurance as to the ultimate outcomes, the Corporation believes it has meritorious defenses to the claims asserted against it in its currently outstanding matters, including the matters described below, and with respect to such legal proceedings, intends to continue to defend itself vigorously. The Corporation will consider settlement of cases when, in management's judgment, it is in the best interests of both the Corporation and its shareholders.

On at least a quarterly basis, the Corporation assesses its liabilities and contingencies in connection with all pending or threatened claims and litigation, utilizing the most recent information available. On a matter by matter basis, an accrual for loss is established for those matters which the Corporation believes it is probable that a loss may be incurred and that the amount of such loss can be reasonably estimated. Once established, each accrual is adjusted as appropriate to reflect any subsequent developments. Accordingly, management's estimate will change from time to time, and actual losses may be more or less than the current estimate. For matters where a loss is not probable, or the amount of the loss cannot be estimated, no accrual is established.

Resolution of legal claims is inherently unpredictable, and in many legal proceedings various factors exacerbate this inherent unpredictability, including where the damages sought are unsubstantiated or indeterminate, it is unclear whether a case brought as a class action will be allowed to proceed on that basis, discovery is not complete, the proceeding is not yet in its final stages, the matters present legal uncertainties, there are significant facts in dispute, there are a large number of parties (including where it is uncertain how liability, if any, will be shared among multiple defendants), or there is a wide range of potential results.

A lawsuit, R.J. ZAYED v. Associated Bank, N.A., was filed in the United States District Court for the District of Minnesota on January 29, 2013. The lawsuit relates to a Ponzi scheme perpetrated by Oxford Global Partners and related entities ("Oxford") and individuals and was brought by the receiver for Oxford. Oxford was a depository customer of Associated Bank (the "Bank"). The lawsuit claims that the Bank is liable for failing to uncover the Oxford Ponzi scheme, and specifically alleges the Bank aided and abetted (1) the fraudulent scheme; (2) a breach of fiduciary duty; (3) conversion; and (4) false representations and omissions. The lawsuit seeks unspecified consequential and punitive damages. The District Court granted the Bank's motion to dismiss the complaint on September 30, 2013. On March 2, 2015, the U.S. Court of Appeals for the Eighth Circuit reversed the District Court and remanded the case back to the District Court for further proceedings. On January 31, 2017, the District Court granted the Bank's motion for summary judgment. The receiver has appealed the District Court's summary judgment decision to the Eighth Circuit Court of Appeals. On January 23, 2018, the District Court approved a settlement agreement between the parties. Based on the terms of the settlement agreement, the Bank expects that the litigation will not have a material adverse impact on the Bank regardless of the outcome of the appeal to the Eighth Circuit Court of Appeals. A lawsuit by investors in the same Ponzi scheme, Herman Grad, et al v. Associated Bank, N.A., brought in Brown County, Wisconsin in October 2009 was dismissed by the circuit court, and the dismissal was affirmed by the Wisconsin Court of Appeals in June 2011 in an unpublished opinion.

Regulatory Matters

A variety of consumer products, including mortgage and deposit products, and certain fees and charges related to such products, have come under increased regulatory scrutiny. It is possible that regulatory authorities could bring enforcement actions, including civil money penalties, or take other actions against the Corporation and the Bank in regard to these consumer products. The Bank could also determine of its own accord, or be required by regulators, to refund or otherwise make remediation payments to customers in connection with these products. It is not possible at this time for management to assess the probability of a material adverse outcome or reasonably estimate the amount of any potential loss related to such matters.

Mortgage Repurchase Reserve

The Corporation sells residential mortgage loans to investors in the normal course of business. Residential mortgage loans sold to others are predominantly conventional residential first lien mortgages originated under the Corporation's usual underwriting procedures, and are most often sold on a nonrecourse basis, primarily to the GSEs. The Corporation's agreements to sell residential mortgage loans in the normal course of business usually require certain representations and warranties on the underlying loans sold, related to credit information, loan documentation, collateral, and insurability. Subsequent to being sold, if a material underwriting deficiency or documentation defect is discovered, the Corporation may be obligated to repurchase the loan or reimburse the GSEs for losses incurred (collectively, "make whole requests"). The make whole requests and any related risk of loss under the representations and warranties are largely driven by borrower performance.

As a result of make whole requests, the Corporation has repurchased loans with principal balances of approximately $1 million during both the nine months ended September 30, 2018 and the year ended December 31, 2017. The loss reimbursement and settlement claims paid for the nine months ended September 30, 2018 were zero and negligible for the year ended December 31, 2017. Make whole requests during 2017 and the first nine months of 2018 generally arose from loans sold during the period of January 1, 2012 to December 31, 2017. Since January 1, 2012, loans sold totaled $10.8 billion at the time of sale, and consisted primarily of loans sold to GSEs. As of September 30, 2018, approximately $7.0 billion of these sold loans remain outstanding.

The balance in the mortgage repurchase reserve at the balance sheet date reflects the estimated amount of potential loss the Corporation could incur from repurchasing a loan, as well as loss reimbursements, indemnifications, and other settlement resolutions. The following summarizes the changes in the mortgage repurchase reserve.

	Nine Months Ended September 30, 2018	Year Ended December 31, 2017
	($ in Thousands)	
Balance at beginning of period	$ 987	$ 900
Repurchase provision expense	254	246
Charge offs, net	(125)	(159)
Amount recorded at acquisition	88	—
Balance at end of period	$ 1,204	$ 987

The Corporation may also sell residential mortgage loans with limited recourse (limited in that the recourse period ends prior to the loan's maturity, usually after certain time and / or loan paydown criteria have been met), whereby repurchase could be required if the loan had defined delinquency issues during the limited recourse periods. At September 30, 2018, and December 31, 2017, there were approximately $46 million and $44 million, respectively, of residential mortgage loans sold with such recourse risk. There have been limited instances and immaterial historical losses on repurchases for recourse under the limited recourse criteria.

The Corporation has a subordinate position to the FHLB in the credit risk on residential mortgage loans it sold to the FHLB in exchange for a monthly credit enhancement fee. The Corporation has not sold loans to the FHLB with such credit risk retention since February 2005. At September 30, 2018 and December 31, 2017, there were $60 million and $73 million, respectively, of such residential mortgage loans with credit risk recourse, upon which there have been negligible historical losses to the Corporation.

Note 13 Fair Value Measurements

Fair value represents the estimated price at which an orderly transaction to sell an asset or to transfer a liability would take place between market participants at the measurement date under current market conditions (i.e., an exit price concept).

Following is a description of the valuation methodologies used for the Corporation's more significant instruments measured on a recurring basis at fair value, including the general classification of such instruments pursuant to the valuation hierarchy.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Investment Securities Available for Sale: Where quoted prices are available in an active market, investment securities are classified in Level 1 of the fair value hierarchy. If quoted market prices are not available for the specific security, then fair values are estimated by using pricing models, quoted prices of securities with similar characteristics or discounted cash flows, with consideration given to the nature of the quote and the relationship of recently evidenced market activity to the fair value estimate, and are classified in Level 2 of the fair value hierarchy. Lastly, in certain cases where there is limited activity or less transparency around inputs to the estimated fair value, securities are classified within Level 3 of the fair value hierarchy. To validate the fair value estimates, assumptions, and controls, the Corporation looks to transactions for similar instruments and utilizes independent pricing provided by third party vendors or brokers and relevant market indices. While none of these sources are solely indicative of fair value, they serve as directional indicators for the appropriateness of the Corporation's fair value estimates. The Corporation has determined that the fair value measures of its investment securities are classified predominantly within Level 1 or 2 of the fair value hierarchy. See Note 6 for additional disclosure regarding the Corporation's investment securities.

Residential Loans Held for Sale: Residential loans held for sale, which consist generally of current production of certain fixed-rate, first-lien residential mortgage loans, are carried at estimated fair value. Management has elected the fair value option to account for all newly originated mortgage loans held for sale, which results in the financial impact of changing market conditions being reflected currently in earnings as opposed to being dependent upon the timing of sales. Therefore, the continually adjusted values better reflect the price the Corporation expects to receive from the sale of such loans. The estimated fair value is based on what secondary markets are currently offering for portfolios with similar characteristics, which the Corporation classifies as a Level 2 fair value measurement.

Derivative Financial Instruments (Interest Rate-Related Instruments): The Corporation utilizes interest rate swaps to hedge exposure to interest rate risk and variability of fair value related to changes in the underlying interest rate of the hedged item. These hedged interest rate swaps are classified as fair value hedges. See Note 10 for additional disclosure regarding the Corporation's fair value hedges.

In addition, the Corporation offers interest rate-related instruments (swaps and caps) to service its customers' needs, for which the Corporation simultaneously enters into offsetting derivative financial instruments (i.e., mirror interest rate-related instruments) with third parties to manage its interest rate risk associated with these financial instruments. The valuation of the Corporation's derivative financial instruments is determined using discounted cash flow analysis on the expected cash flows of each derivative and also includes a nonperformance / credit risk component (credit valuation adjustment). See Note 10 for additional disclosure regarding the Corporation's interest rate-related instruments.

The discounted cash flow analysis component in the fair value measurement reflects the contractual terms of the derivative financial instruments, including the period to maturity, and uses observable market-based inputs, including interest rate curves and implied volatilities. More specifically, the fair values of interest rate swaps are determined using the market standard methodology of netting the discounted future fixed cash receipts (or payments) with the variable cash payments (or receipts) based on an expectation of future interest rates (forward curves) derived from observable market interest rate curves. Likewise, the fair values of interest rate options (i.e., interest rate caps) are determined using the market standard methodology of discounting the future expected cash receipts that would occur if variable interest rates fall below (or rise above) the strike rate of the floors (or caps), with the variable interest rates used in the calculation of projected receipts on the floor (or cap) based on an expectation of future interest rates derived from observable market interest rate curves and volatilities.

The Corporation also incorporates credit valuation adjustments to appropriately reflect both its own nonperformance risk and the respective counterparty's nonperformance risk in the fair value measurements. In adjusting the fair value of its derivative financial instruments for the effect of nonperformance risk, the Corporation has considered the impact of netting and any applicable credit enhancements, such as collateral postings, thresholds, mutual puts, and guarantees.

While the Corporation has determined that the majority of the inputs used to value its derivative financial instruments fall within Level 2 of the fair value hierarchy, the credit valuation adjustments utilize Level 3 inputs, such as estimates of current credit spreads to evaluate the likelihood of default by itself and its counterparties. The Corporation has assessed the significance of the impact of the credit valuation adjustments on the overall valuation of its derivative positions as of September 30, 2018, and December 31, 2017, and has determined that the credit valuation adjustments are not significant to the overall valuation of its derivative financial instruments. Therefore, the Corporation has determined that the fair value measures of its derivative financial instruments in their entirety are classified within Level 2 of the fair value hierarchy.

Derivative Financial Instruments (Foreign Currency Exchange Forwards): The Corporation provides foreign currency exchange services to customers. In addition, the Corporation may enter into a foreign currency exchange forward to mitigate the exchange rate risk attached to the cash flows of a loan or as an offsetting contract to a forward entered into as a service to its customer. The valuation of the Corporation's foreign currency exchange forwards is determined using quoted prices of foreign currency exchange forwards with similar characteristics, with consideration given to the nature of the quote and the relationship of recently evidenced market activity to the fair value estimate, and are classified in Level 2 of the fair value hierarchy. See Note 10 for additional disclosures regarding the Corporation's foreign currency exchange forwards.

Derivative Financial Instruments (Commodity Contracts): The Corporation enters into commodity contracts to manage commercial customers' exposure to fluctuating commodity prices, for which the Corporation simultaneously enters into offsetting derivative financial instruments (i.e., mirror commodity contracts) with third parties to manage its risk associated with these financial instruments. The valuation of the Corporation's commodity contracts is determined using quoted prices of the underlying instruments, and are classified in Level 2 of the fair value hierarchy. See Note 10 for additional disclosures regarding the Corporation's commodity contracts.

The Corporation also incorporates credit valuation adjustments to appropriately reflect both its own nonperformance risk and the respective counterparty's nonperformance risk in the fair value measurements. In adjusting the fair value of its derivative financial instruments for the effect of nonperformance risk, the Corporation has considered the impact of netting and any applicable credit enhancements, such as collateral postings.

While the Corporation has determined that the majority of the inputs used to value its derivative financial instruments fall within Level 2 of the fair value hierarchy, the credit valuation adjustments utilize Level 3 inputs, such as estimates of current credit spreads to evaluate the likelihood of default by itself and its counterparties. The Corporation has assessed the significance of the impact of the credit valuation adjustments on the overall valuation of its derivative positions as of September 30, 2018, and December 31, 2017, and has determined that the credit valuation adjustments are not significant to the overall valuation of its

derivative financial instruments. Therefore, the Corporation has determined that the fair value measures of its derivative financial instruments in their entirety are classified within Level 2 of the fair value hierarchy.

The table below presents the Corporation's financial instruments measured at fair value on a recurring basis as of September 30, 2018 and December 31, 2017, aggregated by the level in the fair value hierarchy within which those measurements fall.

	Fair Value Hierarchy	September 30, 2018	December 31, 2017
		($ in Thousands)	
Assets			
Investment securities available for sale			
U.S. Treasury securities	Level 1	$ 997	$ 996
Residential mortgage-related securities			
FNMA / FHLMC	Level 2	316,674	464,768
GNMA	Level 2	2,180,010	1,913,350
Private-label	Level 2	1,018	1,059
GNMA commercial mortgage-related securities	Level 2	1,250,978	1,513,277
FFELP asset backed securities	Level 2	299,947	145,176
Other equity securities	Level 1	1,573	1,632
Other debt securities	Level 2	3,000	3,188
Total investment securities available for sale	Level 1	2,570	2,628
Total investment securities available for sale	Level 2	4,051,627	4,040,818
Residential loans held for sale	Level 2	134,361	85,544
Commercial loans held for sale	Level 2	30,452	—
Interest rate-related instruments	Level 2	68,916	28,494
Foreign currency exchange forwards	Level 2	1,974	2,495
Interest rate products (designated as hedging instruments)	Level 2	4,902	—
Interest rate lock commitments to originate residential mortgage loans held for sale	Level 3	1,685	1,538
Forward commitments to sell residential mortgage loans	Level 3	1,352	—
Commodity contracts	Level 2	69,439	38,686
Purchased options (time deposit)	Level 2	577	1,175
Liabilities			
Interest rate-related instruments	Level 2	$ 68,103	$ 28,035
Foreign currency exchange forwards	Level 2	1,840	2,339
Forward commitments to sell residential mortgage loans	Level 3	—	313
Commodity contracts	Level 2	68,997	37,286
Written options (time deposit)	Level 2	577	1,175

The table below presents a rollforward of the balance sheet amounts for the nine months ended September 30, 2018 and the year ended December 31, 2017, for financial instruments measured on a recurring basis and classified within Level 3 of the fair value hierarchy.

	Investment Securities Available for Sale	Derivative Financial Instruments
	($ in Thousands)	
Balance December 31, 2016	$ 200	$ 3,114
Total net gains (losses) included in income		
Mortgage derivative gain (loss)	—	(1,889)
Transfer out of level 3 securities [(a)]	(200)	—
Balance December 31, 2017	$ —	$ 1,225
Total net gains (losses) included in income		
Mortgage derivative gain (loss)	—	1,816
Balance September 30, 2018	$ —	$ 3,041

(a) During the first quarter of 2017, the $200,000 level 3 investment security was transferred to level 2 based upon new pricing information.

For Level 3 assets and liabilities measured at fair value on a recurring basis as of September 30, 2018, the Corporation utilized the following valuation techniques and significant unobservable inputs.

Derivative Financial Instruments (Mortgage Derivative — Interest Rate Lock Commitments to Originate Residential Mortgage Loans Held for Sale): The fair value is determined by the change in value from each loan's rate lock date to the expected rate lock expiration date based on the underlying loan attributes, estimated closing ratios, and investor price matrix determined to be reasonably applicable to each loan commitment. The closing ratio calculation takes into consideration historical experience and loan-level attributes, particularly the change in the current interest rates from the time of initial rate lock. The closing ratio is periodically reviewed for reasonableness and reported to the Associated Mortgage Risk Management Committee. At September 30, 2018, the closing ratio was 86%.

Derivative Financial Instruments (Mortgage Derivative — Forward Commitments to Sell Mortgage Loans): Mortgage derivatives include forward commitments to deliver closed end residential mortgage loans into conforming Agency Mortgage Backed Securities (To be Announced, "TBA") or conforming Cash Forward sales. The fair value of such instruments is determined by the difference of current market prices for such traded instruments or available from forward cash delivery commitments and the original traded price for such commitments.

The Corporation also relies on an internal valuation model to estimate the fair value of its forward commitments to sell residential mortgage loans (i.e., an estimate of what the Corporation would receive or pay to terminate the forward delivery contract based on market prices for similar financial instruments), which includes matching specific terms and maturities of the forward commitments against applicable investor pricing available. While there are Level 2 and 3 inputs used in the valuation models, the Corporation has determined that the majority of the inputs significant in the valuation of both of the mortgage derivatives fall within Level 3 of the fair value hierarchy. See Note 10 for additional disclosure regarding the Corporation's mortgage derivatives.

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

Following is a description of the valuation methodologies used for the Corporation's more significant instruments measured on a nonrecurring basis at the lower of amortized cost or estimated fair value, including the general classification of such instruments pursuant to the valuation hierarchy.

Commercial Loans Held for Sale: Commercial loans held for sale are carried at the lower of cost or estimated fair value. The estimated fair value is based on a discounted cash flow analysis, which the Corporation classifies as a Level 2 nonrecurring fair value measurement.

Other Real Estate Owned: Certain other real estate owned, upon initial recognition, was re-measured and reported at fair value through a charge off to the allowance for loan losses based upon the estimated fair value of the other real estate owned, less estimated selling costs. The fair value of other real estate owned, upon initial recognition or subsequent impairment, was estimated using appraised values, which the Corporation classifies as a Level 2 nonrecurring fair value measurement.

For Level 3 assets and liabilities measured at fair value on a nonrecurring basis as of September 30, 2018, the Corporation utilized the following valuation techniques and significant unobservable inputs.

Impaired Loans: The Corporation considers a loan impaired when it is probable that the Corporation will be unable to collect all amounts due according to the original contractual terms of the note agreement, including both principal and interest. Management has determined that commercial and consumer loan relationships that have nonaccrual status or have had their terms restructured in a troubled debt restructuring meet this impaired loan definition. For individually evaluated impaired loans, the amount of impairment is based upon the present value of expected future cash flows discounted at the loan's effective interest rate, the estimated fair value of the underlying collateral for collateral-dependent loans, or the estimated liquidity of the note. See Note 7 for additional information regarding the Corporation's impaired loans.

Mortgage Servicing Rights: Mortgage servicing rights do not trade in an active, open market with readily observable prices. While sales of mortgage servicing rights do occur, the precise terms and conditions typically are not readily available to allow for a "quoted price for similar assets" comparison. Accordingly, the Corporation utilizes an independent valuation from a third party which uses a discounted cash flow model to estimate the fair value of its mortgage servicing rights. The valuation model incorporates prepayment assumptions to project mortgage servicing rights cash flows based on the current interest rate scenario, which is then discounted to estimate an expected fair value of the mortgage servicing rights. The valuation model considers portfolio characteristics of the underlying mortgages, contractually specified servicing fees, prepayment assumptions, discount rate assumptions, delinquency rates, late charges, other ancillary revenue, costs to service, and other economic factors. The Corporation periodically reviews and assesses the underlying inputs and assumptions used in the model. In addition, the Corporation compares its fair value estimates and assumptions to observable market data for mortgage servicing rights, where available, and to recent market activity and actual portfolio experience. Due to the nature of the valuation inputs, mortgage servicing rights are classified within Level 3 of the fair value hierarchy. The Corporation uses the amortization method (i.e., lower of amortized cost or estimated fair value measured on a nonrecurring basis), not fair value measurement accounting, for its mortgage servicing rights assets.

The discounted cash flow analyses that generate expected market prices utilize the observable characteristics of the mortgage servicing rights portfolio, as well as certain unobservable valuation parameters. The significant unobservable inputs used in the fair value measurement of the Corporation's mortgage servicing rights are the weighted average constant prepayment rate and weighted average discount rate. Significant increases (decreases) in any of those inputs in isolation could result in a significantly lower (higher) fair value measurement.

These parameter assumptions fall within a range that the Corporation, in consultation with an independent third party, believes purchasers of servicing would apply to such portfolios sold into the current secondary servicing market. Discussions are held with members from Treasury and the Community, Consumer, and Business segment to reconcile the fair value estimates and the key assumptions used by the respective parties in arriving at those estimates. The Associated Mortgage Risk Management Committee is responsible for providing control over the valuation methodology and key assumptions. To assess the reasonableness of the fair value measurement, the Corporation also compares the fair value and constant prepayment rate to a value calculated by an independent third party on an annual basis. See Note 8 for additional disclosure regarding the Corporation's mortgage servicing rights.

The table below presents the Corporation's assets measured at fair value on a nonrecurring basis, aggregated by the level in the fair value hierarchy within which those measurements fall.

($ in Thousands)	Fair Value Hierarchy	Fair Value	Income Statement Category of Adjustment Recognized in Income	Adjustment Recognized in Income
September 30, 2018				
Assets				
Impaired loans[a]	Level 3	$ 39,438	Provision for credit losses[b]	$ (13,183)
Other real estate owned[c]	Level 2	2,688	Foreclosure / OREO expense, net	(965)
Mortgage servicing rights	Level 3	87,120	Mortgage banking, net	669
December 31, 2017				
Assets				
Impaired loans[a]	Level 3	$ 92,534	Provision for credit losses[b]	$ (32,159)
Other real estate owned[c]	Level 2	2,604	Foreclosure / OREO expense, net	(939)
Mortgage servicing rights	Level 3	64,387	Mortgage banking, net	(175)

(a) Represents individually evaluated impaired loans, net of the related allowance for loan losses.
(b) Represents provision for credit losses on individually evaluated impaired loans.
(c) If the fair value of the collateral exceeds the carrying amount of the asset, no charge-off or adjustment is necessary, the asset is not considered to be carried at fair value, and is therefore not included in the table.

Certain nonfinancial assets and nonfinancial liabilities measured at fair value on a nonrecurring basis include the fair value analysis in the second step of a goodwill impairment test, and intangible assets and other nonfinancial long-lived assets measured at fair value for impairment assessment.

The Corporation's significant Level 3 measurements which employ unobservable inputs that are readily quantifiable pertain to mortgage servicing rights and impaired loans.

The table below presents information about these inputs and further discussion is found above.

September 30, 2018	Valuation Technique	Significant Unobservable Input	Weighted Average Input Applied
Mortgage servicing rights	Discounted cash flow	Discount rate	11%
Mortgage servicing rights	Discounted cash flow	Constant prepayment rate	8%
Impaired Loans	Appraisals / Discounted cash flow	Collateral / Discount factor	34%

Fair Value of Financial Instruments

The Corporation is required to disclose estimated fair values for its financial instruments.

Fair value estimates are set forth below for the Corporation’s financial instruments.

		September 30, 2018		December 31, 2017	
	Fair Value Hierarchy Level	Carrying Amount	Fair Value	Carrying Amount	Fair Value
		($ in Thousands)			
Financial assets					
Cash and due from banks	Level 1	$ 374,168	$ 374,168	$ 483,666	$ 483,666
Interest-bearing deposits in other financial institutions	Level 1	147,848	147,848	199,702	199,702
Federal funds sold and securities purchased under agreements to resell	Level 1	24,325	24,325	32,650	32,650
Investment securities held to maturity	Level 2	2,661,755	2,595,017	2,282,853	2,283,574
Investment securities available for sale	Level 1	2,570	2,570	2,628	2,628
Investment securities available for sale	Level 2	4,051,627	4,051,627	4,040,818	4,040,818
FHLB and Federal Reserve Bank stocks	Level 2	220,825	220,825	165,331	165,331
Residential loans held for sale	Level 2	134,361	134,361	85,544	85,544
Commercial loans held for sale	Level 2	30,452	30,452	—	—
Loans, net	Level 3	22,630,861	22,140,169	20,519,111	20,314,984
Bank and corporate owned life insurance	Level 2	661,009	661,009	591,057	591,057
Derivatives (trading and other assets)	Level 2	145,808	145,808	70,850	70,850
Derivatives (trading and other assets)	Level 3	3,037	3,037	1,538	1,538
Financial liabilities					
Noninterest-bearing demand, savings, interest-bearing demand, and money market accounts	Level 3	$ 21,542,860	$ 21,542,860	$ 20,436,893	$ 20,436,893
Brokered CDs and other time deposits[(a)]	Level 2	3,288,752	3,288,752	2,349,069	2,349,069
Short-term funding[(b)]	Level 2	615,159	615,159	676,282	676,282
Long-term funding	Level 2	3,722,870	3,719,147	3,397,450	3,411,368
Standby letters of credit[(c)]	Level 2	2,600	2,600	2,402	2,402
Derivatives (trading and other liabilities)	Level 2	139,517	139,517	68,835	68,835
Derivatives (trading and other liabilities)	Level 3	—	—	313	313

(a) When the estimated fair value is less than the carrying value, the carrying value is reported as the fair value.
(b) The carrying amount is a reasonable estimate of fair value for existing short-term funding.
(c) The commitment on standby letters of credit was $260 million and $235 million at September 30, 2018 and December 31, 2017, respectively. See Note 12 for additional information on the standby letters of credit and for information on the fair value of lending-related commitments.

Note 14 Retirement Plans

The Corporation has a noncontributory defined benefit retirement plan (the Retirement Account Plan ("RAP")) covering substantially all employees who meet participation requirements. The benefits are based primarily on years of service and the employee's compensation paid. Employees of acquired entities generally participate in the RAP after consummation of the business combinations. Any retirement plans of acquired entities are typically merged into the RAP after completion of the mergers, and credit is usually given to employees for years of service at the acquired institution for vesting and eligibility purposes.

The Corporation also provides legacy healthcare access to a limited group of retired employees from a previous acquisition in the Postretirement Plan. There are no other active retiree healthcare plans.

Bank Mutual was acquired on February 1, 2018. The Bank Mutual Pension Plan has not yet been merged into the Corporation's Retirement Account Plan. However, Bank Mutual's Postretirement Plan was merged into the Corporation's Postretirement Plan during the first quarter of 2018.

The components of net periodic benefit cost for the RAP, Bank Mutual Pension Plan, and Postretirement Plan for three and nine months ended September 30, 2018 and 2017 were as follows.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	($ in Thousands)			
Components of Net Periodic Benefit Cost				
RAP				
Service cost	$ 1,885	$ 1,713	$ 5,670	$ 5,276
Interest cost	1,682	1,795	5,002	5,307
Expected return on plan assets	(4,777)	(4,929)	(14,287)	(14,692)
Amortization of prior service cost	(18)	(19)	(56)	(56)
Amortization of actuarial loss	549	619	1,474	1,594
Total net pension cost	$ (680)	$ (821)	$ (2,197)	$ (2,571)
Bank Mutual Pension Plan[(a)]				
Interest cost	$ 654	N/A	$ 1,737	N/A
Expected return on plan assets	(1,220)	N/A	(2,812)	N/A
Total net pension cost	$ (566)	N/A	$ (1,075)	N/A
Postretirement Plan[(b)]				
Interest cost	$ 27	$ 26	$ 80	$ 74
Amortization of prior service cost	(19)	(19)	(56)	(57)
Amortization of actuarial loss	2	2	6	2
Total net periodic benefit cost	$ 11	$ 9	$ 30	$ 19

(a) The reported figures only include eight months of expense due to the timing of the Bank Mutual acquisition. See Note 2 for additional information on the Bank Mutual acquisition.
(b) The portion of the Postretirement Plan attributed to Bank Mutual's Postretirement Plan only includes eight months of expense due to the timing of the Bank Mutual acquisition. See Note 2 for additional information on the Bank Mutual acquisition.

The components of net periodic benefit cost, other than the service cost component, are included in the line item "other" of noninterest expense in the Consolidated Statements of Income.

The Corporation's funding policy is to pay at least the minimum amount required by federal law and regulations, with consideration given to the maximum funding amounts allowed. The Corporation regularly reviews the funding of its pension plans. The Corporation made a $6 million contribution to the Bank Mutual Pension Plan and a $4 million contribution to the RAP during the third quarter of 2018, as well as a $31 million contribution to the Bank Mutual Pension Plan during the second quarter of 2018.

Note 15 Segment Reporting

The Corporation utilizes a risk-based internal profitability measurement system to provide strategic business unit reporting. The profitability measurement system is based on internal management methodologies designed to produce consistent results and reflect the underlying economics of the units. Certain strategic business units have been combined for segment information reporting purposes where the nature of the products and services, the type of customer and the distribution of those products and services are similar. The three reportable segments are Corporate and Commercial Specialty; Community, Consumer, and Business; and Risk Management and Shared Services. The financial information of the Corporation's segments has been compiled utilizing the

accounting policies described in the Corporation’s 2017 Annual Report on Form 10-K, with certain exceptions. The more significant of these exceptions are described herein.

The reportable segment results are presented based on the Corporation's internal management accounting process. The management accounting policies and processes utilized in compiling segment financial information are highly subjective and, unlike financial accounting, are not based on authoritative guidance similar to U.S. generally accepted accounting principles. As a result, reported segments and the financial information of the reported segments are not necessarily comparable with similar information reported by other financial institutions. Furthermore, changes in management structure or allocation methodologies and procedures may result in changes in previously reported segment financial data. Additionally, the information presented is not indicative of how the segments would perform if they operated as independent entities.

To determine financial performance of each segment, the Corporation allocates funds transfer pricing ("FTP") assignments, the provision for credit losses, certain noninterest expenses, income tax, and equity to each segment. Allocation methodologies are subject to periodic adjustment as the internal management accounting system is revised and business or product lines within the segments change. Also, because the development and application of these methodologies is a dynamic process, the financial results presented may be periodically reviewed.

The Corporation allocates net interest income using an internal FTP methodology that charges users of funds (assets) and credits providers of funds (liabilities, primarily deposits) based on the maturity, prepayment and / or repricing characteristics of the assets and liabilities. The net effect of this allocation is offset in the Risk Management and Shared Services segment to ensure consolidated totals reflect the Corporation's net interest income. The net FTP allocation is reflected as net intersegment income (expense) in the accompanying tables.

A credit provision is allocated to segments based on the expected long-term annual net charge off rates attributable to the credit risk of loans managed by the segment during the period. In contrast, the level of the consolidated provision for credit losses is determined based on an incurred loss model using the methodologies described in the Corporation’s 2017 Annual Report on Form 10-K to assess the overall appropriateness of the allowance for loan losses. The net effect of the credit provision is recorded in Risk Management and Shared Services. Indirect expenses incurred by certain centralized support areas are allocated to segments based on actual usage (for example, volume measurements) and other criteria. Certain types of administrative expense and bank-wide expense accruals (including amortization of core deposit and other intangible assets associated with acquisitions) are generally not allocated to segments. Income taxes are allocated to segments based on the Corporation’s estimated effective tax rate, with certain segments adjusted for any tax-exempt income or non-deductible expenses. Equity is allocated to the segments based on regulatory capital requirements and in proportion to an assessment of the inherent risks associated with the business of the segment (including interest, credit and operating risk).

A brief description of each business segment is presented below. A more in-depth discussion of these segments can be found in the Segment Reporting footnote in the Corporation’s 2017 Annual Report on Form 10-K.

The Corporate and Commercial Specialty segment serves a wide range of customers including larger businesses, developers, not-for-profits, municipalities, and financial institutions. The Community, Consumer, and Business segment serves individuals, as well as small and mid-sized businesses. The Risk Management and Shared Services segment includes key shared operational functions and also includes residual revenue and expenses, representing the difference between actual amounts incurred and the amounts allocated to operating segments, including interest rate risk residuals (FTP mismatches) and credit risk and provision residuals (long-term credit charge mismatches). In addition, the Risk Management and Shared Services segment includes certain unallocated expenses related to Bank Mutual's shared services and operations prior to system conversion in late June 2018. All acquisition related costs are included in the Risk Management and Shared Services segment.

Information about the Corporation’s segments is presented below.

	Corporate and Commercial Specialty			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	($ in Thousands)			
Net interest income	$ 113,298	$ 93,114	$ 339,718	$ 270,256
Net intersegment interest income (expense)	(13,018)	(758)	(36,151)	1,359
Segment net interest income	100,280	92,356	303,567	271,615
Noninterest income	12,280	12,278	39,156	36,768
Total revenue	112,560	104,634	342,723	308,383
Credit provision[a]	11,232	9,499	32,955	32,549
Noninterest expense	41,828	39,681	122,853	116,578
Income (loss) before income taxes	59,500	55,454	186,914	159,256
Income tax expense (benefit)	12,098	19,070	36,978	53,082
Net income	$ 47,402	$ 36,384	$ 149,937	$ 106,174
Return on average allocated capital (ROCET1)[b]	15.5%	12.8%	16.6%	12.7%
Average earning assets	$ 11,981,760	$ 10,923,762	$ 11,814,674	$ 10,846,418
Average loans	11,974,090	10,916,829	11,804,458	10,837,933
Average deposits	8,695,170	7,398,970	8,127,134	6,759,105
Average allocated capital (CET1)[b]	1,215,331	1,125,181	1,207,925	1,121,800
Allocated goodwill			524,525	428,000

	Community, Consumer, and Business			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	($ in Thousands)			
Net interest income	$ 91,323	$ 81,058	$ 268,137	$ 236,407
Net intersegment interest income (expense)	21,951	9,894	63,301	33,603
Segment net interest income	113,275	90,952	331,438	270,011
Noninterest income	73,838	67,867	224,109	198,546
Total revenue	187,113	158,819	555,547	468,557
Credit provision[a]	5,280	5,046	15,125	15,317
Noninterest expense	139,653	120,241	405,338	361,580
Income (loss) before income taxes	42,180	33,532	135,084	91,660
Income tax expense (benefit)	8,861	11,736	28,371	32,081
Net income	$ 33,319	$ 21,796	$ 106,713	$ 59,579
Return on average allocated capital (ROCET1)[b]	20.0%	14.7%	21.9%	13.6%
Average earning assets	$ 10,456,159	$ 9,608,242	$ 10,333,412	$ 9,418,173
Average loans	10,453,485	9,602,098	10,329,888	9,414,880
Average deposits	13,716,862	11,788,606	13,518,903	11,568,220
Average allocated capital (CET1)[b]	662,017	588,841	652,745	584,774
Allocated goodwill			644,397	544,006

	Risk Management and Shared Services			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	($ in Thousands)			
Net interest income	$ 14,770	$ 15,951	$ 47,770	$ 47,552
Net intersegment interest income (expense)	(8,933)	(9,136)	(27,150)	(34,963)
Segment net interest income	5,837	6,814	20,620	12,589
Noninterest income	2,183	5,750	8,257	12,822
Total revenue	8,019	12,564	28,876	25,411
Credit provision[a]	(21,512)	(9,545)	(49,081)	(21,866)
Noninterest expense[c]	22,932	17,505	100,445	49,276
Income (loss) before income taxes	6,599	4,604	(22,488)	(1,999)
Income tax expense (benefit)	1,390	(2,217)	(10,416)	(15,500)
Net income	$ 5,209	$ 6,821	$ (12,072)	$ 13,501
Return on average allocated capital (ROCET1)[b]	1.8%	4.4%	(4.2)%	2.2%
Average earning assets	$ 8,036,951	$ 6,927,791	$ 7,912,853	$ 6,587,401
Average loans	546,142	380,210	554,824	248,165
Average deposits	2,283,886	3,253,869	2,355,566	3,486,354
Average allocated capital (CET1)[b]	635,924	405,653	603,684	387,388

	Consolidated Total			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	($ in Thousands)			
Net interest income	$ 219,392	$ 190,122	$ 655,625	$ 554,215
Net intersegment interest income (expense)	—	—	—	—
Segment net interest income	219,392	190,122	655,625	554,215
Noninterest income	88,300	85,895	271,522	248,136
Total revenue	307,692	276,017	927,146	802,351
Credit provision[a]	(5,000)	5,000	(1,000)	26,000
Noninterest expense	204,413	177,427	628,636	527,434
Income (loss) before income taxes	108,279	93,590	299,510	248,917
Income tax expense (benefit)	22,349	28,589	54,932	69,663
Net income	$ 85,929	$ 65,001	$ 244,578	$ 179,254
Return on average allocated capital (ROCET1)[b]	13.2%	11.7%	12.9%	11.0%
Average earning assets	$ 30,474,870	$ 27,459,795	$ 30,060,938	$ 26,851,992
Average loans	22,973,717	20,899,137	22,689,170	20,500,978
Average deposits	24,695,918	22,441,445	24,001,604	21,813,679
Average allocated capital (CET1)[b]	2,513,272	2,119,675	2,464,354	2,093,962
Allocated goodwill			1,168,922	972,006

(a) The consolidated credit provision is equal to the actual reported provision for credit losses.

(b) The Federal Reserve establishes capital adequacy requirements for the Corporation, including common equity Tier 1. For segment reporting purposes, the return on common equity Tier 1 ("ROCET1") reflects return on average allocated common equity Tier 1. The ROCET1 for the Risk Management and Shared Services segment and the Consolidated Total is inclusive of the annualized effect of the preferred stock dividends.

(c) For the three months ended September 30, 2018, the Risk Management and Shared Services segment includes approximately $2 million of acquisition related noninterest expense. For the nine months ended September 30, 2018, the Risk Management and Shared Services segment includes approximately $30 million of acquisition related noninterest expense.

Note 16 Accumulated Other Comprehensive Income (Loss)

The following tables summarize the components of accumulated other comprehensive income (loss) at September 30, 2018 and 2017 respectively, including changes during the preceding nine and three month periods as well as any reclassifications out of accumulated other comprehensive income (loss).

($ in Thousands)	Investment Securities Available For Sale	Defined Benefit Pension and Post Retirement Obligations	Accumulated Other Comprehensive Income (Loss)
Balance January 1, 2018	$ (38,453)	$ (24,305)	$ (62,758)
Other comprehensive income (loss) before reclassifications	(82,099)	—	(82,099)
Amounts reclassified from accumulated other comprehensive income (loss)			
Investment securities losses (gains), net	1,985	—	1,985
Personnel expense	—	(112)	(112)
Other expense	—	1,480	1,480
Adjustment for adoption of ASU 2016-01	(84)	—	(84)
Adjustment for adoption of ASU 2018-02	(8,419)	(5,235)	(13,654)
Interest income (amortization of net unrealized losses (gains) on available for sale securities transferred to held to maturity securities)	(684)	—	(684)
Income tax (expense) benefit	20,796	(390)	20,406
Net other comprehensive income (loss) during period	(68,505)	(4,257)	(72,762)
Balance September 30, 2018	$ (106,958)	$ (28,562)	$ (135,520)
Balance January 1, 2017	$ (20,079)	$ (34,600)	$ (54,679)
Other comprehensive income (loss) before reclassifications	1,646	—	1,646
Amounts reclassified from accumulated other comprehensive income (loss)			
Personnel expense	—	(113)	(113)
Other expense	—	1,596	1,596
Interest income (amortization of net unrealized losses (gains) on available for sale securities transferred to held to maturity securities)	(2,499)	—	(2,499)
Income tax (expense) benefit	328	(567)	(239)
Net other comprehensive income (loss) during period	(525)	916	391
Balance September 30, 2017	$ (20,604)	$ (33,684)	$ (54,288)

($ in Thousands)	Investments Securities Available For Sale	Defined Benefit Pension and Post Retirement Obligations	Accumulated Other Comprehensive Income (Loss)
Balance July 1, 2018	$ (90,986)	$ (28,902)	$ (119,888)
Other comprehensive income (loss) before reclassifications	(21,345)	—	(21,345)
Amounts reclassified from accumulated other comprehensive income (loss)			
Investment securities losses (gains), net	(30)	—	(30)
Personnel expense	—	(37)	(37)
Other expense	—	551	551
Interest income (amortization of net unrealized losses (gains) on available for sale securities transferred to held to maturity securities)	(52)	—	(52)
Income tax (expense) benefit	5,456	(174)	5,282
Net other comprehensive income (loss) during period	(15,971)	340	(15,631)
September 30, 2018	$ (106,958)	$ (28,562)	$ (135,520)
Balance July 1, 2017	$ (19,428)	$ (34,042)	$ (53,470)
Other comprehensive income (loss) before reclassifications	(1,986)	—	(1,986)
Amounts reclassified from accumulated other comprehensive income (loss)			
Personnel expense	—	(38)	(38)
Other expense	—	621	621
Interest income (Amortization of net unrealized losses (gains)on available for sale securities transferred to held to maturity securities)	76	—	76
Income tax (expense) benefit	734	(225)	509
Net other comprehensive income (loss) during period	(1,176)	358	(818)
September 30, 2017	$ (20,604)	$ (33,684)	$ (54,288)

Note 17 Revenues

On January 1, 2018, the Corporation adopted Topic 606 using the modified retrospective method. As stated in Note 3, the implementation of the new standard had an immaterial impact to the Corporation. Results for reporting periods beginning after January 1, 2018 are presented under Topic 606.

Revenue is recognized when obligations under the terms of a contract with the Corporation's customer are satisfied. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services. We do not have any material significant payment terms as payment is received at or shortly after the satisfaction of the performance obligation.

The following table disaggregates the Corporation's revenue by major source for the three and nine months ended September 30, 2018 and 2017.

Nine Months Ended September 30, 2018				
($ in Thousands)	Corporate and Commercial Specialty	Community, Consumer, and Business	Risk Management and Shared Services	Consolidated Total
Insurance commissions and fees	$ —	$ 68,244	$ 36	$ 68,279
Service charges and deposit account fees	11,680	37,984	50	49,714
Card-based and loan fees[(a)]	1,023	29,512	52	30,587
Trust and asset management fees	—	40,946	—	40,946
Brokerage commissions and fees	—	21,001	252	21,253
Other revenue	(78)	7,349	221	7,491
Noninterest Income (in-scope of Topic 606)	12,625	205,036	611	218,270
Noninterest Income (out-of-scope of Topic 606)	26,531	19,073	7,646	53,252
Total Noninterest Income	$ 39,156	$ 224,109	$ 8,257	$ 271,522

(a) Loan fees are out-of-scope of Topic 606.

Nine Months Ended September 30, 2017				
($ in Thousands)	Corporate and Commercial Specialty	Community, Consumer, and Business	Risk Management and Shared Services	Consolidated Total
Insurance commissions and fees	$ —	$ 62,286	$ 2	$ 62,288
Service charges and deposit account fees	12,334	36,259	61	48,654
Card-based and loan fees[(a)]	876	25,807	17	26,700
Trust and asset management fees	—	37,066	—	37,066
Brokerage commissions and fees	—	13,071	—	13,071
Other revenue	591	6,626	153	7,370
Noninterest Income (in-scope of Topic 606)	13,801	181,115	233	195,149
Noninterest Income (out-of-scope of Topic 606)	22,967	17,431	12,589	52,987
Total Noninterest Income	$ 36,768	$ 198,546	$ 12,822	$ 248,136

(a) Loan fees are out-of-scope of Topic 606.

Three Months Ended September 30, 2018 ($ in Thousands)	Corporate and Commercial Specialty	Community, Consumer, and Business	Risk Management and Shared Services	Consolidated Total
Insurance commissions and fees	$ —	$ 21,632	$ 4	$ 21,636
Service charges and deposit account fees	3,669	13,210	25	16,904
Card-based and loan fees[(a)]	349	9,821	(15)	10,155
Trust and asset management fees	—	14,140	—	14,140
Brokerage commissions and fees	—	7,114	(30)	7,084
Other revenue	92	2,586	122	2,800
Noninterest Income (in-scope of Topic 606)	4,110	68,503	106	72,719
Noninterest Income (out-of-scope of Topic 606)	8,170	5,335	2,077	15,581
Total Noninterest Income	$ 12,280	$ 73,838	$ 2,183	$ 88,300

(a) Loan fees are out-of-scope of Topic 606.

Three Months Ended September 30, 2017 ($ in Thousands)	Corporate and Commercial Specialty	Community, Consumer, and Business	Risk Management and Shared Services	Consolidated Total
Insurance commissions and fees	$ —	$ 19,813	$ 2	$ 19,815
Service charges and deposit account fees	3,824	12,432	12	16,268
Card-based and loan fees[(a)]	284	8,834	6	9,124
Trust and asset management fees	—	12,784	—	12,785
Brokerage commissions and fees	—	4,392	—	4,392
Other revenue	509	2,311	48	2,868
Noninterest Income (in-scope of Topic 606)	4,617	60,566	68	65,251
Noninterest Income (out-of-scope of Topic 606)	7,661	7,301	5,682	20,644
Total Noninterest Income	$ 12,278	$ 67,867	$ 5,750	$ 85,895

(a) Loan fees are out-of-scope of Topic 606.

During the first quarter of 2018, the Corporation acquired Bank Mutual. This acquisition resulted in increased service charges and deposit account fees and card-based and loan fees. In addition, the Corporation acquired Whitnell & Co., Diversified, and Anderson since the third quarter of 2017 which resulted in increased insurance commissions and fees, trust and asset management fees, and brokerage commissions.

Below is a listing of performance obligations for the Corporation's main revenue streams.

Revenue Stream	Noninterest income in-scope of Topic 606
Insurance commissions and fees	The Corporation's insurance revenue has two distinct performance obligations. The first performance obligation is the selling of the policy as an agent for the carrier. This performance obligation is satisfied upon binding of the policy. The second performance obligation is the ongoing servicing of the policy which is satisfied over the life of the policy. For employee benefits, the payment is typically received monthly. For property and casualty, payments can vary, but are typically received at, or in advance, of the policy period.
Service charges and deposit account fees	Service charges on deposit accounts consist of monthly service fees (i.e. business analysis fees and consumer service charges) and other deposit account related fees. The Corporation's performance obligation for monthly service fees is generally satisfied, and the related revenue recognized, over the period in which the service is provided. Other deposit account related fees are largely transactional based, and therefore, the Corporation's performance obligation is satisfied, and related revenue recognized, at a point in time. Payment for service charges on deposit accounts is primarily received immediately or in the following month through a direct charge to customers' accounts.
Card-based and loan fees[a]	Card-based and loan fees are primarily comprised of debit and credit card income, ATM fees, and merchant services income. Debit and credit card income is primarily comprised of interchange fees earned whenever the Corporation's debit and credit cards are processed through card payment networks. ATM and merchant fees are largely transactional based, and therefore, the Corporation's performance obligation is satisfied, and related revenue recognized, at a point in time. Payment is typically received immediately or in the following month.
Trust and asset management fees	Trust and asset management income is primarily comprised of fees earned from the management and administration of trusts and other customer assets. The Corporation's performance obligation is generally satisfied over time and the resulting fees are recognized monthly, based upon the month-end market value of the assets under management and the applicable fee rate. Payment is generally received a few days after month end through a direct charge to customers' accounts. The Corporation's performance obligation for these transactional-based services is generally satisfied, and related revenue recognized, at a point in time (i.e., as incurred). Payment is received shortly after services are rendered.
Brokerage commissions and fees	Brokerage commissions and fees primarily consists of investment advisory, brokerage, retirement services, and annuities. The Corporation's performance obligation for investment advisory services and retirement services is generally satisfied, and the related revenue recognized, over the period in which the services are provided. The performance obligation for annuities is satisfied upon sale of the annuity, and therefore, the related revenue is primarily recognized at the time of sale. Payment for these services are typically received immediately or in advance of the service.

(a) Loan fees are out-of-scope of Topic 606.

Arrangements with Multiple Performance Obligations

The Corporation's contracts with customers may include multiple performance obligations. For such arrangements, we allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the expected cost plus margin.

Practical Expedients

We do not disclose the value of unsatisfied performance obligations for contracts with an original expected length of one year or less.

Using the practical expedient, for contracts with a term of one year or less, the Corporation recognizes incremental costs of obtaining those contracts as an expense when incurred.

ITEM 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Special Note Regarding Forward-Looking Statements

This report contains statements that may constitute forward-looking statements within the meaning of the safe-harbor provisions for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995, such as statements other than historical facts contained or incorporated by reference into this report. These forward-looking statements include statements with respect to the Corporation's financial condition, results of operations, plans, objectives, future performance and business, including statements preceded by, followed by or that include the words "believes," "expects," or "anticipates," references to estimates or similar expressions. Future filings by the Corporation with the Securities and Exchange Commission ("SEC"), and future statements other than historical facts contained in written material, press releases and oral statements issued by, or on behalf of the Corporation may also constitute forward-looking statements.

All forward-looking statements contained in this report or which may be contained in future statements made for or on behalf of the Corporation are based upon information available at the time the statement is made and the Corporation assumes no obligation to update any forward-looking statements, except as required by federal securities law. Forward-looking statements are subject to significant risks and uncertainties, and the Corporation's actual results may differ materially from the expected results discussed in such forward-looking statements. Factors that might cause actual results to differ from the results discussed in forward-looking statements include, but are not limited to, the risk factors in Item 1A, Risk Factors, in the Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, in the Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, and as may be described from time to time in the Corporation's subsequent SEC filings.

Overview

The following discussion and analysis is presented to assist in the understanding and evaluation of the Corporation's financial condition and results of operations. It is intended to complement the unaudited consolidated financial statements, footnotes, and supplemental financial data appearing elsewhere in this Quarterly Report on Form 10-Q and should be read in conjunction therewith. Management continually evaluates strategic acquisition opportunities and other various strategic alternatives that could involve the sale or acquisition of branches or other assets, or the consolidation or creation of subsidiaries. Within the tables presented, certain columns and rows may not sum due to the use of rounded numbers for disclosure purposes.

Recent Legislative Developments

On May 24, 2018, the President signed into law the Economic Growth, Regulatory Relief, and Consumer Protection Act ("Economic Growth Act"), which repealed or modified several important provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act") that have impacted us. Key aspects of the Economic Growth Act that have the potential to affect our business and the results of our operations include:

- Raising the total asset threshold from $10 billion to $250 billion at which bank holding companies are required to conduct annual company-run stress tests mandated by the Dodd-Frank Act;
- Raising the total asset threshold from $10 billion to $50 billion at which publicly traded bank holding companies are required to establish risk committees for the oversight of the enterprise-wide risk management practices of the institution;
- Raising the total asset threshold from $50 billion to $250 billion at which bank holding companies would be subject to annual supervisory stress tests;
- Raising the total asset threshold for enhanced prudential supervision by the Board of Governors of the Federal Reserve System ("Federal Reserve Board") from $50 billion to $250 billion, which had resulted in enhanced prudential standards in the areas of risk-based capital and leverage limits, liquidity requirements, and resolution planning (preparation of so-called "living wills"). Under the amended provisions, the Federal Reserve Board retains discretion to subject bank holding companies with more than $100 billion in assets to enhanced supervision.

To the extent we grow our balance sheet organically or through strategic opportunities, the Corporation expects to benefit significantly from these revisions. Although the Corporation will continue to monitor and stress test its capital consistent with the safety and soundness expectations of the federal regulators, the Corporation will no longer conduct company-run stress testing as a result of the legislative amendments.

The Economic Growth Act also enacted several important changes in some technical compliance areas that we believe will help reduce our regulatory burden, including:

- Prohibiting federal banking regulators from imposing higher capital standards on High Volatility Commercial Real Estate ("HVCRE") exposures unless they are for acquisition, development or construction ("ADC"), and clarifying ADC status;
- Exempting from appraisal requirements certain transactions involving real property in rural areas and valued at less than $400,000; and
- Directing the Bureau of Consumer Financial Protection to provide guidance on the applicability of the TILA-RESPA Integrated Disclosure rule to mortgage assumption transactions and construction-to-permanent home loans, as well the extent to which lenders can rely on model disclosures that do not reflect recent regulatory changes.

Despite the improvements for mid-size financial institutions such as the Corporation that has resulted from the Economic Growth Act, many provisions of the Dodd-Frank Act and its implementing regulations remain in place and will continue to result in additional operating and compliance costs that could have a material adverse effect on our business, financial condition, and results of operations. In addition, the Economic Growth Act requires the enactment of a number of implementing regulations, the details of which may have a material effect on the ultimate impact of the law.

Performance Summary

On February 1, 2018, the Corporation completed the acquisition of Bank Mutual. The acquisition added $2.8 billion of assets, $1.9 billion of loans, and $1.8 billion of deposits.

- Average loans of $22.7 billion increased $2.2 billion, or 11%, from the first nine months of 2017. Average deposits of $24.0 billion increased $2.2 billion, or 10%, from the first nine months of 2017.
- Net interest income of $656 million increased $101 million, or 18%, from the first nine months of 2017. Net interest margin was 2.95% compared to 2.83% for the first nine months of 2017.
- Provision for credit losses was negative $1 million, down from $26 million for the first nine months of 2017.
- Noninterest income of $272 million was up $23 million, or 9%, from the first nine months of 2017.
- Noninterest expense of $629 million, which includes $30 million of acquisition related costs pertaining to Bank Mutual, was up $101 million, or 19% compared to the first nine months 2017.
- The effective tax rate for the first nine months of 2018 was 18.34%, compared to 27.99% for the first nine months of 2017.

Table 1 Summary Results of Operations: Trends

	YTD Sept 2018	YTD Sept 2017	3Q18	2Q18	1Q18	4Q17	3Q17
	($ in Thousands, except per share data)						
Net income	$ 244,578	$ 179,254	$ 85,929	$ 89,192	$ 69,456	$ 50,010	$ 65,001
Net income available to common equity	237,501	172,246	83,521	86,863	67,117	47,671	62,662
Earnings per common share - basic	1.40	1.13	0.49	0.51	0.41	0.31	0.41
Earnings per common share - diluted	1.38	1.11	0.48	0.50	0.40	0.31	0.41
Effective tax rate	18.34%	27.99%	20.64%	14.19%	20.43%	44.34%	30.55%

Income Statement Analysis

Net Interest Income

Table 2 Net Interest Income Analysis

	Nine Months Ended September 30,					
	2018			2017		
	Average Balance	Interest Income / Expense	Average Yield / Rate	Average Balance	Interest Income / Expense	Average Yield / Rate
	($ in Thousands)					
Assets						
Earning assets						
Loans[(a)(b)(c)]						
Commercial and business lending	$ 7,652,096	$ 252,727	4.42%	$ 7,280,302	$ 197,356	3.62%
Commercial real estate lending	5,508,720	201,573	4.89%	4,979,132	143,093	3.84%
Total commercial	13,160,815	454,300	4.61%	12,259,434	340,449	3.71%
Residential mortgage[(d)]	8,259,305	208,656	3.37%	6,956,937	169,231	3.24%
Retail[(d)]	1,269,050	54,623	5.74%	1,284,607	48,039	4.99%
Total loans	22,689,170	717,579	4.22%	20,500,978	557,719	3.63%
Investment securities						
Taxable	5,460,873	90,622	2.21%	4,819,580	71,295	1.97%
Tax-exempt[(a)]	1,480,426	40,173	3.62%	1,153,382	37,546	4.34%
Other short-term investments	430,468	9,366	2.91%	378,052	5,581	1.97%
Investments and other	7,371,767	140,161	2.54%	6,351,014	114,422	2.40%
Total earning assets	30,060,938	$ 857,740	3.81%	26,851,992	$ 672,141	3.34%
Other assets, net	2,989,470			2,466,764		
Total assets	$ 33,050,408			$ 29,318,756		
Liabilities and Stockholders' Equity						
Interest-bearing liabilities						
Interest-bearing deposits						
Savings	$ 1,839,801	$ 739	0.05%	$ 1,517,901	$ 607	0.05%
Interest-bearing demand	4,744,503	30,904	0.87%	3,880,379	13,779	0.47%
Money market	7,318,400	38,042	0.69%	6,254,725	15,765	0.34%
Network transaction deposits	2,168,209	28,308	1.75%	3,357,125	23,510	0.94%
Time	2,753,832	23,966	1.16%	1,853,295	12,221	0.88%
Total interest-bearing deposits	18,824,746	121,959	0.87%	16,863,427	65,882	0.52%
Federal funds purchased and securities sold under agreements to repurchase	255,371	1,564	0.82%	460,672	2,107	0.61%
Commercial paper	60,979	150	0.33%	100,178	239	0.32%
FHLB advances	4,078,588	53,720	1.76%	3,028,957	20,209	0.89%
Long-term funding	550,888	15,183	3.67%	496,842	13,632	3.66%
Total short and long-term funding	4,945,826	70,617	1.91%	4,086,650	36,186	1.18%
Total interest-bearing liabilities	23,770,572	$ 192,576	1.08%	20,950,077	$ 102,068	0.65%
Noninterest-bearing demand deposits	5,176,858			4,950,252		
Other liabilities	428,854			260,409		
Stockholders' equity	3,674,125			3,158,018		
Total liabilities and stockholders' equity	$ 33,050,408			$ 29,318,756		
Interest rate spread			2.73%			2.69%
Net free funds			0.22%			0.14%
Fully tax-equivalent net interest income and net interest margin		$ 665,164	2.95%		$ 570,073	2.83%
Fully tax-equivalent adjustment		9,539			15,858	
Net interest income		$ 655,625			$ 554,215	

(a) Beginning in 2018, the yield on tax-exempt loans and securities is computed on a fully tax-equivalent basis using a tax rate of 21% and is net of the effects of certain disallowed interest deductions. Prior to 2018, the yield on tax-exempt loans and securities was computed on a fully tax-equivalent basis using a tax rate of 35% and was net of the effects of certain disallowed interest deductions.

(b) Nonaccrual loans and loans held for sale have been included in the average balances.

(c) Interest income includes net deferred loan origination costs and net accreted purchase loan discount.

(d) Upon conversion, certain Bank Mutual loans were reclassified from home equity to residential mortgage. All prior periods have been adjusted to reflect this change.

Table 2 Net Interest Income Analysis (continued)

	Quarter ended								
	September 30, 2018			June 30, 2018			September 30, 2017		
	Average Balance	Interest Income / Expense	Average Yield / Rate	Average Balance	Interest Income / Expense	Average Yield / Rate	Average Balance	Interest Income / Expense	Average Yield / Rate
	($ in Thousands)								
Assets									
Earning assets									
Loans[(a)(b)(c)]									
Commercial and business lending	$ 7,938,739	$ 91,250	4.56%	$ 7,697,057	$ 86,771	4.52%	$ 7,318,594	$ 71,169	3.86%
Commercial real estate lending	5,420,680	68,020	4.98%	5,705,817	72,049	5.06%	4,973,436	50,396	4.02%
Total commercial	13,359,419	159,270	4.73%	13,402,874	158,820	4.75%	12,292,030	121,565	3.93%
Residential mortgage[(d)]	8,333,303	71,926	3.45%	8,310,358	69,774	3.36%	7,339,827	59,828	3.26%
Retail[(d)]	1,280,996	18,859	5.87%	1,292,196	18,466	5.72%	1,267,280	16,541	5.21%
Total loans	22,973,717	250,055	4.33%	23,005,428	247,060	4.30%	20,899,137	197,934	3.77%
Investment securities									
Taxable	5,290,859	29,895	2.26%	5,518,077	30,623	2.22%	4,846,653	24,162	1.99%
Tax-exempt[(a)]	1,627,715	14,973	3.68%	1,497,192	13,587	3.63%	1,177,962	12,650	4.30%
Other short-term investments	582,578	4,036	2.75%	392,009	3,153	3.22%	536,043	2,492	1.85%
Investments and other	7,501,152	48,905	2.61%	7,407,277	47,363	2.56%	6,560,658	39,304	2.40%
Total earning assets	30,474,870	$ 298,959	3.91%	30,412,705	$ 294,423	3.88%	27,459,795	$ 237,238	3.44%
Other assets, net	3,059,317			3,022,659			2,504,232		
Total assets	$ 33,534,187			$ 33,435,364			$ 29,964,027		
Liabilities and Stockholders' equity									
Interest-bearing liabilities									
Interest-bearing deposits									
Savings	$ 1,901,960	$ 327	0.07%	$ 1,892,808	$ 210	0.04%	$ 1,545,884	$ 218	0.06%
Interest-bearing demand	4,988,694	13,169	1.05%	4,735,514	9,918	0.84%	3,993,275	5,778	0.57%
Money market	7,546,059	16,212	0.85%	7,190,178	12,045	0.67%	6,617,185	7,017	0.42%
Network transaction deposits	1,969,915	10,027	2.02%	2,130,854	9,503	1.79%	3,104,997	9,392	1.20%
Time deposits	2,978,314	10,382	1.38%	2,565,001	6,755	1.06%	2,187,986	5,372	0.97%
Total interest-bearing deposits	19,384,942	50,116	1.03%	18,514,355	38,431	0.83%	17,449,327	27,778	0.63%
Federal funds purchased and securities sold under agreements to repurchase	231,308	504	0.86%	259,713	538	0.83%	398,200	768	0.76%
Commercial paper	43,911	38	0.35%	65,631	51	0.31%	86,689	70	0.32%
FHLB advances	3,690,687	19,318	2.08%	4,809,071	21,279	1.77%	3,072,108	8,612	1.11%
Long-term funding	656,055	6,095	3.72%	497,517	4,544	3.65%	497,014	4,544	3.66%
Total short and long-term funding	4,621,961	25,956	2.23%	5,631,932	26,412	1.88%	4,054,011	13,994	1.37%
Total interest-bearing liabilities	24,006,903	$ 76,072	1.26%	24,146,287	$ 64,843	1.08%	21,503,338	$ 41,772	0.77%
Noninterest-bearing demand deposits	5,310,977			5,131,894			4,992,118		
Other liabilities	454,767			436,130			283,724		
Stockholders' equity	3,761,541			3,721,053			3,184,847		
Total liabilities and stockholders' equity	$ 33,534,187			$ 33,435,364			$ 29,964,027		
Interest rate spread			2.65%			2.80%			2.67%
Net free funds			0.27%			0.22%			0.17%
Fully tax-equivalent net interest income and net interest margin		$ 222,887	2.92%		$ 229,580	3.02%		$ 195,466	2.84%
Fully tax-equivalent adjustment		3,496			3,217			5,344	
Net interest income		$ 219,392			$ 226,362			$ 190,122	

(a) Beginning in 2018, the yield on tax-exempt loans and securities is computed on a fully tax-equivalent basis using a tax rate of 21% and is net of the effects of certain disallowed interest deductions. Prior to 2018, the yield on tax-exempt loans and securities was computed on a fully tax-equivalent basis using a tax rate of 35% and was net of the effects of certain disallowed interest deductions.

(b) Nonaccrual loans and loans held for sale have been included in the average balances.

(c) Interest income includes amortization of net deferred loan origination costs and net accreted purchase loan discount.

(d) Upon conversion, certain Bank Mutual loans were reclassified from home equity to residential mortgage. All prior periods have been adjusted to reflect this change.

Notable Contributions to the Change in Net Interest Income

- Net interest income in the consolidated statements of income (which excludes the fully tax-equivalent adjustment) was $656 million for the first nine months of 2018 compared to $554 million for the first nine months of 2017. The primary reason for increased net interest income and earning assets from last year was the acquisition of Bank Mutual in February 2018. See sections Interest Rate Risk and Quantitative and Qualitative Disclosures about Market Risk, for a discussion of interest rate risk and market risk.

- Fully tax-equivalent net interest income of $665 million for the first nine months of 2018 was $95 million higher than the first nine months of 2017.

- Accreted income from the acquisition of the Bank Mutual loan portfolio contributed $21 million to net interest income for the first nine months of 2018. Approximately $8 million of the accreted income was from loan prepayments.

- Average earning assets of $30.1 billion for the first nine months of 2018 were $3.2 billion, or 12%, higher than the first nine months of 2017. Average loans of $22.7 billion for the first nine months of 2018 increased $2.2 billion, or 11%, primarily due to an increase of $1.3 billion, or 19%, in residential mortgage loans and a $901 million, or 7%, increase in commercial loans.

- Average interest-bearing liabilities of $23.8 billion for the first nine months of 2018 were up $2.8 billion, or 13% versus the first nine months of 2017. On average, interest-bearing deposits increased $2.0 billion and FHLB advances increased $1.0 billion from the first nine months of 2017.

- The net interest margin for the first nine months of 2018 was 2.95%, compared to 2.83% for the first nine months of 2017.

- The cost of interest-bearing liabilities was 1.08% for the first nine months of 2018, which was 43 bps higher than the first nine months of 2017. The increase was primarily due to a 35 bp increase in the cost of average interest-bearing deposits (to 0.87%) and an 87 bp increase in the cost of FHLB advances (to 1.76%), both primarily due to increases in the Federal Reserve interest rate.

- The Federal Reserve increased the targeted federal funds rate on September 26, 2018, to a range of 2.00% to 2.25%, which compares to a range of 1.00% to 1.25% at the end of the third quarter of 2017. The Federal Reserve has indicated that it expects gradual increases in the Federal Funds rate. However, the timing and magnitude of any such increases are uncertain and will depend on domestic and global economic conditions.

Provision for Credit Losses

The provision for credit losses (which includes the provision for loan losses and the provision for unfunded commitments) for the nine months ended September 30, 2018 was negative $1 million, compared to $26 million for the nine months ended September 30, 2017. Net charge offs were $30 million (representing 0.18% of average loans) for the nine months ended September 30, 2018, compared to $29 million (representing 0.19% of average loans) for the nine months ended September 30, 2017. The ratio of the allowance for loan losses to total loans was 1.03% for September 30, 2018 and 1.32% for September 30, 2017.

The provision for credit losses is predominantly a function of the Corporation's reserving methodology and judgments as to other qualitative and quantitative factors used to determine the appropriate level of the allowance for loan losses and the allowance for unfunded commitments, which focuses on changes in the size and character of the loan portfolio, changes in levels of impaired and other nonaccrual loans, historical losses and delinquencies in each portfolio category, the level of loans sold or transferred to held for sale, the risk inherent in specific loans, concentrations of loans to specific borrowers or industries, existing economic conditions, the fair value of underlying collateral, and other factors which could affect potential credit losses. See additional discussion under sections, Loans, Credit Risk, Nonperforming Assets, and Allowance for Credit Losses.

Noninterest Income

Table 3 Noninterest Income

($ in Thousands)	YTD Sept 2018	YTD Sept 2017	% Change	3Q18	2Q18	1Q18	4Q17	3Q17	3Q18 Change vs 2Q18	3Q18 Change vs 3Q17
Insurance commissions and fees	$ 68,279	$ 62,288	10 %	$ 21,636	$ 23,996	$ 22,648	$ 19,186	$ 19,815	(10)%	9 %
Service charges and deposit account fees	49,714	48,654	2 %	16,904	16,390	16,420	15,773	16,268	3 %	4 %
Card-based and loan fees	41,899	38,848	8 %	14,090	14,387	13,422	13,840	12,619	(2)%	12 %
Trust and asset management fees	40,946	37,066	10 %	14,140	13,437	13,369	13,125	12,785	5 %	11 %
Brokerage commissions and fees	21,253	13,071	63 %	7,084	6,896	7,273	6,864	4,392	3 %	61 %
Total core fee-based revenue	222,091	199,927	11 %	73,854	75,106	73,132	68,788	65,879	(2)%	12 %
Mortgage banking income	23,114	24,112	(4)%	6,444	8,451	8,219	5,507	9,147	(24)%	(30)%
Mortgage servicing rights expense	6,474	7,921	(18)%	2,432	2,193	1,849	2,337	2,563	11 %	(5)%
Mortgage banking, net	16,640	16,191	3 %	4,012	6,258	6,370	3,169	6,585	(36)%	(39)%
Capital markets, net	15,189	12,535	21 %	5,099	4,783	5,306	7,107	4,610	7 %	11 %
Bank and corporate owned life insurance	10,705	13,094	(18)%	3,540	3,978	3,187	3,156	6,580	(11)%	(46)%
Other	7,529	6,746	12 %	2,802	2,235	2,492	2,777	2,254	25 %	24 %
Subtotal	272,154	248,493	10 %	89,307	92,360	90,487	84,997	85,908	(3)%	4 %
Asset gains(losses), net[(a)]	1,353	(716)	N/M	(1,037)	2,497	(107)	(528)	(16)	(142)%	N/M
Investment securities gains(losses), net	(1,985)	359	N/M	30	(2,015)	—	75	3	(101)%	N/M
Total noninterest income	$271,522	$248,136	9 %	$ 88,300	$ 92,842	$ 90,380	$ 84,544	$ 85,895	(5)%	3 %
Mortgage loans originated for sale during period	$847,619	$466,135	82 %	$331,334	$318,682	$197,603	$249,222	$245,851	4 %	35 %
Mortgage loan settlements during period	$826,929	$551,696	50 %	$344,849	$294,456	$187,624	$268,254	$187,568	17 %	84 %
Assets under management, at market value[(b)]	$ 11,206	$ 9,243	21%	$ 11,206	$ 10,776	$ 10,540	$ 10,555	$ 9,243	4%	21 %

N/M = Not Meaningful

(a) The three months ended September 30, 2018 and the three months ended June 30, 2018 each include approximately $1 million of Bank Mutual acquisition related asset losses net of asset gains; the nine months ended September 30, 2018 include approximately $2 million of Bank Mutual acquisition related asset losses net of asset gains.

(b) $ in millions. Excludes assets held in brokerage firms.

Notable Contributions to the Change in Noninterest Income

- Fee-based revenue was $222 million, an increase of $22 million (11%) compared to the first nine months of 2017, primarily driven by the incremental insurance and brokerage commissions and trust fees resulting from the acquisitions of Whitnell & Co., Diversified, and Anderson. See Note 2 for additional information on the Corporation's acquisitions.

- Capital markets, net increased $3 million (21%) compared to the first nine months of 2017, primarily driven by higher customer hedging transactions and increased syndication activity.

Noninterest Expense

Table 4 Noninterest Expense

($ in Thousands)	YTD Sept 2018	YTD Sept 2017	YTD % Change	3Q18	2Q18	1Q18	4Q17	3Q17	3Q18 Change vs 2Q18	3Q18 Change vs 3Q17
Personnel	$ 366,141	$ 321,946	14 %	$ 124,476	$ 123,980	$ 117,685	$ 107,031	$ 108,098	— %	15 %
Occupancy	44,947	40,345	11 %	14,519	15,071	15,357	13,497	12,294	(4)%	18 %
Technology	54,730	45,126	21 %	17,563	19,452	17,715	17,878	15,233	(10)%	15 %
Equipment	17,347	15,951	9 %	5,838	5,953	5,556	5,250	5,232	(2)%	12 %
Business development and advertising	21,973	20,751	6 %	8,213	7,067	6,693	8,195	7,764	16 %	6 %
Legal and professional	17,173	16,125	6 %	5,476	6,284	5,413	6,384	6,248	(13)%	(12)%
Card Issuance and loan costs	10,154	8,924	14 %	3,677	3,173	3,304	2,836	3,330	16 %	10 %
Foreclosure / OREO expense, net	2,694	3,593	(25)%	950	1,021	723	1,285	906	(7)%	5 %
FDIC assessment	24,250	23,800	2 %	7,750	8,250	8,250	7,500	7,800	(6)%	(1)%
Other intangible amortization	5,926	1,459	N/M	2,233	2,168	1,525	500	450	3 %	N/M
Acquisition related costs[(a)]	29,983	—	N/M	2,271	7,107	20,605	—	—	(68)%	N/M
Other	33,318	29,413	13 %	11,445	11,732	10,140	11,343	10,072	(2)%	14 %
Total noninterest expense	$ 628,636	$ 527,434	19 %	$ 204,413	$ 211,258	$ 212,965	$ 181,699	$ 177,427	(3)%	15 %

N/M = Not Meaningful

(a) Includes Bank Mutual acquisition related costs only.

Notable Contributions to the Change in Noninterest Expense

- Personnel expense (which includes salary-related expenses and fringe benefit expenses) was $366 million for the first nine months of 2018, up $44 million (14%) from the first nine months of 2017, primarily driven by the additional cost of Bank Mutual staff and an increase in funding for the management incentive plan.
- All other nonpersonnel noninterest expense on a combined basis was $262 million, up $57 million (28%) compared to the first nine months of 2017. The increase was primarily driven by $30 million of acquisition related costs pertaining to Bank Mutual. In addition, technology expense increased $10 million (21%) from the first nine months of 2017, driven by the additional cost of Bank Mutual operations.

Income Taxes

The Corporation recognized income tax expense of $55 million for the nine months ended September 30, 2018, compared to income tax expense of $70 million for the nine months ended September 30, 2017. The decrease is primarily due to the Tax Cuts and Jobs Act ("TCJA") signed into law on December 22, 2017. During the second and third quarters of 2018, the Corporation received one-time tax benefits from implementing tax planning strategies to maximize the positive impact of the TCJA. These benefits were partially offset by additional tax expense of $6 million which was booked in the third quarter of 2018 as a result of an unfavorable ruling in the Corporation’s case before the Minnesota Supreme Court. The effective tax rate was 18.34% for the first nine months of 2018, compared to an effective tax rate of 27.99% for the first nine months of 2017.

Income tax expense recorded in the consolidated statements of income involves the interpretation and application of certain accounting pronouncements and federal and state tax laws and regulations, and is, therefore, considered a critical accounting policy. The Corporation is subject to examination by various taxing authorities. Examination by taxing authorities may impact the amount of tax expense and / or reserve for uncertainty in income taxes if their interpretations differ from those of management, based on their judgments about information available to them at the time of their examinations. See section Critical Accounting Policies, in the Corporation’s 2017 Annual Report on Form 10-K for additional information on income taxes.

Balance Sheet Analysis

- At September 30, 2018, total assets were $33.5 billion, up $3.0 billion (10%) from December 31, 2017 and up $3.4 billion (11%) from September 30, 2017. On February 1, 2018, the Corporation added $2.8 billion of assets as a result of the Bank Mutual acquisition.
- Loans of $22.9 billion at September 30, 2018 were up $2.1 billion (10%) from December 31, 2017 and were up $1.9 billion (9%) from September 30, 2017. On February 1, 2018, the Corporation added $1.9 billion of loans as a result of the Bank Mutual acquisition. See section Loans for additional information on loans.
- At September 30, 2018, total deposits of $24.8 billion were up $2.0 billion (9%) from December 31, 2017 and were up $2.5 billion (11%) from September 30, 2017. On February 1, 2018, the Corporation assumed $1.8 billion of deposits as a result of the Bank Mutual acquisition. See section Deposits and Customer Funding for additional information on deposits.
- Long-term funding, excluding FHLB advances, was $795 million at September 30, 2018, up $298 million from December 31, 2017 and September 30, 2017 primarily driven by a $300 million senior note issuance during the third quarter of 2018.
- At September 30, 2018, preferred equity of $257 million was up $97 million from December 31, 2017 and September 30, 2017 as a result of a $100 million Non-Cumulative Perpetual Preferred Stock, Series E issuance during the third quarter of 2018.

Loans

Table 5 Period End Loan Composition

	September 30, 2018		June 30, 2018		March 31, 2018		December 31, 2017		September 30, 2017	
	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total
	($ in Thousands)									
Commercial and industrial	$ 7,159,941	31%	$ 7,109,796	31%	$ 6,756,983	30%	$ 6,399,693	31%	$ 6,534,660	31%
Commercial real estate — owner occupied	867,682	4%	888,330	4%	900,913	4%	802,209	4%	827,064	4%
Commercial and business lending	8,027,622	35%	7,998,126	35%	7,657,896	34%	7,201,902	35%	7,361,724	35%
Commercial real estate — investor	3,924,499	17%	3,996,415	17%	4,077,671	18%	3,315,254	16%	3,345,536	16%
Real estate construction	1,416,209	6%	1,487,159	6%	1,579,778	7%	1,451,684	7%	1,552,135	8%
Commercial real estate lending	5,340,708	23%	5,483,574	24%	5,657,449	25%	4,766,938	23%	4,897,671	24%
Total commercial	13,368,330	58%	13,481,700	59%	13,315,345	58%	11,968,840	58%	12,259,395	59%
Residential mortgage	8,227,649	36%	8,207,253	36%	8,197,223	36%	7,546,534	36%	7,408,471	35%
Home equity	901,275	4%	911,363	4%	923,470	4%	883,804	4%	890,130	4%
Other consumer	369,858	2%	376,470	2%	374,453	2%	385,813	2%	373,464	2%
Total consumer	9,498,782	42%	9,495,086	41%	9,495,146	42%	8,816,151	42%	8,672,065	41%
Total loans	$ 22,867,112	100%	$ 22,976,786	100%	$ 22,810,491	100%	$ 20,784,991	100%	$ 20,931,460	100%

The Corporation has long-term guidelines relative to the proportion of Commercial and Business, Commercial Real Estate, and Consumer loans within the overall loan portfolio, with each targeted to represent 30-40% of the overall loan portfolio. The targeted long-term guidelines were unchanged during 2017 and the first nine months of 2018. Furthermore, certain sub-asset classes within the respective portfolios were further defined and dollar limitations were placed on these sub-portfolios. These guidelines and limits are reviewed quarterly and approved annually by the Enterprise Risk Committee of the Corporation's Board of Directors. These guidelines and limits are designed to create balance and diversification within the loan portfolios.

Credit Risk

An active credit risk management process is used for commercial loans to ensure that sound and consistent credit decisions are made. Credit risk is controlled by detailed underwriting procedures, comprehensive loan administration, and periodic review of borrowers' outstanding loans and commitments. Borrower relationships are formally reviewed and graded on an ongoing basis for early identification of potential problems. Further analysis by customer, industry, and geographic location are performed to monitor trends, financial performance, and concentrations. See Note 7 Loans, for additional information on managing overall credit quality.

The loan portfolio is widely diversified by types of borrowers, industry groups, and market areas within the Corporation's branch footprint. Significant loan concentrations are considered to exist when there are amounts loaned to numerous borrowers engaged in similar activities that would cause them to be similarly impacted by economic or other conditions. At September 30, 2018, no significant concentrations existed in the Corporation’s portfolio in excess of 10% of total loans.

Commercial and business lending: The commercial and business lending classification primarily includes commercial loans to large corporations, middle market companies, small businesses and lease financing.

Table 6 Largest Commercial and Business Lending Industry Group Exposures

September 30, 2018	% of Total Loans	% of Total Commercial and Business Lending
Manufacturing and Wholesale Trade	8%	23%
Power and Utilities	5%	14%

The remaining commercial and business lending portfolio is spread over a diverse range of industries, none of which exceed 5% of total loans.

The credit risk related to commercial loans is largely influenced by general economic conditions and the resulting impact on a borrower’s operations or on the value of underlying collateral, if any. Currently, a higher risk segment of the commercial and business lending portfolio is loans to borrowers supporting oil and gas exploration and production, which are further discussed under oil and gas lending below.

Oil and gas lending: The Corporation provides reserve based loans to oil and gas exploration and production firms. At September 30, 2018, the oil and gas portfolio was comprised of 56 credits, totaling $731 million of outstanding balances. The Corporation's oil and gas lending team is based in Houston and focuses on serving the funding needs of small and mid-sized companies in the upstream oil and gas business. The oil and gas loans are generally first lien, reserve-based, and borrowing base dependent lines of credit. A small portion of the portfolio is in a second lien position to which the Corporation also holds the first lien position. The portfolio is diversified across all major U.S. geographic basins. The portfolio is diversified by product line with approximately 57% in oil and 43% in gas at September 30, 2018. Borrowing base re-determinations for the portfolio are completed at least twice a year and are based on detailed engineering reports and discounted cash flow analysis.

The following table summarizes information about the Corporation's oil and gas loan portfolio.

Table 7 Oil and Gas Loan Portfolio

	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
			($ in Millions)		
Pass	$ 625	$ 603	$ 548	$ 483	$ 446
Special mention	34	—	—	—	—
Potential problem	34	34	40	40	39
Accruing TDRs	6	—	—	—	—
Nonaccrual	32	45	69	77	92
Total oil and gas related loans	$ 731	$ 682	$ 657	$ 600	$ 577
Quarter net charge offs	$ 9	$ 7	$ 4	$ —	$ 8
Oil and gas related allowance	$ 10	$ 17	$ 19	$ 27	$ 30
Oil and gas related allowance ratio	1.4%	2.5%	2.9%	4.5%	5.2%

During 2017, the market stabilized leading to improvements across the oil and gas portfolio. At September 30, 2018, nonaccrual oil and gas related loans totaled approximately $32 million, representing 4% of the oil and gas loan portfolio, a decrease of $45 million from December 31, 2017.

Commercial real estate - investor: Commercial real estate-investor is comprised of loans secured by various non-owner occupied or investor income producing property types.

Table 8 Largest Commercial Real Estate Investor Property Type Exposures

September 30, 2018	% of Total Loans	% of Total Commercial Real Estate - Investor
Multi-Family	6%	35%

The remaining commercial real estate-investor portfolio is spread over various other property types, none of which exceed 5% of total loans.

Credit risk is managed in a similar manner to commercial and business lending by employing sound underwriting guidelines, lending primarily to borrowers in local markets and businesses, periodically evaluating the underlying collateral, and formally reviewing the borrower’s financial soundness and relationship on an ongoing basis.

Real estate construction: Real estate construction loans are primarily short-term or interim loans that provide financing for the acquisition or development of commercial income properties, multi-family projects or residential development, both single family and condominium. Real estate construction loans are made to developers and project managers who are generally well known to the Corporation and have prior successful project experience. The credit risk associated with real estate construction loans is generally confined to specific geographic areas but is also influenced by general economic conditions. The Corporation controls the credit risk on these types of loans by making loans in familiar markets to developers, reviewing the merits of individual projects, controlling loan structure, and monitoring project progress and construction advances.

The Corporation’s current lending standards for commercial real estate and real estate construction lending are determined by property type and specifically address many criteria, including: maximum loan amounts, maximum loan-to-value (“LTV”), requirements for pre-leasing and / or presales, minimum borrower equity, and maximum loan-to-cost. Currently, the maximum standard for LTV is 80%, with lower limits established for certain higher risk types, such as raw land that has a 50% LTV maximum. The Corporation’s LTV guidelines are in compliance with regulatory supervisory limits. In most cases, for real estate construction loans, the loan amounts include interest reserves, which are built into the loans and sized to fund loan payments through construction and lease up and / or sell out.

Table 9 Loan Distribution and Interest Rate Sensitivity

September 30, 2018	Within 1 Year[(a)]	1-5 Years	After 5 Years	Total	% of Total
			($ in Thousands)		
Commercial and industrial	$ 6,479,580	$ 519,359	$ 161,001	$ 7,159,941	31%
Commercial real estate — owner occupied	446,275	273,763	147,644	867,682	4%
Commercial real estate — investor	3,274,307	546,483	103,708	3,924,499	17%
Real estate construction	1,293,840	114,976	7,393	1,416,209	6%
Residential Mortgage - Adjustable [(b)]	653,865	2,838,455	1,929,132	5,421,453	24%
Residential Mortgage - Fixed	30,248	71,916	2,704,032	2,806,196	12%
Home Equity	48,327	62,496	790,452	901,275	4%
Other Consumer	157,342	48,400	164,116	369,858	2%
Total Loans	$ 12,383,785	$ 4,475,849	$ 6,007,478	$ 22,867,112	100%
Fixed rate	$ 4,837,096	$ 1,086,227	$ 3,229,217	$ 9,152,540	40%
Floating or adjustable rate	7,546,689	3,389,621	2,778,261	13,714,572	60%
Total	$ 12,383,785	$ 4,475,849	$ 6,007,478	$ 22,867,112	100%

(a) Demand loans, past due loans, overdrafts, and credit cards are reported in the “Within 1 Year” category.
(b) Based on contractual loan terms for adjustable rate mortgages; does not factor in early prepayments or amortization.

Residential mortgages: Residential mortgage loans are primarily first lien home mortgages with a maximum loan-to-collateral value without credit enhancement (e.g. private mortgage insurance) of 80%. The residential mortgage portfolio is focused primarily in the Corporation's three-state branch footprint, with approximately 89% of the outstanding loan balances in the Corporation's branch footprint at September 30, 2018. The majority of the on balance sheet residential mortgage portfolio consists of hybrid, adjustable rate mortgage loans with initial fixed rate terms of 3, 5, 7, or 10 years.

The Corporation also generally retains certain fixed-rate residential real estate mortgages in its loan portfolio, including retail and private banking jumbo mortgages and CRA-related mortgages. As part of management’s historical practice of originating and servicing residential mortgage loans, generally the Corporation’s 30 year, agency conforming, fixed-rate residential real estate

mortgage loans were sold in the secondary market with servicing rights retained. Subject to management’s analysis of the current interest rate environment, among other market factors, the Corporation may choose to retain 30 year mortgage loan production on its balance sheet.

The Corporation’s underwriting and risk-based pricing guidelines for residential mortgage loans include minimum borrower FICO and maximum LTV of the property securing the loan. Residential mortgage products generally are underwritten using FHLMC and FNMA secondary marketing guidelines.

Home equity: Home equity consists of both home equity lines of credit and closed-end home equity loans. The Corporation’s credit risk monitoring guidelines for home equity is based on an ongoing review of loan delinquency status, as well as a quarterly review of FICO score deterioration and property devaluation. The Corporation does not routinely obtain appraisals on performing loans to update LTV ratios after origination; however, the Corporation monitors the local housing markets by reviewing the various home price indices and incorporates the impact of the changing market conditions in its ongoing credit monitoring process. For junior lien home equity loans, the Corporation is unable to track the performance of the first lien loan if it does not own or service the first lien loan. However, the Corporation obtains a refreshed FICO score on a quarterly basis and monitors this as part of its assessment of the home equity portfolio.

The Corporation’s underwriting and risk-based pricing guidelines for home equity lines and loans consist of a combination of both borrower FICO and the original cumulative LTV against the property securing the loan. Currently, the Corporation's policy sets the maximum acceptable LTV at 90% and the minimum acceptable FICO at 670. The Corporation's current home equity line of credit offering is priced based on floating rate indices and generally allows 10 years of interest-only payments followed by a 20-year amortization of the outstanding balance. The Corporation has significantly curtailed its offerings of fixed rate, closed end home equity loans. The loans in the Corporation's portfolio generally have an original term of 20 years with principal and interest payments required.

Other consumer: Other consumer consists of student loans, short-term and other personal installment loans and credit cards. The Corporation had $168 million and $183 million of student loans at September 30, 2018 and December 31, 2017, respectively, the majority of which are government guaranteed. Credit risk for non-government guaranteed student, short-term and personal installment loans and credit cards is influenced by general economic conditions, the characteristics of individual borrowers, and the nature of the loan collateral. Risks of loss are generally on smaller average balances per loan spread over many borrowers. Once charged off, there is usually less opportunity for recovery of these smaller consumer loans. Credit risk is primarily controlled by reviewing the creditworthiness of the borrowers, monitoring payment histories, and taking appropriate collateral and guarantee positions. The student loan portfolio is in run-off and no new student loans are being originated.

Nonperforming Assets

Management is committed to a proactive nonaccrual and problem loan identification philosophy. This philosophy is implemented through the ongoing monitoring and review of all pools of risk in the loan portfolio to ensure that problem loans are identified quickly and the risk of loss is minimized. Table 10 provides detailed information regarding nonperforming assets, which include nonaccrual loans and other real estate owned, and other nonperforming assets.

Table 10 Nonperforming Assets

	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
			($ in Thousands)		
Nonperforming assets					
Commercial and industrial	$ 50,146	$ 81,776	$ 102,667	$ 112,786	$ 122,284
Commercial real estate — owner occupied	4,779	18,649	20,636	22,740	15,598
Commercial and business lending	54,925	100,425	123,303	135,526	137,882
Commercial real estate — investor	19,725	26,503	15,574	4,729	3,543
Real estate construction	1,154	1,544	1,219	974	1,540
Commercial real estate lending	20,879	28,047	16,793	5,703	5,083
Total commercial	75,804	128,472	140,096	141,229	142,965
Residential mortgage	65,896	62,896	55,100	53,632	54,654
Home equity	12,324	12,958	13,218	13,514	12,639
Other consumer	68	134	139	171	259
Total consumer	78,288	75,988	68,456	67,317	67,552
Total nonaccrual loans	154,092	204,460	208,553	208,546	210,517
Commercial real estate owned	4,680	4,848	7,511	6,735	5,098
Residential real estate owned	3,630	3,715	5,806	5,873	3,385
Bank properties real estate owned	17,343	18,645	3,601	—	—
Other real estate owned (“OREO”)	25,653	27,207	16,919	12,608	8,483
Other nonperforming assets	6,379	7,059	7,117	7,418	7,418
Total nonperforming assets (“NPAs”)	$ 186,124	$ 238,726	$ 232,589	$ 228,572	$ 226,418
Accruing loans past due 90 days or more					
Commercial	$ 319	$ 222	$ 505	$ 418	$ 308
Consumer	1,856	1,617	2,888	1,449	1,303
Total accruing loans past due 90 days or more	$ 2,175	$ 1,839	$ 3,393	$ 1,867	$ 1,611
Restructured loans (accruing)					
Commercial	$ 43,199	$ 36,852	$ 47,460	$ 48,735	$ 51,259
Consumer	25,955	26,871	29,041	25,883	25,919
Total restructured loans (accruing)	$ 69,154	$ 63,723	$ 76,501	$ 74,618	$ 77,178
Nonaccrual restructured loans (included in nonaccrual loans)	$ 33,757	$ 38,005	$ 23,827	$ 23,486	$ 33,520
Ratios					
Nonaccrual loans to total loans	0.67%	0.89%	0.91%	1.00%	1.01%
NPAs to total loans plus OREO	0.81%	1.04%	1.02%	1.10%	1.08%
NPAs to total assets	0.56%	0.71%	0.70%	0.75%	0.75%
Allowance for loan losses to nonaccrual loans	153.32%	123.55%	123.26%	127.49%	131.37%

Table 10 Nonperforming Assets (continued)

	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
			($ in Thousands)		
Accruing loans 30-89 days past due					
Commercial and industrial	$ 5,732	$ 588	$ 880	$ 271	$ 1,378
Commercial real estate — owner occupied	6,126	193	511	48	1,522
Commercial and business lending	11,858	781	1,391	319	2,900
Commercial real estate — investor	373	828	240	374	1,109
Real estate construction	517	19,765	490	251	700
Commercial real estate lending	890	20,593	730	625	1,809
Total commercial	12,748	21,374	2,121	944	4,709
Residential mortgage	8,899	9,341	15,133	9,552	8,870
Home equity	8,080	7,270	5,868	6,825	7,191
Other consumer	1,979	1,735	1,811	2,007	1,686
Total consumer	18,958	18,346	22,812	18,384	17,747
Total accruing loans 30-89 days past due	$ 31,706	$ 39,720	$ 24,934	$ 19,328	$ 22,456
Potential problem loans					
Commercial and industrial	$ 144,468	$ 172,177	$ 196,766	$ 113,778	$ 153,779
Commercial real estate — owner occupied	32,526	38,879	34,410	41,997	57,468
Commercial and business lending	176,994	211,056	231,176	155,775	211,247
Commercial real estate — investor	49,842	24,790	46,970	19,291	46,770
Real estate construction	3,392	3,168	1,695	—	118
Commercial real estate lending	53,234	27,958	48,665	19,291	46,888
Total commercial	230,228	239,014	279,841	175,066	258,135
Residential mortgage	6,073	2,355	2,155	1,616	650
Home equity	148	142	188	195	124
Other consumer	—	6	—	—	—
Total consumer	6,221	2,503	2,343	1,811	774
Total potential problem loans	$ 236,449	$ 241,517	$ 282,184	$ 176,877	$ 258,909

Nonaccrual loans: Nonaccrual loans are considered to be one indicator of potential future loan losses. See Note 7 Loans, of the notes to consolidated financial statements for additional nonaccrual loan disclosures. See also sections Credit Risk and Allowance for Credit Losses.

Accruing loans past due 90 days or more: Loans past due 90 days or more but still accruing interest are classified as such where the underlying loans are both well secured (the collateral value is sufficient to cover principal and accrued interest) and are in the process of collection.

Restructured loans: Loans are considered restructured loans if concessions have been granted to borrowers that are experiencing financial difficulty. See also Note 7 Loans, of the notes to consolidated financial statements for additional restructured loans disclosures.

Potential problem loans: The level of potential problem loans is another predominant factor in determining the relative level of risk in the loan portfolio and in determining the appropriate level of the allowance for loan losses. Potential problem loans are generally defined by management to include loans rated as substandard by management but that are not considered impaired (i.e., nonaccrual loans and accruing troubled debt restructurings); however, there are circumstances present to create doubt as to the ability of the borrower to comply with present repayment terms. The decision of management to include performing loans in potential problem loans does not necessarily mean that the Corporation expects losses to occur, but that management recognizes a higher degree of risk associated with these loans.

OREO: Management actively seeks to ensure OREO properties held are monitored to minimize the Corporation’s risk of loss. The increase in OREO during the second quarter of 2018 was primary driven by the closure of Bank Mutual properties.

Other nonperforming assets: The asset represents the Bank's ownership interest in a profit participation agreement in an entity created to own certain oil and gas assets obtained as a result of bankruptcy and liquidation of a borrower in partial satisfaction of their loan.

Allowance for Credit Losses

Credit risks within the loan portfolio are inherently different for each loan type. Credit risk is controlled and monitored through the use of lending standards, a thorough review of potential borrowers, and ongoing review of loan payment performance. Active asset quality administration, including early problem loan identification and timely resolution of problems, aids in the management of credit risk and minimization of loan losses. Credit risk management for each loan type is discussed in the section entitled Credit Risk. See Note 7 Loans, for additional disclosures on the allowance for credit losses.

To assess the appropriateness of the allowance for loan losses, an allocation methodology is applied by the Corporation which focuses on evaluation of many factors, including but not limited to: evaluation of facts and issues related to specific loans, management's ongoing review and grading of the loan portfolio, consideration of historical loan loss and delinquency experience on each portfolio category, trends in past due and nonaccrual loans, the level of potential problem loans, the risk characteristics of the various classifications of loans, changes in the size and character of the loan portfolio, concentrations of loans to specific borrowers or industries, existing economic conditions, the fair value of underlying collateral, and other qualitative and quantitative factors which could affect potential credit losses. Assessing these factors involves significant judgment. Because each of the criteria used is subject to change, the allowance for loan losses is not necessarily indicative of the trend of future loan losses in any particular category. Therefore, management considers the allowance for loan losses a critical accounting policy—See section Critical Accounting Policies, in the Corporation's 2017 Annual Report on Form 10-K for additional information on the allowance for loan losses. See section, Nonperforming Assets, for a detailed discussion on asset quality. See also Note 7 Loans, of the notes to consolidated financial statements for additional allowance for loan losses disclosures. Table 5 provides information on loan growth and period end loan composition, Table 10 provides additional information regarding nonperforming assets, and Table 11 and Table 12 provide additional information regarding activity in the allowance for loan losses.

The methodology used for the allocation of the allowance for loan losses at September 30, 2018 and December 31, 2017 was generally comparable, whereby the Corporation segregated its loss factors (used for both criticized and non-criticized loans) into a component primarily based on historical loss rates and a component primarily based on other qualitative factors that are probable to affect loan collectability. The allocation methodology consists of the following components: First, a valuation allowance estimate is established for specifically identified commercial and consumer loans determined by the Corporation to be impaired, using discounted cash flows, estimated fair value of underlying collateral, and / or other data available. Second, management allocates the allowance for loan losses with loss factors, for criticized loan pools by loan type as well as for non-criticized loan pools by loan type, primarily based on historical loss rates after considering loan type, historical loss and delinquency experience, and industry statistics. Criticized loans are considered to have a higher risk of default than non-criticized loans, as circumstances were present to support the lower loan grade, warranting higher loss factors. The loss factors applied in the methodology are periodically re-evaluated and adjusted to reflect changes in historical loss levels or other risks. Lastly, management allocates allowance for loan losses to absorb unrecognized losses that may not be provided for by the other components due to other factors evaluated by management, such as limitations within the credit risk grading process, known current economic or business conditions that may not yet show in trends, industry or other concentrations with current issues that impose higher inherent risks than are reflected in the loss factors, and other relevant considerations. The total allowance is available to absorb losses from any segment of the loan portfolio.

Table 11 Allowance for Credit Losses

	YTD						
	September 30, 2018	September 30, 2017	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
	($ in Thousands)						
Allowance for Loan Losses							
Balance at beginning of period	$ 265,880	$ 278,335	$ 252,601	$ 257,058	$ 265,880	$ 276,551	$ 281,101
Provision for loan losses	500	27,000	(4,000)	4,000	500	—	6,000
Charge offs	(44,385)	(41,957)	(17,304)	(14,926)	(12,155)	(14,289)	(14,727)
Recoveries	14,255	13,173	4,953	6,470	2,832	3,618	4,177
Net charge offs	(30,130)	(28,784)	(12,351)	(8,456)	(9,323)	(10,671)	(10,550)
Balance at end of period	$ 236,250	$ 276,551	$ 236,250	$ 252,601	$ 257,058	$ 265,880	$ 276,551
Allowance for Unfunded Commitments							
Balance at beginning of period	$ 24,400	$ 25,400	$ 26,336	$ 26,336	$ 24,400	$ 24,400	$ 25,400
Provision for unfunded commitments	(1,500)	(1,000)	(1,000)	—	(500)	—	(1,000)
Amount recorded at acquisition	2,436	—	—	—	2,436	—	—
Balance at end of period	$ 25,336	$ 24,400	$ 25,336	$ 26,336	$ 26,336	$ 24,400	$ 24,400
Allowance for credit losses[(a)]	$ 261,586	$ 300,951	$ 261,586	$ 278,937	$ 283,394	$ 290,280	$ 300,951
Provision for credit losses[(b)]	$ (1,000)	$ 26,000	(5,000)	4,000	—	—	5,000
Net loan (charge offs) recoveries							
Commercial and industrial	$ (20,098)	$ (24,856)	$ (6,893)	$ (6,606)	$ (6,599)	$ (8,212)	$ (9,442)
Commercial real estate — owner occupied	(1,007)	75	(252)	270	(1,025)	(246)	13
Commercial and business lending	(21,105)	(24,781)	(7,145)	(6,336)	(7,624)	(8,458)	(9,429)
Commercial real estate — investor	(5,139)	(585)	(3,958)	(1,189)	8	(164)	55
Real estate construction	42	(165)	(195)	48	189	(365)	(150)
Commercial real estate lending	(5,097)	(750)	(4,153)	(1,141)	197	(529)	(95)
Total commercial	(26,202)	(25,531)	(11,298)	(7,477)	(7,427)	(8,987)	(9,524)
Residential mortgage	(261)	(718)	5	(135)	(131)	(966)	(26)
Home equity	(337)	140	200	140	(677)	330	(87)
Other consumer	(3,330)	(2,675)	(1,258)	(984)	(1,088)	(1,048)	(913)
Total consumer	(3,928)	(3,253)	(1,053)	(979)	(1,896)	(1,684)	(1,026)
Total net charge offs	$ (30,130)	$ (28,784)	$ (12,351)	$ (8,456)	$ (9,323)	$ (10,671)	$ (10,550)
Ratios							
Allowance for loan losses to total loans	1.03%	1.32%	1.03%	1.10%	1.13%	1.28%	1.32%
Allowance for loan losses to net charge offs (annualized)	5.9x	7.2x	4.8x	7.4x	6.8x	6.3x	6.6x

(a) Includes the allowance for loan losses and the allowance for unfunded commitments.
(b) Includes the provision for loan losses and the provision for unfunded commitments.

Table 12 Annualized net (charge offs) recoveries[a]

(In basis points)	YTD September 30, 2018	YTD September 30, 2017	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
Net loan (charge offs) recoveries							
Commercial and industrial	(39)	(52)	(39)	(39)	(41)	(51)	(58)
Commercial real estate — owner occupied	(16)	1	(11)	12	(48)	(12)	1
Commercial and business lending	(37)	(46)	(36)	(33)	(42)	(47)	(51)
Commercial real estate — investor	(17)	(2)	(40)	(12)	—	(2)	1
Real estate construction	—	(1)	(5)	1	5	(10)	(4)
Commercial real estate lending	(12)	(2)	(30)	(8)	1	(4)	(1)
Total commercial	(27)	(28)	(34)	(22)	(24)	(30)	(31)
Residential mortgage	—	(1)	—	(1)	(1)	(5)	—
Home equity	(5)	2	9	6	(30)	15	(4)
Other consumer	(118)	(95)	(133)	(105)	(115)	(109)	(97)
Total consumer	(6)	(5)	(4)	(4)	(8)	(8)	(5)
Total net charge offs	(18)	(19)	(21)	(15)	(17)	(20)	(20)

(a) Annualized ratio of net charge offs to average loans by loan type.

At September 30, 2018, the allowance for credit losses was $262 million, compared to $290 million at December 31, 2017 and $301 million at September 30, 2017. At September 30, 2018, the allowance for loan losses to total loans was 1.03% and covered 153.32% of nonaccrual loans, compared to 1.28% and 127.49%, respectively, at December 31, 2017 and 1.32% and 131.37%, respectively, at September 30, 2017. Management believes the level of allowance for loan losses to be appropriate at September 30, 2018.

Notable Contributions to the Change in Allowance for Credit Losses

- Total loans increased $2.1 billion (10%) for the first nine months of 2018, including an $826 million (11%) increase in commercial and business lending, a $681 million (9%) increase in residential mortgage loans, and a $574 million (12%) increase in commercial real estate lending. Compared to September 30, 2017, total loans increased $1.9 billion (9%), including an $819 million (11%) increase in residential mortgage loans, a $666 million (9%) increase in commercial and business lending, and a $443 million (9%) increase in commercial real estate lending. The increase in total loans from December 31, 2017 and September 30, 2017 was driven by the acquisition of Bank Mutual. See section Loans for additional information on the changes in the loan portfolio and see section Credit Risk for discussion about credit risk management for each loan type.

- Total nonaccrual loans decreased $54 million (26%) from December 31, 2017, and decreased $56 million (27%) from September 30, 2017, primarily due to migration in the oil and gas related credits. See also Note 7 Loans, of the notes to consolidated financial statements and section Nonperforming Assets for additional disclosures on the changes in asset quality.

- Potential problem loans increased $60 million from December 31, 2017, primarily due to the addition of Bank Mutual loans coupled with the downward migration of general commercial related credits, however, potential problem loans decreased $22 million (9%) from September 30, 2017, primarily due to improvements in general commercial related credits. See Table 10 for additional information on the changes in potential problem loans.

- Year-to-date net charge offs increased $1 million (5%) from the comparable period last year. See Table 11 and Table 12 for additional information regarding the activity in the allowance for loan losses.

- The allowance for loan losses attributable to oil and gas related credits (included within the commercial and industrial allowance for loan losses) was $10 million at September 30, 2018, compared to $27 million at December 31, 2017 and $30 million at September 30, 2017. See also Oil and gas lending within the Credit Risk section for additional disclosure.

Deposits and Customer Funding

Table 13 Period End Deposit and Customer Funding Composition

($ in Thousands)	September 30, 2018		June 30, 2018		March 31, 2018		December 31, 2017		September 30, 2017	
	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total
Noninterest-bearing demand	$ 5,421,270	22%	$ 5,341,361	22%	$ 5,458,473	23%	$ 5,478,416	24%	$ 5,177,734	23%
Savings	1,937,006	8%	1,887,777	8%	1,883,638	8%	1,524,992	7%	1,544,037	7%
Interest-bearing demand	5,096,998	21%	4,650,407	20%	4,719,566	20%	4,603,157	20%	4,990,891	22%
Money market	9,087,587	37%	9,208,993	39%	9,086,553	38%	8,830,328	39%	8,299,512	37%
Brokered CDs	235,711	1%	228,029	1%	44,503	—%	18,609	—%	3,554	—%
Other time	3,053,041	12%	2,499,747	10%	2,632,869	11%	2,330,460	10%	2,317,723	11%
Total deposits	$24,831,612	100%	$23,816,314	100%	$23,825,602	100%	$22,785,962	100%	$22,333,451	100%
Customer funding[(a)]	184,269		235,804		297,289		250,332		324,042	
Total deposits and customer funding	$25,015,882		$24,052,118		$24,122,891		$23,036,294		$22,657,493	
Network transaction deposits[(b)]	$ 1,852,863		$ 2,094,670		$ 2,244,739		$ 2,520,968		$ 2,622,787	
Net deposits and customer funding (total deposits and customer funding, excluding Brokered CDs and network transaction deposits)	$22,927,308		$21,729,419		$21,833,649		$20,496,717		$20,031,152	
Time deposits of more than $250,000	$ 1,350,256		$ 804,210		$ 906,727		$ 1,056,172		$ 1,009,097	

(a) Securities sold under agreement to repurchase and commercial paper.
(b) Included above in interest-bearing demand and money market.

- Deposits are the Corporation’s largest source of funds.
- Total deposits increased $2.0 billion (9%) from December 31, 2017 and increased $2.5 billion (11%) from September 30, 2017, primarily due to the acquisition of Bank Mutual.
- Non-maturity deposit accounts, comprised of savings, money market, and demand (both interest and noninterest-bearing) accounts comprised 87% of the Corporation's total deposits at September 30, 2018.
- Included in the above amounts were $1.9 billion of network deposits, primarily sourced from other financial institutions and intermediaries. These represented 7% of the Corporation's total deposits at September 30, 2018. Network transaction deposits have declined approximately $770 million from September 30, 2017.

Liquidity

The objective of liquidity risk management is to ensure that the Corporation has the ability to generate sufficient cash or cash equivalents in a timely and cost effective manner to satisfy the cash flow requirements of depositors and borrowers and to meet its other commitments as they become due. The Corporation’s liquidity risk management process is designed to identify, measure, and manage the Corporation’s funding and liquidity risk to meet its daily funding needs in the ordinary course of business, as well as to address expected and unexpected changes in its funding requirements. The Corporation engages in various activities to manage its liquidity risk, including diversifying its funding sources, stress testing, and holding readily-marketable assets which can be used as a source of liquidity, if needed.

The Corporation performs dynamic scenario analysis in accordance with industry best practices. Measures have been established to ensure the Corporation has sufficient high quality short-term liquidity to meet cash flow requirements under stressed scenarios. In addition, the Corporation also reviews static measures such as deposit funding as a percent of total assets and liquid asset levels. Strong capital ratios, credit quality, and core earnings are also essential to maintaining cost effective access to wholesale funding markets. At September 30, 2018, the Corporation was in compliance with its internal liquidity objectives and has sufficient asset-based liquidity to meet its obligations under a stressed scenario.

The Corporation maintains diverse and readily available liquidity sources, including:

- Investment securities are an important tool to the Corporation's liquidity objective, and can be pledged or sold to enhance liquidity, if necessary. See Note 6 Investment Securities of the notes to consolidated financial statements for additional information on the Corporation's investment securities portfolio, including investment securities pledged.
- The Bank pledges eligible loans to both the Federal Reserve Bank and the FHLB as collateral to establish lines of credit and borrow from these entities. Based on the amount of collateral pledged, the FHLB established a collateral value from which the Bank may draw advances against the collateral. Also, the collateral is used to enable the FHLB to issue letters of credit in favor of public fund depositors of the Bank. As of September 30, 2018, the Bank had $3.2 billion available for future advances. The Federal Reserve Bank also establishes a collateral value of assets to support borrowings from the discount window. As of September 30, 2018, the Bank had $2.2 billion available for discount window borrowings.
- The Parent Company has a $200 million commercial paper program, of which, $44 million was outstanding as of September 30, 2018.
- Dividends and service fees from subsidiaries, as well as the proceeds from issuance of capital, are funding sources for the Parent Company.
- The Parent Company has filed a shelf registration statement with the SEC under which the Parent Company may, from time to time, offer shares of the Corporation's common stock in connection with acquisitions of businesses, assets or securities of other companies.
- The Parent Company also has filed a universal shelf registration statement with the SEC, under which the Parent Company may offer the following securities, either separately or in units: debt securities, preferred stock, depositary shares, common stock, and warrants.
- The Bank may also issue institutional certificates of deposit, network transaction deposits, and brokered certificates of deposit.
- The Bank has implemented a global bank note program pursuant to which it may from time to time offer up to $2.0 billion aggregate principal amount of its unsecured senior and subordinated notes.

Credit ratings relate to the Corporation's ability to issue debt securities and the cost to borrow money, and should not be viewed as an indication of future stock performance or a recommendation to buy, sell, or hold securities. Adverse changes in these factors could result in a negative change in credit ratings and impact not only the ability to raise funds in the capital markets but also the cost of these funds. The credit ratings of the Parent Company and Associated Bank at September 30, 2018 are displayed below.

Table 14 Credit Ratings

	Moody's	S&P[(a)]
Associated Bank short-term deposits	P-1	-
Associated Bank long-term	A1	BBB+
Corporation short-term	P-2	-
Corporation long-term	Baa1	BBB
Outlook	Stable	Stable

(a) Standard and Poor's.

For nine months ended September 30, 2018, net cash provided by operating activities were $303 million, while financing activities and investing activities used net cash of $89 million and $384 million, respectively, for a net decrease in cash and cash equivalents of $170 million since year-end 2017. At September 30, 2018, assets of $33.5 billion increased $3.0 billion from year-end 2017. On the funding side, deposits of $24.8 billion increased $2.0 billion from year-end 2017.

For nine months ended September 30, 2017, net cash provided by operating activities and financing activities were $316 million and $717 million, respectively, while investing activities used net cash of $1.2 billion, for a net decrease in cash and cash equivalents of $151 million since year-end 2016. At September 30, 2017, assets of $30.1 billion increased $925 million from year-end 2016. On the funding side, deposits of $22.3 billion increased by $445 million from year-end 2016.

Quantitative and Qualitative Disclosures about Market Risk

Market risk and interest rate risk are managed centrally. Market risk is the potential for loss arising from adverse changes in the fair value of fixed income securities, equity securities, other earning assets and derivative financial instruments as a result of

changes in interest rates or other factors. Interest rate risk is the potential for reduced net interest income resulting from adverse changes in the level of interest rates. As a financial institution that engages in transactions involving an array of financial products, the Corporation is exposed to both market risk and interest rate risk. In addition to market risk, interest rate risk is measured and managed through a number of methods. The Corporation uses financial modeling simulation techniques that measure the sensitivity of future earnings due to changing rate environments to measure interest rate risk.

Policies established by the Corporation's Asset / Liability Committee ("ALCO") and approved by the Board of Directors are intended to limit these risks. The Board has delegated day-to-day responsibility for managing market and interest rate risk to ALCO. The primary objectives of market risk management is to minimize any adverse effect that changes in market risk factors may have on net interest income and to offset the risk of price changes for certain assets recorded at fair value.

Interest Rate Risk

The primary goal of interest rate risk management is to control exposure to interest rate risk within policy limits approved by the Board of Directors. These limits and guidelines reflect the Corporation's risk appetite for interest rate risk over both short-term and long-term horizons. No limit breaches occurred during the first nine months of 2018.

The major sources of the Corporation's non-trading interest rate risk are timing differences in the maturity and re-pricing characteristics of assets and liabilities, changes in the shape of the yield curve, and the potential exercise of explicit or embedded options. We measure these risks and their impact by identifying and quantifying exposures through the use of sophisticated simulation and valuation models which are employed by management to understand net interest income (NII) at risk, interest rate sensitive earnings at risk (EAR), and market value of equity (MVE) at risk. The Corporation's interest rate risk profile is such that a higher or steeper yield curve adds to income while a flatter yield curve is relatively neutral, and a lower or inverted yield curve generally has a negative impact on earnings. Based on current rate expectations for a flattening yield curve, the Corporation's earnings at risk profile is slightly asset sensitive at September 30, 2018. While the modeled outcome of instantaneous and sustained parallel rate shocks of 100 bps or more indicate increased asset sensitivity, which would provide increased earnings, we see a low probability of a sustained parallel shift occurring in the near term.

For further discussion of the Corporation's interest rate risk and corresponding key assumptions, see the Interest Rate Risk section of Management's Discussion and Analysis of Financial Condition and Results of Operations included in the Corporation's 2017 Annual Report on Form 10-K.

The sensitivity analysis included below is measured as a percentage change in NII and EAR due to instantaneous moves in benchmark interest rates from a baseline scenario. We evaluate the sensitivity using: 1) a dynamic forecast incorporating expected growth in the balance sheet, and 2) a static forecast where the current balance sheet is held constant.

Table 15 Estimated % Change in Net Interest Income Over 12 Months

	Estimated % Change in Rate Sensitive Earnings at Risk (EAR) Over 12 Months			
	Dynamic Forecast September 30, 2018	Static Forecast September 30, 2018	Dynamic Forecast December 31, 2017	Static Forecast December 31, 2017
Instantaneous Rate Change				
100 bp increase in interest rates	4.9%	4.5%	2.5%	2.7%
200 bp increase in interest rates	9.6%	8.8%	4.6%	4.9%

At September 30, 2018, the MVE profile indicates a decline in net balance sheet value due to instantaneous upward changes in rates.

Table 16 Market Value of Equity Sensitivity

	September 30, 2018	December 31, 2017
Instantaneous Rate Change		
100 bp increase in interest rates	(2.3)%	(3.1)%
200 bp increase in interest rates	(4.7)%	(6.7)%

While an instantaneous and severe shift in interest rates was used in this analysis to provide an estimate of exposure under an extremely adverse scenario, the Corporation believes that a gradual shift in interest rates would have a much more modest impact. Since MVE measures the discounted present value of cash flows over the estimated lives of instruments, the change in MVE does

not directly correlate to the degree that earnings would be impacted over a shorter time horizon (i.e., the current year). Further, MVE does not take into account factors such as future balance sheet growth, changes in product mix, changes in yield curve relationships, and changing product spreads that could mitigate the adverse impact of changes in interest rates.

The above NII, EAR, and MVE measures do not include all actions that management may undertake to manage this risk in response to anticipated changes in interest rates.

Contractual Obligations, Commitments, Off-Balance Sheet Arrangements, and Contingent Liabilities

Table 17 summarizes significant contractual obligations and other commitments at September 30, 2018, at those amounts contractually due to the recipient, including any premiums or discounts, hedge basis adjustments, or other similar carrying value adjustments.

Table 17 Contractual Obligations and Other Commitments

September 30, 2018	One Year or Less	One to Three Years	Three to Five Years	Over Five Years	Total
			($ in Thousands)		
Time deposits	$ 2,426,341	$ 737,217	$ 121,293	$ 3,901	$ 3,288,752
Short-term funding	210,159	—	—	—	210,159
FHLB advances	667,609	102,552	208,799	2,353,695	3,332,655
Long-term funding	—	547,012	—	248,203	795,215
Operating leases	9,815	18,572	13,881	22,447	64,715
Commitments to extend credit	4,209,016	2,523,470	1,846,652	151,765	8,730,903
Total	$ 7,522,940	$ 3,928,823	$ 2,190,625	$ 2,780,011	$ 16,422,399

The Corporation utilizes a variety of financial instruments in the normal course of business to meet the financial needs of its customers and to manage its own exposure to fluctuations in interest rates. These financial instruments include lending-related commitments and derivative instruments. A discussion of the Corporation's derivative instruments at September 30, 2018, is included in Note 10, Derivative and Hedging Activities, of the notes to consolidated financial statements. A discussion of the Corporation's lending-related commitments is included in Note 12, Commitments, Off-Balance Sheet Arrangements, Legal Proceedings and Regulatory Matters, of the notes to consolidated financial statements. See also Note 9, Short and Long-Term Funding, of the notes to consolidated financial statements for additional information on the Corporation's short-term funding, FHLB advances, and long-term funding.

Capital

Management actively reviews capital strategies for the Corporation and each of its subsidiaries in light of perceived business risks, future growth opportunities, industry standards, and compliance with regulatory requirements. The assessment of overall capital adequacy depends on a variety of factors, including asset quality, liquidity, stability of earnings, changing competitive forces, economic condition in markets served, and strength of management. At September 30, 2018, the capital ratios of the Corporation and its banking subsidiaries were in excess of regulatory minimum requirements. The Corporation's capital ratios are summarized in Table 18.

Table 18 Capital Ratios

	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
			($ in Thousands)		
Risk-based Capital[(a)]					
Common equity Tier 1	$ 2,475,043	$ 2,528,002	$ 2,473,677	$ 2,171,508	$ 2,144,325
Tier 1 capital	2,731,194	2,686,658	2,632,912	2,331,245	2,304,037
Total capital	3,240,983	3,213,726	3,164,362	2,848,851	2,823,097
Total risk-weighted assets	23,907,156	24,059,029	23,535,483	21,544,463	21,657,286
Common equity Tier 1 capital ratio	10.35%	10.51%	10.51%	10.08%	9.90%
Tier 1 capital ratio	11.42%	11.17%	11.19%	10.82%	10.64%
Total capital ratio	13.56%	13.36%	13.45%	13.22%	13.04%
Tier 1 leverage ratio	8.43%	8.32%	8.48%	8.02%	7.93%
Selected Equity and Performance Ratios					
Total stockholders' equity / assets	11.34%	11.20%	11.13%	10.62%	10.66%
Dividend payout ratio[(b)]	30.61%	29.41%	36.59%	45.16%	29.27%

(a) The Federal Reserve establishes regulatory capital requirements, including well-capitalized standards for the Corporation. The Corporation follows Basel III, subject to certain transition provisions. These regulatory capital measurements are used by management, regulators, investors, and analysts to assess, monitor and compare the quality and composition of the Corporation's capital with the capital of other financial services companies. See Table 19 for a reconciliation of common equity Tier 1.

(b) Ratio is based upon basic earnings per common share.

As part of the regulatory relief provided by the Economic Growth Act, the asset threshold requiring insured depository institutions to conduct and report to their primary federal bank regulators annual company-run stress tests was raised from $10 billion to $250 billion in total consolidated assets and makes the requirement "periodic" rather than annual. The amendments also provide the Federal Reserve Board with discretion to subject bank holding companies with more than $100 billion in total assets to enhanced supervision. Notwithstanding these amendments, the federal banking agencies indicated through interagency guidance that the capital planning and risk management practices of institutions with total assets less than $100 billion would continue to be reviewed through the regular supervisory process. In addition, the federal banking agencies are now prohibited from requiring the Bank to assign a heightened risk weight to certain HVCRE ADC loans as previously required under the Basel III Capital Rules. Although the Corporation will continue to monitor its capital consistent with the safety and soundness expectations of the federal regulators, the Corporation will no longer conduct company-run stress testing as a result of the legislative and regulatory amendments.

During the nine months ended September 30, 2018, approximately 3.9 million TARP warrants ("warrants") were exercised at an exercise price of $19.77. The warrants were converted to approximately 1.1 million shares of common stock. Approximately 103,000 warrants remain outstanding, as of September 30, 2018. Any unexercised warrants will expire on November 21, 2018.

During the third quarter of 2018, the Corporation completed the issuance of 4 million depositary shares each representing a 1/40th interest in a share of 5.875% Non-Cumulative Perpetual Preferred Stock, Series E, for net proceeds of approximately $97 million.

See Part II, Item 2, Unregistered Sales of Equity Securities and Use of Proceeds, for information on the shares repurchased during the third quarter of 2018.

Non-GAAP Measures

Table 19 Non-GAAP Measures

	YTD		Quarter Ended				
	September 30, 2018	September 30, 2017	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
			($ in Thousands)				
Selected Equity and Performance Ratios[a][b]							
Tangible common equity / tangible assets			7.11%	7.29%	7.22%	7.07%	7.08%
Return on average equity	8.90%	7.59%	9.06%	9.61%	7.96%	6.17%	8.10%
Return on average tangible common equity	13.73%	11.45%	14.14%	14.98%	11.99%	9.16%	12.20%
Return on average Common equity Tier 1	12.89%	11.00%	13.18%	14.00%	11.39%	8.77%	11.73%
Return on average assets	0.99%	0.82%	1.02%	1.07%	0.88%	0.66%	0.86%
Average stockholders' equity / average assets	11.12%	10.77%	11.22%	11.13%	11.00%	10.73%	10.63%
Tangible Common Equity and Common Equity Tier 1 Reconciliation[a][b]							
Common equity			$ 3,540,322	$ 3,610,843	$ 3,552,846	$ 3,077,514	$ 3,043,672
Goodwill and other intangible assets, net			(1,246,991)	(1,247,011)	(1,232,870)	(991,819)	(986,086)
Tangible common equity			2,293,331	2,363,832	2,319,977	2,085,695	2,057,586
Less: Accumulated other comprehensive income / loss			135,520	119,888	107,673	62,758	54,288
Less: Deferred tax assets/deferred tax liabilities, net			46,192	44,282	46,027	23,055	32,451
Common equity Tier 1			$ 2,475,043	$ 2,528,002	$ 2,473,677	$ 2,171,508	$ 2,144,325
Tangible Assets Reconciliation[a]							
Total assets			$ 33,489,002	$ 33,652,647	$ 33,366,505	$ 30,483,594	$ 30,064,547
Goodwill and other intangible assets, net			(1,246,991)	(1,247,011)	(1,232,870)	(991,819)	(986,086)
Tangible assets			$ 32,242,010	$ 32,405,635	$ 32,133,636	$ 29,491,775	$ 29,078,461
Average Tangible Common Equity and Average Common Equity Tier 1 Reconciliation[a][b]							
Common equity	$ 3,510,141	$ 2,998,088	$ 3,589,387	$ 3,561,319	$ 3,377,388	$ 3,056,077	$ 3,024,918
Goodwill and other intangible assets, net	(1,196,912)	(986,765)	(1,246,089)	(1,235,623)	(1,107,503)	(991,955)	(986,342)
Tangible common equity	2,313,229	2,011,323	2,343,298	2,325,696	2,269,885	2,064,121	2,038,576
Less: Accumulated other comprehensive income / loss	110,741	51,163	125,225	117,497	89,105	61,937	49,164
Less: Deferred tax assets/deferred tax liabilities, net	40,384	31,476	44,749	45,308	30,943	29,386	31,935
Average common equity Tier 1	$ 2,464,354	$ 2,093,962	$ 2,513,272	$ 2,488,501	$ 2,389,933	$ 2,155,444	$ 2,119,675
Efficiency Ratio Reconciliation[c]							
Federal Reserve efficiency ratio	67.50 %	65.64 %	66.12 %	65.77 %	70.76 %	66.93 %	63.92 %
Fully tax-equivalent adjustment	(0.69)%	(1.27)%	(0.75)%	(0.65)%	(0.66)%	(1.30)%	(1.21)%
Other intangible amortization	(0.64)%	(0.18)%	(0.73)%	(0.68)%	(0.51)%	(0.18)%	(0.16)%
Fully tax-equivalent efficiency ratio	66.18 %	64.19 %	64.66 %	64.45 %	69.60 %	65.45 %	62.55 %

(a) The ratio tangible common equity to tangible assets excludes goodwill and other intangible assets, net, which is a non-GAAP financial measure. This financial measure has been included as it is considered to be a critical metric with which to analyze and evaluate financial condition and capital strength.

(b) The Federal Reserve establishes regulatory capital requirements, including well-capitalized standards for the Corporation. The Corporation follows Basel III, subject to certain transition provisions. These regulatory capital measurements are used by management, regulators, investors, and analysts to assess, monitor and compare the quality and composition of the Corporation's capital with the capital of other financial services companies.

(c) The efficiency ratio as defined by the Federal Reserve guidance is noninterest expense (which includes the provision for unfunded commitments) divided by the sum of net interest income plus noninterest income, excluding investment securities gains / losses, net. The fully tax-equivalent efficiency ratio is noninterest expense (which includes the provision for unfunded commitments), excluding other intangible amortization, divided by the sum of fully tax-equivalent net interest income plus noninterest income, excluding investment securities gains / losses, net. Management believes the fully tax-equivalent efficiency ratio, which adjusts net interest income for the tax-favored status of certain loans and investment securities, to be the preferred industry measurement as it enhances the comparability of net interest income arising from taxable and tax-exempt sources.

Sequential Quarter Results

The Corporation reported net income of $86 million for the third quarter of 2018, compared to net income of $89 million for the second quarter of 2018. Net income available to common equity was $84 million for the third quarter of 2018 or $0.49 for basic and $0.48 diluted earnings per common share. Comparatively, net income available to common equity for the second quarter of 2018 was $87 million, or net income of $0.51 for basic and $0.50 diluted earnings per common share, respectively (see Table 1).

Fully tax-equivalent net interest income for the third quarter of 2018 was $223 million, $7 million lower than the second quarter of 2018. The net interest margin in the third quarter of 2018 was down 10 bp to 2.92%. Average earning assets increased $62 million to $30.5 billion in the third quarter of 2018, primarily driven by a $94 million increase in average investments and other short-term investments. On the funding side, average interest-bearing deposits were up $871 million, and noninterest-bearing demand deposits were up $179 million. Average FHLB advances decreased $1.1 billion (see Table 2).

The provision for credit losses was negative $5 million for the third quarter of 2018, down from $4 million in the second quarter of 2018 (see Table 11). See discussion under sections: Provision for Credit Losses, Nonperforming Assets, and Allowance for Credit Losses.

Noninterest income for the third quarter of 2018 decreased $5 million (5%) to $88 million compared to the second quarter of 2018. Fee-based revenue decreased $1 million (2%) from the second quarter of 2018, primarily due to seasonal fluctuations in the employee benefits and property and casualty businesses. Net mortgage banking income was down $2 million (36%) from the second quarter of 2018 due to lower sales and refinancing volumes in the underlying housing market.

Noninterest expense decreased $7 million (3%) to $204 million. Business development and advertising expense was $8 million for the third quarter of 2018, up $1 million (16%) from the second quarter of 2018. Technology expense decreased $2 million (10%) from the second quarter of 2018. Bank Mutual acquisition related costs were $2 million for the third quarter of 2018, down $5 million from the second quarter of 2018.

For the third quarter of 2018, the Corporation recognized income tax expense of $22 million, compared to income tax expense of $15 million for the second quarter of 2018. The effective tax rate was 20.64% and 14.19% for the third quarter of 2018 and the second quarter of 2018, respectively. See Income Taxes section for a detailed discussion on income taxes.

Comparable Quarter Results

The Corporation reported net income of $86 million for the third quarter of 2018, compared to $65 million for the third quarter of 2017. Net income available to common equity was $84 million for the third quarter of 2018, or $0.49 for basic earnings per common share and $0.48 for diluted earnings per common share. Comparatively, net income available to common equity for the third quarter of 2017 was $63 million, or $0.41 for both basic and diluted earnings per common share (see Table 1).

Fully tax-equivalent net interest income for the third quarter of 2018 was $223 million, $27 million higher than the third quarter of 2017. The net interest margin between the comparable quarters was up 8 bp, to 2.92% in the third quarter of 2018. Average earning assets increased $3.0 billion to $30.5 billion in the third quarter of 2018, with average loans increasing $2.1 billion (predominantly due to the Bank Mutual acquisition). On the funding side, average interest-bearing deposits increased $1.9 billion, while noninterest-bearing demand deposits increased $319 million from the third quarter of 2017. Average short and long-term funding increased $568 million (see Table 2).

The provision for credit losses was negative $5 million for the third quarter of 2018, down $10 million from the third quarter of 2017. See discussion under sections: Provision for Credit Losses, Nonperforming Assets, and Allowance for Credit Losses.

Noninterest income for the third quarter of 2018 of $88 million was up $2 million (3%) compared to third quarter of 2017. Brokerage commissions and fees was up $3 million (61%), primarily driven by increased investment advisory fees compared to the third quarter of 2017 driven by the Whitnell acquisition. Net mortgage banking fees for the third quarter of 2018 were down $3 million (39%) from the third quarter of 2017. Bank and corporate owned life insurance decreased $3 million (46%) from the third quarter of 2017 driven by decreased policy payouts.

On a comparable quarter basis, noninterest expense increased $27 million (15%) to $204 million for the third quarter of 2018. Personnel expense was $124 million for the third quarter of 2018, up $16 million (15%) from the third quarter of 2017, primarily driven by the additional cost of Bank Mutual staff. Technology expense increased $2 million (15%) to $18 million in the third quarter of 2018, largely driven by the additional cost of Bank Mutual operations. Occupancy expense increased $2 million (18%) for the third quarter of 2018, primarily due to the additional expense of acquired Bank Mutual facilities.

The Corporation recognized income tax expense of $22 million for the third quarter of 2018, compared to income tax expense of $29 million for third quarter of 2017. The effective tax rate was 20.64% and 30.55% for the third quarter of 2018 and 2017, respectively. See Income Taxes section for a detailed discussion on income taxes.

Segment Review

As discussed in Note 15 Segment Reporting of the notes to consolidated financial statements, the Corporation's reportable segments have been determined based upon its internal profitability reporting system, which is organized by strategic business unit. Certain strategic business units have been combined for segment information reporting purposes where the nature of the products and services, the type of customer, and the distribution of those products and services are similar. The reportable segments are Corporate and Commercial Specialty; Community, Consumer and Business; and Risk Management and Shared Services.

FTP is an important tool for managing the Corporation's balance sheet structure and measuring risk-adjusted profitability. By appropriately allocating the cost of funding and contingent liquidity to business units, the FTP process improves product pricing, which influences the volume and terms of new business and helps to optimize the risk / reward profile of the balance sheet. This process helps align the Corporation's funding and contingent liquidity risk with its risk appetite and complements broader liquidity and interest rate risk management programs. FTP methodologies are designed to promote more resilient, sustainable business models and centralize the management of funding and contingent liquidity risks. Through FTP, the Corporation transfers these risks to a central management function that can take advantage of natural off-sets, centralized hedging activities, and a broader view of these risks across business units.

Year to Date Segment Review

The Corporate and Commercial Specialty segment consists of lending and deposit solutions to larger businesses, developers, not-for-profits, municipalities, and financial institutions, and the support to deliver, fund, and manage such banking solutions. The Corporate and Commercial Specialty segment had net income of $150 million for the first nine months of 2018, up $44 million, compared to $106 million for the first nine months of 2017. Segment revenue increased $34 million to $343 million for the first nine months of 2018, compared to $308 million for the first nine months of 2017, primarily due to growth in average loan balances and increases in the Federal Reserve interest rate. Income tax expense decreased $16 million largely due to the TCJA. Average loan balances were $11.8 billion for the first nine months of 2018, up $967 million from the first nine months of 2017. Average deposit balances were $8.1 billion for the first nine months of 2018, up $1.4 billion from the first nine months of 2017. Average allocated capital increased $86 million to $1.2 billion for the first nine months of 2018.

The Community, Consumer, and Business segment consists of lending and deposit solutions to individuals and small to mid-sized businesses and also provides a variety of investment and fiduciary products and services. The Community, Consumer, and Business segment had net income of $107 million for the first nine months of 2018, up $47 million from the first nine months of 2017. Segment revenue increased $87 million to $556 million for the first nine months of 2018, primarily due to growth in average loan balances, increases in the Federal Reserve interest rate, and the acquisitions of Whitnell & Co., Diversified, and Anderson which resulted in increased insurance and brokerage commissions as well as trust fees. Noninterest expense increased $44 million to $405 million for the first nine months of 2018, in part due to the addition of approximately 330 average full time equivalent employees. Average loan balances were $10.3 billion for the first nine months of 2018, up $915 million from the first nine months of 2017. Average deposits were $13.5 billion for the first nine months of 2018, up $2.0 billion from the first nine months of 2017. Average allocated capital increased $68 million to $653 million for the first nine months of 2018.

The Risk Management and Shared Services segment had a net loss of $12 million for the first nine months of 2018, down $26 million compared to the first nine months of 2017. The credit provision improved $27 million. Noninterest expense increased $51 million from the first nine months of 2017, primarily driven by $30 million of acquisition related costs and certain unallocated expenses related to Bank Mutual shared services and operations prior to system conversion in late June 2018. Average earning asset balances were $7.9 billion for the first nine months of 2018, up $1.3 billion from the first nine months of 2017. Average deposits were $2.4 billion for the first nine months of 2018, down $1.1 billion from the first nine months of 2017, primarily driven by a decrease in network transaction deposits. Average allocated capital increased to $604 million for the first nine months of 2018.

Comparable Quarter Segment Review

The Corporate and Commercial Specialty segment had net income of $47 million for the third quarter of 2018, up $11 million from the comparable quarter in 2017. Segment revenue increased $8 million compared to third quarter of 2017, primarily due to growth in average loan balances and increases in the Federal Reserve interest rate. Income tax expense decreased $7 million largely due to the TCJA. Average loan balances were $12.0 billion for the third quarter of 2018, up $1.1 billion from an average balance of $10.9 billion for third quarter of 2017. Average deposit balances were $8.7 billion for the third quarter of 2018, up $1.3 billion from the comparable quarter of 2017. Average allocated capital increased $90 million to $1.2 billion for third quarter of 2018.

The Community, Consumer, and Business segment had net income of $33 million for the third quarter of 2018, up $12 million compared to third quarter of 2017. Segment revenue increased $28 million to $187 million for the third quarter of 2018, primarily due to a $22 million increase in net interest income and $6 million increase in noninterest income. The growth in net interest income was primarily due to growth in average loan balances and increases in the Federal Reserve interest rate while the growth in noninterest income was primarily driven by the acquisitions of Whitnell & Co., Diversified, and Anderson since September 30, 2017 which resulted in increased insurance and brokerage commissions as well as trust fees. Total noninterest expense for the third quarter of 2018 was $140 million, up $19 million from the comparable quarter of 2017. Salary expense increased $8 million from the comparable quarter due to the addition of approximately 340 average full time equivalent employees. Average loan balances were $10.5 billion for the third quarter of 2018, up $851 million from the comparable quarter of 2017. Average deposits were $13.7 billion for the third quarter of 2018, up $1.9 billion from average deposits of $11.8 billion for the comparable quarter of 2017. Average allocated capital increased $73 million compared to the third quarter of 2017.

The Risk Management and Shared Services segment had net income of $5 million for the third quarter of 2018. Segment revenue was $8 million in the third quarter of 2018, a decrease of $5 million from the comparable quarter of 2017, primarily driven by a $3 million decrease in bank owned life insurance policy redemptions. The credit provision improved $12 million. Total noninterest expense for the third quarter of 2018 was $23 million, up $5 million from the comparable quarter of 2017, primarily driven by $2 million of acquisition related costs. Average earning asset balances were $8.0 billion for the third quarter of 2018, up $1.1 billion from the third quarter of 2017. Average deposits were $2.3 billion for third quarter of 2018, down $970 million versus the comparable quarter of 2017, primarily driven by a decrease in network transaction deposits. Average allocated capital increased to $636 million for third quarter of 2018.

Critical Accounting Policies

In preparing the consolidated financial statements, management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities as of the date of the balance sheet and revenues and expenses for the period. Actual results could differ significantly from those estimates. Estimates that are particularly susceptible to significant change include the determination of the allowance for loan losses, goodwill impairment assessment, mortgage servicing rights valuation, and income taxes. A discussion of these policies can be found in the Critical Accounting Policies section in Management's Discussion and Analysis of Financial Condition and Results of Operations included in the Corporation's 2017 Annual Report on Form 10-K. There have been no changes in the Corporation's application of critical accounting policies since December 31, 2017.

Future Accounting Pronouncements

New accounting policies adopted by the Corporation are discussed in Note 3 Summary of Significant Accounting Policies, of the notes to consolidated financial statements. The expected impact of accounting pronouncements recently issued or proposed but not yet required to be adopted are displayed in the table below.

Standard	Description	Date of anticipated adoption	Effect on financial statements
ASU-2018-15 Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract	The FASB issued an amendment which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The amendments in this Update require an entity (customer) in a hosting arrangement that is a service contract to follow the guidance in Subtopic 350-40 to determine which implementation costs to capitalize as an asset related to the service contract and which costs to expense. The amendments also require the entity (customer) to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the term of the hosting arrangement. The amendment is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Entities should apply the amendment either retrospectively or prospectively to all implementation costs incurred after the date of adoption. Early adoption is permitted.	1st Quarter 2020	The Corporation is currently evaluating the impact on its results of operations, financial position and liquidity.
ASU 2018-14 Compensation—Retirement Benefits—Defined Benefit Plans—General (Subtopic 715-20): Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans	The FASB issued an amendment to modify the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The amendments also added requirements to disclose the weighted-average interest crediting rates for cash balance plans and other plans with promised interest crediting rates and an explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period. The amendment also clarifies the disclosure requirements in paragraph 715-20-50-3, which states that certain information for defined benefit pension plans should be disclosed. The amendments in this Update remove disclosures that no longer are considered cost beneficial, clarify the specific requirements of disclosures, and add disclosure requirements identified as relevant. Although narrow in scope, the amendments are considered an important part of the Board's efforts to improve the effectiveness of disclosures in the notes to financial statements by applying concepts in the Concepts Statement. The amendment is effective for fiscal years ending after December 15, 2020. Entities should apply the amendments in this Update on a retrospective basis to all periods presented. Early adoption is permitted.	1st Quarter 2021	The Corporation is currently evaluating the impact on its results of operations, financial position and liquidity.
ASU 2018-13 Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement	The FASB issued an amendment to add, modify, and remove disclosure requirements on fair value measurements in Topic 820, Fair Value Measurement, based on the FASB Concepts Statement "Conceptual Framework for Financial Reporting", including the consideration of costs and benefits. The amendment is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. Early adoption is permitted.	1st Quarter 2020	The Corporation is currently evaluating the impact on its results of operations, financial position and liquidity.
ASU 2018-09 Codification Improvements	The FASB issued an amendment which affects a wide variety of Topics in the Codification. The amendments apply to all reporting entities within the scope of the affected accounting guidance. The amendments in this Update represent changes to clarify, correct errors in, or make minor improvements to the Codification. The amendments make the Codification easier to understand and easier to apply by eliminating inconsistencies and providing clarifications. The transition and effective date guidance is based on the facts and circumstances of each amendment. Some of the amendments in this Update do not require transition guidance and will be effective upon issuance of this Update. However, many of the amendments in this Update do have transition guidance with effective dates for annual periods beginning after December 15, 2018. There are some conforming amendments in this Update that have been made to recently issued guidance that is not yet effective that may require application of the transition and effective date guidance in the original Accounting Standards Update.	1st Quarter 2019	The Corporation is currently evaluating the impact on its results of operations, financial position and liquidity.
ASU 2018-07 Compensation - Stock Compensation (Topic 718) Improvements to Nonemployee Share-Based Payment Accounting	The FASB issued an amendment as part of its simplification initiative. As part of this amendment, several aspects of the accounting for nonemployee share-based payment transactions for acquiring goods and services from nonemployees are changing. The amendment expands the scope of Topic 718 to apply to nonemployee awards with the exception for specific guidance on inputs to an option pricing model and the attribution of cost.	1st Quarter 2019	The Corporation is currently evaluating the impact on its results of operations, financial position and liquidity.

Standard	Description	Date of anticipated adoption	Effect on financial statements
ASU 2017-04 Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment	The FASB issued an amendment to simplify the subsequent quantitative measurement of goodwill by eliminating step two from the goodwill impairment test. Instead, an entity will perform only step one of its quantitative goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount, and then recognizing an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. An entity will still have the option to perform a qualitative assessment for a reporting unit to determine if the quantitative step one impairment test is necessary. This amendment is effective for annual or interim goodwill impairment tests in fiscal years beginning after December 15, 2019. Entities should apply the amendment prospectively. Early adoption is permitted, including in an interim period, for impairment tests performed after January 1, 2017.	2nd Quarter 2020, consistent with the Corporation's annual impairment test in May of each year.	The Corporation is currently evaluating the impact on its results of operations, financial position, and liquidity. The Corporation has not had to perform a step one quantitative analysis since 2012, which concluded no impairment was necessary.
ASU 2016-13 Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments	The FASB issued an amendment to replace the current incurred loss impairment methodology. Under the new guidance, entities will be required to measure expected credit losses by utilizing forward-looking information to assess an entity's allowance for credit losses. The guidance also requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The measurement of expected credit losses is based on relevant information about past events, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. An entity must use judgment in determining the relevant information and estimation methods that are appropriate in its circumstances. This amendment is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Entities should apply the amendment by means of a cumulative-effect adjustment to retained earnings as of the beginning of the fiscal year of adoption. Early adoption is permitted.	1st Quarter 2020	The Corporation is currently evaluating the impact on its results of operations, financial position, and liquidity. A cross-functional team, consisting of credit, risk management, finance and information technology, is currently developing an implementation plan to include assessment of processes, portfolio segmentation, model development, system requirements and identification of data and resource needs, among other things.
ASU 2016-02 Leases (Topic 842)	The FASB issued an amendment to provide transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. This amendment will require lessees to recognize the following for all leases (with the exception of short-term leases) at the commencement date: 1) a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and 2) a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. Under the new guidance, lessor accounting is largely unchanged. This amendment is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018. Entities are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. The modified retrospective approach includes a number of optional practical expedients that entities may elect to apply. These practical expedients relate to the identification and classification of leases that commenced before the effective date, initial direct costs for leases that commenced before the effective date, and the ability to use hindsight in evaluating lessee options to extend or terminate a lease or to purchase the underlying asset. Early adoption is permitted. ASU 2018-01 permits an entity to elect an optional transition practical expedient to not evaluate under Topic 842 land easements that exist or expired before the entity's adoption of Topic 842. ASU 2018-10 was issued as improvements and clarifications of ASU 2016-02 were identified. This update provides clarification on narrow aspects of the previously issued updates. ASU 2018-11 was issued to provide entities with an additional (and optional) transition method to adopt the new leases standard under ASU 2016-02.	1st Quarter 2019	The Corporation has evaluated and plans to elect the practical expedients, which would allow for existing leases to be accounted for consistent with current guidance, with the exception of balance sheet recognition for lessees. Based on preliminary evaluation, the right-of-use asset and corresponding lease obligation liability are expected to range between $55 million and $65 million at adoption. The Corporation will continue to evaluate other impacts of adoption but does not anticipate these to be significant.

Recent Developments

On October 2, 2018, the Corporation entered into an accelerated share repurchase agreement. When the transactions contemplated by this agreement are completed, the Corporation will have purchased approximately $59 million of common stock. After this transaction, the Corporation has approximately $141 million remaining from the $200 million repurchase authorization approved by the Board of Directors on September 18, 2018.

On October 23, 2018, the Corporation’s Board of Directors declared a regular quarterly cash dividend of $0.17 per common share, payable on December 17, 2018 to shareholders of record at the close of business on December 3, 2018. This is an increase of $0.02 from the previous quarterly dividend of $0.15 per common share. The Board of Directors also declared a regular quarterly cash dividend of $0.3828125 per depositary share on the Corporation's 6.125% Series C Perpetual Preferred Stock, payable on December 17, 2018 to shareholders of record at the close of business on December 3, 2018. The Board of Directors also declared a regular quarterly cash dividend of $0.3359375 per depositary share on the Corporation's 5.375% Series D Perpetual Preferred Stock, payable on December 17, 2018 to shareholders of record at the close of business on December 3, 2018. The Board of Directors also declared a regular quarterly cash dividend of $0.322309 per depositary share on the Corporation's 5.875% Series E Perpetual Preferred Stock, payable on December 17, 2018 to shareholders of record at the close of business on December 3, 2018.

ITEM 3. Quantitative and Qualitative Disclosures About Market Risk

Information required by this item is set forth in Item 2 under the captions Quantitative and Qualitative Disclosures about Market Risk and Interest Rate Risk.

ITEM 4. Controls and Procedures

The Corporation maintains disclosure controls and procedures as required under Rule 13a-15 promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are designed to ensure that information required to be disclosed in the Corporation's Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to the Corporation's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

As of September 30, 2018 , the Corporation's management carried out an evaluation, under the supervision and with the participation of the Corporation's Chief Executive Officer and Chief Financial Officer, of the effectiveness of its disclosure controls and procedures. Based on the foregoing, its Chief Executive Officer and Chief Financial Officer concluded that the Corporation's disclosure controls and procedures were effective as of September 30, 2018.

No changes were made to the Corporation's internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act of 1934) during the last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Corporation's internal control over financial reporting.

PART II - OTHER INFORMATION

ITEM 1. Legal Proceedings

The information required by this item is set forth in Part I, Item 1 under Note 12 Commitments, Off-Balance Sheet Arrangements, Legal Proceedings and Regulatory Matters.

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

During the third quarter of 2018, the Corporation repurchased $118 million, or approximately 4.3 million shares, of common stock. The repurchase details are presented in the table below.

Common Stock Purchases

Period	Total Number of Shares Purchased[(a)]		Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs[(b)]
July 1, 2018 - July 31, 2018	—	$	—	—	—
August 1, 2018 - August 31, 2018	1,792,443		27.29	1,792,443	—
September 1, 2018 - September 30, 2018	2,557,010		26.95	2,557,010	—
Total	**4,349,453**	**$**	**27.09**	**4,349,453**	**7,690,991**

(a) During the third quarter of 2018, the Corporation repurchased 30,778 common shares for minimum tax withholding settlements on equity compensation. These purchases do not count against the maximum number of shares that may yet be purchased under the Board of Directors' authorization.

(b) On September 18, 2018, the Board of Directors authorized the repurchase of up to $200 million of the Corporation's common stock. Using the closing stock price on September 30, 2018 of $26.00, a total of approximately 7.7 million shares of common stock remained available to be repurchased under this Board authorization as of September 30, 2018.

Preferred Stock Purchases

During the third quarter of 2018, the Corporation did not repurchase any shares of preferred stock.

On August 28, 2015, the Board of Directors authorized the repurchase of up to $10 million of depositary shares of the Series C Preferred Stock, of which all of such depository shares remained available to repurchase as of September 30, 2018. Using the closing stock price on September 30, 2018 of $25.56, a total of approximately 391,000 shares remained available to be repurchased under the previously approved Board authorizations as of September 30, 2018.

On July 25, 2017, the Board of Directors authorized the repurchase of up to $15 million of depositary shares of the Series D Preferred Stock, of which approximately $14 million remained available to repurchase as of September 30, 2018. Using the closing stock price on September 30, 2018 of $23.94, a total of approximately 604,000 shares remained available to be repurchased under the previously approved Board authorizations as of September 30, 2018.

The repurchase of depositary shares is based on market and investment opportunities, capital levels, growth prospects, and regulatory constraints. Such repurchases may occur from time to time in open market purchases, block transactions, private transactions, accelerated share repurchase programs, or similar facilities.

ITEM 6. Exhibits

(a) Exhibits:

Exhibit (3.1, 4.1), Articles of Amendment to the Amended and Restated Articles of Incorporation of Associated Banc-Corp with respect to its 5.875% Non-Cumulative Perpetual Preferred Stock, Series E, dated September 21, 2018, incorporated herein by reference to Exhibit 3.1, 4.1 of the Company's Current Report on Form 8-K dated September 21, 2018.

Exhibit (4.2), Deposit Agreement, dated September 26, 2018, among Associated Banc-Corp, Equiniti Trust Company and the holders from time to time of the Depositary Receipts described therein, incorporated herein by reference to Exhibit 4.2 of the Company's Current Report on Form 8-K dated September 21, 2018.

Exhibit (4.3), Form of Depositary Receipt (included as part of Exhibit 4.2).

Exhibit (10.1), Retirement Agreement dated July 25, 2018 between Associated Banc-Corp and James S. Payne.

Exhibit (11), Statement regarding computation of per share earnings. The information required by this item is set forth in Part I, Item 1 under Note 4 Earnings Per Common Share.

Exhibit (31.1), Certification Under Section 302 of Sarbanes-Oxley by Philip B. Flynn, Chief Executive Officer.

Exhibit (31.2), Certification Under Section 302 of Sarbanes-Oxley by Christopher J. Del Moral-Niles, Chief Financial Officer.

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

Exhibit (101), Interactive data files pursuant to Rule 405 of Regulation S-T: (i) Unaudited Consolidated Balance Sheets, (ii) Unaudited Consolidated Statements of Income, (iii) Unaudited Consolidated Statements of Comprehensive Income, (iv) Unaudited Consolidated Statements of Changes in Stockholders' Equity, (v) Unaudited Consolidated Statements of Cash Flows, and (vi) Notes to Consolidated Financial Statements.

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 hereunto duly authorized.

	ASSOCIATED BANC-CORP
	(Registrant)
Date: October 26, 2018	/s/ Philip B. Flynn
	Philip B. Flynn President and Chief Executive Officer
Date: October 26, 2018	/s/ Christopher J. Del Moral-Niles
	Christopher J. Del Moral-Niles Chief Financial Officer
Date: October 26, 2018	/s/ Tammy C. Stadler
	Tammy C. Stadler Principal Accounting Officer