

Section 1: 10-Q (10-Q)

**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 **March 31, 2019**

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: **000-08185**

CHEMICAL FINANCIAL CORPORATION

(Exact Name of Registrant as Specified in Its Charter)

Michigan

(State or Other Jurisdiction of
Incorporation or Organization)

333 W. Fort Street, Suite 1800

Detroit, Michigan

(Address of Principal Executive Offices)

38-2022454

(I.R.S. Employer
Identification No.)

48226

(Zip Code)

(800) 867-9757

(Registrant's Telephone Number, Including Area Code)

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting 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. (Check one):

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	CHFC	The NASDAQ Stock Market

The number of shares outstanding of the registrant's Common Stock, \$1 par value, as of May 3, 2019, was 71,551,637 shares.

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Forward-Looking Statements

This report contains forward-looking statements that are based on management's beliefs, assumptions, current expectations, estimates and projections about the financial services industry, the economy and us. Words and phrases such as "anticipates," "believes," "continue," "estimates," "expects," "forecasts," "future," "intends," "is likely," "judgment," "look ahead," "look forward," "on schedule," "opinion," "opportunity," "plans," "potential," "predicts," "probable," "projects," "should," "strategic," "trend," "will," and variations of such words and phrases or similar expressions are intended to identify such forward-looking statements. These statements include, among others, statements related to: our belief that unrealized losses on our investment securities at March 31, 2019 were temporary in nature, our strategic plan to develop customer relationships that will drive core deposit growth and stability, management's belief that our commercial and commercial real estate loan portfolios are generally well-secured, management's opinion that our borrowing capacity could be expanded, the impact of projected changes in net interest income assuming changes to short-term market interest rates, statements regarding our risk exposure, statements related to our proposed merger with TCF Financial Corporation ("TCF"), including the expected timing of the consummation of the merger, as well as statements related to the anticipated effects on results of operations and financial condition from expected developments. All statements referencing future time periods are forward-looking.

Management's determination of the provision and allowance for loan losses; the carrying value of acquired loans, goodwill and mortgage servicing rights; the fair value of investment securities (including whether any impairment on any investment security is temporary or other-than-temporary and the amount of any impairment); and management's assumptions concerning pension and other postretirement benefit plans involve judgments that are inherently forward-looking. There can be no assurance that future loan losses will be limited to the amounts estimated. All of the information concerning interest rate sensitivity is forward-looking. The future effect of changes in the financial and credit markets and the national and regional economies on the banking industry, generally, and on us, specifically, are also inherently uncertain.

Forward-looking statements are based upon current beliefs and expectations and involve substantial risks and uncertainties which change over time, are difficult to predict and are generally beyond our control. Accordingly, such statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions ("risk factors") that are difficult to predict with regard to timing, extent, likelihood and degree of occurrence. Therefore, actual results and outcomes may materially differ from what may be expressed or forecasted in such forward-looking statements. We undertake no obligation to update, amend or clarify forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. Risk factors include, without limitation:

- our ability to attract and retain new commercial lenders and other bankers as well as key operations staff in light of competition for experienced employees in the banking industry;
- operational and regulatory challenges associated with our information technology systems and policies and procedures in light of our rapid growth and systems conversion in 2018;
- our ability to grow deposits;
- our inability to execute on our strategy to expand investments and commercial lending;
- our inability to efficiently manage our operating expenses;
- the possibility that our previously announced merger with TCF does not close when expected or at all because required regulatory, shareholder or other approvals and other conditions to closing are not received or satisfied on a timely basis or at all;
- the occurrence of any event, change or other circumstance that could give rise to the right of Chemical, TCF or both to terminate the merger agreement;
- the outcome of pending or threatened litigation or of matters before regulatory agencies, whether currently existing or commencing in the future, including litigation related to our proposed merger with TCF;
- the diversion of management time from core banking functions due to merger-related issues;
- potential difficulty in maintaining relationships with clients, employees or business partners as a result of our proposed merger with TCF;
- the possibility that the anticipated benefits of our proposed merger with TCF, including anticipated cost savings and strategic gains, are not realized when expected or at all, including as a result of the impact of, or problems arising from, the integration of the two companies or as a result of the strength of the economy, competitive factors in the areas where Chemical and TCF do business, or as a result of other unexpected factors or events;
- the impact of purchase accounting with respect to the proposed merger with TCF, or any change in the assumptions used regarding the assets purchased and liabilities assumed to determine their fair value;
- diversion of management's attention from ongoing business operations and opportunities as a result of the proposed merger with TCF;
- potential adverse reactions or changes to business or employee relationships, including those resulting from the announcement or completion of the proposed merger with TCF;

- the outcome of pending or threatened litigation or of matters before regulatory agencies, whether currently existing or commencing in the future, including pending or future litigation related to our proposed merger with TCF;
- economic conditions (both generally and in our markets) may be less favorable than expected, which could result in, among other things, a deterioration in credit quality, a reduction in demand for credit and a decline in real estate values;
- a general decline in the real estate and lending markets, particularly in our market areas, could negatively affect our financial results;
- increased cybersecurity risk, including potential network breaches, business disruptions, or financial losses;
- increases in competitive pressure in the banking and financial services industry;
- increased capital requirements, other regulatory requirements or enhanced regulatory supervision;
- the inability to sustain revenue and earnings growth;
- the inability to efficiently manage operating expenses;
- current or future restrictions or conditions imposed by our regulators on our operations may make it more difficult for us to achieve our goals;
- legislative or regulatory changes, including changes in accounting standards and compliance requirements, may adversely affect us;
- changes in the interest rate environment may reduce margins or the volumes or values of the loans we make or have acquired; and
- economic, governmental, or other factors may prevent the projected population, residential, and commercial growth in the markets in which we operate.

In addition, risk factors include, but are not limited to, the risk factors described in Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2018 or disclosed in documents filed or furnished by the Corporation with or to the SEC after the filing of such Annual Report on Form 10-K. These and other factors are representative of the risk factors that may emerge and could cause a difference between an ultimate actual outcome and a preceding forward-looking statement.

Part I. Financial Information

Item 1. Financial Statements

Chemical Financial Corporation
Consolidated Statements of Financial Position

(Dollars in thousands, except per share data)	March 31, 2019	December 31, 2018
	(Unaudited)	
Assets		
Cash and cash equivalents:		
Cash and cash due from banks	\$ 206,372	\$ 228,527
Interest-bearing deposits with the Federal Reserve Bank and other banks and federal funds sold	311,204	267,312
Total cash and cash equivalents	517,576	495,839
Investment securities:		
Carried at fair value	3,301,054	3,021,832
Held-to-maturity, at amortized cost (fair value of \$627,615 and \$618,672, respectively)	622,519	624,099
Total investment securities	3,923,573	3,645,931
Loans held-for-sale, at fair value	23,535	85,030
Loans	15,324,048	15,269,779
Allowance for loan losses	(110,284)	(109,984)
Net loans	15,213,764	15,159,795
Premises and equipment	122,452	123,442
Loan servicing rights, at fair value	64,701	71,013
Goodwill	1,134,568	1,134,568
Core deposit intangibles	27,195	28,556
Interest receivable and other assets	772,949	754,167
Total assets	\$ 21,800,313	\$ 21,498,341
Liabilities		
Deposits:		
Noninterest-bearing	\$ 3,835,427	\$ 3,809,252
Interest-bearing	12,226,572	11,784,030
Total deposits	16,061,999	15,593,282
Collateralized customer deposits	413,199	382,687
Short-term borrowings	1,740,000	2,035,000
Long-term borrowings	426,035	426,002
Interest payable and other liabilities	261,571	225,110
Total liabilities	18,902,804	18,662,081
Shareholders' equity		
Preferred stock, no par value:		
Authorized – 2,000,000 shares at 3/31/19 and 12/31/18, none issued	—	—
Common stock, \$1.00 par value per share:		
Authorized – 135,000,000 shares at 3/31/19 and 12/31/18		
Issued and outstanding – 71,550,673 shares at 3/31/19 and 71,460,119 shares at 12/31/18	71,551	71,460
Additional paid-in capital	2,209,860	2,209,761
Retained earnings	654,605	616,149
Accumulated other comprehensive loss	(38,507)	(61,110)
Total shareholders' equity	2,897,509	2,836,260
Total liabilities and shareholders' equity	\$ 21,800,313	\$ 21,498,341

See accompanying notes to Consolidated Financial Statements (unaudited).

Chemical Financial Corporation
Consolidated Statements of Income
(Unaudited)

(Dollars in thousands, except per share data)	Three Months Ended March 31,	
	2019	2018
Interest income		
Interest and fees on loans	\$ 183,292	\$ 156,818
Interest on investment securities:		
Taxable	20,501	12,419
Tax-exempt	7,170	5,556
Dividends on nonmarketable equity securities	1,738	1,901
Interest on deposits with the Federal Reserve Bank and other banks and federal funds sold	1,280	1,240
Total interest income	213,981	177,934
Interest expense		
Interest on deposits	38,998	15,917
Interest on collateralized customer deposits	627	524
Interest on short-term borrowings	9,178	8,166
Interest on long-term borrowings	2,354	1,464
Total interest expense	51,157	26,071
Net interest income	162,824	151,863
Provision for loan losses	2,059	6,256
Net interest income after provision for loan losses	160,765	145,607
Noninterest income		
Service charges and fees on deposit accounts	7,967	9,434
Wealth management revenue	5,872	6,311
Other charges and fees for customer services	4,824	4,783
Net gain on sale of loans and other mortgage banking revenue	894	12,535
Net gain on sale of investment securities	87	—
Other	5,213	7,491
Total noninterest income	24,857	40,554
Operating expenses		
Salaries, wages and employee benefits	60,017	55,557
Occupancy	8,277	8,011
Equipment and software	6,979	7,659
Outside processing and service fees	11,726	10,356
Merger expenses	5,424	—
Other	16,592	20,027
Total operating expenses	109,015	101,610
Income before income taxes	76,607	84,551
Income tax expense	13,665	12,955
Net income	\$ 62,942	\$ 71,596
Earnings per common share:		
Basic	\$ 0.88	\$ 1.01
Diluted	\$ 0.87	\$ 0.99

See accompanying notes to Consolidated Financial Statements (unaudited).

Chemical Financial Corporation
Consolidated Statements of Comprehensive Income
(Unaudited)

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Net income	\$ 62,942	\$ 71,596
Other comprehensive income (loss), net of tax:		
Unrealized holding gains (losses) on securities carried at fair value arising during the period	37,444	(27,606)
Reclassification adjustment for gains included in net income	(87)	—
Tax effect	(7,845)	5,797
Net unrealized gains (losses) on securities carried at fair value, net of tax	29,512	(21,809)
Unrealized gains (losses) on interest rate swaps designated as cash flow hedges	(7,552)	7,963
Reclassification adjustment for (gains) losses included in net income	(1,288)	242
Tax effect	1,856	(1,723)
Net unrealized (losses) gains on interest rate swaps designated as cash flow hedges, net of tax	(6,984)	6,482
Adjustment for pension and other postretirement benefits	95	142
Tax effect	(20)	(30)
Net adjustment for pension and other postretirement benefits	75	112
Other comprehensive income (loss), net of tax	22,603	(15,215)
Total comprehensive income, net of tax	\$ 85,545	\$ 56,381

See accompanying notes to Consolidated Financial Statements (unaudited).

Chemical Financial Corporation
Consolidated Statements of Changes in Shareholders' Equity
(Unaudited)

(Dollars in thousands)	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive income (loss)	Total
For the three months ended March 31, 2019					
Beginning Balance	\$ 71,460	\$ 2,209,761	\$ 616,149	\$ (61,110)	\$ 2,836,260
Comprehensive income			62,942	22,603	85,545
Cash dividends declared and paid of \$0.34 per share			(24,486)		(24,486)
Net shares issued under share-based compensation plans	91	(2,274)			(2,183)
Share-based compensation expense	—	2,373			2,373
Ending Balance	<u>\$ 71,551</u>	<u>\$ 2,209,860</u>	<u>\$ 654,605</u>	<u>\$ (38,507)</u>	<u>\$ 2,897,509</u>
For the three months ended March 31, 2018					
Beginning Balance	\$ 71,207	\$ 2,203,637	\$ 419,403	\$ (25,498)	\$ 2,668,749
Cumulative effect adjustment of change in accounting policy, net of tax impact ⁽¹⁾			1,680	(341)	1,339
Comprehensive income			71,596	(15,215)	56,381
Cash dividends declared and paid of \$0.28 per share			(20,075)		(20,075)
Net shares issued under share-based compensation plans	143	(3,486)			(3,343)
Share-based compensation expense	—	1,652			1,652
Ending Balance	<u>\$ 71,350</u>	<u>\$ 2,201,803</u>	<u>\$ 472,604</u>	<u>\$ (41,054)</u>	<u>\$ 2,704,703</u>

⁽¹⁾ Refer to Note 1, Basis of Presentation and Significant Accounting Policies, Note 6, Other Real Estate Owned and Repossessed Assets and Note 20, Accumulated Other Comprehensive Loss for further details on changes in accounting policy.

See accompanying notes to Consolidated Financial Statements (unaudited).

Chemical Financial Corporation
Consolidated Statements of Cash Flows
(Unaudited)

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Cash flows from operating activities		
Net income	\$ 62,942	\$ 71,596
Adjustments to reconcile net income to net cash provided by operating activities:		
Provision for loan losses	2,059	6,256
Gains on sales of loans	(6,150)	(1,508)
Proceeds from sales of loans	195,833	190,435
Valuation change in loans held-for-sale	2,074	700
Loans originated for sale, net of repayments	(130,320)	(165,823)
Net gains on sale of investment securities	(87)	—
Net gains from sales/writedowns of other real estate and repossessed assets	(432)	(71)
Depreciation of premises and equipment	4,234	4,129
Amortization of intangible assets	1,361	1,438
Additions to loan servicing rights	(2,133)	(1,967)
Valuation change in loan servicing rights	8,445	(3,029)
Net amortization of premiums and discounts on investment securities	5,892	4,298
Share-based compensation expense	2,373	1,652
Deferred income tax expense	3,735	5,356
Change in deferred tax valuation allowance	—	(49)
Cash paid for amounts related to operating leases	(1,937)	—
Net (increase) decrease in interest receivable and other assets	(34,462)	4,436
Net increase (decrease) in interest payable and other liabilities	38,526	(9,060)
Net cash provided by operating activities	151,953	108,789
Cash flows from investing activities		
Investment securities - carried at fair value		
Proceeds from maturities, calls and principal reductions	95,148	66,526
Proceeds from sales and redemptions	71,502	—
Purchases	(414,624)	(431,670)
Investment securities – held-to-maturity:		
Proceeds from maturities, calls and principal reductions	2,859	8,744
Purchases	(975)	(8,835)
Net increase in loans	(60,847)	(71,952)
Proceeds from sales of other real estate and repossessed assets	2,295	3,351
Purchases of premises and equipment, net of disposals	(3,244)	(3,484)
Proceeds from returns of investment in equity method investments	110	266
Net cash used in investing activities	(307,776)	(437,054)
Cash flows from financing activities		
Net increase in interest- and noninterest-bearing demand deposits and savings accounts	208,296	182,108
Net increase in time deposits	260,421	142,906
Net (decrease) increase in collateralized customer deposits and other short-term borrowings	(264,488)	124,871
Cash dividends paid	(24,486)	(20,075)
Proceeds from directors' stock plans and exercise of stock options, net of shares withheld	388	952
Cash paid for payroll taxes upon conversion of share-based awards	(2,571)	(4,295)
Net cash provided by financing activities	177,560	426,467
Net increase in cash and cash equivalents	21,737	98,202
Cash and cash equivalents at beginning of period	495,839	455,991
Cash and cash equivalents at end of period	\$ 517,576	\$ 554,193
Supplemental disclosures of cash flow information:		
Interest paid	\$ 49,753	\$ 25,038
Net income tax refunds	(24,749)	(441)
Non-cash activities:		
Loans transferred to other real estate and repossessed assets	4,877	2,484
Net transfer of loans held-for-sale to (from) loans held-for-investment	58	(3,307)

See accompanying notes to Consolidated Financial Statements (unaudited).

Chemical Financial Corporation
Notes to Consolidated Financial Statements (Unaudited)
March 31, 2019

Note 1: Basis of Presentation and Significant Accounting Policies

Nature of Operations

Chemical Financial Corporation ("Corporation" or "Chemical") operates in a single operating segment — commercial banking. The Corporation is a financial holding company, headquartered in Detroit, Michigan, that operates through one commercial bank, Chemical Bank. Chemical Bank operates within Michigan, Ohio and Northern Indiana as a Michigan state-chartered commercial bank. Chemical Bank operates through an internal organizational structure of six regional banking units and offers a full range of traditional banking and fiduciary products and services to the residents and business customers in the Corporation's geographical market areas. The products and services offered by the regional banking units, through branch banking offices, are generally consistent throughout the Corporation, as is the pricing of those products and services. The marketing of products and services throughout the Corporation's regional banking units is generally uniform, as many of the markets served by the regional banking units overlap. The distribution of products and services is generally uniform throughout the Corporation's regional banking units and is achieved primarily through retail branch banking offices, automated teller machines and electronically accessed banking products.

The Corporation's primary sources of revenue are interest from its loan products and investment securities, service charges and fees from customer deposit accounts, wealth management revenue and net gain on sale of loans and other mortgage banking revenue.

Basis of Presentation and Principles of Consolidation

The accompanying unaudited Consolidated Financial Statements of the Corporation and its subsidiaries have been prepared in accordance with United States ("U.S.") generally accepted accounting principles ("GAAP") for interim financial information and with instructions to Form 10-Q, Securities and Exchange Commission ("SEC") rules and interpretive releases and prevailing practices within the banking industry and Rule 10-01 of Regulation S-X. Accordingly, the interim Consolidated Financial Statements do not include all of the information and footnotes required by GAAP for complete financial statements and should be read in conjunction with the Corporation's Consolidated Financial Statements and footnotes thereto included in the Corporation's Annual Report on Form 10-K for the year ended December 31, 2018. In the opinion of management, the accompanying unaudited interim Consolidated Financial Statements contain all adjustments believed necessary to present fairly the financial condition and results of operations of the Corporation for the periods presented. All significant income and expenses are recorded on the accrual basis. Intercompany accounts and transactions have been eliminated in preparing the Consolidated Financial Statements. Operating results for the three months ended March 31, 2019 are not necessarily indicative of the results that may be expected for the year ending December 31, 2019.

Proposed Merger with TCF Financial Corporation

Chemical and TCF Financial Corporation ("TCF") have entered into an Agreement and Plan of Merger, dated as of January 27, 2019, which we refer to as the merger agreement. Under the merger agreement, Chemical and TCF have agreed to combine their respective companies in a merger of equals, pursuant to which TCF will merge with and into Chemical, with Chemical continuing as the surviving entity, in a transaction we refer to as the merger. Immediately following the merger or at such later time as the parties may mutually agree, Chemical Bank will merge with and into TCF National Bank, with TCF National Bank as the surviving bank, in a transaction we refer to as the bank merger. The merger agreement was approved by the boards of directors of Chemical and TCF, and is subject to shareholder and regulatory approval and other customary closing conditions. The transaction is anticipated to close in late third quarter or early fourth quarter of 2019. The transaction is discussed in more detail in Note 2.

Use of Estimates

Management makes estimates and assumptions that affect the amounts reported in the Consolidated Financial Statements and accompanying footnotes. Estimates that are particularly susceptible to significant change include the determination of the allowance for loan losses, expected cash flows from acquired loans, income taxes and the valuation of loan servicing rights. Actual results could differ from these estimates.

Chemical Financial Corporation
Notes to Consolidated Financial Statements (Unaudited)
March 31, 2019

Reclassifications

Certain amounts appearing in the Consolidated Financial Statements and notes thereto for prior periods have been reclassified to conform to the current presentation. The reclassification had no effect on net income or shareholders' equity as previously reported, except in case of the cumulative effect adjustment of change in accounting policy as noted.

Recently Adopted Accounting Principles

Standard	Description	Adoption Date	Effect on the financial statements
ASU No. 2014-09 - Revenue from Contracts with Customers (Topic 606)	The core principle of the Updates to Topic 606 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. The standard is intended to clarify and converge the revenue recognition principles under GAAP and International Financial Reporting Standards and to streamline revenue recognition requirements in addition to expanding required revenue recognition disclosures.	January 1, 2018	A large majority of the Corporation's revenue is derived from net interest income, which is excluded from the scope of the guidance. Following detailed review of the Corporation's revenue streams not derived from net interest income on financial assets and liabilities, management identified the recognition of gains from other real estate sales financed by the Corporation to be in the scope of this amended guidance. Effective January 1, 2018, revenue for new seller financed other real estate owned sales is determined according to the Updates to Topic 606. If all qualifications are met, gains associated with the sales are recognized into income at the time of closing and therefore not deferred. The cumulative effect of the Updates to Topic 606 increased retained earnings by \$1.2 million upon adoption. Additional required disclosures have been included in Note 15, Revenue from Contracts with Customers. The adoption is not expected to have a material impact on the Corporation's net income on an ongoing basis. Refer to Note 6, Other Real Estate Owned and Repossessed Assets, for further detail.
ASU No. 2016-08 - Principal versus Agent Considerations			
ASU No. 2016-10 - Identifying Performance Obligations and Licensing			
ASU No. 2016-12 - Narrow-scope Improvements and Practical Expedients ("Updates to Topic 606")			
ASU No. 2016-01 - Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01")	ASU 2016-01 amended current guidance by: (i) requiring equity investments with readily determinable fair values to be measured at fair value with changes in fair value recognized in net income, (ii) allowing an entity to measure equity retrospective investments that do not have readily determinable fair values at either fair value approach with the or cost minus impairment, changes in measurement is recognized in net income, exception of (iii) simplifying impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify requirements which impairment, (iv) eliminating the requirement to disclose the methods and are adopted on a assumptions used to estimate the fair value of financial instruments measured at prospective basis amortized cost; (v) requiring the use of exit price notion when measuring the fair value of financial instruments; (vi) requiring recognition of changes in the fair value related to instrument-specific credit risk in other comprehensive income if financial liabilities are measured at fair value, (vii) requiring separate presentation in financial statements by measurement category, and (viii) clarifying that an entity should evaluate the need for valuation allowance on deferred tax assets related to available-for-sale securities in combination with the entity's other deferred tax assets.	January 1, 2018	The Corporation identified available-for-sale investment securities qualifying as equity investments in the securities portfolio at January 1, 2018. The adoption resulted in recognizing the unrealized fair value related to the identified equity investments as a cumulative effect to retained earnings of \$0.3 million. In addition, the Corporation has updated disclosures related to the fair value of financial instruments to the use of the exit price notion.

Chemical Financial Corporation
Notes to Consolidated Financial Statements (Unaudited)
March 31, 2019

Standard	Description	Adoption Date	Effect on the financial statements
ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts as Cash Payments ("ASU 2016-15")	ASU 2016-15 was issued to reduce diversity in practice and prevent financial statement restatements by clarifying the presentation and classification of cash receipts and cash payments within the statement of cash flows. Cash flow issues include: debt prepayment or debt extinguishment costs, settlement of insurance claims, proceeds from the settlement of corporate-owned and bank-owned life insurance policies, distribution received from equity method investees, beneficial interests in securitization transactions and separately identifiable cash flows and application of the predominance principle.	January 1, 2018 using retrospective application	The adoption did not have a material effect on the presentation of our Consolidated Statements of Cash Flows, as current policies are either already in-line with the clarifications in the updated guidance, or the related cash flows are not material.
ASU No. 2017-07 - Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost ("ASU 2017-07")	ASU 2017-07 improves the income statement presentation of net periodic benefit cost for an entity's pension and postretirement plans. The standard requires employers to disaggregate current service costs from other components of net benefit cost and present it with other compensation cost. Additionally net benefit cost becomes eligible for capitalization.	January 1, 2018 using the retrospective transition method	The adoption did not have a material effect on the Consolidated Statements of Income during the year ended December 31, 2018.
ASU No. 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvement to Account for Hedging Activities ("ASU 2017-12")	ASU 2017-12 eliminates the separate measurement of hedge ineffectiveness as well as the benchmark interest rate concept when applying hedge risk to variable-rate instruments. It also allows a company to elect to perform subsequent effectiveness assessments qualitatively if the initial quantitative hedge effectiveness assessment is found to be highly effective.	January 1, 2018	The early adoption resulted in a cumulative adjustment from opening retained earnings to accumulated other comprehensive income of \$3 thousand, which represented all previously recognized hedge ineffectiveness.
ASU No. 2018-15 - Intangible-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 ("ASU 2018-15")	ASU 2018-15 clarifies the accounting treatment for implementation costs for hosting arrangements that are service contracts. The amendments in this update align 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 in accordance with subtopic 350-40. Under this guidance costs for implementation activities during the development stage shall be capitalized. The said capitalized-costs shall be expensed over the term of the hosting arrangement.	Third quarter of 2018 applied retrospectively	The early adoption in the third quarter of 2018 did not have a material effect on the Consolidated Financial Statements.

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Standard	Description	Adoption Date	Effect on the financial statements
ASU No. 2016-02 - Leases (Topic 842)	In February 2016, the FASB established Topic 842, Leases, by issuing Accounting Standards Update (ASU), No. 2016-02, which requires lessees to recognize leases on-balance sheet, lessors to classify leases as sales-type, direct financing, or operating, and disclose key information about leasing arrangements.	January 1, 2019	Upon adoption as of January 1, 2019, the Corporation elected certain practical expedients offered through the guidance, including foregoing the restatement of comparative periods, the use of hindsight, and the 'package of practical expedients' whereby it did not reassess (i) whether any expired or existing contracts contain leases, (ii) the lease classification for any expired or existing leases and (iii) initial direct costs for any existing leases.
ASU No. 2018-01 - Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842	Topic 842 was subsequently amended by ASU No. 2018-01, Land Easement Practical Expedient for Transition to Topic 842; ASU No. 2018-10, Codification Improvements to Topic 842, Leases; ASU No. 2018-11, Targeted Improvements; ASU No. 2018-20, Narrow Scope Improvements for Lessors; and ASU No. 2019-01, Leases (Topic 842): Codification Improvements.		
ASU No. 2018-10 - Codification Improvements to Topic 842, Leases	This guidance provides that lessees will be required to recognize the following for all operating leases (with the exception of short-term leases): 1) a lease liability, which is the present value of a lessee's obligation to make lease payments, and 2) a right-of-use (ROU) 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. Lessor accounting under the new guidance remains largely unchanged as it is substantially equivalent to existing guidance for sales-type leases, direct financing leases and operating leases.		
ASU No. 2018-11 - Leases (Topic 842): Targeted Improvements			In conjunction with the adoption, the Corporation elected to not recognize on its balance sheet, assets or liabilities related to short-term leases, of which the Corporation had none as of March 31, 2019.
ASU No. 2018-20 - Leases (Topic 842): Narrow Scope Improvements for Lessors			The adoption had a material impact on the Consolidated Statements of Financial Position, but did not have a material impact on the Consolidated Statements of Income or Consolidated Statements of Cash Flows. At adoption on January 1, 2019, the Corporation recognized an operating lease ROU asset of \$37.2 million and an operating lease liability of \$38.2 million. Refer to Note 11, Leases, for further detail.
ASU No. 2019-01 - Leases (Topic 842): Codification Improvements	Upon adoption, a modified retrospective transition approach is required, applying the new standard to all leases existing at the date of initial application.		

Effective during the three months ended 2019, the Corporation also adopted the following standards, none of which had a material impact to the Corporation's financial statements or financial statement disclosures:

Standard	Effective Date
2017-06 Plan Accounting: Defined Benefit Pension Plans (Topic 960)	January 1, 2019
2018-07 Compensation - Stock Compensation (Topic 718)	January 1, 2019
2018-08 Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made	January 1, 2019
2018-09 Codification Improvements	January 1, 2019
2018-16 Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes	January 1, 2019

Note 2: Mergers and Acquisitions

Pending Merger with TCF Financial Corporation

On January 27, 2019, the Corporation entered into an Agreement and Plan of Merger with TCF under which, the companies will combine in an all-stock merger of equals transaction. Under the terms of the agreement, which was unanimously approved by the boards of directors of both companies, TCF will merge into Chemical, and the combined holding company and bank will operate under the TCF name and brand following the closing of the transaction. TCF is headquartered in Wayzata, Minnesota with reported assets of approximately \$23.7 billion as of December 31, 2018.

Under the terms of the Merger Agreement, TCF shareholders will receive 0.5081 shares of Chemical common stock for each share of TCF common stock based on a fixed exchange ratio, equivalent to \$21.58 per TCF share based on the closing price

as of January 25, 2019. Each outstanding share of 5.70% Series C Non-Cumulative Perpetual Preferred Stock of TCF will be converted into the right to receive one share of a newly created series of preferred stock of Chemical. Subject to receipt of regulatory approvals and satisfaction of other customary closing conditions, including approval of both Chemical and TCF shareholders, the transaction is anticipated to close in late third quarter or early fourth quarter of 2019.

Note 3: Fair Value Measurements

Fair value, as defined by GAAP, is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. A fair value measurement assumes that the transaction to sell the asset or transfer the liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. The price in the principal (or most advantageous) market used to measure the fair value of the asset or liability is not adjusted for transaction costs. An orderly transaction is a transaction that assumes exposure to the market for a period prior to the measurement date to allow for market activities that are usual and customary for transactions involving such assets and liabilities; it is not a forced transaction. Market participants are buyers and sellers in the principal market that are (i) independent, (ii) knowledgeable, (iii) able to transact and (iv) willing to transact.

The Corporation utilizes fair value measurements to record fair value adjustments to certain assets and liabilities and to determine fair value disclosures. Investment securities — carried at fair value, loans held-for-sale, loan servicing rights ("LSRs") and derivatives are recorded at fair value on a recurring basis. Additionally, the Corporation may be required to record other assets, such as impaired loans, goodwill, other intangible assets, other real estate and repossessed assets, at fair value on a nonrecurring basis. These nonrecurring fair value adjustments typically involve the application of lower of cost or market accounting or write-downs of individual assets.

The Corporation determines the fair value of its financial instruments based on a three-level hierarchy established by GAAP. The classification and disclosure of assets and liabilities within the hierarchy is based on whether the inputs to the valuation methodology used for measurement are observable or unobservable. Observable inputs reflect market-derived or market-based information obtained from independent sources, while unobservable inputs reflect management's estimates about market data. The three levels of inputs that may be used to measure fair value within the GAAP hierarchy are as follows:

- Level 1 Valuation is based upon quoted prices for identical instruments traded in active markets.
- Level 2 Valuation is based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market. Level 2 valuations for the Corporation include government and government-sponsored enterprise debt obligations, including securities issued by the Federal Home Loan Bank ("FHLB"), Federal Home Loan Mortgage Corporation, Federal National Mortgage Association, Federal Farm Credit Bank, Student Loan Marketing Corporation and the Small Business Administration, securities issued by certain state and political subdivisions, residential mortgage-backed securities, collateralized mortgage obligations, corporate bonds and available-for-sale trust preferred securities. Valuations are obtained from a third-party pricing service for these investment securities. Additionally included in Level 2 valuations are loans held for sale and derivative assets and liabilities.
- Level 3 Valuation is generated from model-based techniques that use at least one significant assumption not observable in the market. These unobservable assumptions reflect estimates of assumptions that market participants would use in pricing the asset or liability. Valuation techniques include use of option pricing models, discounted cash flow models, yield curves and similar techniques. The determination of fair value requires management judgment or estimation and generally is corroborated by external data, which includes third-party pricing services. Level 3 valuations for the Corporation include impaired loans, goodwill, core deposit intangible assets, LSRs and other real estate and repossessed assets.

A description of the valuation methodologies used for instruments measured at fair value, as well as the general classification of such instruments pursuant to the valuation hierarchy, is set forth below. These valuation methodologies were applied to all of the Corporation's financial assets and financial liabilities carried at fair value and all financial instruments disclosed at fair value. Transfers of assets or liabilities between levels of the fair value hierarchy are recognized at the beginning of the reporting period, when applicable.

In general, fair value is based upon quoted market prices, where available. If quoted market prices are not available, fair value is based upon third-party pricing services when available. Fair value may also be based on internally developed models that primarily use, as inputs, observable market-based parameters. Valuation adjustments may be required to record financial instruments

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at fair value. Any such valuation adjustments are applied consistently over time. The Corporation's valuation methodologies may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values.

While management believes the Corporation's valuation methodologies are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date. Furthermore, the fair value amounts may change significantly after the date of the statement of financial position from the amounts reported in the Consolidated Financial Statements and related notes.

Assets and Liabilities Recorded at Fair Value on a Recurring Basis

Investment securities: Investment securities are recorded at fair value on a recurring basis with the exception of those classified as held-to-maturity. Fair value measurement is based upon quoted prices, if available. If quoted prices are not available, fair values are generally measured using independent pricing models or other model-based valuation techniques that include market inputs, such as benchmark yields, reported trades, broker dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, reference data and industry and economic events.

Loans held-for-sale: The Corporation elected the fair value option for all loans held-for-sale. Accordingly, loans held-for-sale are recorded at fair value on a recurring basis. The fair values of loans held-for-sale are based on the market price for similar loans sold in the secondary market, and therefore, are classified as Level 2 valuations.

Loan servicing rights: The Corporation has elected to account for all LSRs under the fair value measurement method. A third party valuation model is used to determine the fair value at the end of each reporting period utilizing a discounted cash flow analysis using interest rates and prepayment speed assumptions currently quoted for comparable instruments and a discount rate determined by management. Because of the nature of the valuation inputs, the Corporation classifies loan servicing rights as Level 3. Refer to Note 8, Loan Servicing Rights, for the assumptions included in the valuation of loan servicing rights.

Derivatives: The Corporation enters into interest rate lock commitments with prospective borrowers to be sold into the secondary market and forward commitments for the future delivery of mortgage loans to third party investors, which are carried at fair value on a recurring basis. The fair value of these commitments is based on the fair value of related mortgage loans determined using observable market data. Interest rate lock commitments are adjusted for expectations of exercise and funding. This adjustment is not considered to be a material input. The Corporation classifies interest rate lock commitments and forward contracts related to mortgage loans to be delivered for sale as recurring Level 2.

Derivative instruments held or issued for risk management or customer-initiated activities are traded in over-the counter markets where quoted market prices are not readily available. Fair value for over-the-counter derivative instruments is measured on a recurring basis using third party models that use primarily market observable inputs, such as yield curves and option volatilities. The fair value for these derivatives may include a credit valuation adjustment that is determined by applying a credit spread for the counterparty or the Corporation, as appropriate, to the total expected exposure of the derivative after considering collateral and other master netting arrangements. These adjustments, which are considered Level 3 inputs, are based on estimates of current credit spreads to evaluate the likelihood of default. The Corporation assessed the significance of the impact of the credit valuation adjustments on the overall valuation of its derivative positions at both March 31, 2019 and December 31, 2018 and it was determined that the credit valuation adjustments were not significant to the overall valuation of its derivatives. As a result, the Corporation classifies its risk management interest rate swaps designated as cash flow hedges and customer-initiated derivatives valuations in Level 2 of the fair value hierarchy.

Written and purchased option derivatives consist of instruments to facilitate an equity-linked time deposit product (the "Power Equity CD"). The Power Equity CD is a time deposit that provides the purchaser a guaranteed return of principal at maturity plus a potential equity return, while the Corporation receives a known stream of funds based on equity returns. The written and purchased options are mirror derivative instruments which are carried at fair value on the Consolidated Statements of Financial Position. Fair value measurements for the Power Equity CD are determined using quoted prices of underlying stocks, along with other terms and features of the derivative instrument. As a result, the Power Equity CD derivatives are classified as Level 2 valuations.

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Disclosure of Recurring Basis Fair Value Measurements

For assets and liabilities measured at fair value on a recurring basis, quantitative disclosures about the fair value measurements for each major category of assets and liabilities follow:

(Dollars in thousands)	Quoted Prices In Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
March 31, 2019				
Investment securities – carried at fair value:				
Government and government-sponsored enterprises	\$ —	\$ 387,390	\$ —	\$ 387,390
State and political subdivisions	—	554,743	—	554,743
Residential mortgage-backed securities	—	202,240	—	202,240
Collateralized mortgage obligations	—	1,802,924	—	1,802,924
Corporate bonds	—	306,147	—	306,147
Trust preferred securities	—	47,610	—	47,610
Total investment securities – carried at fair value	—	3,301,054	—	3,301,054
Loans held-for-sale	—	23,535	—	23,535
Loan servicing rights	—	—	64,701	64,701
Derivative assets:				
Customer-initiated derivatives	—	39,398	—	39,398
Interest rate lock commitments	—	1,758	—	1,758
Power Equity CD	—	881	—	881
Risk management derivatives	—	5,322	—	5,322
Total derivatives	—	47,359	—	47,359
Total assets at fair value	\$ —	\$ 3,371,948	\$ 64,701	\$ 3,436,649
Derivative liabilities:				
Customer-initiated derivatives	—	40,672	—	40,672
Forward contracts related to mortgage loans to be delivered for sale	—	653	—	653
Power Equity CD	—	881	—	881
Risk management derivatives	—	7,292	—	7,292
Total derivatives	—	49,498	—	49,498
Total liabilities at fair value	\$ —	\$ 49,498	\$ —	\$ 49,498

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(Dollars in thousands)	Quoted Prices In Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
December 31, 2018				
Investment securities – carried at fair value:				
Government and government-sponsored enterprises	\$ —	\$ 351,700	\$ —	\$ 351,700
State and political subdivisions	—	516,286	—	516,286
Residential mortgage-backed securities	—	213,428	—	213,428
Collateralized mortgage obligations	—	1,601,298	—	1,601,298
Corporate bonds	—	293,063	—	293,063
Trust preferred securities	—	46,057	—	46,057
Total investment securities – carried at fair value	—	3,021,832	—	3,021,832
Loans held-for-sale	—	85,030	—	85,030
Loan servicing rights	—	—	71,013	71,013
Derivative assets:				
Customer-initiated derivatives	—	26,680	—	26,680
Interest rate lock commitments	—	1,049	—	1,049
Power Equity CD	—	718	—	718
Risk management derivatives	—	10,148	—	10,148
Total derivatives	—	38,595	—	38,595
Total assets at fair value	\$ —	\$ 3,145,457	\$ 71,013	\$ 3,216,470
Derivative liabilities:				
Customer-initiated derivatives	\$ —	\$ 27,664	\$ —	\$ 27,664
Forward contracts related to mortgage loans to be delivered for sale	—	719	—	719
Power Equity CD	—	718	—	718
Risk management derivatives	—	3,278	—	3,278
Total derivatives	—	32,379	—	32,379
Total liabilities at fair value	\$ —	\$ 32,379	\$ —	\$ 32,379

There were no transfers between levels within the fair value hierarchy during the three months ended March 31, 2019 and 2018.

The following table summarizes the changes in Level 3 assets measured at fair value on a recurring basis.

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
	Loan servicing rights	
Balance, beginning of period	\$ 71,013	\$ 63,841
Gains (losses):		
Recorded in earnings (realized):		
Recorded in "Net gain on sale of loans and other mortgage banking revenue"	(8,445)	3,029
New originations	2,133	1,967
Balance, end of period	\$ 64,701	\$ 68,837

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The Corporation has elected the fair value option for loans held-for-sale. These loans are intended for sale and the Corporation believes that the fair value is the best indicator of the resolution of these loans. Interest income is recorded based on the contractual terms of the loans in accordance with the Corporation's policy on loans held for investment in "Interest and fees on loans" in the Consolidated Statements of Income. There were no loans held-for-sale on nonaccrual status or 90 days past due and on accrual status as of March 31, 2019 and December 31, 2018.

The aggregate fair value, contractual balance (including accrued interest), and gain or loss for loans held-for-sale carried at fair value option was as follows:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Aggregate fair value	\$ 23,535	\$ 85,030
Contractual balance	22,660	82,080
Unrealized gain	875	2,950

The total amount of gains from loans held-for-sale included in the Consolidated Statements of Income was as follows:

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Interest income ⁽¹⁾	\$ 633	\$ 376
Change in fair value ⁽²⁾	(2,075)	(700)
Net gain on sales of loans ⁽²⁾	6,150	1,508
Total included in earnings	\$ 4,708	\$ 1,184

⁽¹⁾ Included in "Interest and fees on loans" in the Consolidated Statements of Income.

⁽²⁾ Included in "Net gain on sale of loans and other mortgage banking revenue" in the Consolidated Statements of Income.

Assets and Liabilities Recorded at Fair Value on a Nonrecurring Basis

Investment securities: Investment securities classified as held-to-maturity are recorded at fair value if the value is below amortized cost and the Corporation has determined that such unrealized loss is an other-than-temporary impairment. Fair value measurement is based upon quoted prices, if available. If quoted prices are not available, fair values are generally measured using independent pricing models or other model-based valuation techniques that include market inputs, such as benchmark yields, reported trades, broker dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, reference data and industry and economic events.

Impaired Loans: The Corporation does not record loans held for investment at fair value on a recurring basis. However, from time to time, a loan is considered impaired and an allocation of the allowance (valuation allowance) may be established or a portion of the loan is charged off. Loans for which it is probable that payment of interest and principal will not be made in accordance with the contractual terms of the loan agreement are considered impaired. The fair value of impaired loans is estimated using one of several methods, including the loan's observable market price, the fair value of the collateral or the present value of the expected future cash flows discounted at the loan's effective interest rate. Those impaired loans not requiring a valuation allowance represent loans for which the fair value of the expected repayments or collateral exceed the remaining carrying amount of such loans. Impaired loans where a valuation allowance is established or a portion of the loan is charged off based on the fair value of collateral are subject to nonrecurring fair value measurement and require classification in the fair value hierarchy. The Corporation records impaired loans as Level 3 valuations as there is generally no observable market price or management determines the fair value of the collateral is further impaired below the independent appraised value. When management determines the fair value of the collateral is further impaired below the appraised value, discounts ranging between 20% and 30% of the appraised value are used depending on the nature of the collateral and the age of the most recent appraisal.

Goodwill: Goodwill is subject to impairment testing on an annual basis. The assessment of goodwill for impairment requires a significant degree of judgment. In the event the assessment indicates that it is more-likely-than-not that the fair value is less than the carrying value, the asset is considered impaired and recorded at fair value. Goodwill that is impaired and subject to nonrecurring fair value measurements is a Level 3 valuation. At March 31, 2019 and December 31, 2018, no goodwill was impaired.

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Core deposit intangibles: Core deposit intangible assets are recorded at fair value when initially recorded. Subsequently, core deposit intangible assets are amortized primarily on an accelerated basis over periods ranging from ten to fifteen years and are subject to impairment testing whenever events or changes in circumstances indicate that the carrying amount exceeds the fair value of the asset. If core deposit intangible asset impairment is identified, the Corporation classifies the impaired core deposit intangible asset subject to nonrecurring fair value measurements as Level 3 valuations. At March 31, 2019 and December 31, 2018, there was no impairment identified for core deposit intangible assets.

Other real estate owned and repossessed assets: The carrying amounts for other real estate and repossessed assets are reported in the Consolidated Statements of Financial Position under "Interest receivable and other assets." Other real estate and repossessed assets include real estate and other types of assets repossessed by the Corporation. Other real estate and repossessed assets are recorded at the lower of cost or fair value upon the transfer of a loan to other real estate and repossessed assets and, subsequently, continue to be measured and carried at the lower of cost or fair value. Fair value is based upon independent market prices, appraised values of the property or management's estimation of the value of the property. The Corporation records other real estate and repossessed assets as Level 3 valuations as management generally determines that the fair value of the property is impaired below the appraised value. When management determines the fair value of the property is further impaired below appraised value, discounts ranging between 20% and 30% of the appraised value are used depending on the nature of the property and the age of the most recent appraisal.

Disclosure of Nonrecurring Basis Fair Value Measurements

Certain assets may be required to be measured at fair value on a nonrecurring basis. The carrying value of these assets represent end of period values, which approximate the fair value measurements that occurred on the various measurement dates during the period. For assets measured at fair value on a nonrecurring basis, quantitative disclosures about fair value measurements for each major category of assets follow:

(Dollars in thousands)	Significant Unobservable Inputs (Level 3)	
March 31, 2019		
Impaired loans	\$	62,118
Other real estate and repossessed assets		1,360
Total	\$	63,478
December 31, 2018		
Impaired loans	\$	63,247
Other real estate and repossessed assets		883
Total	\$	64,130

There were no liabilities recorded at fair value on a nonrecurring basis at either March 31, 2019 or December 31, 2018.

The following table presents additional information about the significant unobservable inputs used in the fair value measurement of financial assets measured on a nonrecurring basis that were categorized within the Level 3 of the fair value hierarchy:

(Dollars in thousands)	Fair Value at March 31, 2019	Valuation Technique	Significant Unobservable Inputs	Range
Impaired loans	\$ 62,118	Appraisal of collateral	Discount for type of collateral and age of appraisal	20%-30%
Other real estate and repossessed assets	1,360	Appraisal of property	Discount for type of property and age of appraisal	20%-30%

Disclosures About Fair Value of Financial Instruments

GAAP requires disclosures about the estimated fair value of the Corporation's financial instruments, including those financial assets and liabilities that are not measured and reported at fair value on a recurring or nonrecurring basis. The Corporation utilized the fair value hierarchy in computing the fair values of its financial instruments. In cases where quoted market prices were not available, the Corporation employed the exit-price notion, using unobservable inputs requiring management's judgment to

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estimate the fair values of its financial instruments, which is considered a Level 3 valuation. This Level 3 valuation is affected by the assumptions made and, accordingly, is not necessarily indicative of amounts that would be realized in a current market exchange. It is also the Corporation's general practice and intent to hold the majority of its financial instruments until maturity and, therefore, the Corporation does not expect to realize the estimated amounts disclosed.

A summary of carrying amounts and estimated fair values of the Corporation's financial instruments not recorded at fair value in their entirety on a recurring basis on the Consolidated Statements of Financial Position are disclosed in the table below.

(Dollars in thousands)	Level in Fair Value Measurement Hierarchy	March 31, 2019		December 31, 2018	
		Carrying Amount	Fair Value	Carrying Amount	Fair Value
Financial assets:					
Investment securities:					
Held-to-maturity	Level 2	\$ 622,019	\$ 627,165	\$ 623,599	\$ 618,232
Held-to-maturity	Level 3	500	450	500	440
Net loans ⁽¹⁾	Level 3	15,213,764	15,084,122	15,159,795	14,907,789
Financial liabilities:					
Time deposits	Level 2	\$ 4,334,669	\$ 4,315,319	\$ 4,074,248	\$ 4,041,212
Collateralized customer deposits	Level 2	413,199	413,075	382,687	382,370
Short-term borrowings	Level 2	1,740,000	1,739,883	2,035,000	2,034,719
Long-term borrowings	Level 2	426,035	424,613	426,002	423,258

⁽¹⁾ Included \$62.1 million and \$63.2 million of impaired loans recorded at fair value on a nonrecurring basis at March 31, 2019 and December 31, 2018, respectively.

The short-term nature of certain assets and liabilities result in their carrying value approximating fair value. These include cash and cash equivalents, nonmarketable equity securities, interest receivable, bank owned life insurance, deposits without defined maturities and interest payable.

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Note 4: Investment Securities

The following is a summary of the amortized cost and fair value of investment securities carried at fair value and investment securities held-to-maturity at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	Investment Securities Carried at Fair Value			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
March 31, 2019				
<u>Debt securities</u>				
Government and government-sponsored enterprises	\$ 389,657	\$ 357	\$ 2,624	\$ 387,390
State and political subdivisions	545,823	10,100	1,180	554,743
Residential mortgage-backed securities	203,692	836	2,288	202,240
Collateralized mortgage obligations	1,812,649	5,943	15,668	1,802,924
Corporate bonds	312,112	205	6,170	306,147
Trust preferred securities	47,577	555	522	47,610
Total	\$ 3,311,510	\$ 17,996	\$ 28,452	\$ 3,301,054
December 31, 2018				
<u>Debt securities</u>				
Government and government-sponsored enterprises	\$ 354,342	\$ 713	\$ 3,355	\$ 351,700
State and political subdivisions	523,178	1,141	8,033	516,286
Residential mortgage-backed securities	216,990	261	3,823	213,428
Collateralized mortgage obligations	1,623,415	2,903	25,020	1,601,298
Corporate bonds	304,243	259	11,439	293,063
Trust preferred securities	47,477	324	1,744	46,057
Total	\$ 3,069,645	\$ 5,601	\$ 53,414	\$ 3,021,832
(Dollars in thousands)	Investment Securities Held-to-Maturity			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
March 31, 2019				
State and political subdivisions	\$ 622,019	\$ 7,392	\$ 2,246	\$ 627,165
Trust preferred securities	500	—	50	450
Total	\$ 622,519	\$ 7,392	\$ 2,296	\$ 627,615
December 31, 2018				
State and political subdivisions	\$ 623,599	\$ 2,548	\$ 7,915	\$ 618,232
Trust preferred securities	500	—	60	440
Total	\$ 624,099	\$ 2,548	\$ 7,975	\$ 618,672

Investment securities are classified at the time they are acquired as either available-for-sale, held-to-maturity or carried at fair value based upon various factors, including asset/liability management strategies, liquidity and profitability objectives and regulatory requirements. Debt securities classified as available-for-sale are recorded at fair value. Investment securities carried at fair value may be sold prior to maturity based upon asset/liability management decisions. Unrealized gains or losses on available-for-sale debt securities are recorded as part of accumulated other comprehensive income in stockholders' equity. Held-to-maturity securities are carried at amortized cost, adjusted for amortization of premiums or accretion of discounts.

The majority of the Corporation's residential mortgage-backed securities and collateralized mortgage obligations are backed by a U.S. government agency (Government National Mortgage Association) or a government sponsored enterprise (Federal Home Loan Mortgage Corporation or Federal National Mortgage Association).

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Proceeds from sales of investment securities carried at fair value and the associated gains and losses recorded in earnings are listed below:

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Proceeds	\$ 71,502	\$ —
Gross gains	552	—
Gross losses	(465)	—

The following is a summary of the amortized cost and fair value of investment securities at March 31, 2019, by maturity, for both carried at fair value and held-to-maturity. The maturities of residential mortgage-backed securities and collateralized mortgage obligations are based on scheduled principal payments. The maturities of all other debt securities are based on final contractual maturity.

(Dollars in thousands)	March 31, 2019	
	Amortized Cost	Fair Value
Investment Securities Carried at Fair Value:		
Due in one year or less	\$ 47,145	\$ 47,088
Due after one year through five years	85,636	84,973
Due after five years through ten years	537,851	530,965
Due after ten years	2,640,878	2,638,028
Total	<u>\$ 3,311,510</u>	<u>\$ 3,301,054</u>
Investment Securities Held-to-Maturity:		
Due in one year or less	\$ 55,696	\$ 55,676
Due after one year through five years	229,594	230,314
Due after five years through ten years	162,812	165,238
Due after ten years	174,417	176,387
Total	<u>\$ 622,519</u>	<u>\$ 627,615</u>

Securities with a carrying value of \$971.1 million and \$1.05 billion were pledged at March 31, 2019 and December 31, 2018, respectively, to secure borrowings and deposits.

At March 31, 2019 and December 31, 2018, there were no holdings of securities of any one issuer, other than the U.S. government and its agencies, in an amount greater than 10% of shareholders' equity.

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The following schedule summarizes information for debt securities both carried at fair value and held-to-maturity with gross unrealized losses at March 31, 2019 and December 31, 2018, aggregated by category and length of time that individual securities have been in a continuous unrealized loss position. As of March 31, 2019, the Corporation's securities portfolio consisted of 2,087 securities, 879 of which were in an unrealized loss position.

(Dollars in thousands)	Less Than 12 Months		12 Months or More		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
March 31, 2019						
Government and government-sponsored enterprises	\$ 120,690	\$ 937	\$ 112,261	\$ 1,687	\$ 232,951	\$ 2,624
State and political subdivisions	15,474	32	424,934	3,394	440,408	3,426
Residential mortgage-backed securities	1,217	5	120,950	2,283	122,167	2,288
Collateralized mortgage obligations	170,414	1,093	873,914	14,575	1,044,328	15,668
Corporate bonds	117,903	1,003	162,324	5,167	280,227	6,170
Trust preferred securities	25,034	433	2,752	139	27,786	572
Total	\$ 450,732	\$ 3,503	\$ 1,697,135	\$ 27,245	\$ 2,147,867	\$ 30,748
December 31, 2018						
Government and government-sponsored enterprises	\$ 167,164	\$ 1,672	\$ 62,200	\$ 1,683	\$ 229,364	\$ 3,355
State and political subdivisions	190,551	1,932	657,327	14,016	847,878	15,948
Residential mortgage-backed securities	20,679	85	123,757	3,738	144,436	3,823
Collateralized mortgage obligations	496,356	5,268	656,208	19,752	1,152,564	25,020
Corporate bonds	169,431	5,888	103,688	5,551	273,119	11,439
Trust preferred securities	34,623	1,640	2,725	164	37,348	1,804
Total	\$ 1,078,804	\$ 16,485	\$ 1,605,905	\$ 44,904	\$ 2,684,709	\$ 61,389

An assessment is performed quarterly by the Corporation to determine whether unrealized losses in its debt securities portfolio are temporary or other-than-temporary by carefully considering all reasonably available information. The Corporation reviews factors such as financial statements, credit ratings, news releases and other pertinent information of the underlying issuer or company to make its determination. Management did not believe any individual unrealized loss on any debt security, as of March 31, 2019, represented an other-than-temporary impairment ("OTTI") as the unrealized losses for these securities resulted primarily from changes in benchmark U.S. Treasury interest rates and not credit issues. Management believed that the unrealized losses on debt securities at March 31, 2019 were temporary in nature and due primarily to changes in interest rates and reduced market liquidity and not as a result of credit-related issues.

At March 31, 2019, the Corporation did not have the intent to sell any of its impaired debt securities and believed that it was more-likely-than-not that the Corporation will not have to sell any such debt securities before a full recovery of amortized cost. Accordingly, at March 31, 2019, the Corporation believed the impairments in its debt securities portfolio were temporary in nature. However, there is no assurance that OTTI may not occur in the future.

Note 5: Loans

Loan portfolio segments are defined as the level at which an entity develops and documents a systematic methodology to determine its allowance. The Corporation has two loan portfolio segments (commercial loans and consumer loans) that it uses in determining the allowance. Both quantitative and qualitative factors are used by management at the loan portfolio segment level in determining the adequacy of the allowance for the Corporation. Classes of loans are a disaggregation of an entity's loan portfolio segments. Classes of loans are defined as a group of loans which share similar initial measurement attributes, risk characteristics, and methods for monitoring and assessing credit risk. The Corporation has six classes of loans, which are set forth below.

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Commercial — Loans and lines of credit to varying types of businesses, including municipalities, school districts and nonprofit organizations, for the purpose of supporting working capital, operational needs and term financing of equipment. Repayment of such loans is generally provided through operating cash flows of the business. Commercial loans are predominately secured by equipment, inventory, accounts receivable, personal guarantees of the owner and other sources of repayment, although the Corporation may also secure commercial loans with real estate.

Commercial real estate — Loans secured by real estate occupied by the borrower for ongoing operations (owner-occupied), non-owner occupied real estate leased to one or more tenants (non-owner occupied) and vacant land that has been acquired for investment or future land development (vacant land).

Real estate construction and land development — Real estate construction loans represent secured loans for the construction of business properties. Real estate construction loans often convert to a commercial real estate loan at the completion of the construction period. Land development loans represent secured development loans made to borrowers for the purpose of infrastructure improvements to vacant land to create finished marketable residential and commercial lots/land. Most land development loans are originated with the intention that the loans will be paid through the sale of developed lots/land by the developers within twelve months of the completion date. Land development loans at March 31, 2019 and December 31, 2018 were primarily comprised of loans to develop residential properties.

Residential mortgage — Loans secured by one- to four-family residential properties, generally with fixed interest rates for periods of fifteen years or less. The loan-to-value ratio at the time of origination is generally 80% or less. Residential mortgage loans with a loan-to-value ratio of more than 80% generally require private mortgage insurance.

Consumer installment — Loans to consumers primarily for the purpose of acquiring automobiles, recreational vehicles and watercraft and comprised primarily of indirect loans purchased from dealers. These loans generally consist of relatively small amounts that are spread across many individual borrowers.

Home equity — Loans and lines of credit whereby consumers utilize equity in their personal residence, generally through a second mortgage, as collateral to secure the loan.

Loans held-for-sale, comprised of fixed-rate residential mortgage and construction loans, were \$23.5 million at March 31, 2019 and \$85.0 million at December 31, 2018. The Corporation sold loans totaling \$195.8 million and \$190.4 million during the three months ended March 31, 2019 and 2018, respectively.

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Commercial, commercial real estate, and real estate construction and land development loans are referred to as the Corporation's commercial loan portfolio, while residential mortgage, consumer installment and home equity loans are referred to as the Corporation's consumer loan portfolio. A summary of the Corporation's loans follows:

(Dollars in thousands)	Originated	Acquired ⁽¹⁾	Total Loans
March 31, 2019			
Commercial loan portfolio:			
Commercial	\$ 3,428,432	\$ 625,640	\$ 4,054,072
Commercial real estate:			
Owner-occupied	1,536,956	513,474	2,050,430
Non-owner occupied	1,961,863	774,457	2,736,320
Vacant land	36,454	11,965	48,419
Total commercial real estate	3,535,273	1,299,896	4,835,169
Real estate construction and land development	592,289	30,301	622,590
Subtotal	7,555,994	1,955,837	9,511,831
Consumer loan portfolio:			
Residential mortgage	2,542,943	1,006,674	3,549,617
Consumer installment	1,440,193	64,248	1,504,441
Home equity	603,144	155,015	758,159
Subtotal	4,586,280	1,225,937	5,812,217
Total loans ⁽²⁾	\$ 12,142,274	\$ 3,181,774	\$ 15,324,048
December 31, 2018			
Commercial loan portfolio:			
Commercial	\$ 3,287,087	\$ 715,481	\$ 4,002,568
Commercial real estate:			
Owner-occupied	1,513,532	546,025	2,059,557
Non-owner occupied	1,966,330	818,690	2,785,020
Vacant land	40,295	27,215	67,510
Total commercial real estate	3,520,157	1,391,930	4,912,087
Real estate construction and land development	566,726	30,486	597,212
Subtotal	7,373,970	2,137,897	9,511,867
Consumer loan portfolio:			
Residential mortgage	2,407,305	1,051,361	3,458,666
Consumer installment	1,451,352	69,722	1,521,074
Home equity	612,129	166,043	778,172
Subtotal	4,470,786	1,287,126	5,757,912
Total loans ⁽²⁾	\$ 11,844,756	\$ 3,425,023	\$ 15,269,779

⁽¹⁾ Loans acquired in the Talmer, Lake Michigan, Monarch, Northwestern and OAK acquisitions were elected to be accounted for under ASC 310-30, Loans and Debt Securities Acquired with Deteriorated Credit Quality (ASC 310-30), by analogy.

⁽²⁾ Reported net of deferred costs totaling \$22.2 million and \$19.7 million at March 31, 2019 and December 31, 2018, respectively.

The Corporation acquired loans at fair value as of the acquisition date, which includes loans acquired in the acquisitions of Talmer Bancorp, Inc. ("Talmer"), Lake Michigan Financial Corporation ("Lake Michigan"), Monarch Community Bancorp, Inc. ("Monarch"), Northwestern Bancorp, Inc. ("Northwestern") and O.A.K. Financial Corporation ("OAK"). Loans acquired in each of these transactions ("Acquired Loans") were elected to be accounted for under ASC 310-30, by analogy, which recognizes the expected shortfall of expected future cash flows, as compared to the contractual amount due, as nonaccretable difference. Any excess of the net present value of expected future cash flows over the acquisition date fair value is recognized as the accretable discount, or accretable yield. The accretable yield is recognized over the expected remaining life of the acquired loans on a pool basis. In the event an acquired loan is renewed or extended, the loan continues to be accounted for as an acquired loan on a pool basis in accordance with ASC 310-30.

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Activity for the accretable yield, which includes contractually due expected cash flows for acquired loans that have been renewed or extended since the date of acquisition and continue to be accounted for in loan pools in accordance with ASC 310-30, follows:

(Dollars in thousands)	Talmer	Lake Michigan	Monarch	North-western	OAK	Total
Three Months Ended March 31, 2019						
Balance at beginning of period	\$ 505,332	\$ 73,132	\$ 17,832	\$ 41,455	\$ 9,574	\$ 647,325
Accretion recognized in interest income	(38,031)	(5,551)	(774)	(3,420)	(1,369)	(49,145)
Net reclassification (to) from nonaccretable difference ⁽¹⁾	2,412	1,414	(91)	609	140	4,484
Balance at end of period	<u>\$ 469,713</u>	<u>\$ 68,995</u>	<u>\$ 16,967</u>	<u>\$ 38,644</u>	<u>\$ 8,345</u>	<u>\$ 602,664</u>
Three Months Ended March 31, 2018						
Balance at beginning of period	\$ 731,353	\$ 95,124	\$ 22,496	\$ 60,814	\$ 17,110	\$ 926,897
Accretion recognized in interest income	(42,640)	(6,758)	(1,156)	(4,904)	(3,103)	(58,561)
Net reclassification (to) from nonaccretable difference ⁽¹⁾	(2,883)	1,790	(186)	(510)	2,151	362
Balance at end of period	<u>\$ 685,830</u>	<u>\$ 90,156</u>	<u>\$ 21,154</u>	<u>\$ 55,400</u>	<u>\$ 16,158</u>	<u>\$ 868,698</u>

⁽¹⁾ The net reclassification results from changes in expected cash flows of the acquired loans which may include increases in the amount of contractual principal and interest expected to be collected due to improvement in credit quality, increases in balances outstanding from advances, renewals, extensions and interest rates; as well as reductions in contractual principal and interest expected to be collected due to credit deterioration, payoffs, and decreases in interest rates.

Credit Quality Monitoring

The Corporation maintains loan policies and credit underwriting standards as part of the process of managing credit risk. These standards include making loans generally only within the Corporation's market areas. The Corporation's lending markets generally consist of communities throughout Michigan, Ohio and Northern Indiana.

The Corporation, through Chemical Bank, has a commercial loan portfolio approval process involving underwriting and individual and group loan approval authorities to consider credit quality and loss exposure at loan origination. The loans in the Corporation's commercial loan portfolio are risk rated at origination based on the grading system set forth below. The approval authority of relationship managers is established based on experience levels, with credit decisions greater than \$1.25 million requiring credit officer approval and credit decisions greater than \$3.0 million requiring group loan authority approval, except for six executive and senior officers who have varying loan limits up to \$8.0 million. With respect to the group loan authorities, Chemical Bank has various regional loan committees that meet weekly to consider loans ranging in amounts of \$3.0 million to \$7.0 million, and a senior loan committee, consisting of certain executive and senior officers, that meets weekly to consider loans ranging in amounts of \$7.0 million up to Chemical Bank's internal lending limit, depending on risk rating and credit action required. Credit actions exceeding Chemical Bank's internal lending limit require the approval of the board of directors of Chemical Bank.

The majority of the Corporation's consumer loan portfolio is comprised of secured loans that are relatively small. The Corporation's consumer loan portfolio has a centralized approval process which utilizes standardized underwriting criteria. The ongoing measurement of credit quality of the consumer loan portfolio is largely done on an exception basis. If payments are made on schedule, as agreed, then no further monitoring is performed. However, if delinquency occurs, the delinquent loans are turned over to the Corporation's collection department for resolution, resulting in repossession or foreclosure if payments are not brought current. Credit quality for the entire consumer loan portfolio is measured by the periodic delinquency rate, nonaccrual amounts and actual losses incurred.

Loans in the commercial loan portfolio tend to be larger and more complex than those in the consumer loan portfolio, and therefore, are subject to more intensive monitoring. All loans in the commercial loan portfolio have an assigned relationship manager, and most borrowers provide periodic financial and operating information that allows the relationship managers to stay abreast of credit quality during the life of the loans. The risk ratings of loans in the commercial loan portfolio are reassessed at least annually, with loans below an acceptable risk rating reassessed more frequently and reviewed by various loan committees within the Corporation at least quarterly.

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The Corporation maintains a centralized independent loan review function that monitors the approval process and ongoing asset quality of the loan portfolio, including the accuracy of loan grades. The Corporation also maintains an independent appraisal review function that participates in the review of all appraisals obtained by the Corporation for loans in the commercial loan portfolio.

Credit Quality Indicators

Commercial Loan Portfolio

Risk categories for the Corporation's commercial loan portfolio establish the credit quality of a borrower by measuring liquidity, debt capacity, coverage and payment behavior as shown in the borrower's financial statements. The risk categories also measure the quality of the borrower's management and the repayment support offered by any guarantors. Risk categories for the Corporation's commercial loan portfolio are described as follows:

Pass: Includes all loans without weaknesses or potential weaknesses identified in the categories of special mention, substandard or doubtful.

Special Mention: Loans with potential credit weakness or credit deficiency, which, if not corrected, pose an unwarranted financial risk that could weaken the loan by adversely impacting the future repayment ability of the borrower.

Substandard: Loans with a well-defined weakness, or weaknesses, such as loans to borrowers who may be experiencing losses from operations or inadequate liquidity of a degree and duration that jeopardizes the orderly repayment of the loan. Substandard loans also are distinguished by the distinct possibility of loss in the future if these weaknesses are not corrected.

Doubtful: Loans with all the characteristics of a loan classified as Substandard, with the added characteristic that credit weaknesses make collection in full highly questionable and improbable. The primary source of repayment is nonexistent and there is doubt as to the value of the secondary source of repayments. A doubtful asset has a high probability of total or substantial loss, but because of pending events that may strengthen the asset, its classification as loss is deferred.

Loss: An asset classified as loss is considered uncollectible and of such little value that the continuance as a bankable asset is not warranted. This classification does not mean that an asset has absolutely no recovery or salvage value, but rather that it is not practical or desirable to defer writing off this basically worthless asset even through partial recovery may occur in the future.

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The following schedule presents the recorded investment of loans in the commercial loan portfolio by credit risk categories at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	Pass	Special Mention	Substandard	Doubtful	Total
March 31, 2019					
Originated Portfolio:					
Commercial	\$ 3,242,753	\$ 87,939	\$ 89,169	\$ 8,571	\$ 3,428,432
Commercial real estate:					
Owner-occupied	1,456,316	31,550	48,927	163	1,536,956
Non-owner occupied	1,897,810	41,195	22,807	51	1,961,863
Vacant land	33,756	98	2,597	3	36,454
Total commercial real estate	3,387,882	72,843	74,331	217	3,535,273
Real estate construction and land development	577,693	10,933	3,663	—	592,289
Subtotal	7,208,328	171,715	167,163	8,788	7,555,994
Acquired Portfolio:					
Commercial	570,164	33,067	22,398	11	625,640
Commercial real estate:					
Owner-occupied	477,378	20,522	15,563	11	513,474
Non-owner occupied	703,703	52,006	18,748	—	774,457
Vacant land	11,764	201	—	—	11,965
Total commercial real estate	1,192,845	72,729	34,311	11	1,299,896
Real estate construction and land development	29,174	59	1,068	—	30,301
Subtotal	1,792,183	105,855	57,777	22	1,955,837
Total	\$ 9,000,511	\$ 277,570	\$ 224,940	\$ 8,810	\$ 9,511,831
December 31, 2018					
Originated Portfolio:					
Commercial	\$ 3,118,894	\$ 87,222	\$ 77,036	\$ 3,935	\$ 3,287,087
Commercial real estate:					
Owner-occupied	1,430,948	32,056	50,286	242	1,513,532
Non-owner occupied	1,901,822	39,416	25,092	—	1,966,330
Vacant land	36,499	—	3,741	55	40,295
Total commercial real estate	3,369,269	71,472	79,119	297	3,520,157
Real estate construction and land development	557,040	6,108	3,578	—	566,726
Subtotal	7,045,203	164,802	159,733	4,232	7,373,970
Acquired Portfolio:					
Commercial	655,883	36,809	22,773	16	715,481
Commercial real estate:					
Owner-occupied	500,072	28,909	17,033	11	546,025
Non-owner occupied	740,900	52,546	25,244	—	818,690
Vacant land	26,978	237	—	—	27,215
Total commercial real estate	1,267,950	81,692	42,277	11	1,391,930
Real estate construction and land development	29,248	97	1,141	—	30,486
Subtotal	1,953,081	118,598	66,191	27	2,137,897
Total	\$ 8,998,284	\$ 283,400	\$ 225,924	\$ 4,259	\$ 9,511,867

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Consumer Loan Portfolio

The Corporation evaluates the credit quality of loans in the consumer loan portfolio based on the performing or nonperforming status of the loan. Loans in the consumer loan portfolio that are performing in accordance with original contractual terms and are less than 90 days past due and accruing interest are considered to be in a performing status, while those that are in nonaccrual status, contractually past due 90 days or more as to interest or principal payments, are considered to be in a nonperforming status. Loans accounted for under ASC 310-30, "Acquired loans", that are not performing in accordance with contractual terms are not reported as nonperforming because these loans are recorded in pools at their net realizable value based on the principal and interest the Corporation expects to collect on these loans.

The following schedule presents the recorded investment of loans in the consumer loan portfolio based on loans in a performing status and loans in a nonperforming status at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	Residential Mortgage	Consumer Installment	Home Equity	Total Consumer
March 31, 2019				
Originated Loans:				
Performing	\$ 2,535,278	\$ 1,439,002	\$ 599,871	\$ 4,574,151
Nonperforming	7,665	1,191	3,273	12,129
Subtotal	<u>2,542,943</u>	<u>1,440,193</u>	<u>603,144</u>	<u>4,586,280</u>
Acquired Loans	1,006,674	64,248	155,015	1,225,937
Total	<u>\$ 3,549,617</u>	<u>\$ 1,504,441</u>	<u>\$ 758,159</u>	<u>\$ 5,812,217</u>
December 31, 2018				
Originated Loans:				
Performing	\$ 2,399,317	\$ 1,450,076	\$ 608,525	\$ 4,457,918
Nonperforming	7,988	1,276	3,604	12,868
Subtotal	<u>2,407,305</u>	<u>1,451,352</u>	<u>612,129</u>	<u>4,470,786</u>
Acquired Loans	1,051,361	69,722	166,043	1,287,126
Total	<u>\$ 3,458,666</u>	<u>\$ 1,521,074</u>	<u>\$ 778,172</u>	<u>\$ 5,757,912</u>

Nonperforming Assets and Past Due Loans

Nonperforming assets consist of loans for which the accrual of interest has been discontinued, other real estate owned acquired through acquisitions, other real estate owned obtained through foreclosure and other repossessed assets.

Loans are considered past due or delinquent when the contractual principal or interest due in accordance with the terms of the loan agreement or any portion thereof remains unpaid after the due date of the scheduled payments. Loans outside of those accounted for under ASC 310-30 are classified as nonaccrual when, in the opinion of management, collection of principal or interest is doubtful. The accrual of interest is discontinued when a loan is placed in nonaccrual status and any payments received reduce the carrying value of the loan. A loan may be placed back on accrual status if all contractual payments have been received and collection of future principal and interest payments are no longer doubtful. Acquired loans that are not performing in accordance with contractual terms are not reported as nonperforming because these loans are recorded in pools at their net realizable value based on the principal and interest the Corporation expects to collect on these loans.

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A summary of nonperforming assets follows:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Nonperforming assets		
Nonaccrual loans:		
Commercial	\$ 33,715	\$ 30,139
Commercial real estate:		
Owner-occupied	18,234	16,056
Non-owner occupied	19,430	23,021
Vacant land	2,153	3,337
Total commercial real estate	39,817	42,414
Real estate construction and land development	3,663	12
Residential mortgage	7,665	7,988
Consumer installment	1,191	1,276
Home equity	3,273	3,604
Total nonaccrual loans	89,324	85,433
Other real estate owned and repossessed assets	9,106	6,256
Total nonperforming assets	\$ 98,430	\$ 91,689

The Corporation's nonaccrual loans at March 31, 2019 and December 31, 2018 included \$26.8 million and \$28.1 million, respectively, of nonaccrual TDRs.

The Corporation had \$4.0 million of residential mortgage loans that were in the process of foreclosure at March 31, 2019, compared to \$4.5 million at December 31, 2018.

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Loan delinquency, excluding acquired loans accounted for under ASC 310-30, was as follows:

(Dollars in thousands)	Loans Past Due and Still Accruing			Nonaccrual Loans	Current	Total loans
	30-89 days past due	90 days or more past due	Total past due			
March 31, 2019						
Originated Portfolio:						
Commercial	\$ 23,700	\$ 544	\$ 24,244	\$ 33,715	\$ 3,370,473	\$ 3,428,432
Commercial real estate:						
Owner-occupied	4,642	—	4,642	18,234	1,514,080	1,536,956
Non-owner occupied	1,975	—	1,975	19,430	1,940,458	1,961,863
Vacant land	926	—	926	2,153	33,375	36,454
Total commercial real estate	7,543	—	7,543	39,817	3,487,913	3,535,273
Real estate construction and land development	1,528	—	1,528	3,663	587,098	592,289
Residential mortgage	2,247	—	2,247	7,665	2,533,031	2,542,943
Consumer installment	3,556	—	3,556	1,191	1,435,446	1,440,193
Home equity	2,495	—	2,495	3,273	597,376	603,144
Total	\$ 41,069	\$ 544	\$ 41,613	\$ 89,324	\$ 12,011,337	\$ 12,142,274
December 31, 2018						
Originated Portfolio:						
Commercial	\$ 16,835	\$ —	\$ 16,835	\$ 30,139	\$ 3,240,113	\$ 3,287,087
Commercial real estate:						
Owner-occupied	4,657	52	4,709	16,056	1,492,767	1,513,532
Non-owner occupied	1,793	887	2,680	23,021	1,940,629	1,966,330
Vacant land	160	—	160	3,337	36,798	40,295
Total commercial real estate	6,610	939	7,549	42,414	3,470,194	3,520,157
Real estate construction and land development	247	—	247	12	566,467	566,726
Residential mortgage	1,688	—	1,688	7,988	2,397,629	2,407,305
Consumer installment	4,731	—	4,731	1,276	1,445,345	1,451,352
Home equity	3,843	488	4,331	3,604	604,194	612,129
Total	\$ 33,954	\$ 1,427	\$ 35,381	\$ 85,433	\$ 11,723,942	\$ 11,844,756

Impaired Loans

A loan is impaired when, based on current information and events, it is probable that the Corporation will be unable to collect all amounts due according to the contractual terms of the loan agreement. Impaired loans include nonperforming loans and all TDRs. Impaired loans are accounted for at the lower of the present value of expected cash flows or the estimated fair value of the collateral. When the present value of expected cash flows or the fair value of the collateral of an impaired loan not accounted for under ASC 310-30 is less than the amount of unpaid principal outstanding on the loan, the recorded principal balance of the loan is reduced to its carrying value through either a specific allowance for loan loss or a partial charge-off of the loan balance.

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The following schedules present impaired loans by classes of loans at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	Recorded investment	Unpaid principal balance	Related valuation allowance
March 31, 2019			
Impaired loans with a valuation allowance:			
Commercial	\$ 27,102	\$ 29,617	\$ 4,971
Commercial real estate:			
Owner-occupied	19,116	21,157	1,619
Non-owner occupied	4,739	5,816	392
Vacant land	1,000	1,205	110
Total commercial real estate	24,855	28,178	2,121
Real estate construction and land development	3,776	3,776	486
Residential mortgage	9,961	9,961	711
Consumer installment	1,051	1,051	103
Home equity	4,011	4,011	246
Subtotal	70,756	76,594	8,638
Impaired loans with no related valuation allowance:			
Commercial	23,748	24,800	—
Commercial real estate:			
Owner-occupied	11,964	12,825	—
Non-owner occupied	21,186	21,698	—
Vacant land	1,648	2,635	—
Total commercial real estate	34,798	37,158	—
Real estate construction and land development	147	147	—
Residential mortgage	7,581	7,581	—
Consumer installment	368	368	—
Home equity	1,806	1,806	—
Subtotal	68,448	71,860	—
Total impaired loans:			
Commercial	50,850	54,417	4,971
Commercial real estate:			
Owner-occupied	31,080	33,982	1,619
Non-owner occupied	25,925	27,514	392
Vacant land	2,648	3,840	110
Total commercial real estate	59,653	65,336	2,121
Real estate construction and land development	3,923	3,923	486
Residential mortgage	17,542	17,542	711
Consumer installment	1,419	1,419	103
Home equity	5,817	5,817	246
Total	\$ 139,204	\$ 148,454	\$ 8,638

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(Dollars in thousands)	Recorded Investment	Unpaid Principal Balance	Related Valuation Allowance
December 31, 2018			
Impaired loans with a valuation allowance:			
Commercial	\$ 20,957	\$ 23,781	\$ 3,546
Commercial real estate:			
Owner-occupied	14,702	16,519	1,359
Non-owner occupied	16,833	17,452	462
Vacant land	1,008	1,208	96
Total commercial real estate	32,543	35,179	1,917
Real estate construction and land development	126	126	11
Residential mortgage	10,867	10,867	816
Consumer installment	1,126	1,126	186
Home equity	4,432	4,432	328
Subtotal	70,051	75,511	6,804
Impaired loans with no related valuation allowance:			
Commercial	25,093	25,934	—
Commercial real estate:			
Owner-occupied	10,971	11,601	—
Non-owner occupied	12,412	13,411	—
Vacant land	2,825	3,911	—
Total commercial real estate	26,208	28,923	—
Real estate construction and land development	111	111	—
Residential mortgage	7,537	7,537	—
Consumer installment	377	377	—
Home equity	1,496	1,496	—
Subtotal	60,822	64,378	—
Total impaired loans:			
Commercial	46,050	49,715	3,546
Commercial real estate:			
Owner-occupied	25,673	28,120	1,359
Non-owner occupied	29,245	30,863	462
Vacant land	3,833	5,119	96
Total commercial real estate	58,751	64,102	1,917
Real estate construction and land development	237	237	11
Residential mortgage	18,404	18,404	816
Consumer installment	1,503	1,503	186
Home equity	5,928	5,928	328
Total	\$ 130,873	\$ 139,889	\$ 6,804

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The following schedule presents additional information regarding impaired loans by classes of loans segregated by those requiring a valuation allowance and those not requiring a valuation allowance for the three months ended March 31, 2019 and 2018, and the respective interest income amounts recognized:

(Dollars in thousands)	Three Months Ended March 31, 2019		Three Months Ended March 31, 2018	
	Average recorded investment	Interest income recognized while on impaired status	Average recorded investment	Interest income recognized while on impaired status
Impaired loans with a valuation allowance:				
Commercial	\$ 21,633	\$ 86	\$ 20,402	\$ 165
Commercial real estate:				
Owner-occupied	17,528	125	14,072	82
Non-owner occupied	13,061	45	3,870	11
Vacant land	1,004	8	3,695	15
Total commercial real estate	31,593	178	21,637	108
Real estate construction and land development	2,618	2	225	2
Residential mortgage	9,999	101	13,604	117
Consumer installment	1,175	2	906	1
Home equity	3,647	22	3,694	17
Subtotal	70,665	391	60,468	410
Impaired loans with no related valuation allowance:				
Commercial	27,154	183	18,126	95
Commercial real estate:				
Owner-occupied	11,571	53	15,369	56
Non-owner occupied	15,469	47	7,158	65
Vacant land	2,434	—	1,769	—
Total commercial real estate	29,474	100	24,296	121
Real estate construction and land development	49	2	107	1
Residential mortgage	7,736	28	6,138	23
Consumer installment	417	—	140	—
Home equity	2,206	7	2,046	7
Subtotal	67,036	320	50,853	247
Total impaired loans:				
Commercial	48,787	269	38,528	260
Commercial real estate:				
Owner-occupied	29,099	178	29,441	138
Non-owner occupied	28,530	92	11,028	76
Vacant land	3,438	8	5,464	15
Total commercial real estate	61,067	278	45,933	229
Real estate construction and land development	2,667	4	332	3
Residential mortgage	17,735	129	19,742	140
Consumer installment	1,592	2	1,046	1
Home equity	5,853	29	5,740	24
Total	\$ 137,701	\$ 711	\$ 111,321	\$ 657

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The difference between an impaired loan's recorded investment and the unpaid principal balance for originated loans represents a partial charge-off resulting from a confirmed loss due to the value of the collateral securing the loan being below the loan balance and management's assessment that full collection of the loan balance is not likely.

Impaired loans included \$49.9 million and \$45.6 million at March 31, 2019 and December 31, 2018, respectively, of accruing TDRs.

Loans Modified Under Troubled Debt Restructurings (TDRs)

The following tables present the recorded investment of loans modified into TDRs during the three months ended March 31, 2019 and 2018 by type of concession granted. In cases where more than one type of concession was granted, the loans were categorized based on the most significant concession.

(Dollars in thousands)	Concession type				Total number of loans	Pre-modification recorded investment	Post-modification recorded investment
	Principal deferral	Principal reduction	Interest rate	Forbearance agreement			
For the three months ended March 31, 2019							
Commercial loan portfolio:							
Commercial	\$ 374	\$ —	\$ 441	\$ 3,541	11	\$ 4,568	\$ 4,356
Commercial real estate:							
Owner-occupied	2,707	103	29	1,360	5	4,213	4,199
Vacant land	22	—	—	—	1	24	22
Total commercial real estate	2,729	103	29	1,360	6	4,237	4,221
Total commercial	3,103	103	470	4,901	17	8,805	8,577
Consumer loan portfolio:							
Residential mortgage	167	75	—	—	2	257	242
Consumer installment	46	26	—	—	11	79	72
Home equity	108	—	—	—	3	111	108
Total consumer	321	101	—	—	16	447	422
Total loans	\$ 3,424	\$ 204	\$ 470	\$ 4,901	33	\$ 9,252	\$ 8,999

(Dollars in thousands)	Concession type				Total number of loans	Pre-modification recorded investment	Post-modification recorded investment
	Principal deferral	Principal reduction	Interest rate	Forbearance agreement			
For the three months ended March 31, 2018							
Commercial loan portfolio:							
Commercial	\$ 903	\$ —	\$ 1,065	\$ 261	18	\$ 2,235	\$ 2,229
Commercial real estate:							
Owner-occupied	—	—	726	482	2	1,208	1,208
Non-owner occupied	68	—	—	—	1	74	68
Total commercial real estate	68	—	726	482	3	1,282	1,276
Total commercial	971	—	1,791	743	21	3,517	3,505
Consumer loan portfolio:							
Residential mortgage	138	—	—	—	4	142	138
Consumer installment	71	23	28	—	16	128	122
Home equity	185	—	28	—	5	253	213
Total consumer	394	23	56	—	25	523	473
Total loans	\$ 1,365	\$ 23	\$ 1,847	\$ 743	46	\$ 4,040	\$ 3,978

The pre-modification and post-modification recorded investment represents amounts as of the date of loan modification. The difference between the pre-modification and post-modification recorded investment of residential mortgage TDRs represents

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impairment recognized by the Corporation through the provision for loan losses computed based on a loan's post-modification present value of expected future cash flows discounted at the loan's original effective interest rate.

The following schedule presents the Corporation's TDRs at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	Accruing TDRs	Nonaccrual TDRs	Total
March 31, 2019			
Commercial loan portfolio	\$ 37,219	\$ 23,801	\$ 61,020
Consumer loan portfolio	12,716	2,999	15,715
Total	<u>\$ 49,935</u>	<u>\$ 26,800</u>	<u>\$ 76,735</u>
December 31, 2018			
Commercial loan portfolio	\$ 32,508	\$ 24,343	\$ 56,851
Consumer loan portfolio	13,072	3,732	16,804
Total	<u>\$ 45,580</u>	<u>\$ 28,075</u>	<u>\$ 73,655</u>

The following schedule includes TDRs for which there was a payment default during the three months ended March 31, 2019 and 2018, whereby the borrower was past due with respect to principal and/or interest for 90 days or more, and the loan became a TDR during the twelve-month period prior to the default:

(Dollars in thousands)	For The Three Months Ended March 31,			
	2019		2018	
	Number of loans	Principal balance	Number of loans	Principal balance
Commercial loan portfolio (commercial)	—	\$ —	1	\$ 82
Consumer loan portfolio (residential mortgage)	—	—	1	3
Total	<u>—</u>	<u>\$ —</u>	<u>2</u>	<u>\$ 85</u>

Commitments to lend additional funds to borrowers whose terms have been modified in TDRs totaled \$4.7 million and \$3.2 million at March 31, 2019 and December 31, 2018, respectively.

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Allowance for Loan Losses

The following schedule presents, by loan portfolio segment, the changes in the allowance for the originated loan portfolio for the three months ended March 31, 2019 and 2018.

(Dollars in thousands)	Commercial Loan Portfolio	Consumer Loan Portfolio	Total
Originated Loan Portfolio			
Changes in allowance for loan losses for the three months ended March 31, 2019:			
Beginning balance	\$ 82,759	\$ 26,805	\$ 109,564
Provision for loan losses	1,864	615	2,479
Charge-offs	(1,434)	(1,771)	(3,205)
Recoveries	821	625	1,446
Ending balance	<u>\$ 84,010</u>	<u>\$ 26,274</u>	<u>\$ 110,284</u>
Changes in allowance for loan losses for the three months ended March 31, 2018:			
Beginning balance	\$ 66,133	\$ 25,754	\$ 91,887
Provision for loan losses	3,400	2,856	6,256
Charge-offs	(2,594)	(2,230)	(4,824)
Recoveries	805	638	1,443
Ending balance	<u>\$ 67,744</u>	<u>\$ 27,018</u>	<u>\$ 94,762</u>

The following schedule presents, by loan portfolio, the changes in the allowance for the acquired loan portfolio.

(Dollars in thousands)	Commercial Loan Portfolio	Consumer Loan Portfolio	Total
Acquired Loan Portfolio			
Changes in allowance for loan losses for the three months ended March 31, 2019:			
Beginning balance	\$ 420	\$ —	\$ 420
Provision for loan losses	(420)	—	(420)
Charge-offs	—	—	—
Recoveries	—	—	—
Ending balance	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

The following schedule presents by loan portfolio segment, details regarding the balance in the allowance and the recorded investment in loans at March 31, 2019 and December 31, 2018 by impairment evaluation method.

(Dollars in thousands)	Commercial Loan Portfolio	Consumer Loan Portfolio	Total
Allowance for loan losses balance at March 31, 2019 attributable to:			
Loans individually evaluated for impairment	\$ 7,578	\$ 1,060	\$ 8,638
Loans collectively evaluated for impairment	76,432	25,214	101,646
Loans accounted for under ASC 310-30	—	—	—
Total	<u>\$ 84,010</u>	<u>\$ 26,274</u>	<u>\$ 110,284</u>
Recorded investment (loan balance) at March 31, 2019:			
Loans individually evaluated for impairment	\$ 114,426	\$ 24,778	\$ 139,204
Loans collectively evaluated for impairment	7,441,568	4,561,502	12,003,070
Loans accounted for under ASC 310-30	1,955,837	1,225,937	3,181,774
Total	<u>\$ 9,511,831</u>	<u>\$ 5,812,217</u>	<u>\$ 15,324,048</u>

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(Dollars in thousands)	Commercial Loan Portfolio	Consumer Loan Portfolio	Total
Allowance for loan losses balance at December 31, 2018 attributable to:			
Loans individually evaluated for impairment	\$ 5,474	\$ 1,330	\$ 6,804
Loans collectively evaluated for impairment	77,285	25,475	102,760
Loans acquired with deteriorated credit quality	420	—	420
Total	\$ 83,179	\$ 26,805	\$ 109,984
Recorded investment (loan balance) at December 31, 2018:			
Loans individually evaluated for impairment	\$ 105,038	\$ 25,835	\$ 130,873
Loans collectively evaluated for impairment	7,268,932	4,444,951	11,713,883
Loans acquired with deteriorated credit quality	2,137,897	1,287,126	3,425,023
Total	\$ 9,511,867	\$ 5,757,912	\$ 15,269,779

Note 6: Other Real Estate Owned and Repossessed Assets

Changes in other real estate owned and repossessed assets, included in interest receivable and other assets on the Consolidated Statements of Financial Position, were as follows:

(Dollars in thousands)	Other real estate owned	Repossessed assets
Balance at January 1, 2019	\$ 5,832	\$ 424
Additions ⁽¹⁾	4,137	740
Net payments received	(164)	—
Disposals	(852)	(717)
Write-downs	(294)	—
Balance at March 31, 2019	\$ 8,659	\$ 447
Balance at January 1, 2018	\$ 8,182	\$ 625
Transfers based on adoption of ASU 2014-09 ⁽²⁾	(189)	—
Additions ⁽¹⁾	1,638	846
Net payments received	(103)	—
Disposals	(1,678)	(951)
Write-downs	(651)	—
Balance at March 31, 2018	\$ 7,199	\$ 520

⁽¹⁾ Includes loans transferred to other real estate owned and other repossessed assets.

⁽²⁾ In accordance with the updates to Topic 606 adopted by the Corporation effective January 1, 2018, \$1.1 million of other real estate owned sold with seller financing were reclassified on the Consolidated Statements of Financial Position to loans and the related \$0.9 million of deferred gains were recognized in income as an adjustment to opening retained earnings. Refer to Note 1, Basis of Presentation and Significant Accounting Policies for further information.

At March 31, 2019, the Corporation had \$1.8 million of other real estate owned and repossessed assets as a result of obtaining physical possession in accordance with ASU No. 2014-04, Reclassification of Residential Real Estate Collateralized Consumer Mortgage Loans Upon Foreclosure. In addition, there were \$4.0 million of consumer mortgage loans secured by residential real estate properties for which formal foreclosure proceedings are in process as of March 31, 2019.

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Income and expenses related to other real estate owned and repossessed assets, recorded as a component of "Other" operating expenses in the Consolidated Statements of Income, were as follows:

(Dollars in thousands)	Other real estate owned	Repossessed assets
For the three months ended March 31, 2019		
Net gain (loss) on sale	\$ 744	\$ (18)
Write-downs	(294)	—
Net operating expenses	(307)	(3)
Total	<u>\$ 143</u>	<u>\$ (21)</u>
For the three months ended March 31, 2018		
Net gain (loss) on sale	\$ 756	\$ (34)
Write-downs	(651)	—
Net operating expenses	(397)	(1)
Total	<u>\$ (292)</u>	<u>\$ (35)</u>

Note 7: Goodwill

Goodwill was \$1.13 billion at both March 31, 2019 and December 31, 2018. The difference between consideration paid for the business and the net fair value of assets and liabilities is recognized as goodwill.

Goodwill is not amortized but is subject to impairment testing annually as of October 31 and on an interim basis if events or changes in circumstances indicate assets might be impaired. Impairment exists when the carrying value of goodwill exceeds its fair value. The Corporation's most recent annual goodwill impairment review performed as of October 31, 2018 did not indicate that an impairment of goodwill existed. The Corporation also determined that no triggering events have occurred that indicated impairment from the most recent valuation date through March 31, 2019 and that the Corporation's goodwill was not impaired at March 31, 2019.

Note 8: Loan Servicing Rights

LSRs are created as a result of selling residential mortgage and commercial real estate loans in the secondary market while retaining the right to service these loans and receive servicing income over the life of the loan, and from acquisitions of other banks that had LSRs. Loans serviced for others are not reported as assets in the Consolidated Statements of Financial Position. The Corporation has elected to account for LSRs under the fair value measurement method.

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LSRs are established and recorded at the estimated fair value by calculating the present value of estimated future net servicing cash flows, taking into consideration actual and expected mortgage loan prepayment rates, discount rates, servicing costs, and other economic factors, which are determined based on current market conditions. The following table represents the activity for LSRs and the related fair value changes:

(Dollars in thousands)	Commercial Real Estate	Mortgage	Total
For the three months ended March 31, 2019			
Fair value, beginning of period	\$ 451	\$ 70,562	\$ 71,013
Additions from loans sold with servicing retained	138	1,995	2,133
Changes in fair value due to:			
Reductions from pay-offs, pay downs and run-off	(30)	(769)	(799)
Changes in estimates of fair value ⁽¹⁾	—	(7,646)	(7,646)
Fair value, end of period	<u>\$ 559</u>	<u>\$ 64,142</u>	<u>\$ 64,701</u>
Principal balance of loans serviced	<u>\$ 45,719</u>	<u>\$ 6,810,887</u>	<u>\$ 6,856,606</u>
For the three months ended March 31, 2018			
Fair value, beginning of period	\$ 427	\$ 63,414	\$ 63,841
Additions from loans sold with servicing retained	43	1,924	1,967
Changes in fair value due to:			
Reductions from pay-offs, pay downs and run-off	(29)	(694)	(723)
Changes in estimates of fair value ⁽¹⁾	—	3,752	3,752
Fair value, end of period	<u>\$ 441</u>	<u>\$ 68,396</u>	<u>\$ 68,837</u>
Principal balance of loans serviced	<u>\$ 42,032</u>	<u>\$ 7,018,307</u>	<u>\$ 7,060,339</u>

⁽¹⁾ Represents estimated LSR value change resulting primarily from market-driven changes in interest rates and prepayments. Included in "Net gain on sale of loans and other mortgage banking revenue" in the Consolidated Statements of Income.

Expected and actual loan prepayment speeds are the most significant factors driving the fair value of loan servicing rights. The following table presents assumptions utilized in determining the fair value of loan servicing rights as of March 31, 2019 and December 31, 2018.

	Mortgage
As of March 31, 2019	
Prepayment speed	6.0 - 29.8%
Weighted average ("WA") discount rate	10.1%
WA cost to service/per year	\$ 66
WA ancillary income/per year	\$ 31
WA float range	2.5%
As of December 31, 2018	
Prepayment speed	0.0 - 26.4%
WA discount rate	10.1%
WA cost to service/per year	\$ 66
WA ancillary income/per year	\$ 31
WA float range	2.5%

The Corporation realized total loan servicing fee income of \$4.2 million and \$4.6 million for the three months ended March 31, 2019 and 2018, respectively, included in "Net gain on sale of loans and other mortgage banking revenue" in the Consolidated Statements of Income.

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Note 9: Core Deposit Intangibles

The Corporation recorded core deposit intangible assets associated with each of its acquisitions and its merger with Talmer. Core deposit intangible assets are amortized on an accelerated basis over their estimated useful lives and have an estimated remaining weighted-average useful life of 6.4 years as of March 31, 2019.

The following table sets forth the carrying amount and accumulated amortization of core deposit intangible assets that are amortizable and arose from business combinations or other acquisitions:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Gross original amount	\$ 56,456	\$ 56,456
Accumulated amortization	29,261	27,900
Net carrying amount	<u>\$ 27,195</u>	<u>\$ 28,556</u>

Amortization expense recognized on core deposit intangible assets was \$1.4 million for both the three months ended March 31, 2019 and 2018.

The estimated future amortization expense on core deposit intangible assets for periods ending after March 31, 2019 is as follows:

(Dollars in thousands)	Estimated amortization expense
2019	4,081
2020	4,851
2021	4,471
2022	4,218
2023	3,591
2024 and thereafter	5,983

Note 10: Derivative Instruments and Balance Sheet Offsetting

In the normal course of business, the Corporation enters into various transactions involving derivative instruments to manage exposure to fluctuations in interest rates and to meet the financing needs of customers (customer-initiated derivatives). These financial instruments involve, to varying degrees, elements of market and credit risk. Market and credit risk are included in the determination of fair value.

Commitments to fund mortgage loans (interest rate locks) to be sold into the secondary market and forward commitments for the future delivery of mortgage loans to third party investors are considered derivatives. It is the Corporation's practice to enter into forward commitments for the future delivery of mortgage loans when interest rate lock commitments are entered into in order to economically hedge the effect of changes in interest rates resulting from its commitments to fund the loans.

The Corporation enters into interest rate derivatives to provide a service to certain qualifying customers to help facilitate their respective risk management strategies. These customer-initiated derivatives are not used for interest rate risk management purposes and primarily consist of interest rate swaps, interest rate caps and floors and foreign exchange contracts. The Corporation generally takes offsetting positions with dealer counterparts to mitigate the inherent risk. Income primarily results from the spread between the customer derivative and the offsetting dealer positions. Gains and losses on customer-related derivatives are included in other noninterest income.

The Corporation utilizes interest rate swaps designated as cash flow hedges for risk management purposes to manage exposure that arises 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. These interest rate swaps designated as cash flow hedges are used to manage

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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 certain variable rate borrowings. The Corporation assesses the effectiveness of each hedging relationship by comparing the changes in cash flows of the derivative instruments with the changes in cash flows of the designated hedged transactions. The changes in fair value of derivatives designated and that qualify as cash flow hedges are recorded in accumulated other comprehensive income (loss) and are subsequently reclassified into earnings in the period that the hedged forecasted transaction affects earnings. For the Corporation's derivative instruments that are designated and qualify as a cash flow hedge, the gain or loss on the derivative instrument, as well as the offsetting loss or gain on the hedged item attributable to the hedged risk are recognized in current earnings in the same line item as the offsetting loss or gain on the related interest rate swap. The Corporation expects the hedges to remain highly effective during the remaining terms of the swaps.

The Corporation additionally has written and purchased option derivatives consisting of instruments to facilitate an equity-linked time deposit product (the "Power Equity CD"). The Power Equity CD is a time deposit that provides the purchaser a guaranteed return of principal at maturity plus a potential equity return (a written option), while the Corporation receives 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 Statements of Financial Position.

The following table presents the notional amount and fair value of the Corporation's derivative instruments held or issued in connection with customer-initiated and mortgage banking activities.

(Dollars in thousands)	March 31, 2019			December 31, 2018		
	Notional Amount (1)	Fair Value		Notional Amount (1)	Fair Value	
		Gross Derivative Assets (2)	Gross Derivative Liabilities (2)		Gross Derivative Assets (2)	Gross Derivative Liabilities (2)
Risk management purposes:						
Derivatives designated as hedging instruments:						
Interest rate swaps	\$ 820,000	\$ 5,322	\$ 7,292	\$ 820,000	\$ 10,148	\$ 3,278
Total risk management purposes	820,000	5,322	7,292	820,000	10,148	3,278
Customer-initiated and mortgage banking derivatives:						
Customer-initiated derivatives	2,635,769	39,398	40,672	2,477,640	26,680	27,664
Forward contracts related to mortgage loans to be delivered for sale	110,328	—	653	127,159	—	719
Interest rate lock commitments	92,684	1,758	—	54,848	1,049	—
Power Equity CD	36,206	881	881	36,771	718	718
Total customer-initiated and mortgage banking derivatives	2,874,987	42,037	42,206	2,696,418	28,447	29,101
Total gross derivatives	\$ 3,694,987	\$ 47,359	\$ 49,498	\$ 3,516,418	\$ 38,595	\$ 32,379

(1) Notional or contract amounts, which represent the extent of involvement in the derivatives market, are used to determine the contractual cash flows required in accordance with the terms of the agreement. These amounts are typically not exchanged, significantly exceed amounts subject to credit or market risk and are not reflected in the Consolidated Statements of Financial Position.

(2) Derivative assets are included within "Interest receivable and other assets" and derivative liabilities are included within "Interest payable and other liabilities" on the Consolidated Statements of Financial Position. Included in the fair value of the derivative assets are credit valuation adjustments for counterparty credit risk totaling \$1.2 million at March 31, 2019 and \$0.9 million at December 31, 2018.

In the normal course of business, the Corporation may decide to settle a forward contract rather than fulfill the contract. Cash received or paid in this settlement manner is included in "Net gain on sale of loans and other mortgage banking revenue" in the Consolidated Statements of Income and is considered a cost of executing a forward contract.

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The following table presents the net gains (losses) related to derivative instruments reflecting the changes in fair value.

(Dollars in thousands)	Location of Gain (Loss)	Three Months Ended March 31,	
		2019	2018
Forward contracts related to mortgage loans to be delivered for sale	Net gain on sale of loans and other mortgage banking revenue	\$ 66	\$ (370)
Interest rate lock commitments	Net gain on sale of loans and other mortgage banking revenue	709	552
Power Equity CD	Other noninterest income	—	—
Customer-initiated derivatives	Other noninterest income	(290)	327
Total gain (loss) recognized in income		\$ 485	\$ 509

The following table presents the net gains (losses) recorded in accumulated other comprehensive income and the Consolidated Statements of Income relating to interest rate swaps designated as cash flow hedges for the three months ended March 31, 2019 and 2018.

(Dollars in thousands)	Amount of gain (loss) recognized in other comprehensive income	Amount of gain (loss) reclassified from other comprehensive income to interest income or expense
Three Months Ended March 31, 2019		
Interest rate swaps designated as cash flow hedges	\$ (7,552)	\$ 1,288
Three Months Ended March 31, 2018		
Interest rate swaps designated as cash flow hedges	7,963	(242)

At March 31, 2019, the Corporation expected \$2.9 million of unrealized gains to be reclassified as an increase to interest expense during the following twelve months.

Methods and assumptions used by the Corporation in estimating the fair value of its forward contracts, interest rate lock commitments and customer-initiated derivatives are discussed in Note 3, Fair Value Measurements.

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Balance Sheet Offsetting

Certain financial instruments, including customer-initiated derivatives and interest rate swaps, may be eligible for offset in the Consolidated Statements of Financial Position and/or subject to master netting arrangements or similar agreements. The Corporation is party to master netting arrangements with its financial institution counterparties; however, the Corporation does not offset assets and liabilities under these arrangements for financial statement presentation purposes based on an accounting policy election. The tables below present information about the Corporation's financial instruments that are eligible for offset.

(Dollars in thousands)	Gross amounts recognized	Gross amounts offset in the statements of financial condition	Net amounts presented in the statements of financial position	Gross amounts not offset in the statements of financial position		Net Amount
				Financial instruments	Collateral (received)/posted	
March 31, 2019						
Offsetting derivative assets						
Derivative assets ⁽¹⁾	\$ 44,672	\$ —	\$ 44,672	\$ —	\$ (39,368)	\$ 5,304
Offsetting derivative liabilities						
Derivative liabilities ⁽¹⁾	47,810	—	47,810	—	170	47,640
December 31, 2018						
Offsetting derivative assets						
Derivative assets ⁽¹⁾	\$ 36,791	\$ —	\$ 36,791	\$ —	\$ (16,120)	\$ 20,671
Offsetting derivative liabilities						
Derivative liabilities	30,822	—	30,822	—	430	30,392

⁽¹⁾ Amount does not include participated interest rate swaps, forward contracts, interest rate lock commitments and power equity CDs as these instruments are not subject to master netting or similar arrangements.

Note 11: Leases

On January 1, 2019, the Corporation adopted ASU 2016-02-Leases (Topic 842) and all subsequent ASUs that modified Topic 842. Refer to Note 1, Basis of Presentation and Significant Accounting Policies, for further details regarding the adoption.

Lessee Leases

Operating leases in which the Corporation is the lessee are recorded as operating lease right-of-use ("ROU") assets and operating lease liabilities, included in "Interest receivable and other assets" and "Interest payable and other liabilities," respectively, in the Consolidated Statements of Financial Position.

Operating lease ROU assets and operating lease liabilities are recognized at lease commencement based on the present value of the future minimum lease payments over the lease term. The Corporation has lease agreements with lease and non-lease components, which are accounted for separately. Where an implicit rate is not provided or determinable in the lease, the Corporation uses its incremental borrowing rate as a discount rate, on a collateralized basis, over a similar term. The lease term considers options to extend or terminate the lease when it is reasonably certain that the Corporation will exercise that option.

The Corporation's leases relate primarily to real estate property consisting of branches, office space, storage and operation centers with remaining lease terms of generally 1 to 16 years. Certain lease arrangements contain extension options which typically range from 3 to 5 years. During the three months ended March 31, 2019, the Corporation obtained \$5.6 million of ROU assets in exchange for new lease liabilities. As of March 31, 2019, operating lease ROU assets and liabilities were \$41.2 million and \$42.2 million, respectively.

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The following table presents balances and assumptions utilized in determining the right to use asset and lease liability for operating leases as of March 31, 2019:

	March 31, 2019
(Dollars in thousands)	
Weighted-average remaining lease terms (in years)	8.1
Weighted-average discount rate	3.1%

The components of net operating lease cost were as follows:

	Three Months Ended March 31, 2019
(Dollars in thousands)	
Operating lease cost	\$ 1,914
Variable lease cost ⁽¹⁾	206
Sublease income	(55)
Total lease cost⁽²⁾	\$ 2,065

⁽¹⁾ Represents non-lease components such as common area maintenance, taxes, insurance and utilities.

⁽²⁾ Included within "Occupancy" expense in the Consolidated Statements of Income.

Maturities of operating lease liability due under these lease arrangements as of March 31, 2019 are as follows:

	Operating Leases
(Dollars in thousands)	
Remainder of 2019	\$ 5,905
2020	7,132
2021	6,744
2022	6,071
2023	5,017
Thereafter	17,041
Total	\$ 47,910
Less: Present value discount	5,744
Lease liability	\$ 42,166

As of March 31, 2019, the Corporation has approximately \$15.8 million in additional operating leases for real property that have not yet commenced and are excluded from the lessee maturity table above.

At December 31, 2018, operating lease commitments under lessee arrangements were \$7.3 million, \$6.2 million, \$5.1 million, \$4.8 million and \$4.4 million for 2019 through 2023, respectively, and \$12.1 million in aggregate for all years thereafter. These amounts include variable lease payments under leases that have not yet commenced, which are excluded from the lessee maturity analysis presented in the table above.

Lessors Leases

The Corporation is the lessor in certain arrangements, primarily for the use of real estate property. Lease agreements may include options to renew, but do not offer the right to purchase the underlying asset at the end of the lease term. Of the \$122.5 million of net premises and equipment, \$15.3 million represents underlying assets under operating leases.

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The components of operating lease income were as follows:

(Dollars in thousands)	Three Months Ended March 31, 2019
Total lease income⁽¹⁾	\$ 194

⁽¹⁾ Included within "Other" noninterest income in the Consolidated Statements of Income.

Note 12: Investments in Qualified Affordable Housing Projects, Federal Historic Projects and New Market Tax Credits

The Corporation invests in qualified affordable housing projects, federal historic projects, and new market projects for the purpose of community reinvestment and obtaining tax credits. Return on the Corporation's investment in these projects comes in the form of the tax credits and tax losses that pass through to the Corporation. The carrying value of the investments is reflected in "Interest receivable and other assets" on the Consolidated Statements of Financial Position. The Corporation utilizes the proportional amortization method to account for investments in qualified affordable housing projects and the equity method to account for investments in other tax credit projects.

Under the proportional amortization method, the Corporation amortizes the initial cost of the investment in proportion to the tax credits and other tax benefits. The Corporation recognized additional income tax expense attributable to the amortization of investments in qualified affordable housing projects of \$1.7 million and \$1.0 million during the three months ended March 31, 2019 and 2018, respectively. The Corporation's remaining investment in qualified affordable housing projects accounted for under the proportional amortization method totaled \$83.2 million at March 31, 2019 and \$84.9 million at December 31, 2018.

Under the equity method, the Corporation's share of the earnings or losses is included in "Other" operating expenses on the Consolidated Statements of Income. The Corporation's remaining investment in federal historic tax projects accounted for under the equity method totaled \$13.2 million and \$13.3 million at March 31, 2019 and December 31, 2018, respectively.

The Corporation's unfunded equity contributions relating to investments in qualified affordable housing projects, federal historic tax projects and new market projects is recorded in "Interest payable and other liabilities" on the Consolidated Statements of Financial Position. The Corporation's remaining unfunded equity contributions totaled \$67.5 million and \$72.0 million at March 31, 2019 and December 31, 2018, respectively.

Management analyzes these investments for potential impairment when events or changes in circumstances indicate that it is more-likely-than-not that the carrying amount of the investment will not be realized. An impairment loss is measured as the amount by which the carrying amount of an investment exceeds its fair value. During the three months ended March 31, 2019 there were no impairment losses recognized. During the three months ended March 31, 2018 federal historic tax credits resulted in an income tax benefit of \$1.5 million, partially offset by impairment expense of \$1.6 million, representing \$1.3 million net of tax, recorded in "Other" operating expense.

The Corporation consolidates variable interest entities ("VIEs") in which it is the primary beneficiary. In general, a VIE is an entity that either (i) has an insufficient amount of equity to carry out its principal activities without additional subordinated financial support, (ii) has a group of equity owners that are unable to make significant decisions about its activities or (iii) has a group of equity owners that do not have the obligation to absorb losses or the right to receive returns as generated by its operations. If any of these characteristics are present, the entity is subject to a variable interest consolidation model, and consolidation is based on variable interests, not on ownership of the entity's outstanding voting stock. Variable interests are defined as contractual, ownership, or other monetary interests in an entity that change with fluctuations in the entity's net asset value. The primary beneficiary consolidates the VIE. The primary beneficiary is defined as the enterprise that has the power to direct the activities and absorb losses or the right to receive benefits. The Corporation is a significant limited partner in the qualified affordable housing, federal historic and new market projects it has invested in. These projects meet the definition of VIEs. However, the Corporation is not the primary beneficiary of any of the VIEs in which it holds a limited partnership interest; therefore, the VIEs are not consolidated in the Consolidated Financial Statements.

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Note 13: Commitments, Contingencies and Guarantees

Commitments

In the normal course of business, the Corporation offers a variety of financial instruments containing credit risk that are not required to be reflected in the Consolidated Statements of Financial Position. These financial instruments include outstanding commitments to extend credit, approved but undisbursed loans (undisbursed loan commitments), credit lines, commercial letters of credit and standby letters of credit. The Corporation has risk management policies to identify, monitor and limit exposure to credit risk. To mitigate credit risk for these financial guarantees, the Corporation generally determines the need for specific covenant, guarantee and collateral requirements on a case-by-case basis, depending on the nature of the financial instrument and the customer's creditworthiness.

At March 31, 2019 and December 31, 2018, the Corporation had \$125.7 million and \$119.0 million, respectively, of outstanding financial and performance standby letters of credit. The majority of these standby letters of credit are collateralized. The Corporation determined that there were no potential losses from standby letters of credit at March 31, 2019 and December 31, 2018.

Commitments to extend credit are agreements to lend to a customer provided there is no violation of any condition established in the commitment. Commitments generally have fixed expiration dates or other termination clauses and may not require payment of a fee. Since many commitments expire without being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. The Corporation evaluates each customer's creditworthiness on an individual basis. The amount of collateral obtained, if deemed necessary by the Corporation upon extension of credit, is based on management's credit evaluation of the counterparty. The collateral held varies, but may include securities, real estate, accounts receivable, inventory, plant or equipment. Unfunded commitments under commercial lines of credit, revolving credit lines and overdraft protection agreements are included in commitments to extend credit. These lines of credit are generally not collateralized, usually do not contain a specified maturity date and may be drawn upon only to the total extent to which the Corporation is committed. At March 31, 2019 and December 31, 2018, the Corporation had \$3.54 billion and \$3.55 billion, respectively, of commitments to extend credit. The Corporation had undisbursed loan commitments of \$512.7 million and \$493.3 million at March 31, 2019 and December 31, 2018, respectively. Undisbursed loan commitments are not included in loans on the Consolidated Statements of Financial Position. The majority of undisbursed loan commitments will be funded and convert to a portfolio loan within a one year period.

The allowance for credit losses on lending-related commitments included \$1.7 million at both March 31, 2019 and December 31, 2018, for probable credit losses inherent in the Corporation's unused commitments and was recorded in "Interest payable and other liabilities" in the Consolidated Statements of Financial Position.

Contingencies and Guarantees

The Corporation has originated and sold certain loans, and additionally acquired the potential liability for those historical originated and sold loans by merged or acquired entities, for which the buyer has limited recourse to us in the event the loans do not perform as specified in the agreements. These loans had an outstanding balance of \$11.3 million and \$11.6 million at March 31, 2019 and December 31, 2018, respectively. The maximum potential amount of undiscounted future payments that the Corporation could be required to make in the event of nonperformance by the borrower totaled \$11.1 million and \$11.4 million at March 31, 2019 and December 31, 2018, respectively. In the event of nonperformance, the Corporation has rights to the underlying collateral securing the loans. At both March 31, 2019 and December 31, 2018, the Corporation had recorded a liability of \$0.1 million, in connection with the recourse agreements, recorded in "Interest payable and other liabilities" in the Consolidated Statements of Financial Position.

In addition, the Corporation acquired certain SBA guaranteed notes in which the guaranteed portion had been sold to a third party investor prior to the Corporation's acquisition. In the event these loans default and the SBA guaranty is no longer intact (i.e. an issue found to have occurred during the origination or the liquidation of the loans) the Corporation would be liable to make the loan whole to the third party investor. The maximum potential amount of undiscounted future payments that the Corporation could be required to make in the event of default by the borrower totaled \$18.4 million and \$19.1 million at March 31, 2019 and December 31, 2018, respectively. In the event of default, the Corporation has rights to the underlying collateral securing the loans. At both March 31, 2019 and December 31, 2018, the Corporation had recorded a liability of \$1.2 million.

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Representations and Warranties

In connection with the Corporation's mortgage banking loan sales, and the historical sales of merged or acquired entities, the Corporation makes certain representations and warranties that the loans meet certain criteria, such as collateral type and underwriting standards. The Corporation may be required to repurchase individual loans and/or indemnify the purchaser against losses if the loan fails to meet established criteria. At March 31, 2019 and December 31, 2018, the liability recorded in connection with these representations and warranties totaled \$4.0 million and \$4.1 million, respectively.

A summary of the reserve for representations and warranties of the Corporation is as follows:

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Reserve balance at beginning of period	\$ 4,084	\$ 5,349
Reserve reduction	(101)	(244)
Charge-offs	—	—
Ending reserve balance	\$ 3,983	\$ 5,105
(Dollars in thousands)	March 31, 2019	December 31, 2018
Reserve balance		
Liability for specific claims	\$ 431	\$ 398
General allowance	3,552	3,686
Total reserve balance	\$ 3,983	\$ 4,084

Related Party Letter Agreement

On March 27, 2019, Chemical Bank and 28 Associates LLC, a Michigan limited liability company, entered into a letter agreement regarding the development and lease of a new headquarters building for Chemical Bank in Detroit, Michigan. 28 Associates is 50% owned by children of Chemical's Chairman, Gary Torgow, through their ownership of a member of 28 Associates, Park Elizabeth Associates LLC. The approximate aggregate value of the interest of Mr. Torgow's children in the development and lease transaction is equal to approximately 50% of the amounts payable to 28 Associates. The letter agreement provides for the parties to enter into a development and lease transaction to include a triple net lease by Chemical of a proposed office building 28 Associates, which owns the property, will remediate and improve the property and build the office building. Chemical Bank and 28 Associates have agreed to cooperate to seek critical tax incentives from governmental agencies, which will be for the benefit of the developer and Chemical Bank. Conditions to closing include receipt of tax incentives as well as guaranteed construction cost agreements on terms acceptable to the landlord and the tenant. If the parties do not enter into a final lease agreement with respect to the property, or if the parties do not receive the contemplated tax incentives by September 30, 2019, Chemical Bank has agreed to pay 28 Associates a break-up fee of \$6 million, as 28 Associates has held the property off of the market since the third quarter of 2018, commenced the termination of tenants in an existing building on the site and incurred expenses associated with site preparation and negotiations as Chemical Bank has completed its due diligence.

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Note 14: Borrowings and Other Short-Term Liabilities

A summary of the Corporation's short- and long-term borrowings, and other short-term liabilities follows:

(Dollars in thousands)	March 31, 2019		December 31, 2018	
	Amount	Weighted Average Rate (1)	Amount	Weighted Average Rate (1)
Short-term borrowings:				
FHLB advances: 2.55% - 2.59% fixed-rate notes	\$ 1,740,000	2.57%	\$ 2,035,000	2.47%
Long-term borrowings:				
FHLB advances: 1.00% - 2.72% fixed-rate notes due 2019 to 2025 ⁽²⁾	410,087	2.00	410,102	2.00
Subordinated debt obligations: floating-rate based on three-month LIBOR plus 1.45% - 2.85% due 2034 to 2035 ⁽³⁾	11,610	4.90	11,572	4.85
Subordinated debt obligations: floating-rate based on three-month LIBOR plus 3.25% due in 2032 ⁽⁴⁾	4,338	6.05	4,328	5.65
Total long-term borrowings	426,035	2.12	426,002	2.11
Total borrowings	\$ 2,166,035	2.48%	\$ 2,461,002	2.41%
Other short-term liabilities:				
Collateralized customer deposits	\$ 413,199	0.59%	\$ 382,687	0.75%

(1) Weighted average rate presented is the contractual rate which excludes premiums and discounts related to purchase accounting.

(2) The March 31, 2019 balances include advances payable of \$410.0 million and purchase accounting premiums of \$0.1 million. The December 31, 2018 balance includes advances payable of \$410.0 million and purchase accounting premiums of \$0.1 million.

(3) The March 31, 2019 balance includes advances payable of \$15.0 million and purchase accounting discounts of \$3.4 million. The December 31, 2018 balance includes advances payable of \$15.0 million and purchase accounting discounts of \$3.4 million.

(4) The March 31, 2019 balance includes advances payable of \$5.0 million and purchase accounting discounts of \$0.7 million. The December 31, 2018 balance includes advances payable of \$5.0 million and purchase accounting discounts of \$0.7 million.

Chemical Bank is a member of the FHLB, which provides short- and long-term funding collateralized by mortgage related assets to its members. Each advance is payable at its maturity date, with a prepayment penalty for fixed-rate advances. The Corporation's FHLB advances, including both short-term and long-term, require monthly interest payments and are collateralized by commercial and residential mortgage loans totaling \$7.50 billion as of March 31, 2019. The Corporation's additional borrowing availability through the FHLB, subject to the FHLB's credit requirements and policies and based on the amount of FHLB stock owned by the Corporation, was \$955.6 million at March 31, 2019.

Note 15: Revenue from Contracts with Customers

The Corporation earns a variety of revenue including interest and fees from customers as well as revenues from non-customers. Certain sources of revenue are recognized within interest income and are outside of the scope of ASC Topic 606, Revenue from Contracts with Customers ("ASC 606"). Other sources of revenue fall within the scope of ASC 606 and are mostly recognized within "Noninterest Income" in the Consolidated Statements of Income.

The Corporation recognizes revenue when the performance obligations related to the transfer of goods or services under the terms of a contract are satisfied. Some obligations are satisfied at a point in time while others are satisfied over a period of time. Revenue is recognized as the amount of consideration expected to be received in exchange for transferring goods or services to a customer and is segregated based on the nature of product and services offered as part of contractual arrangements. Revenue within the scope of ASC 606 are discussed below.

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- *Service charges and fees on deposit accounts* include fees and other charges the Corporation receives to provide various services, including but not limited to, maintaining an account with a customer, providing overdraft services, wire transfers, transferring funds, and accepting and executing stop-payment orders. The consideration includes both fixed (e.g., account maintenance fees) and transaction fees (i.e., wire-transfer fee). Fixed fees are recognized over the period of time the service is provided while transaction fees are recognized when a specific service is rendered to the customer.
- *Wealth management revenue* includes fee income generated from personal and institutional customers. The Corporation also provides investment management services. Services are rendered over a period of time, over which revenue is recognized. Wealth management revenue also includes commissions that are earned for placing a brokerage transaction for execution, such as stocks or other investments. Revenue is recognized once the transaction is completed and the Corporation is entitled to receive consideration.
- *Other charges and fees for customer services* includes service charges on deposit accounts and other fees including account analysis fees, monthly service fees, check orders, ATM fees and other service charges. The Corporation's performance obligation for account analysis fees and monthly service fees is generally satisfied, and therefore, revenue is recognized over the period in which the service is provided. Check orders and other deposit account related fees are largely transactional based, and therefore, the performance obligation is satisfied and related revenue recognized, at a point in time.
- *Other noninterest expense* includes net gain or loss on sales of other real estate and repossessed assets. Revenue is recognized at the time the sale is complete and the Corporation is entitled to receive consideration, including sales that are seller financed as receipt of all payment is expected.

The following table presents total noninterest income segregated between contracts with customers within the scope of ASC 606 and those within the scope of other GAAP Topics. The following additionally presents revenues from customers and non-customers that are included within noninterest income and expense.

(Dollars in thousands)	Three Months Ended	
	March 31, 2019	March 31, 2018
Noninterest income		
Service charges and fees on deposit accounts	\$ 2,997	4,463
Wealth management revenue	1,300	784
Other charges and fees for customer services	1,217	2,398
Noninterest income from contracts with customers within the scope of ASC 606	5,514	7,645
Noninterest income within the scope of other GAAP topics	19,343	32,909
Total noninterest income	\$ 24,857	\$ 40,554
Noninterest expense		
Other	\$ (726)	\$ (722)

Contract Balances

A contract asset balance occurs when an entity performs a service for a customer before the customer pays consideration (resulting in a contract receivable) or before payment is due (resulting in a contract asset). A contract liability balance is an entity's obligation to transfer a service to a customer for which the entity has already received payment (or payment is due) from the customer. The Corporation's noninterest income streams are largely based on transactional activity, or standard month-end revenue accruals such as asset management fees based on month-end market values. Consideration is most often received immediately or shortly after the Corporation satisfies its performance obligation and revenue is recognized. The Corporation does not typically enter into long-term revenue contracts with customers, and therefore, does not experience significant contract balances. As of March 31, 2019 and December 31, 2018, the Corporation did not have a material amount of contract balances.

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Note 16: Share-Based Compensation

The Corporation maintains share-based compensation plans under which it periodically grants share-based awards for a fixed number of shares to certain officers of the Corporation. The fair value of share-based awards is recognized as compensation expense over the requisite service or performance period. During the three months ended March 31, 2019 and 2018, share-based compensation expense related to share-based awards totaled \$2.4 million and \$1.7 million, respectively. The excess tax benefit realized from share-based compensation transactions during the three months ended March 31, 2019 and 2018 was a benefit of \$0.3 million and \$1.4 million, respectively.

During the three months ended March 31, 2019, the Corporation granted 368,197 restricted stock units to certain officers of the Corporation.

On April 26, 2017, the shareholders of the Corporation approved the Stock Incentive Plan of 2017, which provides for 1,750,000 shares of the Corporation's common stock to be made available for future equity-based awards and canceled the amount of shares available for future grant under prior share-based compensation plans. At March 31, 2019, there were 869,549 shares of common stock available for future grants under the Stock Incentive Plan of 2017.

Stock Options

The Corporation issues stock options to certain officers from time to time. The exercise price on stock options equals the current market price of the Corporation's common stock on the date of grant and stock options expire ten years from the date of grant. Stock options granted after 2012 vest ratably over a five-year period. Stock options granted prior to 2013 generally vest ratably over a three-year period. Stock options granted prior to 2016 were fully vested upon the merger with Talmer. Stock options assumed by the Corporation in the merger with Talmer were fully vested prior to assumption.

A summary of activity for the Corporation's stock options as of and for the three months ended March 31, 2019 is presented below:

	Non-Vested Stock Options Outstanding			Stock Options Outstanding	
	Number of Options	Weighted- Average Exercise Price Per Share	Weighted- Average Grant Date Fair Value Per Share	Number of Options	Weighted- Average Exercise Price Per Share
Outstanding at December 31, 2018	221,658	\$ 38.37	\$ 7.16	777,443	\$ 31.42
Exercised	—	—	—	(89,443)	29.77
Vested	(65,104)	37.24	6.98	—	—
Forfeited/expired	(22,481)	37.37	7.00	(27,095)	36.89
Outstanding at March 31, 2019	<u>134,073</u>	<u>\$ 39.08</u>	<u>\$ 7.28</u>	<u>660,905</u>	<u>\$ 31.42</u>
Exercisable/vested at March 31, 2019				<u>526,832</u>	<u>\$ 29.47</u>

The weighted-average remaining contractual terms were 5.5 years for all outstanding stock options and 5.0 years for exercisable stock options at March 31, 2019. The intrinsic value of all outstanding in-the-money stock options and exercisable in-the-money stock options was \$7.6 million and \$6.9 million, respectively, at March 31, 2019. The aggregate intrinsic values of outstanding and exercisable options at March 31, 2019 were calculated based on the closing market price of the Corporation's common stock on March 31, 2019 of \$41.16 per share less the exercise price. Options with intrinsic values less than zero, or "out-of-the-money" options, are not included in the aggregate intrinsic value reported. The total intrinsic value of stock options as of March 31, 2018 and December 31, 2018 was \$21.5 million and \$26.6 million, respectively.

Total cash received from options exercises during the three months ended March 31, 2019 and 2018 was \$0.3 million and \$0.9 million, respectively.

At March 31, 2019, unrecognized compensation expense related to stock options totaled \$1.0 million and is expected to be recognized over a remaining weighted average period of 2.3 years.

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Restricted Stock Units

The Corporation grants Performance-Based Restricted Stock Units ("PRsUs") and Time-Based Restricted Stock Units ("TRsUs") (collectively referred to as "RSUs") to certain officers from time to time. The PRsUs vest based on the Corporation achieving certain performance target levels and the grantee completing the requisite service period. The PRsUs are eligible to vest from 0.5x to 1.5x the number of units originally granted depending on which, if any, of the performance target levels are met. However, if the minimum performance target levels are not achieved, no shares will become vested or be issued for that respective year's PRsUs. The TRsUs vest upon satisfaction of a service condition. Upon achievement of the performance target level and/or satisfaction of a service condition, as applicable, the RSUs are converted into shares of the Corporation's common stock on a one-to-one basis. Compensation expense related to RSUs is recognized over the expected requisite performance or service period, as applicable.

A summary of the activity for RSUs as of and for the three months ended March 31, 2019 is presented below:

	Number of Units	Weighted-average grant date fair value per unit
Outstanding at December 31, 2018	576,490	\$ 49.35
Granted	368,197	45.03
Converted into shares of common stock	(118,481)	38.27
Forfeited/expired	(12,832)	50.35
Outstanding at March 31, 2019	813,374	\$ 48.99

At March 31, 2019, unrecognized compensation expense related to RSUs totaled \$30.3 million and is expected to be recognized over a remaining weighted average period of 3.6 years.

Restricted Stock Awards

The Corporation assumed restricted stock awards in the merger with Talmer that vested upon completion of service requirements. The fair value of these awards is equal to the market price of the Corporation's common stock at the date the awards were assumed with the portion of the fair value related to post-combination service. The Corporation recognizes stock-based compensation expense over the vesting period, using the straight-lined method, based upon the number of shares of restricted stock ultimately expected to vest.

The following table provides information regarding restricted stock awards. All restricted stock awards fully vested during the three months ended March 31, 2019.

Nonvested restricted stock awards	Number of Awards	Weighted-average acquisition-date fair value
Nonvested at January 1, 2019	40,852	\$ 46.23
Vested	(40,852)	46.23
Nonvested at March 31, 2019	—	\$ —

Note 17: Retirement Plans

The Corporation's retirement plans include a qualified defined benefit pension plan, a nonqualified pension plan, a nonqualified postretirement benefit plan, a 401(k) savings plan, and a multi-employer defined benefit plan.

Qualified Defined Benefit Pension Plan

The Chemical Financial Corporation Employees' Pension Plan (the "Pension Plan") is a qualified defined-benefit, noncontributory pension plan, which provides for postretirement pension benefits for certain salaried employees of the Corporation and its subsidiary, Chemical Bank. Benefits under the Pension Plan were partially frozen effective June 30, 2006. Under the partial freeze of the Pension Plan, benefits for employees with less than 15 years of service or whose combined age plus years of service

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were less than 65 at June 30, 2006, were based on years of vested service at June 30, 2006 and generally the average of the employee's salary for the five years ended June 30, 2006. In addition, no employee hired after January 1, 2006 was eligible to participate in the Pension Plan. Effective September 30, 2017, the Pension and Compensation Committee approved an amendment to the Pension Plan to cease accruing additional benefits under the existing pension benefit formula after the effective date and all accrued benefits were frozen. Retirement benefits under the Pension Plan are based on years of vested service at September 30, 2017, up to a maximum of thirty years, and the employee's average annual pay for the five highest consecutive years during the ten years preceding September 30, 2017, except for employees whose benefits were previously frozen during 2006.

Pension Plan benefits are the present value of estimated future periodic payments that are attributable to services rendered by the employees to the valuation date. Benefits include the benefits expected to be paid to (a) retired or terminated employees or their beneficiaries and (b) present employees or their beneficiaries. A discount rate of 4.32% was utilized for the projected benefit obligation as of March 31, 2019. The Pension Plan is fully funded as of March 31, 2019.

Nonqualified Pension Plan

The Corporation has a supplemental defined benefit nonqualified pension plan, the Chemical Financial Corporation Supplemental Pension Plan ("SERP"). The Corporation established the SERP to provide payments to certain executive officers of the Corporation, as determined by the Compensation and Pension Committee. The Internal Revenue Code limits both the amount of eligible compensation for benefit calculation purposes and the amount of annual benefits that may be paid from a tax qualified retirement plan. The SERP was designed to provide benefits to executive officers of the Corporation that would have been entitled, calculated under the provisions of the Pension Plan, as if the limits imposed by the Internal Revenue Code did not apply. The SERP is an unfunded plan and, therefore, has no assets.

Effective September 30, 2017, the Pension and Compensation Committee approved a curtailment to the SERP due to the retirement of the final remaining participant in the SERP. As of March 31, 2019, a \$0.3 million liability included in other liabilities was recorded in the Consolidated Statements of Financial Position related to a former participant of the SERP. As of March 31, 2019, the SERP had no active participants.

Nonqualified Postretirement Benefit Plan

The Corporation has a nonqualified postretirement benefit plan ("Postretirement Plan") that provides medical and dental benefits, upon retirement, to a limited number of active and retired employees. The majority of the retirees are required to make contributions toward the cost of their benefits based on their years of credited service and age at retirement. Beginning January 1, 2012, the Corporation amended the Postretirement Plan to extend coverage to employees who were at least age 50 as of January 1, 2012. These employees must also retire at age 60 or older, have at least twenty-five years of service with the Corporation and be participating in the active employee group health insurance plan in order to be eligible to participate in the Corporations' Postretirement Plan. Eligible employees may also cover their spouse until age 65 as long as the spouse is not offered health insurance coverage through his or her employer. Employees and their spouses eligible to participate in the Postretirement Plan will be required to make contributions toward the cost of their benefits upon retirement, with the contribution levels designed to cover the projected overall cost of these benefits over the long-term. Retiree contributions are generally adjusted annually. The accounting for these postretirement benefits anticipates changes in future cost-sharing features such as retiree contributions, deductibles, copayments and coinsurance. The Corporation reserves the right to amend, modify or terminate these benefits at any time.

Chemical Financial Corporation
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The components of net periodic benefit cost for the Corporation's qualified and nonqualified pension plans and nonqualified postretirement benefit plan are as follows:

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Defined Benefit Pension Plans		
Interest cost	\$ 1,172	\$ 1,092
Expected return on plan assets	(2,190)	(2,220)
Amortization of unrecognized net loss	141	178
Net periodic benefit cost (income) ⁽¹⁾	\$ (877)	\$ (950)
Postretirement Benefit Plan		
Service cost ⁽²⁾	\$ —	\$ 1
Interest cost	21	20
Amortization of unrecognized net gain	(45)	(36)
Net periodic benefit cost (income) ⁽¹⁾	\$ (24)	\$ (15)

⁽¹⁾ Net periodic benefit cost (income), excluding service cost is included "Other" operating expenses on the Consolidated Statements of Income.

⁽²⁾ Service cost is included in "Salaries, wages and employee benefits expense" on the Consolidated Statements of Income.

401(k) Savings Plan

The Corporation's 401(k) Savings Plan is available to all employees and provides employees with tax deferred salary deductions and alternative investment options. Effective January 1, 2018, the Corporation provides a safe harbor matching contribution of the participants elective deferrals up to a maximum of 6.0% of eligible compensation up to the maximum amount allowed under the Internal Revenue Code. The Corporation's match under the 401(k) Savings Plan was \$2.4 million and \$2.8 million for the three months ended March 31, 2019 and 2018, respectively.

The 401(k) Savings Plan provides employees with the option to invest in the Corporation's common stock.

Note 18: Regulatory Capital and Reserve Requirements

Federal and state banking regulations place certain restrictions on the transfer of assets, in the form of dividends, loans, or advances, from Chemical Bank to the Corporation. As of March 31, 2019, substantially all of the assets of Chemical Bank were restricted from transfer to the Corporation in the form of loans or advances. Dividends from Chemical Bank are the principal source of funds for the Corporation. In addition to the statutory limits, the Corporation considers the overall financial and capital position of Chemical Bank prior to making any cash dividend decisions.

The Corporation and Chemical Bank are subject to various regulatory capital requirements administered by federal banking agencies. Under these capital requirements, Chemical Bank must meet specific capital guidelines that involve quantitative measures of assets and certain off-balance sheet items as calculated under regulatory accounting practices. In addition, capital amounts and classifications are subject to qualitative judgments by regulators. Failure to meet minimum capital requirements can initiate certain mandatory and possibly additional discretionary actions by regulators that, if undertaken, could have a direct material effect on the Consolidated Financial Statements. Management believes as of March 31, 2019, the Corporation and Chemical Bank met all capital adequacy requirements to which they are subject.

Quantitative measures established by regulation to ensure capital adequacy require minimum ratios of Tier 1 capital to average assets (Leverage Ratio) and Common Equity Tier 1, Tier 1 and Total capital to risk-weighted assets. These capital guidelines assign risk weights to on- and off-balance sheet items in arriving at total risk-weighted assets. Minimum capital levels are based upon the perceived risk of various asset categories and certain off-balance sheet instruments. Risk-weighted assets for the Corporation and Chemical Bank totaled \$16.18 billion and \$16.15 billion at March 31, 2019, respectively, compared to \$16.10 billion and \$16.07 billion at December 31, 2018, respectively.

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Effective January 1, 2015, the Corporation adopted the Basel III regulatory capital framework as approved by federal banking agencies, which was subject to a multi-year phase-in period. The adoption of this new framework modified the calculation of the various capital ratios, added a new ratio, common equity tier 1, and revised the adequately and well capitalized thresholds. In addition, Basel III establishes a new capital conservation buffer of 2.5% of risk-weighted assets, which was phased-in over a multi-year period beginning January 1, 2016. The capital conservation buffer for 2019 is 2.5%, which is now fully phased-in, and was 1.875% for 2018. The Corporation has elected to opt-out of including accumulated other comprehensive income in common equity tier 1 capital.

At March 31, 2019 and December 31, 2018, Chemical Bank's capital ratios exceeded the quantitative capital ratios required for an institution to be considered "well-capitalized." Significant factors that may affect capital adequacy include, but are not limited to, a disproportionate growth in assets versus capital and a change in mix or credit quality of assets. There are no conditions or events since that notification that management believes have changed the institutions' category.

The summary below compares the actual capital amounts and ratios with the quantitative measures established by regulation to ensure capital adequacy:

	Actual		Minimum Required for Capital Adequacy Purposes Including Capital Conservation Buffer		Required to be Well Capitalized Under Prompt Corrective Action Regulations	
	Capital Amount	Ratio	Capital Amount	Ratio	Capital Amount	Ratio
(Dollars in thousands)						
March 31, 2019						
Total Capital to Risk-Weighted Assets						
Corporation	\$ 1,896,830	11.7%	\$ 1,698,868	10.5%	N/A	N/A
Chemical Bank	1,872,628	11.6	1,695,932	10.5	\$ 1,615,173	10.0%
Tier 1 Capital to Risk-Weighted Assets						
Corporation	1,763,626	10.9	1,375,274	8.5	N/A	N/A
Chemical Bank	1,755,372	10.9	1,372,897	8.5	1,292,138	8.0
Common Equity Tier 1 Capital to Risk-Weighted Assets						
Corporation	1,763,626	10.9	1,132,579	7.0	N/A	N/A
Chemical Bank	1,755,372	10.9	1,130,621	7.0	1,049,862	6.5
Leverage Ratio						
Corporation	1,763,626	8.7	814,944	4.0	N/A	N/A
Chemical Bank	1,755,372	8.6	813,893	4.0	1,017,366	5.0
December 31, 2018						
Total Capital to Risk-Weighted Assets						
Corporation	\$ 1,855,922	11.5%	\$ 1,590,323	9.9%	N/A	N/A
Chemical Bank	1,825,742	11.4	1,586,719	9.9	\$ 1,606,804	10.0%
Tier 1 Capital to Risk-Weighted Assets						
Corporation	1,723,004	10.7	1,268,232	7.9	N/A	N/A
Chemical Bank	1,708,724	10.6	1,265,358	7.9	1,285,444	8.0
Common Equity Tier 1 Capital to Risk-Weighted Asset						
Corporation	1,723,004	10.7	1,026,664	6.4	N/A	N/A
Chemical Bank	1,708,724	10.6	1,024,338	6.4	1,044,423	6.5
Leverage Ratio						
Corporation	1,723,004	8.7	793,669	4.0	N/A	N/A
Chemical Bank	1,708,724	8.6	792,184	4.0	990,230	5.0

On April 23, 2019, the Corporation declared a cash dividend on its common stock of \$0.34 per share. The dividend will be paid on June 21, 2019 to shareholders of record as of June 7, 2019.

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Note 19: Earnings Per Common Share

The two-class method is used in the calculation of basic and diluted earnings per share. Under the two-class method, earnings available to common shareholders for the period are allocated between common shareholders and participating securities according to dividends declared (or accumulated) and participating rights in undistributed earnings.

Average shares of common stock for diluted net income per common share include shares to be issued upon the exercise of stock options granted under the Corporation's share-based compensation plans, restricted stock units that may be converted to stock, restricted stock awards and stock to be issued under the deferred stock compensation plan for non-employee directors.

The factors used in the earnings per share computation follow:

(In thousands, except per share data)	Three Months Ended March 31,	
	2019	2018
Net income	\$ 62,942	\$ 71,596
Net income allocated to participating securities	24	66
Net income allocated to common shareholders ⁽¹⁾	<u>\$ 62,918</u>	<u>\$ 71,530</u>
Weighted average common shares - issued	71,498	71,297
Average unvested restricted share awards	(24)	(66)
Weighted average common shares outstanding - basic	71,474	71,231
Effect of dilutive securities		
Weighted average common stock equivalents	667	675
Weighted average common shares outstanding - diluted	<u>72,141</u>	<u>71,906</u>
EPS available to common shareholders		
Basic earnings per common share	<u>\$ 0.88</u>	<u>\$ 1.01</u>
Diluted earnings per common share	<u>\$ 0.87</u>	<u>\$ 0.99</u>

⁽¹⁾ Net income allocated to common shareholders for basic and diluted earnings per share may differ under the two-class method as a result of adding common share equivalents for options to dilutive shares outstanding, which alters the ratio used to allocate net income to common shareholders and participating securities for the purposes of calculating diluted earnings per share.

For the effect of dilutive securities, the average stock valuation is \$43.20 per share and \$56.23 per share for the three months ended March 31, 2019 and 2018, respectively.

The average number of exercisable employee stock option awards outstanding that were "out-of-the-money," whereby the option exercise price per share exceeded the market price per share and, therefore, were not included in the computation of diluted earnings per common share because they would have been anti-dilutive totaled 52,244 and 71,046 for the three months ended March 31, 2019, and 2018, respectively.

Chemical Financial Corporation
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March 31, 2019

Note 20: Accumulated Other Comprehensive Loss

The following table summarizes the changes within each component of accumulated other comprehensive income (loss), net of related tax benefit/expense for the three months ended March 31, 2019, and 2018:

(Dollars in thousands)	Unrealized gains (losses) on securities carried at fair value, net of tax	Defined Benefit Pension Plan	Unrealized gains (losses) on cash flow hedges, net of tax	Total
For the three months ended March 31, 2019				
Beginning balance at January 1, 2019	\$ (37,772)	\$ (28,766)	\$ 5,428	\$ (61,110)
Other comprehensive income (loss) before reclassifications	29,581	—	(5,966)	23,615
Amounts reclassified from accumulated other comprehensive income (loss)	(69)	75	(1,018)	(1,012)
Net current period other comprehensive income (loss)	29,512	75	(6,984)	22,603
Ending balance	<u>\$ (8,260)</u>	<u>\$ (28,691)</u>	<u>\$ (1,556)</u>	<u>\$ (38,507)</u>
For the three months ended March 31, 2018				
Beginning balance at December 31, 2017	\$ (10,348)	\$ (19,808)	\$ 4,658	\$ (25,498)
Cumulative effect adjustment of change in accounting policy, net of tax impact ⁽¹⁾	(344)	—	3	(341)
Beginning balance at January 1, 2018	(10,692)	(19,808)	4,661	(25,839)
Other comprehensive income (loss) before reclassifications	(21,809)	—	6,291	(15,518)
Amounts reclassified from accumulated other comprehensive income (loss)	—	112	191	303
Net current period other comprehensive income (loss)	(21,809)	112	6,482	(15,215)
Ending balance	<u>\$ (32,501)</u>	<u>\$ (19,696)</u>	<u>\$ 11,143</u>	<u>\$ (41,054)</u>

⁽¹⁾ Refer to Note 1, Basis of Presentation and Significant Accounting Policies for further details on the adoption of ASU 2016-01 and ASU 2017-12.

Chemical Financial Corporation
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The following table summarizes the amounts reclassified out of each component of accumulated other comprehensive income (loss) for the three months ended March 31, 2019, and 2018:

(Dollars in thousands)	Amounts Reclassified from Accumulated Other Comprehensive Income (Loss)		Affected Line Item in the Income Statement
	Three Months Ended March 31,		
	2019	2018	
Gains and losses on investment securities carried at fair value	\$ 87	\$ —	Net gain on sale of investment securities (noninterest income)
	(18)	—	Income tax expense
	<u>\$ 69</u>	<u>\$ —</u>	Net Income
Amortization of defined benefit pension plan items	\$ 95	\$ 142	Salaries, wages and employee benefits (operating expenses)
	(20)	(30)	Income tax benefit
	<u>\$ 75</u>	<u>\$ 112</u>	Net Loss
Gains and losses on cash flow hedges	\$ (1,288)	\$ 242	Interest on short-term borrowings (interest expense)
	270	(51)	Income tax expense (benefit)
	<u>\$ (1,018)</u>	<u>\$ 191</u>	Net (Income)/Loss

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

The following is management's discussion and analysis of certain significant factors that have affected our financial condition and results of operations during the periods included in the Consolidated Financial Statements included in this report. This discussion should be read in conjunction with our Consolidated Financial Statements and accompanying footnotes appearing in this report and in conjunction with the financial statements and related notes and disclosures in our 2018 Annual Report on Form 10-K.

In this report, unless the context suggests otherwise, references to the "Corporation," "we," "us," and "our" mean the combined business of Chemical Financial Corporation and its subsidiary bank, Chemical Bank (the "Bank").

We have made, and will continue to make, various forward-looking statements with respect to financial and business matters. Comments regarding our business that are not historical facts are considered forward-looking statements that involve inherent risks and uncertainties. Actual results may differ materially from those contained in these forward-looking statements. For additional information regarding our cautionary disclosure, see the "*Cautionary Note Regarding Forward-Looking Statements*" on page 3 of this report.

Business Overview

Chemical Financial Corporation ("Chemical"), headquartered in Detroit, Michigan, is a financial holding company registered under the Bank Holding Company Act of 1956, as amended, incorporated in the State of Michigan in August 1973. Our common stock is listed on the NASDAQ under the symbol "CHFC." On June 30, 1974, we acquired Chemical Bank and Trust Company pursuant to a reorganization in which the former shareholders of Chemical Bank and Trust Company became shareholders of the Corporation. We changed the name of Chemical Bank and Trust Company to Chemical Bank on December 31, 2005. At March 31, 2019, we had consolidated total assets of \$21.80 billion, total loans of \$15.32 billion, total deposits of \$16.06 billion and total shareholders' equity of \$2.90 billion, respectively.

Since our acquisition of Chemical Bank and Trust Company, we have acquired 25 community banks and 36 other branch bank offices through March 31, 2019. Our most recent transactions include our merger with Talmer Bancorp, Inc. ("Talmer") during the third quarter of 2016, and our acquisitions of Lake Michigan Financial Corporation ("Lake Michigan") and Monarch Community Bancorp, Inc. ("Monarch") during the second quarter of 2015.

Our business is concentrated in a single industry segment, commercial banking, which is conducted through our single commercial bank subsidiary, Chemical Bank. We offer a full range of traditional banking and fiduciary products and services to residents and business customers in our geographical areas. These products and services include business and personal checking accounts, savings and individual retirement accounts, time deposit instruments, electronically accessed banking products, residential and commercial real estate financing, commercial lending, consumer financing, debit cards, safe deposit box services, money transfer services, automated teller machines, access to insurance and investment products, corporate and personal wealth management services, mortgage banking and other banking services. In addition, we own, directly or indirectly, various non-bank operating and non-operating subsidiaries.

Proposed Merger with TCF Financial Corporation

Chemical and TCF Financial Corporation ("TCF") have entered into an Agreement and Plan of Merger, dated as of January 27, 2019, which we refer to as the "merger agreement." Under the merger agreement, Chemical and TCF have agreed to combine their respective companies in a merger of equals, pursuant to which TCF will merge with and into Chemical, with Chemical continuing as the surviving entity. Immediately following the merger or at such later time as the parties may mutually agree, Chemical Bank will merge with and into TCF National Bank, with TCF National Bank as the surviving bank. The merger agreement was approved by the boards of directors of Chemical and TCF, and is subject to shareholder and regulatory approval and other customary closing conditions. The transaction is anticipated to close in the late third quarter or early fourth quarter of 2019. The transaction is discussed in more detail in Note 2, Mergers to our Consolidated Financial Statements included in this report.

Critical Accounting Policies

Our Consolidated Financial Statements are prepared in accordance with United States generally accepted accounting principles ("GAAP"), Securities and Exchange Commission ("SEC") rules and interpretive releases and general practices within the industry in which we operate. Application of these principles requires management to make estimates, assumptions and complex judgments that affect the amounts reported in our Consolidated Financial Statements and accompanying notes. These estimates, assumptions and judgments are based on information available as of the date of the financial statements; accordingly, as this information changes, our Consolidated Financial Statements could reflect different estimates, assumptions and judgments. Actual results could differ significantly from those estimates. Certain policies inherently have a greater reliance on the use of estimates, assumptions and judgments and, as such, have a greater possibility of producing results that could be materially different than originally reported. We use third-party sources to assist us with developing estimates, assumptions and judgments regarding certain amounts reported in our Consolidated Financial Statements and accompanying notes. When we use third-party sources, our management remains responsible for complying with GAAP. To execute management's responsibilities, we have processes in place to develop an understanding of the third-party methodologies and to design and implement specific internal controls over valuation.

We have identified the determination of the allowance for loan losses, accounting for acquired loans, income and other taxes and the valuation of loan servicing rights to be the accounting areas that require the most subjective or complex judgments and, as such, could be most subject to revision as new or additional information becomes available or circumstances change, including overall changes in the economic climate and/or market interest rates. Therefore, we consider them to be critical accounting policies and discuss them directly with the Audit Committee of the board of directors.

Our significant accounting policies are more fully described in Note 1 to the audited Consolidated Financial Statements contained in our Annual Report on Form 10-K for the year ended December 31, 2018, and the more significant assumptions and estimates made by us are more fully described in "Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Policies" in our Annual Report on Form 10-K for the year ended December 31, 2018. There were no material changes to our significant accounting policies or the estimates made pursuant to those policies during the most recent quarter.

Accounting Standards Updates

See Note 1 to our Consolidated Financial Statements included in this report for details of accounting pronouncements adopted during the three months ended March 31, 2019 and the year ended December 31, 2018. See the following section for a description of pronouncements that have been released but not yet adopted.

Pending Accounting Pronouncements

Standard	Description/Required Date of Adoption	Expected impact on the financial statements and other significant matters
<p>ASU No. 2016-13 - Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments</p> <p>ASU No. 2018-19 - Codification Improvements to Topic 326, Financial Instruments: Credit Losses</p>	<p>This standard amends the guidance on reporting credit losses for financial assets held at amortized cost basis and available for sale debt securities. For assets held at amortized cost basis, Topic 326 eliminates the probable initial recognition threshold in current GAAP and, instead, requires an entity to reflect its current estimate of all expected credit losses. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial assets to present the net amount expected to be collected. For available for sale debt securities, credit losses should be measured in a manner similar to current GAAP; however, Topic 326 will require that credit losses be presented as an allowance rather than as a write-down. The measurement of expected credit loss should be based on relevant information about past events, current conditions, and reasonable forecasts. An allowance will be recognized for purchased credit-deteriorated assets through a gross-up approach measuring the amortized cost as the sum of the purchase price and estimated credit loss at the acquisition date. Adjustments in allowance will be recognized immediately in earnings. The newly required disclosures include both qualitative and quantitative information about an entity's financial assets and the allowance for credit losses, including among others: (a) how an entity developed its allowance for financial assets measured at amortized cost, (b) information about the credit quality for financial receivables and net investments in leases measured at amortized cost, and (c) an allowance roll-forward for available-for-sale securities and an aging analysis for securities past due.</p> <p>The amendments in the 2018 update clarify that receivables arising from operating leases are not within the scope of Subtopic 326-20. Instead, impairment of receivables arising from operating leases should be accounted for in accordance with Topic 842.</p> <p>Required adoption date of January 1, 2020.</p>	<p>We are currently evaluating the potential impact the adoption of ASU 2016-13 will have on our consolidated financial statements and disclosures. A cross-functional working group comprised of individuals from various functional areas across the organization has been formed. In addition, we have been working with an industry leading vendor and using their software program to develop a model to determine the expected credit losses in our loan portfolio. Starting in the fourth quarter of 2018, we began developing and refining multiple scenarios and identifying portfolio segmentation. We have continued this process into 2019 and our next steps will include running a parallel analysis with our current credit loss model followed by the completion model validation procedures. While we are currently unable to reasonably estimate the impact of adopting ASU 2016-13, we expect that the impact of adoption could be significantly influenced by the composition, characteristics and quality of our loan portfolio as well as the prevailing economic conditions and forecasts as of the adoption date. Upon adoption, a cumulative-effect adjustment to retained earnings will be recorded as of the beginning of the first reporting period in which the guidance is effective.</p>
<p>ASU No. 2017-04, Intangible - Goodwill and Other (Topic 350)</p>	<p>Accounting for goodwill impairment is simplified by removing Step 2 of the goodwill impairment test, which requires a hypothetical purchase price allocation. Subsequent to the adoption, goodwill impairment will be the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. All other goodwill impairment guidance largely remains unchanged.</p> <p>Required adoption date of January 1, 2020, with early adoption permitted. Currently, we do not have plans for early adoption.</p>	<p>Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.</p>
<p>ASU 2018-13, Fair Value Measurement (Topic 820): Disclose Framework-Changes to the Disclosure Requirements for Fair Value Measurement</p>	<p>The amendments in this update improve the effectiveness of fair value measurement disclosures and modifies the disclosure requirements on fair value measurements in Topic 820, Fair Value Measurement based on the concepts in the Concept Statement, Conceptual Framework for Financial Reporting - Chapter 8: Notes to Financial Statements, including considerations of costs and benefits.</p> <p>The additional disclosure requirements include disclosing the change in unrealized gains (losses) for recurring Level 3 fair value measurements held at the end of the reporting period and the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements or other quantitative information. The update also removes the disclosure requirements for: the amount of and reasons for transfers between Level 1 and Level 2 hierarchies, the policy for timing of transfers between levels, and the valuation processes for Level 3 fair value measurements.</p> <p>Required adoption date of January 1, 2020, with early adoption permitted. Currently, we do not have plans for early adoption.</p>	<p>Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.</p>

Standard	Description/Required Date of Adoption	Expected impact on the financial statements and other significant matters
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 amendments in this update remove disclosures that no longer are considered cost-beneficial, clarify the specific requirements of disclosures, and add on our consolidated financial condition and results of operations. Concepts Statement, Conceptual Framework for Financial Reporting-Chapter 8: Notes to Financial Statements. Required adoption date of January 1, 2021, with early adoptions permitted. Currently, we do not have plans for early adoption.	Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.
ASU 2019-04, Codification Improvements to Topic 326, Financial Instruments - Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments	The amendments in this update clarify and make improvements to the new guidance on credit losses, hedging, and recognizing and measuring financial instruments. The amendments clarify the scope of the credit losses standard and address issues related to accrued interest receivable balances, recoveries, the ASU 2016-13 update above for more information. The amendments related to variable interest rates and prepayments, and other. The amendments related to hedge accounting address partial-term fair value hedges, fair value hedge basis adjustments, application by not-for-profit entities and private companies, and certain transition requirements. As we have not yet adopted ASU 2016-13, but have adopted ASU 2017-12 and ASU 2016-01, the required adoption date for all amendments in this update are January 1, 2020, with early adoption permitted.	Adoption of these updates along with ASU 2016-13 will have a material impact on our consolidated financial condition and results of operations. Refer to the ASU 2016-13 update above for more information. The remaining amendments are not expected to have a material impact on our consolidated financial condition or results of operations.

The following table sets forth our selected financial information for the periods and as of the dates indicated. You should read this information together with Management's Discussion and Analysis of Financial Condition and Results of Operations and our Consolidated Financial Statements and the related notes thereto, which are included elsewhere in this report. As noted in the following table, we have included certain non-GAAP financial measures, which should be read in conjunction with the section entitled "Non-GAAP Financial Measures" and the accompanying table entitled "Reconciliation of Non-GAAP Operating Results," for reconciliation of non-GAAP measures to the most directly comparable GAAP financial measure. Our results shown in the following table and elsewhere in this report are not necessarily indicative of our future performance.

Chemical Financial Corporation
Selected Financial Information
(Unaudited)

(Dollars in thousands, except per share data)	Three Months Ended		
	March 31, 2019	December 31, 2018	March 31, 2018
Summary of Operations			
Interest income	\$ 213,981	\$ 210,103	\$ 177,934
Interest expense	51,157	46,651	26,071
Net interest income	162,824	163,452	151,863
Provision for loan losses	2,059	8,894	6,256
Net interest income after provision for loan losses	160,765	154,558	145,607
Noninterest income	24,857	32,047	40,554
Operating expenses, core (non-GAAP)(1)(2)	103,591	102,594	99,976
Merger expenses	5,424	—	—
Impairment of income tax credits	—	5,772	1,634
Income before income taxes	76,607	78,239	84,551
Income tax expense	13,665	5,200	12,955
Net income	<u>\$ 62,942</u>	<u>\$ 73,039</u>	<u>\$ 71,596</u>
Significant items, net of tax (non-GAAP)(1)(3)	10,326	2,233	(2,964)
Net income, excluding significant items (non-GAAP)(1)(3)	<u>\$ 73,268</u>	<u>\$ 75,272</u>	<u>\$ 68,632</u>
Per Common Share Data			
Net income:			
Basic	\$ 0.88	\$ 1.02	\$ 1.01
Diluted	0.87	1.01	0.99
Diluted, excluding significant items (non-GAAP)(1)(3)	1.02	1.04	0.95
Cash dividends declared	0.34	0.34	0.28
Book value at end of period	40.50	39.69	37.91
Tangible book value per share at end of period (non-GAAP)(1)	24.39	23.54	21.68
Market value at end of period	41.16	36.61	54.68
Key Ratios (annualized where applicable)			
Net interest margin	3.38%	3.42%	3.51%
Net interest margin (fully taxable equivalent) (non-GAAP)(1)(4)	3.42%	3.49%	3.56%
Efficiency ratio (GAAP)	58.1%	55.4%	52.8%
Efficiency ratio-adjusted (non-GAAP)(1)	51.7%	50.4%	51.6%
Return on average assets	1.17%	1.39%	1.47%
Return on average assets, excluding significant items (non-GAAP)(1)(3)	1.36%	1.44%	1.41%
Return on average shareholders' equity	8.8%	10.4%	10.7%
Return on average tangible shareholders' equity (non-GAAP)(1)	14.8%	17.8%	19.0%
Return on average tangible shareholders' equity, excluding significant items (non-GAAP)(1)(3)	17.2%	18.3%	18.2%
Average shareholders' equity as a percent of average assets	13.3%	13.4%	13.7%
Capital ratios (period end):			
Tangible shareholders' equity as a percent of tangible assets (non-GAAP)(1)	8.5%	8.3%	8.3%
Total risk-based capital ratio	11.7%	11.5%	11.2%

(1) Denotes a non-GAAP Financial Measure. Please refer to section entitled "Non-GAAP Financial Measures" included within this Management's Discussion and Analysis of Financial Condition and Results of Operations for a reconciliation to the most directly comparable GAAP financial measure.

(2) Excludes merger expenses and impairment of income tax credits.

(3) "Significant items" are defined to be the change in fair value of loan servicing rights and merger expenses.

(4) Presented on a tax equivalent basis using a 21% tax rate for each period presented.

Non-GAAP Financial Measures

This report contains references to financial measures that are not defined in GAAP. Such non-GAAP financial measures include our operating expenses, core (which excludes merger expenses, the change in fair value of loan servicing rights and impairment of income tax credits); tangible book value per share; tangible shareholders' equity; presentation of net interest income and net interest margin on a fully taxable equivalent ("FTE") basis; operating expenses and efficiency ratio (which excludes merger expenses, the change in fair value of loan servicing rights, impairment of income tax credits and amortization of intangibles); the adjusted efficiency ratio and the adjusted total operating expenses as a percentage of total average assets (which both exclude merger expenses, impairment of income tax credits, amortization of intangibles, net interest FTE adjustments, the change in fair value of loan servicing rights and net gains from sale of investment securities) and other information presented excluding significant items (merger expenses, the change in fair value of loan servicing rights and gains and losses on sale of investment securities) including net income, diluted earnings per share, return on average assets, return on average shareholders' equity and return on average tangible shareholders' equity. Management believes that the presentation of these non-GAAP financial measures (a) provides important supplemental information that contributes to a proper understanding of our operating performance, (b) enables a more complete understanding of factors and trends affecting our business, and (c) allows investors to evaluate our performance in a manner similar to management, the financial services industry, bank stock analysts, and bank regulators. Management uses non-GAAP measures as follows: in the preparation of our operating budgets, monthly financial performance reporting, and in our presentation to investors of our performance. Limitations associated with non-GAAP financial measures include the risk that persons might disagree as to the appropriateness of items comprising these measures and that different companies might calculate these measures differently. These disclosures should not be considered an alternative to our GAAP results.

A reconciliation of non-GAAP financial measures to the most directly comparable GAAP financial measures is presented below. A reconciliation of net interest income and net interest margin (FTE) to the most directly comparable GAAP financial measure can be found under the subheading "Average Balances, Fully Taxable Equivalent (FTE) Interest and Effective Yields and Rates" of this report.

	Three Months Ended		
	March 31, 2019	December 31, 2018	March 31, 2018
(Dollars in thousands, except per share data)			
Reconciliation of Non-GAAP Operating Results			
Net Income			
Net income, as reported	\$ 62,942	\$ 73,039	\$ 71,596
Merger expenses	5,424	—	—
Loan servicing rights change in fair value (gains) losses	7,646	2,827	(3,752)
Significant items	13,070	2,827	(3,752)
Income tax benefit ⁽¹⁾	(2,744)	(594)	788
Significant items, net of tax	10,326	2,233	(2,964)
Net income, excluding significant items	<u>\$ 73,268</u>	<u>\$ 75,272</u>	<u>\$ 68,632</u>
Diluted Earnings Per Share			
Diluted earnings per share, as reported	\$ 0.87	\$ 1.01	\$ 0.99
Effect of significant items, net of tax	0.15	0.03	(0.04)
Diluted earnings per share, excluding significant items	<u>\$ 1.02</u>	<u>\$ 1.04</u>	<u>\$ 0.95</u>
Return on Average Assets			
Return on average assets, as reported	1.17%	1.39%	1.47 %
Effect of significant items, net of tax	0.19	0.05	(0.06)
Return on average assets, excluding significant items	<u>1.36%</u>	<u>1.44%</u>	<u>1.41 %</u>
Return on Average Shareholders' Equity			
Return on average shareholders' equity, as reported	8.8%	10.4%	10.7 %
Effect of significant items, net of tax	1.5	0.4	(0.4)
Return on average shareholders' equity, excluding significant items	<u>10.3%</u>	<u>10.8%</u>	<u>10.3 %</u>
Return on Average Tangible Shareholders' Equity			
Average shareholders' equity	\$2,855,715	\$2,798,498	\$2,668,325
Average goodwill, CDI and noncompete agreements, net of tax	1,153,275	1,154,469	1,158,084
Average tangible shareholders' equity	<u>\$1,702,440</u>	<u>\$1,644,029</u>	<u>\$1,510,241</u>
Return on average tangible shareholders' equity	14.8%	17.8%	19.0 %
Effect of significant items, net of tax	2.4	0.5	(0.8)
Return on average tangible shareholders' equity, excluding significant items	<u>17.2%</u>	<u>18.3%</u>	<u>18.2 %</u>
Efficiency Ratio and Operating Expenses			
Net interest income	\$ 162,824	\$ 163,452	\$ 151,863
Noninterest income	24,857	32,047	40,554
Total revenue - GAAP	187,681	195,499	192,417
Net interest income FTE adjustment	2,662	2,514	2,227
Loan servicing rights change in fair value (gains) losses	7,646	2,827	(3,752)
Gains from sale of investment securities	(87)	(221)	—
Total revenue - Non-GAAP	<u>\$ 197,902</u>	<u>\$ 200,619</u>	<u>\$ 190,892</u>
Operating expenses - GAAP	\$ 109,015	\$ 108,366	\$ 101,610
Merger expenses	(5,424)	—	—
Impairment of income tax credits	—	(5,772)	(1,634)
Operating expense, core - Non-GAAP	103,591	102,594	99,976
Amortization of intangibles	(1,361)	(1,426)	(1,439)
Operating expenses, efficiency ratio - Non-GAAP	<u>\$ 102,230</u>	<u>\$ 101,168</u>	<u>\$ 98,537</u>
Efficiency ratio - GAAP	<u>58.1%</u>	<u>55.4%</u>	<u>52.8 %</u>
Efficiency ratio - adjusted Non-GAAP	<u>51.7%</u>	<u>50.4%</u>	<u>51.6 %</u>

(1) Assumes significant items are deductible at an income tax rate of 21% for each period.

	Three Months Ended		
	March 31, 2019	December 31, 2018	March 31, 2018
(Dollars in thousands, except per share data)			
Total operating expenses as a percentage of total average assets (annualized)			
Average assets	\$21,514,998	\$20,955,706	\$19,457,877
Operating expenses - GAAP	\$ 109,015	\$ 108,366	\$ 101,610
Merger expenses	(5,424)	—	—
Impairment of income tax credits	—	(5,772)	(1,634)
Operating expense, core - Non-GAAP	103,591	102,594	99,976
Total operating expenses as a percentage of total average assets (annualized)	2.0%	2.1%	2.1%
Total operating expenses as a percentage of total average assets - adjusted non-GAAP (annualized)	1.9%	2.0%	2.1%

	March 31, 2019	December 31, 2018	March 31, 2018
	(Dollars in thousands, except per share data)		
Tangible Book Value			
Shareholders' equity, as reported	\$ 2,897,509	\$ 2,836,260	\$ 2,704,703
Goodwill, CDI and noncompete agreements, net of tax	(1,152,705)	(1,153,877)	(1,157,505)
Tangible shareholders' equity	\$ 1,744,804	\$ 1,682,383	\$ 1,547,198
Common shares outstanding	71,551	71,460	71,350
Book value per share (shareholders' equity, as reported, divided by common shares outstanding)	\$ 40.50	\$ 39.69	\$ 37.91
Tangible book value per share (tangible shareholders' equity divided by common shares outstanding)	\$ 24.39	\$ 23.54	\$ 21.68
Tangible Shareholders' Equity to Tangible Assets			
Total assets, as reported	\$21,800,313	\$ 21,498,341	\$ 19,757,510
Goodwill, CDI and noncompete agreements, net of tax	(1,152,705)	(1,153,877)	(1,157,505)
Tangible assets	\$20,647,608	\$ 20,344,464	\$ 18,600,005
Shareholders' equity to total assets	13.3%	13.2%	13.7%
Tangible shareholders' equity to tangible assets	8.5%	8.3%	8.3%

Statements of Financial Position Review

Overview

Total assets were \$21.80 billion at March 31, 2019, an increase of \$302.0 million, or 1.4%, from total assets of \$21.50 billion at December 31, 2018. The increase in total assets during the three months ended March 31, 2019 was primarily attributable to additions to our investment securities portfolio and, to a lesser extent, net loan growth.

Average assets were \$21.51 billion during the three months ended March 31, 2019, an increase of \$2.05 billion, or 10.6%, compared to average assets of \$19.46 billion during the three months ended March 31, 2018. The increase in average assets during the three months ended March 31, 2019, compared to the three months ended March 31, 2018, was primarily attributable to loan growth and an increase in our investment securities portfolio which is reflective of our long-term plan to increase our investment securities portfolio as a percentage of total assets.

Total liabilities were \$18.90 billion at March 31, 2019, an increase of \$240.7 million, or 1.3%, compared to total liabilities at December 31, 2018 of \$18.66 billion. The increase in liabilities during the three months ended March 31, 2019, compared to December 31, 2018, was primarily attributable to a \$468.7 million increase in deposits, partially offset by a \$295.0 million decrease in short-term borrowings.

Investment Securities

The following table summarizes the maturities and yields of the carrying value of debt securities by investment category, and fair value by investment category, at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	Maturity as of March 31, 2019 ⁽¹⁾								Total Carrying Value ⁽²⁾		Total Fair Value
	Within One Year		After One but Within Five Years		After Five but Within Ten Years		After Ten Years		Amount	Yield ⁽³⁾	
	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾			
Carried at Fair Value:											
Government and government-sponsored enterprises	\$ 42,612	3.31%	\$ 129,930	3.21%	\$ 170,933	3.33%	\$ 43,915	3.28%	\$ 387,390	3.28%	\$ 387,390
State and political subdivisions	15,571	2.58	13,312	2.12	132,657	2.90	393,203	3.36	554,743	3.20	554,743
Residential mortgage-backed securities	38,667	2.93	90,854	2.85	48,384	2.80	24,335	2.91	202,240	2.86	202,240
Collateralized mortgage obligations	401,101	2.80	915,658	2.89	336,113	2.95	150,052	3.17	1,802,924	2.90	1,802,924
Corporate bonds	37,337	2.27	43,495	3.13	225,315	3.89	—	—	306,147	3.58	306,147
Trust preferred securities	—	—	—	—	46,140	4.33	1,470	2.06	47,610	4.26	47,610
Total debt securities carried at fair value	535,288	2.81	1,193,249	2.92	959,542	3.29	612,975	3.29	3,301,054	3.08	3,301,054
Held-to-Maturity:											
State and political subdivisions	58,732	3.24	227,668	3.26	162,052	3.44	173,567	3.50	622,019	3.37	627,165
Trust preferred securities	—	—	—	—	—	—	500	5.75	500	5.75	450
Total investment securities held-to-maturity	58,732	3.24	227,668	3.26	162,052	3.44	174,067	3.50	622,519	3.38%	627,615
Total investment securities	\$ 594,020	2.85%	\$ 1,420,917	2.97%	\$ 1,121,594	3.31%	\$ 787,042	3.34%	\$ 3,923,573	3.12%	\$ 3,928,669

- (1) Residential mortgage-backed securities, collateralized mortgage obligations and certain government and government-sponsored enterprise securities are based on scheduled principal maturity. All other investment securities are based on final contractual maturity.
- (2) The aggregate book value of securities issued by any single issuer, other than the U.S. government and government-sponsored enterprises, did not exceed 10% of our shareholders' equity.
- (3) Yields are weighted by amount and time to contractual maturity, are on a taxable equivalent basis using a 21% federal income tax rate and are based on carrying value. Yields disclosed are actual yields based on carrying value at March 31, 2019. Approximately 25% of investment securities at March 31, 2019 were variable-rate financial instruments.

(Dollars in thousands)	Maturity as of December 31, 2018 ⁽¹⁾										Total Fair Value
	Within One Year		After One but Within Five Years		After Five but Within Ten Years		After Ten Years		Total Carrying Value ⁽²⁾		
	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	
Carried at Fair Value:											
Government and government-sponsored enterprises	\$ 35,502	3.44%	\$ 115,562	3.32%	\$ 147,939	3.37%	\$ 52,697	3.41%	\$ 351,700	3.37%	\$ 351,700
State and political subdivisions	19,539	1.98	43,746	2.34	139,586	2.54	313,415	3.17	516,286	2.88	516,286
Residential mortgage-backed securities	33,262	2.96	94,271	2.94	55,617	2.90	30,278	2.98	213,428	2.94	213,428
Collateralized mortgage obligations	256,044	2.90	758,278	2.96	387,959	3.08	199,017	3.03	1,601,298	2.99	1,601,298
Corporate bonds	37,348	2.23	37,998	3.18	217,717	3.99	—	—	293,063	3.66	293,063
Trust preferred securities	—	—	—	—	44,572	4.53	1,485	2.06	46,057	4.45	46,057
Total debt securities carried at fair value	381,695	2.84	1,049,855	2.98	993,390	3.30	596,892	3.13	3,021,832	3.10	3,021,832
Held-to-Maturity:											
State and political subdivisions	58,875	3.22	228,229	3.35	163,565	3.41	172,930	3.28	623,599	3.33	618,232
Trust preferred securities	—	—	—	—	—	—	500	5.75	500	5.75	440
Total investment securities held-to-maturity	58,875	3.22	228,229	3.35	163,565	3.41	173,430	3.28	624,099	3.34	618,672
Total investment securities	\$ 440,570	2.89%	\$ 1,278,084	3.05%	\$ 1,156,955	3.32%	\$ 770,322	3.16%	\$ 3,645,931	3.14%	\$ 3,640,504

- Residential mortgage-backed securities, collateralized mortgage obligations and certain government and government-sponsored enterprise securities are based on scheduled principal maturity. All other investment securities are based on final contractual maturity.
- The aggregate book value of securities issued by any single issuer, other than the U.S. government and government-sponsored enterprises, did not exceed 10% of our shareholders' equity.
- Yields are weighted by amount and time to contractual maturity, are on a taxable equivalent basis using a 21% federal income tax rate and are based on carrying value. Yields disclosed are actual yields based on carrying value at December 31, 2018. Approximately 24% of investment securities at December 31, 2018 were variable-rate financial instruments.

We utilize third-party pricing services to obtain market value prices for our investment securities portfolio. On a quarterly basis, we validate the reasonableness of prices received from the third-party pricing services through independent price verification on a sample of investment securities in the portfolio, data integrity validation based upon comparison of current market prices to prior period market prices and analysis of overall expectations of movement in market prices based upon the changes in the related yield curves and other market factors. We annually review the pricing methodology of the third-party pricing vendors and the results of the vendors' internal control assessments to ensure the integrity of the process that the vendor uses to develop market pricing for our investment securities portfolio.

The carrying value of our investment securities totaled \$3.92 billion at March 31, 2019, an increase of \$277.6 million, or 7.6%, from investment securities of \$3.65 billion at December 31, 2018, primarily as a result of our long-term plan to increase our investment securities portfolio as a percentage of total assets.

Our investment securities portfolio as of March 31, 2019 had a weighted average life of approximately 4.7 years and an effective duration of approximately 2.2 years.

The following table summarizes the carrying value of investment securities at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Carried at Fair Value:		
Government and government-sponsored enterprises	\$ 387,390	\$ 351,700
State and political subdivisions	554,743	516,286
Residential mortgage-backed securities	202,240	213,428
Collateralized mortgage obligations	1,802,924	1,601,298
Corporate bonds	306,147	293,063
Trust preferred securities	47,610	46,057
Total investment securities carried at fair value	<u>3,301,054</u>	<u>3,021,832</u>
Held-to-Maturity:		
State and political subdivisions	622,019	623,599
Trust preferred securities	500	500
Total investment securities held-to-maturity	<u>622,519</u>	<u>624,099</u>
Total investment securities	<u>\$ 3,923,573</u>	<u>\$ 3,645,931</u>

At March 31, 2019, our investment securities portfolio consisted of: Government and government-sponsored enterprise (GSE) debt obligations, comprised primarily of fixed-rate instruments backed by U.S. government agencies or government-sponsored enterprises, totaling \$387.4 million; state and political subdivisions debt obligations, comprised primarily of general debt obligations, totaling \$1.18 billion; residential mortgage-backed securities (MBSs), comprised primarily of fixed-rate instruments backed by U.S. government agencies or government-sponsored enterprises, totaling \$202.2 million; collateralized mortgage obligations (CMOs), comprised of approximately 84.5% fixed-rate and 15.5% variable-rate instruments primarily backed by U.S. government agencies and government-sponsored enterprises, totaling \$1.80 billion; corporate bonds, comprised primarily of debt obligations of large U.S. global financial organizations, totaling \$306.1 million; and trust preferred securities (TRUPs), comprised of variable-rate TRUPs from both publicly-traded bank holding companies and small non-public bank holding companies, totaling \$48.1 million. Fixed-rate instruments comprised approximately 74.8% of our investment securities portfolio at March 31, 2019.

We record investment securities in accordance with ASC Topic 320, Investments-Debt Securities under which we are required to assess securities that have fair values below their amortized cost basis to determine whether the decline (impairment) is other-than-temporary. We perform a quarterly assessment to determine whether unrealized losses in our debt securities portfolio are temporary or other-than-temporary by considering all reasonably available information. We review factors such as financial statements, credit ratings, news releases and other pertinent information of the underlying issuer or company to make our determination. In assessing whether a decline is other-than-temporary, management considers, among other things, (i) the length of time and the extent to which the fair value has been less than the amortized cost, (ii) the financial condition and near-term prospects of the issuer, (iii) the potential for impairments in an entire industry or sub-sector and (iv) the potential for impairments in certain economically depressed geographical locations.

Our total investment securities portfolio had a carrying value of \$3.92 billion at March 31, 2019, with gross unrealized losses of \$30.7 million at that date. We believe that the unrealized losses on debt securities at March 31, 2019 were temporary in nature and due primarily to changes in interest rates on the investment securities and market illiquidity, and not as a result of credit-related issues. Accordingly, we believe the unrealized losses in our debt securities portfolio at March 31, 2019 were temporary in nature and, therefore, no impairment loss was recognized in our Consolidated Statements of Income for the three months ended March 31, 2019. However, other-than-temporary impairment ("OTTI") may occur in the future as a result of material declines in the fair value of investment securities resulting from market, credit, economic or other conditions. A further discussion of the assessment of potential impairment and our process that resulted in the conclusion that the impairment was temporary in nature follows.

At March 31, 2019, the gross unrealized losses in our investment securities portfolio of \$30.7 million were comprised as follows: Government and GSE securities, residential MBSs and CMOs, combined, of \$20.5 million, corporate bonds of \$6.2 million, state and political subdivisions securities of \$3.4 million and TRUPs of \$0.6 million. The amortized costs and fair values of investment securities are disclosed in Note 4 to our Consolidated Financial Statements.

Government and GSE securities, residential MBSs and CMOs, included in our carried at fair value investment securities portfolio, had a combined amortized cost of \$2.41 billion and gross unrealized losses of \$20.5 million at March 31, 2019. The vast majority of the investment securities in these categories are backed by the full faith and credit of the U.S. government or a guarantee of a U.S. government agency or government-sponsored enterprise. We determined that the unrealized losses on these investment securities were attributable to current market interest rates being higher than the yields being earned on these investment securities. The investment securities in these categories that are not backed by a government related guarantee had an amortized cost of \$517.7 million and gross unrealized losses of \$5.9 million at March 31, 2019. We determined that the unrealized losses on these investment securities were attributable to current market interest rates being higher than the yields being earned on these investment securities in addition to the securities holding credit support in the form of subordinated debt positions. We concluded that the unrealized losses in our government and GSE securities, residential MBSs and CMOs were temporary in nature at March 31, 2019.

State and political subdivisions securities, included in our carried at fair value and held-to-maturity investment securities portfolios, had an amortized cost of \$1.17 billion and gross unrealized losses of \$3.4 million at March 31, 2019. Approximately 78.3% of the state and political subdivisions securities are general obligations of the issuer, meaning that repayment of these obligations is funded by general tax collections of the issuer. The gross unrealized losses were attributable to state and political subdivisions securities with an amortized cost of \$443.8 million that generally mature beyond 2019. It was our assessment that the unrealized losses on these investment securities were attributable to current market interest rates being slightly higher than the yield on these investment securities and illiquidity in the market due to the nature of a portion of these investment securities. We concluded that the unrealized losses in our state and political subdivisions securities were temporary in nature at March 31, 2019.

Corporate bonds included in our carried at fair value investment securities portfolio had an amortized cost of \$312.1 million and gross unrealized losses of \$6.2 million at March 31, 2019. The investment securities in this category are investment grade securities and none have had recent downgrades. We determined that the unrealized losses on these investment securities were attributable to current market interest rates being higher than the yields being earned on these investment securities. We concluded that the unrealized loss was temporary in nature at March 31, 2019.

Trust preferred securities included in our carried at fair value investment securities portfolio had an amortized cost of \$47.6 million and gross unrealized losses of \$0.5 million at March 31, 2019. The investment securities in this category are investment grade securities and none have had recent downgrades. The principal on these TRUPs mature in periods ranging from 2027 to 2037, with dividend payments due quarterly. All scheduled dividend payments for these TRUPs have been made on a timely basis. We concluded that the unrealized loss was temporary in nature at March 31, 2019 as the ability of each of these entities to repay remains strong.

At March 31, 2019, we held one TRUP in our held-to-maturity investment securities portfolio, with an amortized cost of \$0.5 million and gross unrealized loss of \$0.1 million. This TRUP represents a 10% interest in the TRUP of a well-capitalized non-public bank holding company in Michigan. The principal of \$0.5 million of this TRUP matures in 2033, with interest payments due quarterly. All scheduled interest payments on this TRUP have been made on a timely basis. We determined that the unrealized loss on this TRUP was attributable to a lack of liquidity for issuances of this size. We concluded that the unrealized loss on our TRUP was temporary in nature at March 31, 2019.

At March 31, 2019, we expected to fully recover the entire amortized cost basis of each investment security in an unrealized loss position in our investment securities portfolio at that date. Furthermore, at March 31, 2019, we did not have the intent to sell any of our investment securities in an unrealized loss position and believed that it was more-likely-than-not that we would not have to sell any of our investment securities before a full recovery of amortized cost. However, there can be no assurance that OTTI losses will not be recognized on any investment security in the future.

Loans

Our loan portfolio is comprised of commercial, commercial real estate (which includes owner-occupied, non-owner occupied and vacant land) and real estate construction and land development loans, referred to as our commercial loan portfolio, and residential mortgage, consumer installment and home equity loans, referred to as our consumer loan portfolio. At March 31, 2019, our loan portfolio was \$15.32 billion and consisted of loans in the commercial loan portfolio totaling \$9.51 billion, or 62.1% of total loans, and loans in the consumer loan portfolio totaling \$5.81 billion, or 37.9% of total loans.

Chemical Bank is a full-service commercial bank and the acceptance and management of credit risk is an integral part of our business. We maintain loan policies and credit underwriting standards as part of the process of managing credit risk. These standards include making loans generally only within our market areas. Our lending markets generally consist of communities throughout Michigan, Ohio and Northern Indiana. Our lending philosophy is implemented through strong administrative and

reporting controls. We maintain a centralized independent loan review function that monitors the approval process and ongoing asset quality of the loan portfolio.

Total loans were \$15.32 billion at March 31, 2019, an increase of \$54.3 million, or 0.4%, from total loans of \$15.27 billion at December 31, 2018, and an increase of \$1.10 billion, or 7.8%, from total loans of \$14.22 billion at March 31, 2018. We experienced originated loan growth of \$297.5 million during the three months ended March 31, 2019 and \$2.13 billion during the twelve months ended March 31, 2019. The increases were partially offset by run-off in the acquired loan portfolio of \$243.2 million during the three months ended March 31, 2019 and \$1.02 billion during the twelve months ended March 31, 2019.

The following table includes the composition of our loan portfolio, by major loan category, as of March 31, 2019 and December 31, 2018.

(Dollars in thousands)	March 31, 2019	December 31, 2018
Commercial loan portfolio:		
Commercial	\$ 4,054,072	\$ 4,002,568
Commercial real estate:		
Owner-occupied	2,050,430	2,059,557
Non-owner occupied	2,736,320	2,785,020
Vacant land	48,419	67,510
Total commercial real estate	4,835,169	4,912,087
Real estate construction and land development	622,590	597,212
Subtotal - commercial loan portfolio	9,511,831	9,511,867
Consumer loan portfolio:		
Residential mortgage	3,549,617	3,458,666
Consumer installment	1,504,441	1,521,074
Home equity	758,159	778,172
Subtotal - consumer loan portfolio	5,812,217	5,757,912
Total loans	\$ 15,324,048	\$ 15,269,779

A discussion of our loan portfolio by category follows.

Commercial Loan Portfolio

Our commercial loan portfolio is comprised of commercial loans, commercial real estate loans (which includes owner-occupied, non-owner occupied and vacant land), real estate construction loans and land development loans. Our commercial loan portfolio is well diversified across business lines and has no concentration in any one industry. The commercial loan portfolio of \$9.51 billion at March 31, 2019 included 175 loan relationships of \$10.0 million or greater. These 175 loan relationships totaled \$3.98 billion, which represented 41.8% of the commercial loan portfolio at March 31, 2019 and included 101 loan relationships that had outstanding balances of \$15.0 million or higher, totaling \$3.06 billion, or 32.2% of the commercial loan portfolio, at that date. We had 61 loan relationships that had outstanding balances of \$20.0 million or higher, totaling \$2.36 billion, or 24.8% of the commercial loan portfolio, at March 31, 2019. We had 32 loan relationships at March 31, 2019 with loan balances greater than \$10.0 million and less than \$15.0 million, totaling \$419.8 million, that had unfunded credit commitments totaling \$224.2 million that, if advanced, could result in a loan relationship of \$15.0 million or more.

The following table presents the contractual maturities of our \$9.51 billion commercial loan portfolio at March 31, 2019. Commercial loans at fixed interest rates comprised 48.9% of our total commercial loan portfolio at March 31, 2019, compared to 51.1% at December 31, 2018. The percentage of these loans maturing within one year was 27.3% at March 31, 2019, while the percentage of these loans maturing beyond five years remained low at 18.8% at March 31, 2019. At March 31, 2019, loans in the commercial loan portfolio with maturities beyond one year totaled \$6.91 billion, with 58.4% of these loans at fixed interest rates.

March 31, 2019				
(Dollars in thousands)	Due In			
	1 Year or Less	1 to 5 Years	Over 5 Years	Total
Loan maturities:				
Commercial	\$ 1,326,548	\$ 2,278,142	\$ 449,382	\$ 4,054,072
Commercial real estate:				
Owner-occupied	306,645	1,351,123	392,662	2,050,430
Non-owner occupied	613,669	1,265,056	857,595	2,736,320
Vacant land	24,114	23,094	1,211	48,419
Total commercial real estate	944,428	2,639,273	1,251,468	4,835,169
Real estate construction and land development	327,204	207,898	87,488	622,590
Total	\$ 2,598,180	\$ 5,125,313	\$ 1,788,338	\$ 9,511,831
Percent of total	27.3%	53.9%	18.8%	100.0%
Interest sensitivity of above loans:				
Fixed interest rates	\$ 616,076	\$ 3,224,786	\$ 813,368	\$ 4,654,230
Variable interest rates	1,982,104	1,900,527	974,970	4,857,601
Total	\$ 2,598,180	\$ 5,125,313	\$ 1,788,338	\$ 9,511,831

The following table presents the contractual maturities of our \$9.51 billion commercial loan portfolio at December 31, 2018.

December 31, 2018				
(Dollars in thousands)	Due In			
	1 Year or Less	1 to 5 Years	Over 5 Years	Total
Loan maturities:				
Commercial	\$ 1,180,581	\$ 2,296,822	\$ 525,165	\$ 4,002,568
Commercial real estate:				
Owner-occupied	219,398	1,231,037	609,122	2,059,557
Non-owner occupied	440,343	1,424,344	920,333	2,785,020
Vacant land	19,128	32,041	16,341	67,510
Total commercial real estate	678,869	2,687,422	1,545,796	4,912,087
Real estate construction and land development	175,076	326,131	96,005	597,212
Total	\$ 2,034,526	\$ 5,310,375	\$ 2,166,966	\$ 9,511,867
Percent of total	21.4%	55.8%	22.8%	100.0%
Interest sensitivity of above loans:				
Fixed interest rates	\$ 628,744	\$ 3,362,009	\$ 873,128	\$ 4,863,881
Variable interest rates	1,405,782	1,948,366	1,293,838	4,647,986
Total	\$ 2,034,526	\$ 5,310,375	\$ 2,166,966	\$ 9,511,867

Commercial loans consist of loans and lines of credit to varying types of businesses, including municipalities, school districts and nonprofit organizations, for the purpose of supporting working capital and operational needs and term financing of equipment. Repayment of such loans is generally provided through operating cash flows of the borrower. Commercial loans are generally secured with inventory, accounts receivable, equipment, personal guarantees of the owner or other sources of repayment, although we may also obtain real estate as collateral.

Commercial loans were \$4.05 billion at March 31, 2019, an increase of \$51.5 million, or 1.3%, from commercial loans of \$4.00 billion at December 31, 2018. Originated commercial loans grew by \$141.3 million, or 4.3%, during the three months ended March 31, 2019, partially offset by run-off in the acquired loan portfolio of \$89.8 million. Commercial loans represented 26.5% of our loan portfolio at March 31, 2019, compared to 26.2% at December 31, 2018.

Commercial real estate loans include loans that are secured by real estate occupied by the borrower for ongoing operations (owner occupied), non-owner occupied real estate leased to one or more tenants (non-owner occupied) and vacant land that has

been acquired for investment or future land development (vacant land). Commercial real estate loans were \$4.84 billion at March 31, 2019, a decrease of \$76.9 million, or 1.6%, from commercial real estate loans of \$4.91 billion at December 31, 2018. Loans secured by owner occupied properties, non-owner occupied properties and vacant land comprised 42.4%, 56.6% and 1.0%, respectively, of our commercial real estate loans outstanding at March 31, 2019. Commercial real estate loans represented 31.6% of our loan portfolio at March 31, 2019, compared to 32.2% at December 31, 2018.

Commercial and commercial real estate lending are generally considered to involve a higher degree of risk than residential mortgage, consumer installment and home equity lending as they typically involve larger loan balances concentrated in a single borrower. In addition, the payment experience on loans secured by income-producing properties and vacant land loans is typically dependent on the success of the operation of the related project and is typically affected by adverse conditions in the real estate market and in the economy. We generally attempt to mitigate the risks associated with commercial and commercial real estate lending by, among other things, lending primarily in our market areas, lending across industry lines, not developing a concentration in any one line of business and using prudent loan-to-value ratios in the underwriting process. It is management's belief that our commercial and commercial real estate loan portfolios are generally well-secured.

Real estate construction loans are primarily originated for construction of commercial properties and often convert to a commercial real estate loan at the completion of the construction period. Land development loans include loans made to developers for the purpose of infrastructure improvements to vacant land to create finished marketable residential and commercial lots/land. A majority of our land development loans consist of loans to develop residential real estate. Land development loans are generally originated as interest only with the intention that the loan principal balance will be repaid through the sale of finished properties by the developers within twelve months of the completion date. Real estate construction and land development loans were \$622.6 million at March 31, 2019, an increase of \$25.4 million, or 4.2%, compared to \$597.2 million at December 31, 2018. Real estate construction and land development loans represented 4.1% of our loan portfolio at March 31, 2019, compared to 3.9% at December 31, 2018.

Real estate construction and land development lending involves a higher degree of risk than commercial real estate lending and residential mortgage lending because of the uncertainties of construction, including the possibility of costs exceeding the initial estimates, the need to obtain a tenant or purchaser of the property if it will not be owner-occupied or the need to sell developed properties. We generally attempt to mitigate the risks associated with real estate construction and land development lending by, among other things, lending primarily in our market areas, using prudent underwriting guidelines and closely monitoring the construction process. At March 31, 2019, \$3.9 million or 0.63%, of our \$622.6 million of real estate construction and land development loans were considered impaired, whereby we determined it was probable that the full amount of principal and interest would not be collected on these loans in accordance with their original contractual terms. At December 31, 2018, \$0.2 million, or 0.04%, of our \$597.2 million of real estate construction and land development loans were considered impaired. The increase in impaired real estate construction and land development loans during the three months ended March 31, 2019 was primarily attributable to one real estate construction loan relationship that we downgraded to nonaccrual status during the first quarter of 2019.

Consumer Loan Portfolio

Our consumer loan portfolio is comprised of residential mortgage loans, consumer installment loans and home equity loans and lines of credit.

Residential mortgage loans consist primarily of one- to four-family residential loans, generally with fixed interest rates of 15 years or less, with amortization periods generally from 15 to 30 years. The loan-to-value ratio at the time of origination is generally 80% or less. Loans with more than an 80% loan-to-value ratio generally require private mortgage insurance.

Residential mortgage loans were \$3.55 billion at March 31, 2019, an increase of \$91.0 million, or 2.6%, from residential mortgage loans of \$3.46 billion at December 31, 2018. Residential mortgage loans historically involve the least amount of credit risk in our loan portfolio. Residential mortgage loans also include loans to consumers for the construction of single family residences that are secured by these properties. Residential mortgage construction loans to consumers were \$257.5 million at March 31, 2019, compared to \$249.4 million at December 31, 2018. Residential mortgage loans represented 23.2% of our loan portfolio at March 31, 2019, compared to 22.7% of our loan portfolio at December 31, 2018.

Our consumer installment loans consist of relatively small loan amounts to consumers to finance personal items (primarily automobiles, recreational vehicles and marine vehicles) with the majority comprised of indirect loans generated from dealerships. Consumer installment loans were \$1.50 billion at March 31, 2019, a decrease of \$16.6 million, or 1.1%, compared to \$1.52 billion at December 31, 2018. At March 31, 2019, collateral securing consumer installment loans was comprised approximately as follows:

automobiles - 52.5%; recreational vehicles - 23.3%; marine vehicles - 20.1%; other collateral - 1.9%; and unsecured - 2.2%. Consumer installment loans represented 9.8% of our loan portfolio at March 31, 2019, compared to 10.0% at December 31, 2018.

Our home equity loans, including home equity lines of credit, are comprised of loans to consumers who utilize equity in their personal residence, including junior lien mortgages, as collateral to secure the loan or line of credit. Home equity loans were \$758.2 million at March 31, 2019, a decrease of \$20.0 million, or 2.6%, from home equity loans of \$778.2 million at December 31, 2018. Home equity loans represented 4.9% of our loan portfolio at March 31, 2019, compared to 5.1% at December 31, 2018. Home equity lines of credit comprised \$355.7 million, or 46.9%, of our home equity loans at March 31, 2019, compared to \$368.0 million, or 47.3%, of home equity loans at December 31, 2018. The majority of our home equity lines of credit are comprised of loans with payments of interest only and original maturities of up to ten years. These home equity lines of credit include junior lien mortgages whereby the first lien mortgage is held by a nonaffiliated financial institution.

Consumer installment and home equity loans generally have shorter terms than residential mortgage loans, but generally involve more credit risk than residential mortgage lending because of the type and nature of the collateral. We experienced net credit losses on average consumer installment and home equity loans totaling 19 basis points (annualized) during the three months ended March 31, 2019, compared to 23 basis points of average consumer installment and home equity loans in all of 2018. Consumer installment and home equity loans are spread across many individual borrowers, which minimizes the risk per loan transaction. We originate consumer installment and home equity loans utilizing a computer-based credit scoring analysis to supplement the underwriting process. Consumer installment and home equity lending collections are dependent on the borrowers' continuing financial stability and are more likely to be affected by adverse personal situations. Collateral values on properties securing consumer installment and home equity loans are negatively impacted by many factors, including the physical condition of the collateral and property values, although losses on consumer installment and home equity loans are often more significantly impacted by the unemployment rate and other economic conditions. The unemployment rates in Michigan, Ohio and Indiana were 4.0%, 4.4% and 3.6%, respectively, at March 31, 2019, compared to 4.0%, 4.6% and 3.6%, respectively, at December 31, 2018. The national average unemployment rate was 3.8% at March 31, 2019.

Asset Quality

Summary of Impaired Assets and Past Due Loans

A loan is impaired when, based on current information and events, it is probable that we will be unable to collect all amounts due according to the contractual terms of the loan agreement. Impaired loans included nonperforming loans and all troubled debt restructurings ("TDRs").

Nonperforming assets consist of loans for which the accrual of interest has been discontinued, other real estate owned acquired through acquisitions or mergers, other real estate owned obtained through foreclosures and other repossessed assets. We do not consider accruing TDRs to be nonperforming assets. Our level of nonaccrual loans is an important element in assessing asset quality. We transfer originated loans that are 90 days or more past due to nonaccrual status, unless we believe the loan is both well-secured and in the process of collection. For loans classified as nonaccrual, including those with modifications, we do not expect to receive all principal and interest payments, and therefore, any payments are recognized as principal reductions when received.

Acquired loans, accounted for under ASC 310-30, that are not performing in accordance with contractual terms are not reported as nonperforming because these loans are recorded in pools at their net realizable value based on the principal and interest we expect to collect on these loans.

Nonperforming assets were \$98.4 million at March 31, 2019, an increase of \$6.7 million, or 7.4%, from \$91.7 million at December 31, 2018. Nonperforming assets represented 0.45% of total assets at March 31, 2019 and 0.43% at December 31, 2018, respectively. Our nonperforming assets are not concentrated in any one industry or any one geographical area. We individually assess each impaired loan to determine if a specific reserve is needed within our allowance for loan losses beyond any charge-offs that may have already been taken.

The following table provides a summary of impaired assets:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Nonaccrual loans ⁽¹⁾ :		
Commercial loan portfolio:		
Commercial	\$ 33,715	\$ 30,139
Commercial real estate:		
Owner-occupied	18,234	16,056
Non-owner occupied	19,430	23,021
Vacant land	2,153	3,337
Total commercial real estate	39,817	42,414
Real estate construction and land development	3,663	12
Total commercial loan portfolio	77,195	72,565
Consumer loan portfolio:		
Residential mortgage	7,665	7,988
Consumer installment	1,191	1,276
Home equity	3,273	3,604
Total consumer loan portfolio	12,129	12,868
Total nonaccrual loans	89,324	85,433
Other real estate and repossessed assets	9,106	6,256
Total nonperforming assets	\$ 98,430	\$ 91,689
Accruing troubled debt restructurings		
Commercial loan portfolio	\$ 37,219	\$ 32,508
Consumer loan portfolio	12,716	13,072
Total performing troubled debt restructurings	49,935	45,580
Total impaired assets	\$ 148,365	\$ 137,269
Accruing loans contractually past due 90 days or more as to interest or principal payments, excluding loans accounted for under ASC 310-30		
Commercial loan portfolio	\$ 544	\$ 939
Consumer loan portfolio	—	488
Total accruing loans contractually past due 90 days or more as to interest or principal payments	\$ 544	\$ 1,427
Nonperforming loans as a percent of total loans	0.58%	0.56%
Nonperforming assets as a percent of total assets	0.45%	0.43%
Impaired assets as a percent of total assets	0.68%	0.64%

(1) Includes nonaccrual troubled debt restructurings.

Nonaccrual loans that meet the definition of a TDR, or nonaccrual TDRs, totaled \$26.8 million at March 31, 2019, compared to \$28.1 million at December 31, 2018. These loans have been modified by providing the borrower a financial concession that is intended to improve our probability of collection of the amounts due.

The following schedule summarizes impaired loans to commercial borrowers and the related valuation allowance at March 31, 2019 and December 31, 2018 and partial loan charge-offs (confirmed losses) taken on these impaired loans:

(Dollars in thousands)	Amount	Valuation Allowance	Confirmed Losses	Cumulative Inherent Loss Percentage
March 31, 2019				
Impaired loans – originated commercial loan portfolio:				
With valuation allowance and no charge-offs	\$ 46,952	\$ 6,395	\$ —	14%
With valuation allowance and charge-offs	8,781	1,183	5,838	48%
With charge-offs and no valuation allowance	7,684	—	3,412	31%
Without valuation allowance or charge-offs	51,009	—	—	—%
Total impaired loans to commercial borrowers	<u>\$ 114,426</u>	<u>\$ 7,578</u>	<u>\$ 9,250</u>	<u>14%</u>
December 31, 2018				
Impaired loans – originated commercial loan portfolio:				
With valuation allowance and no charge-offs	\$ 46,112	\$ 4,103	\$ —	9%
With valuation allowance and charge-offs	7,514	1,371	5,460	53%
With charge-offs and no valuation allowance	9,350	—	3,556	28%
Without valuation allowance or charge-offs	42,062	—	—	—%
Total impaired loans to commercial borrowers	<u>\$ 105,038</u>	<u>\$ 5,474</u>	<u>\$ 9,016</u>	<u>13%</u>

After analyzing the various components of the customer relationships and evaluating the underlying collateral of impaired loans, we determined that impaired loans in the commercial loan portfolio totaling \$55.7 million at March 31, 2019 required a specific allocation of the allowance for loan losses (valuation allowance) of \$7.6 million, compared to \$53.6 million of impaired loans in the commercial loan portfolio at December 31, 2018 that required a valuation allowance of \$5.5 million.

Nonperforming Loans

The following schedule provides the composition of nonperforming loans, by major loan category, as of March 31, 2019 and December 31, 2018.

(Dollars in thousands)	March 31, 2019		December 31, 2018	
	Amount	Percent of Total	Amount	Percent of Total
Commercial loan portfolio:				
Commercial	\$ 33,715	37.7%	\$ 30,139	35.3%
Commercial real estate:				
Owner-occupied	18,234	20.4	16,056	18.8
Non-owner occupied	19,430	21.8	23,021	26.9
Vacant land	2,153	2.4	3,337	3.9
Commercial real estate	<u>39,817</u>	<u>44.6</u>	<u>42,414</u>	<u>49.6</u>
Real estate construction and land development	3,663	4.1	12	—
Subtotal — commercial loan portfolio	<u>77,195</u>	<u>86.4</u>	<u>72,565</u>	<u>84.9</u>
Consumer loan portfolio:				
Residential mortgage	7,665	8.6	7,988	9.4
Consumer installment	1,191	1.3	1,276	1.5
Home equity	3,273	3.7	3,604	4.2
Subtotal — consumer loan portfolio	<u>12,129</u>	<u>13.6</u>	<u>12,868</u>	<u>15.1</u>
Total nonperforming loans	<u>\$ 89,324</u>	<u>100.0%</u>	<u>\$ 85,433</u>	<u>100.0%</u>

Total nonperforming loans were \$89.3 million at March 31, 2019, an increase of \$3.9 million, or 4.6%, compared to \$85.4 million at December 31, 2018. Nonperforming loans in the commercial loan portfolio were \$77.2 million at March 31, 2019, an increase of \$4.6 million, or 6.4%, from \$72.6 million at December 31, 2018. Nonperforming loans in the commercial loan portfolio comprised 86.4% of total nonperforming loans at March 31, 2019, compared to 84.9% at December 31, 2018. Nonperforming loans in the consumer loan portfolio were \$12.1 million at March 31, 2019, a decrease of \$0.8 million, or 5.9%, from \$12.9 million at December 31, 2018.

The following schedule summarizes changes in nonaccrual loans (including nonaccrual TDRs) during the three months ended March 31, 2019 and 2018.

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Balance at beginning of period	\$ 85,433	\$ 63,095
Additions during period	22,621	13,710
Principal balances charged off	(3,076)	(3,989)
Transfers to other real estate/repossessed assets	(1,536)	(1,252)
Moved to accrual status	(3,387)	(2,543)
Payments received	(10,731)	(7,189)
Balance at end of period	\$ 89,324	\$ 61,832

Nonperforming Loans — Commercial Loan Portfolio

The following schedule presents information related to stratification of nonperforming loans in the commercial loan portfolio by dollar amount at March 31, 2019 and December 31, 2018.

(Dollars in thousands)	March 31, 2019		December 31, 2018	
	Number of Borrowers	Amount	Number of Borrowers	Amount
\$5,000,000 or more	1	\$ 13,842	1	\$ 14,121
\$2,500,000 – \$4,999,999	4	13,820	5	16,085
\$1,000,000 – \$2,499,999	10	14,275	4	6,059
\$500,000 – \$999,999	14	9,877	13	9,232
\$250,000 – \$499,999	23	8,008	29	10,390
Under \$250,000	238	17,373	225	16,678
Total	290	\$ 77,195	277	\$ 72,565

Nonperforming commercial loans within the commercial loan portfolio were \$33.7 million at March 31, 2019, an increase of \$3.6 million, or 11.8%, compared to \$30.1 million at December 31, 2018. Nonperforming commercial loans comprised 0.8% of total commercial loans at both March 31, 2019 and December 31, 2018. There were no individual nonperforming commercial loans \$2.5 million or greater at March 31, 2019.

Nonperforming commercial real estate loans within the commercial loan portfolio were \$39.8 million at March 31, 2019, a decrease of \$2.6 million, or 6.1%, compared to \$42.4 million at December 31, 2018. Nonperforming commercial real estate loans comprised 0.8% and 0.9% of total commercial real estate loans at March 31, 2019 and December 31, 2018, respectively. Nonperforming commercial real estate loans secured by owner occupied real estate, non-owner occupied real estate and vacant land totaled \$18.2 million, \$19.4 million and \$2.2 million, respectively, at March 31, 2019. Nonperforming commercial real estate loans secured by owner occupied real estate, non-owner occupied real estate and vacant land totaled \$16.1 million, \$23.0 million and \$3.3 million, respectively, at December 31, 2018. At March 31, 2019, our nonperforming commercial real estate loans were comprised of a diverse mix of commercial lines of business and were also geographically disbursed throughout our market areas. The largest concentration of the \$39.8 million in nonperforming commercial real estate loans at March 31, 2019 was one customer relationship totaling \$13.8 million secured by non-owner occupied commercial real estate property that was transferred to nonaccrual status in the third quarter of 2018.

Nonperforming real estate construction and land development loans were \$3.7 million at March 31, 2019, compared to \$12 thousand at December 31, 2018. The increase in nonperforming real estate construction and land development loans was

primarily due to one real estate construction loan relationship being downgraded to nonaccrual status during the first quarter of 2019. Nonperforming real estate construction and land development loans comprised 0.6% of total real estate construction and land development loans at March 31, 2019, compared to less than 0.01% at December 31, 2018.

At March 31, 2019, we had nonperforming loans in the commercial loan portfolio of \$1.6 million that were secured by real estate and were in various stages of foreclosure, compared to \$1.1 million at December 31, 2018.

Nonperforming Loans — Consumer Loan Portfolio

Nonperforming residential mortgage loans were \$7.7 million at March 31, 2019, a decrease of \$0.3 million, or 4.0%, from \$8.0 million at December 31, 2018. Nonperforming residential mortgage loans comprised 0.2% of total residential mortgage loans at both March 31, 2019 and December 31, 2018. At March 31, 2019, a total of \$0.5 million of nonperforming residential mortgage loans were in various stages of foreclosure, compared to \$1.1 million at December 31, 2018.

Nonperforming consumer installment loans were \$1.2 million at March 31, 2019, compared to \$1.3 million at December 31, 2018. Nonperforming consumer installment loans comprised 0.1% of total consumer installment loans at both March 31, 2019 and December 31, 2018.

Nonperforming home equity loans were \$3.3 million at March 31, 2019, a decrease of \$0.3 million, or 9.2%, compared to \$3.6 million at December 31, 2018. Nonperforming home equity loans comprised 0.4% of total home equity loans at March 31, 2019, compared to 0.5% at December 31, 2018.

Troubled Debt Restructurings (TDRs)

We assess all loan modifications to determine whether a restructuring constitutes a TDR. A restructuring is considered a TDR when a borrower demonstrates financial difficulties and we grant a concession on their loan because we determine that it is probable that if a modification of their loan is granted, such as reducing their monthly payments, we would be able to bring their loan relationships into a performing status. We believe loan modifications will potentially result in a lower level of loan losses and loan collection costs than if we proceeded immediately through the foreclosure process with these borrowers.

Accruing TDRs continue to accrue interest at the loan's original interest rate as we expect to collect the remaining principal balance on the loan. Nonaccrual loans that meet the definition of a TDR do not accrue interest as we do not expect to collect the full amount of principal and interest owed from the borrower on these loans.

The following summarizes TDRs (both accruing and nonaccrual) at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	Accruing TDRs			Nonaccrual TDRs	Total
	Current	Past due 31-89 days	Subtotal		
March 31, 2019					
Commercial loan portfolio	\$ 36,668	\$ 551	\$ 37,219	\$ 23,801	\$ 61,020
Consumer loan portfolio	12,167	549	12,716	2,999	15,715
Total TDRs	\$ 48,835	\$ 1,100	\$ 49,935	\$ 26,800	\$ 76,735
December 31, 2018					
Commercial loan portfolio	\$ 32,173	\$ 335	\$ 32,508	\$ 24,343	\$ 56,851
Consumer loan portfolio	12,532	540	13,072	3,732	16,804
Total TDRs	\$ 44,705	\$ 875	\$ 45,580	\$ 28,075	\$ 73,655

A summary of changes in accruing TDRs in the commercial loan portfolio for the three months ended March 31, 2019 and 2018 follows:

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Balance at beginning of period	\$ 32,508	\$ 34,484
Additions for modifications	4,948	2,702
Principal payments and pay-offs	(653)	(1,642)
Transfers from nonaccrual status	1,080	—
Transfers to nonaccrual status	(664)	(328)
Balance at end of period	\$ 37,219	\$ 35,216

Other Real Estate and Repossessed Assets

Other real estate and repossessed assets are components of nonperforming assets, included in "Interest receivable and other assets" on our Consolidated Statements of Financial Position. These include other real estate ("ORE"), comprised of residential and commercial real estate and land development properties acquired through foreclosure or by acceptance of a deed in lieu of foreclosure, and repossessed assets, comprised of other personal and commercial assets. ORE totaled \$8.7 million at March 31, 2019, an increase of \$2.8 million, or 48.5%, from \$5.8 million at December 31, 2018. The increase in ORE during the three months ended March 31, 2019 was primarily attributable to one commercial property that was moved to ORE during the quarter. Repossessed assets totaled \$0.4 million at both March 31, 2019 and December 31, 2018.

The following schedule provides the composition of ORE at March 31, 2019 and December 31, 2018:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Composition of ORE:		
Vacant land	\$ 188	\$ 305
Commercial real estate properties	4,762	2,465
Residential real estate properties	3,709	3,062
Total ORE	\$ 8,659	\$ 5,832

The following schedule summarizes ORE activity during the three months ended March 31, 2019 and 2018:

(Dollars in thousands)	Three Months Ended March 31,	
	2019	2018
Balance at beginning of period	\$ 5,832	\$ 8,182
Transfers based on adoption of ASU 2014-09 ⁽¹⁾	—	(189)
Additions ⁽²⁾	4,137	1,638
Write-downs	(294)	(651)
Net payments received	(164)	(103)
Dispositions	(852)	(1,678)
Balance at end of period	\$ 8,659	\$ 7,199

⁽¹⁾ In accordance with the updates to Topic 606 adopted by us effective January 1, 2018, \$1.1 million of other real estate owned sold with seller financing were reclassified on the Consolidated Statements of Financial Position to loans and the related \$0.9 million of deferred gains were recognized in income as an adjustment to opening retained earnings. Refer to Note 1, Basis of Presentation and Significant Accounting Policies for further information.

⁽²⁾ Includes loans transferred to other real estate owned.

Our ORE is carried at the lower of cost or fair value less estimated cost to sell. We had \$0.5 million in ORE at March 31, 2019 that had been held in excess of one year. There was no ORE held in excess of three years as of March 31, 2019. We had \$5.6 million of nonperforming loans that were in the process of foreclosure at March 31, 2019.

All of our ORE properties have been written down to fair value through a charge-off against the allowance for loan losses at the time the loan was transferred to ORE, through a subsequent write-down, recorded as an operating expense, to recognize a further market value decline of the property after the initial transfer date, or due to recording at fair value as a result of acquisition transactions. Accordingly, at March 31, 2019, the carrying value of ORE of \$8.7 million was reflective of \$0.9 million in charge-offs, write-downs and acquisition-related fair value adjustments.

During the three months ended March 31, 2019, we sold 70 ORE properties for net proceeds of \$1.6 million. On an average basis, the net proceeds from these sales represented 171% of the carrying value of the property at the time of sale, with the net proceeds representing 113% of the remaining contractual loan balance at the time these loans were classified as nonperforming.

Allowance for Loan Losses

We maintain the allowance for loan losses (the "allowance") at a level we believe is sufficient to absorb probable, incurred losses in our portfolio given the conditions at the time. Management determines the adequacy of the allowance based on quarterly evaluations of the loan portfolio and other factors. These evaluations are inherently subjective as they require management to make material estimates, all of which may be susceptible to significant change.

The originated allowance is comprised of specific valuation allowances (assessed for originated loans that have known credit weaknesses and are considered impaired), pooled allowances, based on assigned risk ratings and historical loan loss experience for each loan type, and a qualitative allowance based on environmental factors that take into consideration risks inherent in the originated loan portfolio that differ from historical loan loss experience. Our methodology for measuring the adequacy of the originated allowance is comprised of several key elements, which include a review of the loan portfolio, both individually and by category, and consideration of changes in the mix and volume of the loan portfolio, actual delinquency and loan loss experience, review of collateral values, the size and financial condition of the borrowers, industry and geographical exposures within the portfolio, economic conditions and employment levels of our local markets and other factors affecting business sectors.

The allowance for each acquired loan portfolio was not carried over on the date of each respective acquisition. Instead, the acquired loans were recorded at their estimated fair values at each acquisition date, with the estimated fair values including a component for expected credit losses. Acquired loans are subsequently evaluated for further credit deterioration in loan pools, which consist of loans with similar credit risk characteristics. If an acquired loan pool experiences a decrease in expected cash flows, as compared to those expected at the acquisition date, an allowance is established and allocated to acquired loans. The allowance is evaluated utilizing the key assumptions and estimates, similar to the initial estimate of fair value. Management must use judgment to develop its estimates of cash flows for acquired loans, which are impacted by many factors, including changes in property values, default rates, loss severities and prepayment speeds. As a result of the significant amount of judgment involved in estimating future cash flows expected to be collected for acquired loans, the adequacy of the allowance could be significantly impacted by changes in expected cash flows resulting from changes in credit quality of acquired loans. The results of our quarterly re-estimations of cash flows on our acquired loan portfolio resulted in no allowance established for our acquired loan portfolios at March 31, 2019, compared to \$420 thousand at December 31, 2018.

We evaluate the originated and acquired allowances on a quarterly basis in an effort to ensure the level is adequate to absorb probable losses inherent in the loan portfolios. This evaluation process is inherently subjective as it requires estimates that may be susceptible to significant change and has the potential to affect net income materially. We believe that the allowances are currently maintained at an appropriate level, considering the inherent risk in the loan portfolios. Future significant adjustments to the allowances may be necessary due to changes in economic conditions, delinquencies or the level of loan losses incurred.

The following schedule summarizes information related to our allowance for loan losses:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Allowance for loan losses:		
Originated loans	\$ 110,284	\$ 109,564
Acquired loans	—	420
Total	<u>\$ 110,284</u>	<u>\$ 109,984</u>
Originated loans	<u>\$ 12,142,274</u>	<u>\$ 11,844,756</u>
Acquired loans	<u>3,181,774</u>	<u>3,425,023</u>
Total loans	<u>\$ 15,324,048</u>	<u>\$ 15,269,779</u>
Nonperforming loans	<u>\$ 89,324</u>	<u>\$ 85,433</u>
Allowance for originated loan losses as a percent of:		
Total originated loans	0.91%	0.93%
Nonperforming loans	123.5%	128.2%
Nonperforming loans, less impaired originated loans for which the expected loss has been charged-off	135%	144%
Credit mark as a percent of unpaid principal balance on acquired loans	1.5%	1.7%

A summary of the activity in the allowance for loan losses is included in the table below.

(Dollars in thousands)	Three Months Ended	
	March 31, 2019	March 31, 2018
Allowance for loan losses - originated loan portfolio		
Allowance for loan losses - beginning of period	\$ 109,564	\$ 91,887
Provision for loan losses	2,479	6,256
Loan charge-offs:		
Commercial	(827)	(1,493)
Commercial real estate:		
Owner-occupied	(583)	(147)
Non-owner occupied	(5)	(495)
Vacant land	(19)	(450)
Total commercial real estate	(607)	(1,092)
Real estate construction and land development	—	(9)
Residential mortgage	(202)	(159)
Consumer installment	(1,537)	(1,496)
Home equity	(32)	(575)
Total loan charge-offs	(3,205)	(4,824)
Recoveries of loans previously charged off:		
Commercial	540	241
Commercial real estate:		
Owner-occupied	51	488
Non-owner occupied	224	39
Vacant land	6	2
Total commercial real estate	281	529
Real estate construction and land development	—	35
Residential mortgage	126	106
Consumer installment	404	499
Home equity	95	33
Total loan recoveries	1,446	1,443
Net loan charge-offs	(1,759)	(3,381)
Allowance for loan losses - end of period	110,284	94,762
Allowance for loan losses - acquired loan portfolio		
Allowance for loan losses - beginning of period	420	—
Provision for loan losses	(420)	—
Allowance for loan losses - end of period	—	—
Total allowance for loan losses	\$ 110,284	\$ 94,762
Net loan charge-offs as a percentage of average loans (annualized)	0.05%	0.10%

The allocation of the allowance for loan losses in the table below is based upon ranges of estimates and is not intended to imply either limitations on the usage of the allowance or exactness of the specific amounts. The entire allowances attributable to originated and acquired loans are available to absorb future loan losses within the originated and acquired loan portfolios without regard to the categories in which the loan losses are classified. The allocation of the allowances is based upon a combination of factors, including historical loss factors, credit-risk grading, past-due experiences, and other factors, as discussed above.

(Dollars in thousands)	March 31, 2019		December 31, 2018	
	Allowance Amount	Percent of loans in each category to total loans	Allowance Amount	Percent of loans in each category to total loans
Originated loans:				
Commercial	\$ 40,613	22%	\$ 36,931	21%
Commercial real estate:				
Owner-occupied	20,552	10	19,586	10
Non-owner occupied	17,604	13	21,789	13
Vacant land	434	—	532	—
Total commercial real estate	38,590	23	41,907	23
Real estate construction and land development	4,807	4	3,921	4
Residential mortgage	15,006	17	14,815	16
Consumer Installment	8,009	9	8,542	10
Home equity	3,259	4	3,448	4
Subtotal — originated loans	110,284	79	109,564	78
Acquired loans	—	21	420	22
Total	\$ 110,284	100%	\$ 109,984	100%

Deposits

Total deposits were \$16.06 billion at March 31, 2019, an increase of \$468.7 million, or 3.0%, from total deposits of \$15.59 billion at December 31, 2018. The increase in total deposits during the three months ended March 31, 2019 was primarily due to an increase in customer deposits of \$419.3 million, with increases across all categories, and an increase in brokered deposits of \$49.4 million. Interest and noninterest-bearing demand deposits, and savings and money market accounts totaled \$11.45 billion at March 31, 2019, compared to \$11.22 billion at December 31, 2018. Time and brokered deposits were \$4.61 billion at March 31, 2019, compared to \$4.37 billion at December 31, 2018.

It is our strategy to develop customer relationships that will drive core deposit growth and stability. Our competitive position within many of our market areas has historically limited our ability to materially increase core deposits without adversely impacting the weighted average cost of the deposit portfolio. While competition for core deposits remained strong throughout our markets during the three months ended March 31, 2019, our efforts to expand deposit relationships with existing and new customers, our financial strength and a general trend in customers holding more liquid assets have resulted in continued increases in customer deposits.

At March 31, 2019, time deposits, which consist of certificates of deposit, including CDARs, IRA deposits and other brokered funds, totaled \$4.33 billion, of which \$2.51 billion have stated maturities during the remainder of 2019. We expect the majority of these maturing time deposits to be renewed by customers. The following schedule summarizes the scheduled maturities of time deposits as of March 31, 2019:

(Dollars in thousands)	Amount	Weighted Average Interest Rate
2019 maturities:		
Second quarter	\$ 1,291,562	1.9%
Third quarter	670,396	2.0
Fourth quarter	548,862	2.1
2019 remaining maturities	\$ 2,510,820	2.0%
2020 maturities	1,539,842	2.3
2021 maturities	159,429	1.5
2022 maturities	83,567	1.6
2023 maturities	34,636	1.6
2024 maturities and beyond	6,375	1.5
Total time deposits	\$ 4,334,669	2.0%

The below table presents the maturity distribution of time deposits of \$250,000 or more at March 31, 2019. Time deposits of \$250,000 or more totaled \$2.26 billion and represented 14.1% of total deposits at March 31, 2019.

(Dollars in thousands)	March 31, 2019	
	Amount	Percent
Maturity:		
Within 3 months	\$ 862,505	38.2%
After 3 but within 6 months	457,839	20.3
After 6 but within 12 months	791,592	35.1
After 12 months	145,200	6.4
Total	\$ 2,257,136	100.0%

Borrowed Funds and Other Short-Term Liabilities

Borrowed funds consist of short-term and long-term borrowings. Short-term borrowings, which generally have an original term to maturity of 30 days or less, consist of short-term FHLB advances and federal funds purchased which are utilized by us to fund short-term liquidity needs. Other short-term liabilities consist of collateralized customer deposits.

Other Short-term Liabilities

Other short-term liabilities consist of collateralized customer deposits, which represent funds deposited by customers that are collateralized by investment securities owned by Chemical Bank, as these deposits are not covered by Federal Deposit Insurance Corporation ("FDIC") insurance. These funds have been a stable source of liquidity for Chemical Bank, much like our core deposit base, and are generally only provided to customers that have an established banking relationship with Chemical Bank. Our collateralized customer deposits do not qualify as sales for accounting purposes. Collateralized customer deposits were \$413.2 million at March 31, 2019, compared to \$382.7 million at December 31, 2018.

Short-term Borrowings

Short-term borrowings were \$1.74 billion at March 31, 2019, compared to \$2.04 billion at December 31, 2018 and were comprised of FHLB borrowings. Short-term borrowings decreased \$295.0 million, or 14.5%, during the three months ended March 31, 2019.

FHLB advances are borrowings from the FHLB generally used to fund loans and are secured by both a blanket security agreement of residential mortgage first lien and other real estate loans with an aggregate book value equal to at least 140% of the

advances and FHLB capital stock owned by Chemical Bank. The carrying value of loans eligible as collateral under the blanket security agreement was \$7.50 billion at March 31, 2019. We rely on short-term FHLB advances to cover short-term liquidity needs.

(Dollars in thousands)	Three Months Ended	
	March 31, 2019	March 31, 2018
Short-term borrowings:		
Short-term FHLB advances		
Maximum outstanding at any month-end	\$ 1,820,000	\$ 2,100,000
Balance outstanding at end of period	\$ 1,740,000	\$ 2,050,000
Weighted average interest rate at end of period	2.57%	1.75%
Average balance outstanding	\$ 1,652,389	\$ 2,055,556
Weighted average interest rate	2.25%	1.61%
Federal Funds Purchased and Other Short-Term Borrowings		
Maximum outstanding at any month-end	\$ 25,000	\$ —
Balance outstanding at end of period	\$ —	\$ —
Weighted average interest rate at end of period	—%	—%
Average balance outstanding	\$ 833	\$ —
Weighted average interest rate	2.52%	—%

Long-term Borrowings

Long-term borrowings were \$426.0 million at both March 31, 2019 and December 31, 2018.

A summary of the composition of our long-term borrowings follows:

(Dollars in thousands)	March 31, 2019	December 31, 2018
Long-term borrowings:		
Long-term FHLB advances	\$ 410,087	\$ 410,102
Subordinated debt obligations	15,948	15,900
Total long-term borrowings	\$ 426,035	\$ 426,002

Credit-Related Commitments

We have credit-related commitments that may impact liquidity. The following schedule summarizes credit-related commitments and expected expiration dates by period as of March 31, 2019. Because many of these commitments historically have expired without being drawn upon, the total amount of these commitments does not necessarily represent future liquidity requirements. Refer to Note 13 to our Consolidated Financial Statements for a further discussion of these obligations.

(Dollars in thousands)	Less than 1 year	1-3 years	3-5 years	More than 5 years	Total
Unused commitments to extend credit:					
Loans to commercial borrowers	\$ 1,621,086	\$ 812,191	\$ 349,603	\$ 155,111	\$ 2,937,991
Loans to consumer borrowers	114,418	126,098	164,880	195,251	600,647
Total unused commitments to extend credit	1,735,504	938,289	514,483	350,362	3,538,638
Undisbursed loan commitments ⁽¹⁾	512,735	—	—	—	512,735
Standby letters of credit	76,089	14,523	17,957	17,081	125,650
Total credit-related commitments	\$ 2,324,328	\$ 952,812	\$ 532,440	\$ 367,443	\$ 4,177,023

⁽¹⁾ Excludes \$115.8 million of residential mortgage loan originations that were expected to be sold in the secondary market.

Capital

Capital supports current operations and provides the foundation for future growth and expansion. Our total shareholders' equity was \$2.90 billion at March 31, 2019, an increase of \$61.2 million, or 2.2%, from total shareholders' equity of \$2.84 billion at December 31, 2018. Our total shareholders' equity as a percentage of total assets was 13.3% at March 31, 2019, compared to 13.2% at December 31, 2018. Our tangible shareholders' equity, which is defined as total shareholders' equity less goodwill and other acquired intangible assets, totaled \$1.74 billion at March 31, 2019 and \$1.68 billion at December 31, 2018. Our tangible shareholders' equity to tangible assets ratio was 8.5% at March 31, 2019, compared to 8.3% at December 31, 2018. Tangible shareholders' equity and the tangible shareholders' equity to tangible assets ratio are non-GAAP financial measures. Please refer to the section entitled "Non-GAAP Financial Measures."

Regulatory Capital

Under the regulatory "risk-based" capital guidelines in effect for both banks and bank holding companies, minimum capital levels are based upon perceived risk in our various asset categories. These guidelines assign risk weights to on- and off-balance sheet items in arriving at total risk-weighted assets. Regulatory capital is divided by the computed total of risk-weighted assets to arrive at the risk-based capital ratios. Our risk-weighted assets for Chemical and Chemical Bank totaled \$16.18 billion and \$16.15 billion, respectively, at March 31, 2019, compared to \$16.10 billion and \$16.07 billion respectively, at December 31, 2018. The increase in risk-weighted assets during the three months ended March 31, 2019 was primarily attributable to increases in our investment securities portfolio.

In July 2013, the FRB and the FDIC approved final rules implementing the Basel Committee on Banking Supervision's (BCBS) capital guidelines for U.S. banks (commonly known as Basel III). Under Basel III, which became applicable to us and Chemical Bank on January 1, 2015, minimum capital requirements were increased for both the quantity and quality of capital held by Chemical and Chemical Bank. Basel III added a new common equity Tier 1 capital to risk-weighted assets ratio (CET1 ratio) of 4.5%, raised the minimum ratio of Tier 1 capital to risk-weighted assets from 4.0% to 6.0%, kept the total risk-based capital ratio unchanged at 8.0% and kept the minimum leverage ratio unchanged at 4.0%. In addition to meeting the minimum capital requirements, under the Basel III capital rules, Chemical and Chemical Bank must also maintain a capital conservation buffer to avoid becoming subject to restrictions on capital distributions and certain discretionary bonus payments to management. The capital conservation buffer is calculated as a ratio of CET1 capital to risk-weighted assets, and it effectively increases the required minimum risk-based capital ratios. The capital conservation buffer requirement was phased in over a multi-year period that began on January 1, 2016. The phase-in period ended on January 1, 2019, and the capital conservation buffer is now at its fully phased-in level of 2.5%. Throughout 2018, the required capital conservation buffer was 1.875%. The Tier 1 leverage ratio is not impacted by the capital conservation buffer, and a banking institution may be considered well-capitalized even if it is out of compliance with the capital conservation buffer.

Chemical and Chemical Bank both continue to maintain strong capital positions, which exceeded the minimum capital adequacy levels prescribed by the FRB at March 31, 2019, as shown in the following schedule:

	March 31, 2019			
	Leverage Ratio	Risk-Based Capital Ratios		
CET Tier 1		Tier 1	Total	
Actual Capital Ratios:				
Chemical Financial Corporation	8.7%	10.9%	10.9%	11.7%
Chemical Bank	8.6	10.9	10.9	11.6
Minimum required for capital adequacy purposes	4.0	4.5	6.0	8.0
Minimum required for "well-capitalized" capital adequacy purposes	5.0	6.5	8.0	10.0

At March 31, 2019, Chemical's and Chemical Bank's regulatory capital ratios were above the well-capitalized standards and met the 2.5% capital conservation buffer. See Note 18 to our Consolidated Financial Statements for more information regarding Chemical's and Chemical Bank's regulatory capital ratios.

Results of Operations

Overview

Our net income was \$62.9 million, or \$0.87 per diluted share, in the first quarter of 2019, compared to net income of \$73.0 million, or \$1.01 per diluted share, in the fourth quarter of 2018, and net income of \$71.6 million, or \$0.99 per diluted share, in the first quarter of 2018. Net income decreased \$10.1 million in the first quarter of 2019, compared to the fourth quarter of 2018, and decreased \$8.7 million, compared to the first quarter of 2018. Net income, excluding the change in fair value in loan servicing rights and merger expenses (collectively referred to herein as "significant items"), a non-GAAP financial measure, was \$73.3 million, or \$1.02 per diluted share, in the first quarter of 2019, compared to \$75.3 million, or \$1.04 per diluted share, in the fourth quarter of 2018, and \$68.6 million, or \$0.95 per diluted share, in the first quarter of 2018. The decrease in net income, excluding significant items, in the first quarter of 2019, compared to the fourth quarter of 2018, was primarily due to a lower effective tax rate in the fourth quarter of 2018 due to federal historic tax credits placed into service, the adjustment to tax provisional amounts related to the one-year measurement period provided by Staff Accounting Bulletin No. 118 in order to finalize items that were not available in the enactment period associated with the passing of the Tax Cuts and Jobs Act and by certain changes in estimates associated with the filing of our final 2017 tax return, partially offset by decreases in the provision for loan losses and operating expenses. The increase in net income, excluding significant items, in the first quarter of 2019, compared to the first quarter of 2018, was primarily attributable to an increase in net interest income driven by increases in average balances and yields earned on our loan portfolio and an increase in investment securities, partially offset by increases in average deposits, cost of funds and operating expenses and a decrease in the provision for loan losses.

Return on average assets was 1.17% in the first quarter of 2019, compared to 1.39% in the fourth quarter of 2018 and 1.47% in the first quarter of 2018. Return on average assets in the first quarter of 2019, excluding significant items, a non-GAAP financial measure, net of tax was 1.36%, compared to 1.44% in the fourth quarter of 2018 and 1.41% in the first quarter of 2018. Return on average shareholders' equity was 8.8% in the first quarter of 2019, compared to 10.4% in the fourth quarter of 2018 and 10.7% in the first quarter of 2018. Return on average shareholders' equity in the first quarter of 2019, excluding significant items, a non-GAAP financial measure, was 10.3%, compared to 10.8% in the fourth quarter of 2018 and 10.3% in the first quarter of 2018. Our return on average tangible shareholders' equity, a non-GAAP financial measure, was 14.8% in the first quarter of 2019, compared to 17.8% in the fourth quarter of 2018 and 19.0% in the first quarter of 2018. Our return on average tangible equity in the first quarter of 2019, excluding significant items, a non-GAAP financial measure, was 17.2%, compared to 18.3% in the fourth quarter of 2018 and 18.2% in the first quarter of 2018.

Please refer to the section entitled "Non-GAAP Financial Measures" included within this Management's Discussion and Analysis of Financial Condition and Results of Operations for a reconciliation to the most directly comparable GAAP financial measures.

Net Interest Income

Net interest income is the difference between interest income on earning assets, such as loans, investment and non-marketable equity securities and interest-bearing deposits with the Federal Reserve Bank ("FRB") and other banks, and interest expense on liabilities, such as deposits and borrowings. Net interest income is our largest source of net revenue (net interest income plus noninterest income), representing 86.8% of net revenue for the first quarter of 2019, compared to 83.6% for the fourth quarter of 2018 and 78.9% for the first quarter of 2018. Net interest income, on a fully taxable equivalent ("FTE") basis, is the difference between interest income and interest expense adjusted for the tax benefit received on tax-exempt commercial loans and investment securities. Net interest margin (FTE) is calculated by dividing net interest income (FTE) by average interest-earning assets, annualized as applicable. Net interest spread is the difference between the average yield on interest-earning assets and the average cost of interest-bearing liabilities. Because noninterest-bearing sources of funds, or free funds (principally demand deposits and shareholders' equity), also support earning assets, the net interest margin exceeds the net interest spread.

Average Balances, Fully Tax Equivalent ("FTE") Interest and Effective Yields and Rates

The following table presents the average daily balances of our major categories of assets and liabilities, interest income and expense on a FTE basis, average interest rates earned and paid on the assets and liabilities, net interest income (FTE), net interest spread and net interest margin for the three months ended March 31, 2019, December 31, 2018 and March 31, 2018. The presentation of net interest income on a FTE basis is not in accordance with GAAP but is customary in the banking industry. This non-GAAP measure ensures comparability of net interest income arising from both taxable and tax-exempt loans and investment securities. Please refer to the section entitled "Non-GAAP Financial Measures."

(Dollars in thousands)	Three Months Ended								
	March 31, 2019			December 31, 2018			March 31, 2018		
	Average Balance	Interest (FTE)	Effective Yield/Rate ⁽¹⁾	Average Balance	Interest (FTE)	Effective Yield/Rate ⁽¹⁾	Average Balance	Interest (FTE)	Effective Yield/Rate ⁽¹⁾
Assets									
Interest-earning assets:									
Loans ⁽¹⁾⁽²⁾	\$ 15,323,704	\$184,058	4.86%	\$ 15,058,271	\$181,765	4.80%	\$ 14,224,926	\$157,568	4.48%
Taxable investment securities	2,631,161	20,501	3.12	2,399,177	18,746	3.13	1,781,995	12,419	2.79
Tax-exempt investment securities ⁽¹⁾	1,154,348	9,066	3.14	1,075,377	8,286	3.08	1,010,092	7,033	2.79
Other interest-earning assets	193,326	1,738	3.65	193,333	2,419	4.97	180,084	1,901	4.28
Interest-bearing deposits with FRB and other banks and federal funds sold	221,116	1,280	2.35	230,142	1,401	2.41	262,910	1,240	1.91
Total interest-earning assets	19,523,655	216,643	4.48	18,956,300	212,617	4.46	17,460,007	180,161	4.17
Less: Allowance for loan losses	(110,852)			(105,767)			(92,648)		
Other assets:									
Cash and cash due from banks	186,849			191,985			226,660		
Premises and equipment	123,470			123,993			126,742		
Interest receivable and other assets	1,791,876			1,789,195			1,737,116		
Total assets	\$ 21,514,998			\$ 20,955,706			\$ 19,457,877		
Liabilities and shareholders' equity									
Interest-bearing liabilities:									
Interest-bearing demand deposits	\$ 3,375,841	\$ 6,721	0.81%	\$ 3,072,237	\$ 4,791	0.62%	\$ 2,767,267	\$ 1,225	0.18%
Savings deposits	4,532,107	11,257	1.01	4,436,212	10,209	0.91	4,047,004	4,937	0.49
Time deposits	4,287,346	21,020	1.99	4,029,519	19,106	1.88	3,262,568	9,755	1.21
Collateralized customer deposits	359,230	627	0.71	383,457	721	0.75	409,077	524	0.52
Short-term borrowings	1,653,222	9,178	2.25	1,693,750	9,426	2.21	2,055,556	8,166	1.61
Long-term borrowings	426,011	2,354	2.24	428,425	2,398	2.22	372,886	1,464	1.59
Total interest-bearing liabilities	14,633,757	51,157	1.42	14,043,600	46,651	1.32	12,914,358	26,071	0.82
Noninterest-bearing deposits	3,753,929	—	—	3,892,517	—	—	3,688,581	—	—
Total deposits and borrowed funds	18,387,686	51,157	1.13	17,936,117	46,651	1.03	16,602,939	26,071	0.64
Interest payable and other liabilities	271,597			221,091			186,613		
Shareholders' equity	2,855,715			2,798,498			2,668,325		
Total liabilities and shareholders' equity	\$ 21,514,998			\$ 20,955,706			\$ 19,457,877		
Net Interest Spread (Average yield earned minus average rate paid)			3.06%			3.14%			3.35%
Net Interest Income (FTE)		\$165,486			\$165,966			\$154,090	
Net Interest Margin (Net interest income (FTE) divided by total average interest-earning assets)			3.42%			3.49%			3.56%
Reconciliation to Reported Net Interest Income									
Net interest income, fully taxable equivalent (non-GAAP)		\$165,486			\$165,966			\$154,090	
Adjustments for taxable equivalent interest ⁽¹⁾ :									
Loans		(766)			(782)			(750)	
Tax-exempt investment securities		(1,896)			(1,732)			(1,477)	
Total taxable equivalent interest adjustments		(2,662)			(2,514)			(2,227)	
Net interest income (GAAP)		\$162,824			\$163,452			\$151,863	
Net interest margin (GAAP)			3.38%			3.42%			3.51%

(1) Fully taxable equivalent (FTE) basis using a federal income tax rate of 21%. The presentation of net interest income on a FTE basis is not in accordance with GAAP, but is customary in the banking industry. Please refer to the section entitled "Non-GAAP Financial Measures."

(2) Nonaccrual loans and loans held-for-sale are included in average balances reported and are included in the calculation of yields. Tax equivalent interest also includes net loan fees.

Net interest income (FTE) of \$165.5 million in the first quarter of 2019 was \$0.5 million, or 0.3%, lower than net interest income (FTE) of \$166.0 million in the fourth quarter of 2018, and 7.4% higher than net interest income (FTE) of \$154.1 million in the first quarter of 2018. The decrease in net interest income (FTE) in the first quarter of 2019, compared to the fourth quarter of 2018, was primarily attributable to an increase in average deposits and cost of funds, partially offset by the benefit provided from an increase in average balances and yields earned on loans and investment securities. The increase in net interest income (FTE) in the first quarter of 2019, compared to the first quarter of 2018, was primarily attributable to increases in average balances and yields earned on loans and investment securities, partially offset by an increase in our average interest-bearing deposits and funding costs. The net interest margin (FTE) was 3.42% in the first quarter of 2019, compared to 3.49% in the fourth quarter of 2018 and 3.56% in the first quarter of 2018. The decrease in the net interest margin (FTE), in the first quarter of 2019, compared to the fourth quarter of 2018 and the first quarter of 2019, was primarily due to an increase in average deposit balances and cost of funds, partially offset by increases in average balances and yields earned on loans and investment securities. The average yield on interest-earning assets increased two basis point to 4.48% in the first quarter of 2019, from 4.46% in the fourth quarter of 2018, and increased 31 basis points compared to 4.17% in the first quarter of 2018. Interest accretion from purchase accounting discounts on acquired loans contributed 22 basis points to our net interest margin (FTE) in the first quarter of 2019, compared to 23 basis points in the fourth quarter of 2018 and 29 basis points in the first quarter of 2018. The yield on total loans in the first quarter of 2019 of 4.86%, increased six basis points compared to 4.80% in the fourth quarter of 2018, and increased 38 basis points compared to 4.48% in the first quarter of 2018, primarily due to higher yields on new loan fundings and the benefit from interest rate adjustments on variable rate loans. The average cost of interest-bearing liabilities increased ten basis points to 1.42% in the first quarter of 2019, compared to 1.32% in the fourth quarter of 2018, and increased 60 basis points, compared to 0.82% in the first quarter of 2018, primarily due to an increase in funding costs resulting from a rising interest rate environment combined with an increase in average balances of deposits.

Changes in our net interest income are influenced by a variety of factors, including changes in the level and mix of interest-earning assets and interest-bearing liabilities, current and prior years' interest rate changes, the level and direction of interest rates, the difference between short-term and long-term interest rates (the steepness of the yield curve) and the general strength of the economies in our markets. Risk management plays an important role in our level of net interest income. The ineffective management of credit risk, and more significantly interest rate risk, can adversely impact our net interest income. Management monitors our Consolidated Statements of Financial Position to seek to reduce the potential adverse impact on net interest income caused by significant changes in interest rates. Our policies in this regard are further discussed under the subheading "Market Risk."

The Federal Reserve influences the general market rates of interest, including the deposit and loan rates offered by many financial institutions. The prime interest rate, which is the rate offered on loans to borrowers with strong credit, increased to 5.50% in December 2018, from the previous rates of 5.25% in September 2018, 5.00% in June 2018, 4.75% in January 2018 and from 4.50% in December 2017. The prime interest rate has historically been 300 basis points higher than the federal funds rate. The majority of our variable interest rate loans in our commercial loan portfolio are tied to the prime rate.

We are primarily funded by core deposits, which are a lower-cost funding base than wholesale funding and historically has had a positive impact on our net interest income and net interest margin.

Volume and Rate Variance Analysis

The below table presents the effect of volume and rate changes on interest income and expense. Changes in volume are changes in the average balance multiplied by the previous year's average rate. Changes in rate are changes in the average rate multiplied by the average balance from the previous year. The net changes attributable to the combined impact of both rate and volume have been allocated proportionately to the changes due to volume and the changes due to rate.

(Dollars in thousands)	Three Months Ended March 31, 2019					
	Compared to Three Months Ended December 31, 2018			Compared to Three Months Ended March 31, 2018		
	Increase (Decrease) Due to Changes in			Increase (Decrease) Due to Changes in		
	Average Volume ⁽¹⁾	Average Yield/Rate ⁽¹⁾	Combined Increase/ (Decrease)	Average Volume ⁽¹⁾	Average Yield/Rate ⁽¹⁾	Combined Increase/ (Decrease)
Changes in Interest Income on Interest-Earning Assets:						
Loans	\$ 1,526	\$ 767	\$ 2,293	\$ 14,106	\$ 12,384	\$ 26,490
Taxable investment securities/other assets	1,815	(741)	1,074	6,607	1,312	7,919
Tax-exempt investment securities	617	163	780	1,082	951	2,033
Interest-bearing deposits with the FRB and other banks	(72)	(49)	(121)	(207)	247	40
Total change in interest income on interest-earning assets	3,886	140	4,026	21,588	14,894	36,482
Changes in Interest Expense on Interest-Bearing Liabilities:						
Interest-bearing demand deposits	641	1,289	1,930	323	5,173	5,496
Savings deposits	580	468	1,048	2,203	4,117	6,320
Time deposits	1,957	(43)	1,914	3,372	7,893	11,265
Collateralized customer deposits	(51)	(43)	(94)	(70)	173	103
Short-term borrowings	(315)	67	(248)	(1,807)	2,819	1,012
Long-term borrowings	(39)	(5)	(44)	174	716	890
Total change in interest expense on interest-bearing liabilities	2,773	1,733	4,506	4,195	20,891	25,086
Total Change in Net Interest Income (FTE) ⁽²⁾	\$ 1,113	\$ (1,593)	\$ (480)	\$ 17,393	\$ (5,997)	\$ 11,396

(1) The change in interest income and interest expense due to both volume and rate has been allocated to the volume and rate changes in proportion to the relationship of the absolute dollar amounts of the change in each.

(2) Fully taxable equivalent basis using a federal income tax rate of 21%. The presentation of net interest income on a FTE basis is not in accordance with GAAP, but is customary in the banking industry.

Provision for Loan Losses

The provision for loan losses ("provision") is an increase to the allowance, as determined by management, to provide for probable losses inherent in the originated loan portfolio and for impairment in pools of acquired loans that results from us experiencing a decrease, if any, in expected cash flows on acquired loans during each reporting period.

The provision was \$2.1 million in the first quarter of 2019, compared to \$8.9 million in the fourth quarter of 2018 and \$6.3 million in the first quarter of 2018. The decrease in the provision in the first quarter of 2019, compared to the fourth quarter of 2018, was primarily the result of a decrease in originated loan growth, low loan charge-off rates and recoveries in the acquired loan portfolio. The decrease in the provision in the first quarter of 2019, compared to the first quarter of 2018, was primarily the result of an improvement in overall credit quality. Net originated loan growth was \$297.5 million in the first quarter of 2019, which was partially offset by \$243.2 million of run-off in the acquired loan portfolio during the same period, compared to net originated loan growth of \$699.3 million in the fourth quarter of 2018, partially offset by run-off of \$225.8 million in the acquired loan portfolio during the same period, and net originated loan growth of \$265.1 million in the first quarter of 2018, partially offset by run-off of \$201.6 million in the acquired loan portfolio during the same period.

We experienced net loan charge-offs of \$1.8 million, or 0.05% of average loans, in the first quarter of 2019, compared to \$3.0 million, or 0.08% of average loans, in the fourth quarter of 2018 and \$3.4 million, or 0.10% of average loans, in the first quarter of 2018. Net loan charge-offs in the commercial loan portfolios totaled \$0.6 million in the first quarter of 2019, compared to \$1.3 million in the fourth quarter of 2018 and \$1.8 million in the first quarter of 2018. Net loan charge-offs in the consumer

loan portfolios totaled \$1.1 million in the first quarter of 2019, compared to \$1.6 million in the fourth quarter of 2018 and \$1.6 million in the first quarter of 2018.

Noninterest Income

The following table presents the major components of noninterest income:

(Dollars in thousands)	Three Months Ended		
	March 31, 2019	December 31, 2018	March 31, 2018
Noninterest income			
Service charges and fees on deposit accounts	\$ 7,967	\$ 8,654	\$ 9,434
Wealth management revenue	5,872	6,457	6,311
Electronic banking fees ⁽¹⁾	3,452	5,127	3,619
Net gain on sale of loans and other mortgage banking revenue ⁽²⁾	8,540	6,804	8,783
Change in fair value in loan servicing rights ⁽²⁾	(7,646)	(2,827)	3,752
Other fees for customer services ⁽¹⁾	1,372	1,379	1,164
Gain on sale of investment securities	87	221	—
Bank-owned life insurance ⁽³⁾	1,709	273	891
Other ⁽³⁾	3,504	5,959	6,600
Total noninterest income	\$ 24,857	\$ 32,047	\$ 40,554
Noninterest income as a percentage of:			
Net revenue (net interest income plus noninterest income)	13.3%	16.5%	21.1%
Average total assets (annualized)	0.5%	0.6%	0.8%

⁽¹⁾ Included within the line item "Other charges and fees for customer services" in the Consolidated Statements of Income.

⁽²⁾ Included within the line item "Net gain on sale of loans and other mortgage banking revenue" in our Consolidated Statements of Income.

⁽³⁾ Included within the line item "Other" noninterest income in the Consolidated Statements of Income.

Noninterest income was \$24.9 million in the first quarter of 2019, compared to \$32.0 million in the fourth quarter of 2018 and \$40.6 million in the first quarter of 2018. Noninterest income in the first quarter of 2019 decreased \$7.1 million, or 22.1%, compared to the fourth quarter of 2018, primarily due to the change in fair value in loan servicing rights, included within net gain on sale of loans and other mortgage banking revenue, and a decrease of \$1.6 million in electronic banking fees, included within other charges and fees for customer services, partially offset by an increase of \$1.7 million in net gain on sale of loans and other mortgage banking revenue. Noninterest income in the first quarter of 2019 decreased \$15.7 million, or 38.2%, compared to the first quarter of 2018, primarily due to the change in fair value in loan servicing rights.

Service charges and fees on deposit accounts, which include overdraft/non-sufficient funds fees, checking account fees and other deposit account charges, were \$8.0 million in the first quarter of 2019, \$8.7 million in the fourth quarter of 2018 and \$9.4 million in the first quarter of 2018. Service charges and fees on deposit accounts decreased \$0.7 million, or 7.9%, in the first quarter of 2019, compared to the fourth quarter of 2018, and \$1.4 million, or 15.6%, from the first quarter of 2018, primarily due to a decrease in overdraft fees. Overdraft/non-sufficient funds fees included in service charges and fees on deposit accounts were \$4.4 million in the first quarter of 2019, compared to \$4.9 million in the fourth quarter of 2018 and \$5.9 million in the first quarter of 2018.

Wealth management revenue is comprised of investment fees that are generally based on the market value of assets within a trust account, custodial account fees and fees from the sale of investment products. Volatility in the equity and bond markets impacts the market value of trust assets and our related investment fees. Wealth management revenue was \$5.9 million in the first quarter of 2019, compared to \$6.5 million in the fourth quarter of 2018 and \$6.3 million in the first quarter of 2018. Wealth management revenue decreased \$0.6 million, or 9.1%, in the first quarter of 2019, compared to the fourth quarter of 2018, and \$0.4 million, or 7.0%, from the first quarter of 2018.

At March 31, 2019, the estimated fair value of trust assets under administration was \$4.93 billion (comprised of discretionary assets of \$2.58 billion and nondiscretionary assets of \$2.35 billion), and was \$4.60 billion at December 31, 2018 (comprised of discretionary assets of \$2.42 billion and nondiscretionary assets of \$2.19 billion). Wealth management revenue also includes fees from the sale of investment products offered through the Chemical Financial Advisors program. Fees from this program totaled \$1.0 million in the first quarter of 2019, compared to \$1.3 million in the fourth quarter of 2018 and \$1.4 million in the first quarter of 2018.

Electronic banking fees, which represent income earned from ATM transactions, debit card activity and internet banking fees were \$3.5 million in the first quarter of 2019, compared to \$5.1 million in the fourth quarter of 2018 and \$3.6 million in the first quarter of 2018. Electronic banking fees decreased \$1.6 million in the first quarter of 2019, compared to the fourth quarter of 2018, primarily due to an annual bonus earned related to consumer debit card income in the fourth quarter of 2018.

Net gain on sale of loans and other mortgage banking revenue ("MBR") includes revenue from originating, selling and servicing residential mortgage loans for the secondary market, other loan sales and the change in fair value in loan servicing rights. MBR was \$0.9 million in the first quarter of 2019, compared to \$4.0 million in the fourth quarter of 2018 and \$12.5 million in the first quarter of 2018. MBR decreased \$3.1 million, compared to the fourth quarter of 2018, and decreased \$11.6 million, compared to the first quarter of 2018. The decrease in MBR in the first quarter of 2019, compared to both the fourth quarter of 2018 and the first quarter of 2018, was primarily due to the change in the impact to earnings from the change in fair value in loan servicing rights, partially offset by an increase in loan sales. The change in fair value in loan servicing rights resulted in a detriment of \$7.6 million in the first quarter of 2019, compared to a detriment of \$2.8 million in the fourth quarter of 2018 and a benefit of \$3.8 million in the first quarter of 2018. At March 31, 2019, we were servicing \$6.81 billion of residential mortgage loans that were originated in our market areas and subsequently sold in the secondary market, compared to \$6.83 billion at December 31, 2018 and \$7.02 billion at March 31, 2018.

We sell residential mortgage loans in the secondary market on both a servicing retained and servicing released basis. Our sales transactions require us to enter into residential mortgage loan sale agreements with buyers in the normal course of business. The agreements contain provisions that include various representations and warranties regarding the origination, characteristics and underwriting of the mortgage loans. The recourse of the buyer may result in either indemnification of the loss incurred by the buyer or a requirement for us to repurchase a loan that the buyer believes does not comply with the representations included in the loan sale agreement. Repurchase demands and loss indemnifications received by us are reviewed by a senior officer on a loan-by-loan basis to validate the claim made by the buyer. We maintain a reserve for probable losses expected to be incurred from loans previously sold in the secondary market. This contingent liability is based on trends in repurchase and indemnification requests, actual loss experience, information requests, known and inherent risks in the sale of loans in the secondary market and current economic conditions. We record losses resulting from the repurchase of loans previously sold in the secondary market, as well as adjustments to estimates of future probable losses, as part of our MBR in the period incurred. Our reserve for probable losses was \$4.0 million at March 31, 2019, compared to \$4.1 million at December 31, 2018 and \$5.1 million at March 31, 2018.

All other categories of noninterest income, including other fees for customer services, gain on sale of investment securities, bank-owned life insurance and other noninterest income totaled \$6.6 million in the first quarter of 2019, compared to \$7.7 million in the fourth quarter of 2018 and \$8.6 million in the first quarter of 2018. Other fees for customer services include revenue from safe deposit boxes, credit card referral fees, wire transfer fees, letter of credit fees and other fees for services.

Operating Expenses

The following table presents the major categories of operating expenses:

(Dollars in thousands)	Three Months Ended		
	March 31, 2019	December 31, 2018	March 31, 2018
Operating expense			
Salaries and wages ⁽¹⁾	\$ 50,131	\$ 48,486	\$ 45,644
Employee benefits ⁽¹⁾	9,886	8,342	9,913
Occupancy	8,277	7,360	8,011
Equipment and software	6,979	7,641	7,659
Outside processing and service fees	11,726	11,698	10,356
FDIC insurance premiums ⁽²⁾	3,323	3,583	5,629
Professional fees ⁽²⁾	2,743	3,758	2,458
Intangible asset amortization ⁽²⁾	1,361	1,426	1,439
Advertising and marketing ⁽²⁾	1,758	2,287	1,375
Postage and express mail ⁽²⁾	1,212	1,305	1,188
Training, travel and other employee expenses ⁽²⁾	1,564	2,441	1,217
Telephone ⁽²⁾	918	760	848
Supplies ⁽²⁾	591	456	579
Donations ⁽²⁾	211	786	286
Credit-related expenses ⁽²⁾	660	829	1,306
Merger expenses ⁽³⁾	5,424	—	—
Impairment of federal historic income tax credits ⁽²⁾⁽³⁾	—	5,772	1,634
Other ⁽²⁾	2,251	1,436	2,068
Total operating expenses	\$ 109,015	\$ 108,366	\$ 101,610
Significant and other non-core items ⁽³⁾	5,424	5,772	1,634
Operating expenses, core (non-GAAP) ⁽³⁾⁽⁴⁾	\$ 103,591	\$ 102,594	\$ 99,976
Full-time equivalent staff (at period end)	3,096	3,117	3,026
Average assets	\$ 21,514,998	\$ 20,955,706	\$ 19,457,877
Efficiency ratio - GAAP	58.1%	55.4%	52.8%
Efficiency ratio - adjusted non-GAAP ⁽⁴⁾	51.7%	50.4%	51.6%
Total operating expenses as a percentage of total average assets (annualized)	2.0%	2.1%	2.1%
Total operating expenses as a percentage of total average assets - adjusted non-GAAP ⁽⁴⁾ (annualized)	1.9%	2.0%	2.1%

(1) Included within the line item "Salaries, wages and employee benefits" in the Consolidated Statements of Income.

(2) Included within the line item "Other" operating expenses in the Consolidated Statements of Income.

(3) Significant items are defined as merger expenses during the three months ended March 31, 2019. The other non-core items are the impairment of federal historic income tax credits.

(4) Please refer to the section entitled "Non-GAAP Financial Measures" for a reconciliation to the most directly comparable GAAP financial measure.

Total operating expenses were \$109.0 million in the first quarter of 2019, compared to \$108.4 million in the fourth quarter of 2018 and \$101.6 million in the first quarter of 2018. The increase in operating expense in the first quarter of 2019, compared to the fourth quarter of 2018, was primarily due to merger expenses of \$5.4 million in the first quarter of 2019 that were not included in the fourth quarter of 2018 and increases in salaries and wages of \$1.6 million and employee benefits of \$1.6 million, partially offset by \$5.8 million of impairment of federal historic income tax credits that were not repeated in the first quarter of 2019. The increase in operating expense in the first quarter of 2019, compared to the first quarter of 2018, was primarily due to merger expenses of \$5.4 million in the first quarter of 2019 that were not included in the first quarter of 2018, increases in salaries and wages of \$4.5 million and outside processing and service fees of \$1.3 million, partially offset by a decrease in FDIC insurance premiums of \$2.3 million and \$1.6 million of impairment of federal historic income tax credits that were not repeated in the first quarter of 2019.

Operating expenses, core, a non-GAAP financial measure that excludes the impact of merger expenses and the impairment of federal historic tax credits, were \$103.6 million in the first quarter of 2019, an increase of \$1.0 million, or 1.0%, compared to core operating expenses of \$102.6 million in the fourth quarter of 2018, and an increase of \$3.6 million, or 3.6%, compared to core operating expenses of \$100.0 million in the first quarter of 2018. The increase in core operating expense in the first quarter of 2019, compared to the fourth quarter of 2018, was primarily due to increases in salaries and wages of \$1.6 million and employee benefits of \$1.6 million. The increase in core operating expense in the first quarter of 2019, compared to the first quarter of 2018, was primarily due to increases in salaries and wages of \$4.5 million and outside processing and service fees of \$1.3 million, partially offset by a decrease in FDIC insurance premiums of \$2.3 million. Expense related to our efforts to implement upgrades to our core operating systems totaled \$1.6 million in the fourth quarter of 2018 and \$1.0 million in the first quarter of 2018. We had no such expenses in the first quarter of 2019.

Salaries and wages were \$50.1 million in the first quarter of 2019, compared to \$48.5 million in the fourth quarter of 2018 and \$45.6 million in the first quarter of 2018. Salaries and wages increased \$1.6 million, or 3.4%, in the first quarter of 2019, compared to the fourth quarter of 2018 and increased \$4.5 million, or 9.8%, in the first quarter of 2019, compared to the first quarter of 2018. The increase in the first quarter of 2019, compared to the fourth quarter of 2018 was primarily due to a decrease in the deferral of loan origination costs due to lower loan production. The increase in the first quarter of 2019, compared to the first quarter of 2018, was primarily due to increases in staff to support our strategic focus on growth in commercial lending.

Employee benefits expense was \$9.9 million in the first quarter of 2019, compared to \$8.3 million in the fourth quarter of 2018 and \$9.9 million in the first quarter of 2018. Employee benefits expense increased \$1.6 million, or 19.1%, in the first quarter of 2019, compared to the fourth quarter of 2018, primarily due to an increase in payroll taxes due to the beginning of a new tax year.

Compensation expenses, which include salaries and wages and employee benefits, as a percentage of total operating expenses were 55.1% in the first quarter of 2019, 52.4% in the fourth quarter of 2018, and 54.7% in the first quarter of 2018.

Occupancy expense was \$8.3 million in the first quarter of 2019, compared to \$7.4 million in the fourth quarter of 2018 and \$8.0 million in the first quarter of 2018. Occupancy expense increased \$0.9 million, or 12.5%, in the first quarter of 2019, compared to the fourth quarter of 2018, primarily due to an increase in building repair and maintenance. Occupancy expense included depreciation expense on buildings of \$1.7 million in the first quarter of 2019, \$1.6 million in the fourth quarter of 2018 and \$1.6 million in the first quarter of 2018.

Equipment and software expense was \$7.0 million in the first quarter of 2019, compared to \$7.6 million in the fourth quarter of 2018 and \$7.7 million in the first quarter of 2018. Equipment and software expense decreased \$0.6 million, or 8.0%, in the first quarter of 2019, compared to the fourth quarter of 2018, and decreased \$0.7 million, or 8.9%, compared to the first quarter of 2018, primarily due to a reduction in software license expense.

Outside processing and service fees are primarily comprised of amounts paid to third-party vendors related to the outsourcing of certain day-to-day functions that are integral to our ability to provide services to our customers, including our core operating system and other items, such as our debit card, electronic banking and wealth management platforms. Outside processing and service fees were \$11.7 million in both the first quarter of 2019 and in the fourth quarter of 2018, compared to \$10.4 million in the first quarter of 2018. Outside processing and service fees increased \$1.3 million, or 13.2%, compared to the first quarter of 2018, primarily due to increased operating costs associated with the enhancement in our overall technology platform.

FDIC insurance premiums were \$3.3 million in the first quarter of 2019, compared to \$3.6 million in the fourth quarter of 2018 and \$5.6 million in the first quarter of 2018. FDIC insurance premiums decreased \$0.3 million, or 7.3%, in the first quarter of 2019, compared to the fourth quarter of 2018, and decreased \$2.3 million compared to the first quarter of 2018. Changes in our FDIC insurance premiums are primarily due to changes in our assessment base, which consists of average consolidated total assets less average Tier 1 capital. Additionally, included in our FDIC insurance premiums through September 30, 2018, was a special assessment or surcharge on large banks, defined as banks with \$10 billion or more in assets, established under the Dodd-Frank Act to raise the deposit insurance fund minimum reserve ratio to 1.35%. The deposit insurance fund reached 1.36% on September 30, 2018, exceeding the statutorily required minimum reserve ratio of 1.35%. Accordingly, the last quarterly surcharge was reflected in large banks' December 2018 assessment invoices, which covered the assessment period from July 1 through September 30, 2018.

Professional fees were \$2.7 million in the first quarter of 2019, compared to \$3.8 million in the fourth quarter of 2018 and \$2.5 million in the first quarter of 2018. Professional fees decreased \$1.1 million, or 29.1%, in the first quarter of 2019, compared to the fourth quarter of 2018, and increased \$0.2 million compared to the first quarter of 2018. Professional fees related

to our core operating system conversion were \$0.8 million in the fourth quarter of 2018 and \$0.1 million in the first quarter of 2018.

Advertising and marketing expenses were \$1.8 million in the first quarter of 2019, compared to \$2.3 million in the fourth quarter of 2018 and \$1.4 million in the first quarter of 2018. Advertising and marketing expense decreased \$0.5 million, in the first quarter of 2019, compared to the fourth quarter of 2018, and increased \$0.4 million compared to the first quarter of 2018.

Credit-related expenses are comprised of other real estate ("ORE") net costs and loan collection costs. ORE net costs are comprised of costs to carry ORE, such as property taxes, insurance and maintenance costs, fair value write-downs after a property is transferred to ORE and net gains/losses from the disposition of ORE. Loan collection costs include legal fees, appraisal fees and other costs recognized in the collection of loans with deteriorated credit quality and in the process of foreclosure. Credit-related expenses were \$0.7 million in the first quarter of 2019, compared to \$0.8 million in the fourth quarter of 2018 and \$1.3 million in the first quarter of 2018. We recognized net gains from the sales of ORE properties of \$0.7 million in the first quarter of 2019, \$0.4 million in the fourth quarter of 2018 and \$0.8 million in the first quarter of 2018.

Impairment of federal historic income tax credits were \$5.8 million in the fourth quarter of 2018 and \$1.6 million in the first quarter of 2018, recognized as the result of federal historic tax credits placed into service in each respective period. In the fourth quarter of 2018, the \$5.8 million of impairment, or \$4.6 million net of tax, was more than offset by the benefit received on the same tax credits which resulted in a reduction of income tax expense of \$5.8 million. In the first quarter of 2018, the \$1.5 million of impairment, or \$1.3 million net of tax, was more than offset by the benefit received on the same tax credits which resulted in a reduction of income tax expense of \$1.6 million.

All other categories of operating expenses not discussed above totaled \$13.5 million in the first quarter of 2019, compared to \$8.6 million in the fourth quarter of 2018, and \$7.6 million in the first quarter of 2018. All other categories of operating expenses increased \$4.9 million, or 57.2%, in the first quarter of 2019, compared to the fourth quarter of 2018, and increased \$5.9 million, compared to the first quarter of 2018, primarily due to the \$5.4 million in merger related expenses in the first quarter of 2019.

Our efficiency ratio, which measures total operating expenses divided by the sum of net interest income plus noninterest income, was 58.1% in the first quarter of 2019, compared to 55.4% in the fourth quarter of 2018 and 52.8% in the first quarter of 2018. Our adjusted efficiency ratio, a non-GAAP financial measure, that excludes merger expenses, the change in fair value in loan servicing rights, amortization of intangibles, impairment of historic income tax credits, net interest income FTE adjustment, and gain from sale of investment securities, as applicable, was 51.7% in the first quarter of 2019, compared to 50.4% in the fourth quarter of 2018 and 51.6% in the first quarter of 2018.

Please refer to the section entitled "Non-GAAP Financial Measures" included within this Management's Discussion and Analysis of Financial Condition and Results of Operations for a reconciliation of core operating expenses and the adjusted efficiency ratio to the most directly comparable GAAP financial measures.

Income Taxes

We record our federal income tax expense using our estimate of the effective income tax rate expected for the full-year and apply that rate on a year-to-date basis. The fluctuations in our effective income tax rate reflect changes each period in the proportion of interest income exempt from taxation and other nondeductible expenses relative to pretax income and tax credits.

A reconciliation of expected income tax expense at the federal statutory income tax rate and the amounts recorded in our Consolidated Financial Statements were as follows:

(Dollars in thousands)	Three Months Ended			
	March 31, 2019		March 31, 2018	
	Amount	Rate	Amount	Rate
Tax at statutory rate	\$ 16,088	21.0 %	\$ 17,756	21.0 %
Changes resulting from:				
Tax-exempt interest income	(1,825)	(2.4)	(1,515)	(1.8)
State taxes, net of federal benefit	63	0.1	144	0.2
Change in valuation allowance	—	—	(49)	(0.1)
Bank-owned life insurance adjustments	(359)	(0.5)	(187)	(0.2)
Income tax credits, net	(566)	(0.7)	(2,393)	(2.8)
Nondeductible transaction expenses	342	0.4	—	—
Tax benefit in excess of compensation costs on share-based payments ⁽¹⁾	(322)	(0.4)	(1,366)	(1.6)
Other, net	244	0.3	565	0.6
Income tax expense	\$ 13,665	17.8 %	\$ 12,955	15.3 %

⁽¹⁾ Represents excess tax benefits resulting from the exercise or settlement of share-based payment transactions.

Our effective federal income tax rate was 17.8% in the first quarter of 2019, compared to 15.3% in the first quarter of 2018. Our effective tax rate in the first quarter of 2018 benefited from historic tax credits placed into service of \$1.5 million. The income tax benefit from the tax credits placed into service was partially offset by impairment recorded on the same tax credits included within other operating expenses. We had no uncertain tax positions during the three months ended March 31, 2019 and March 31, 2018.

Liquidity

Liquidity risk is the potential that we will be unable to meet our obligations as they come due because of an inability to liquidate assets or obtain adequate funding (referred to as "funding liquidity risk") or that we cannot easily unwind or offset specific exposures without significantly lowering market prices because of inadequate market depth or market disruptions (referred to as "market liquidity risk").

We manage our funding liquidity risk to ensure stable, reliable and cost-effective sources of funds are available to satisfy deposit withdrawals and lending and investment opportunities. Our ability to meet our current financial obligations is a function of our balance sheet structure, our ability to liquidate assets and our access to alternative sources of funds. We manage our funding needs by maintaining a level of liquid funds through our asset/liability management process. Our largest sources of liquidity on a consolidated basis is our deposit base that comes from consumer, business and municipal customers within our local markets, principal payments on loans, maturing investment securities, cash held at the FRB and unpledged investment securities available-for-sale. Total deposits increased \$468.7 million during the three months ended March 31, 2019. Our loan-to-total deposits ratio was 93.0% at March 31, 2019 and 95.6% at December 31, 2018. We had \$155.9 million of cash deposits held at the FRB at March 31, 2019, compared to \$157.1 million at December 31, 2018. At March 31, 2019, we had unpledged investment securities available-for-sale with an amortized cost of \$2.33 billion and available unused wholesale sources of liquidity, including FHLB advances and borrowings from the discount window of the FRB.

Chemical Bank is a member of the FHLB and as such has access to short-term and long-term advances from the FHLB that are generally secured by residential mortgage first lien loans. We had short-term and long-term FHLB advances outstanding of \$2.15 billion at March 31, 2019. Additional borrowing availability from the FHLB, subject to certain requirements, was \$2.57 billion at March 31, 2019. We can also borrow from the FRB's discount window to meet short-term liquidity requirements. These borrowings are required to be secured by investment securities and/or certain loan types, with each category of assets carrying various borrowing capacity percentages. At March 31, 2019, we maintained an unused borrowing capacity of \$115.9 million with the FRB's discount window based upon pledged collateral as of that date. We also had the ability to borrow an additional \$450.0 million of federal funds and \$580.0 million from unsecured overnight lines of credit from multiple third-party financial institutions at March 31, 2019. It is management's opinion that our borrowing capacity could be expanded, if deemed necessary, as we have additional borrowing capacity available at the FHLB, and we have a significant amount of additional assets that could be used as collateral at the FRB's discount window.

We manage our liquidity position to provide the cash necessary to pay dividends to shareholders, invest in new subsidiaries, enter new banking markets, pursue investment opportunities and satisfy other operating requirements. Our primary source of liquidity is dividends from Chemical Bank.

Federal and state banking laws place certain restrictions on the amount of dividends that a bank may pay to its parent company. During the three months ended March 31, 2019, Chemical Bank paid \$25.0 million in dividends to us, and we paid cash dividends to shareholders of \$24.5 million. The earnings of Chemical Bank are the principal source of funds to pay cash dividends to our shareholders. Chemical Bank had net income of \$69.6 million during the three months ended March 31, 2019 and net income of \$295.3 million during the year ended December 31, 2018. Cash dividends to shareholders are dependent upon earnings, capital requirements, regulatory restraints and other factors affecting Chemical Bank.

The following liquidity ratios compare certain assets and liabilities to total deposits or total assets.

	March 31, 2019	December 31, 2018
Investment securities carried at fair value to total deposits	20.6%	19.4%
Loans to total deposits ⁽¹⁾	93.0	95.6
Interest-earning assets to total assets	89.8	89.6
Interest-bearing deposits to total deposits	76.1	75.6

⁽¹⁾ For liquidity purposes, collateralized customer deposits are treated similarly to deposits and are included in this calculation.

Market Risk

Market risk is the risk to a financial institutions' condition resulting from adverse movements in market rates or prices, including, but not limited to, interest rates, foreign exchange rates, commodity prices, or equity prices. Interest rate risk, a form of market risk, is the current and prospective risk to earnings or capital arising from movement in interest rates. Interest rate risk is due to the difference in the repricing and maturity dates between financial assets and funding sources, as well as changes in the relationship between benchmark rate indices used to reprice various assets and liabilities, product options available to customers, competitive pressures and other variables. Our net interest income is largely dependent upon the effective management of interest rate risk. Our goal is to avoid a significant decrease in net interest income, and thus an adverse impact on our profitability, in periods of changing interest rates. Sensitivity of earnings to interest rate changes arises when yields on assets change differently from the interest costs on liabilities. Interest rate sensitivity is determined by the amount of interest-earning assets and interest-bearing liabilities repricing within a specific time period and the magnitude by which interest rates change on the various types of interest-earning assets and interest-bearing liabilities. The management of interest rate sensitivity includes monitoring the maturities and repricing opportunities of interest-earning assets and interest-bearing liabilities. Our interest rate risk is managed through policies and risk limits approved by the boards of directors of the Corporation and Chemical Bank and an Asset and Liability Committee ("ALCO"). The ALCO, which is comprised of executive and senior management from various areas of the Corporation and Chemical Bank, including finance, lending, investments and deposit gathering, meets regularly to execute asset and liability management strategies. The ALCO establishes guidelines and monitors the sensitivity of earnings to changes in interest rates. The goal of the ALCO process is to manage the impact on net interest income and the net present value of future cash flows of probable changes in interest rates within authorized risk limits.

The primary technique utilized to measure our interest rate risk is simulation analysis. Simulation analyses forecast the effects on our balance sheet structure and net interest income under a variety of scenarios that incorporate changes in interest rates, the shape of the U.S. Treasury yield curve, interest rate relationships and the mix of assets and liabilities and loan prepayments. These forecasts are compared against net interest income projected in a stable interest rate environment. While many assets and liabilities reprice either at maturity or in accordance with their contractual terms, several balance sheet components demonstrate

characteristics that require an evaluation to more accurately reflect their repricing behavior. Key assumptions in the simulation analysis include prepayments on loans, probable calls of investment securities, changes in market conditions, loan volumes and loan pricing, deposit sensitivity and customer preferences. These assumptions are inherently uncertain as they are subject to fluctuation and revision in a dynamic environment. As a result, the simulation analyses cannot precisely forecast the impact of rising and falling interest rates on net interest income. Actual results will differ from simulated results due to many other factors, including changes in balance sheet components, interest rate changes, changes in market conditions and management strategies.

At March 31, 2019 and December 31, 2018, we projected the change in net interest income during both the following 12 and 24 months assuming immediate parallel moves in interest rates. These projections were based on our assets and liabilities remaining static over the next 24 months and estimates of the potential impact that changes in interest rates may have on the value and prepayment speeds on all components of our loan and investment portfolios, as well as embedded options and cash flows of other assets and liabilities. The ALCO regularly monitors our forecasted net interest income sensitivity to ensure that it remains within established limits. The estimated impact on our net interest income at March 31, 2019 and December 31, 2018, assuming immediate parallel moves in interest rates is presented in the table below.

	March 31, 2019		December 31, 2018	
	Following 12 months	Following 24 months	Following 12 months	Following 24 months
+400 basis points	(1.4)%	(1.5)%	(0.5)%	(0.5)%
+300 basis points	(1.5)	(1.6)	(0.8)	(0.7)
+200 basis points	(1.0)	(1.3)	(0.7)	(0.7)
+100 basis points	0.0	(0.2)	(0.1)	(0.2)
-100 basis points	(1.8)	(2.0)	(1.1)	(1.1)
-200 basis points	(9.9)	(12.2)	(7.7)	(9.2)
-300 basis points	(18.4)	(22.1)	(18.0)	(22.4)
-400 basis points	(24.6)	(28.3)	(24.0)	(28.4)

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Information concerning quantitative and qualitative disclosures about market risk is contained in the discussion regarding interest rate risk and sensitivity under the captions "Liquidity" and "Market Risk" herein and in our Annual Report on Form 10-K for the year ended December 31, 2018, which are here incorporated by reference.

Since December 31, 2018, we do not believe that there has been a material change in the nature or categories of our primary market risk exposure, or the particular markets that present the primary risk of loss to us. Our market risk exposure is mainly comprised of vulnerability to interest rate risk. Prevailing interest rates and interest rate relationships are largely determined by market factors that are beyond our control. Certain information provided in response to this item consists of forward-looking statements. Reference is made to the section captioned "Forward-Looking Statements" in this report for a discussion of the limitations on our responsibility for such statements.

Item 4. Controls and Procedures

An evaluation was performed under the supervision and with the participation of the Corporation's management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the Corporation's disclosure controls and procedures as of the end of the period covered by this report. Based on and as of the time of that evaluation, the Corporation's management, including the Chief Executive Officer and Chief Financial Officer, concluded that the Corporation's disclosure controls and procedures were effective to ensure that information required to be disclosed by the Corporation in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. There was no change in the Corporation's internal control over financial reporting that occurred during the quarter ended March 31, 2019 that has materially affected, or that is reasonably likely to materially affect, the Corporation's internal control over financial reporting.

Part II. Other Information

Item 1. Legal Proceedings

On February 22, 2016, two putative class action and derivative complaints were filed in the Circuit Court for Oakland County, Michigan by individuals purporting to be shareholders of Talmer. The actions are styled *Regina Gertel Lee v. Chemical Financial Corporation, et. al.*, Case No. 2016-151642-CB and *City of Livonia Employees' Retirement System v. Chemical Financial Corporation et. al.*, Case No. 2016-151641-CB. These complaints purport to be brought derivatively on behalf of Talmer against the individual defendants, and individually and on behalf of all others similarly situated against Talmer and Chemical (collectively, the "Defendants"). The complaints allege, among other things, that the directors of Talmer breached their fiduciary duties to Talmer's shareholders in connection with the merger by approving a transaction pursuant to an allegedly inadequate process that undervalues Talmer and includes preclusive deal protection provisions, and that Chemical allegedly aided and abetted the Talmer directors in breaching their duties to Talmer's shareholders. The complaints also allege that the individual defendants have been unjustly enriched. Both complaints seek various remedies on behalf of the putative class (consisting of all shareholders of Talmer who are not related to or affiliated with any defendant). They request, among other things, that the Court enjoin the merger from being consummated in accordance with its agreed-upon terms, direct the Talmer directors to exercise their fiduciary duties, rescind the merger agreement to the extent that it is already implemented, award the plaintiff all costs and disbursements in each respective action (including reasonable attorneys' and experts' fees), and grant such further relief as the court deems just and proper. The *City of Livonia* plaintiff amended its complaint on April 21, 2016 to add additional factual allegations, including but not limited to allegations that Keefe Bruyette & Woods, Inc. ("KBW") served as a financial advisor for the proposed merger despite an alleged conflict of interest, that Talmer's board acted under actual or potential conflicts of interest, and that the defendants omitted and/or misrepresented material information about the proposed merger in the Form S-4 Registration Statement relating to the proposed merger. These two cases were consolidated as *In re Talmer Bancorp Shareholder Litigation*, case number 2016-151641-CB, per an order entered on May 12, 2016. On October 31, 2016, the plaintiffs in this consolidated action again amended their complaint, adding additional factual allegations, adding KBW as a defendant, and asserting that KBW acted in concert with Chemical to aid and abet breaches of fiduciary duty by Talmer's directors. The Defendants all filed motions for summary disposition seeking dismissal of all claims with prejudice. The Court issued an opinion and order on those motions on May 4, 2017 and granted dismissal to Chemical, but denied the motions filed by KBW and the individual defendants. KBW and the individual defendants filed an application seeking leave to appeal the Court's ruling to the Michigan Court of Appeals. That application was denied by the Michigan Court of Appeals on August 16, 2017. On June 8, 2017, the Defendants filed a notice with the Court that the plaintiffs had failed to timely certify a class as required by the Michigan Court Rules. Upon the filing of that notice, the *City of Livonia* case became an individual action brought by the two named plaintiffs, and cannot proceed as a class action. On October 19, 2017, the Defendants filed motions for summary disposition under MCR 2.116(C)-(10) in the *City of Livonia* case, again seeking the dismissal of the case. A hearing on those motions was held on April 11, 2018. On May 11, 2018, the Court issued its opinion and order granting the motion of the Defendants, and dismissing the case. On May 25, 2018, the plaintiffs filed a claim of appeal from the Court's decision with the Michigan Court of Appeals. By order dated August 7, 2018, the Michigan Court of Appeals consolidated the *City of Livonia* case with the *Nicholl* case discussed below. A ruling from the Court is awaited.

On June 16, 2016, the same putative class plaintiff that filed the *City of Livonia* state court action discussed in the preceding paragraph filed a complaint in the United States District Court for the Eastern District of Michigan, styled *City of Livonia Employees' Retirement System v. Chemical Financial Corporation, et. al.*, Docket No. 1:16-cv-12229. The plaintiff purports to bring this action "individually and on behalf of all others similarly situated," and requests certification as a class action. The Complaint alleges violations of Section 14(a) and 20(a) of the Securities Exchange Act of 1934 and alleges, among other things, that the Defendants issued materially incomplete and misleading disclosures in the Form S-4 Registration Statement relating to the proposed merger. The Complaint contains requests for relief that include, among other things, that the Court enjoin the proposed transaction unless and until additional information is provided to Talmer's shareholders, declare that the Defendants violated the securities laws in connection with the proposed merger, award compensatory damages, interest, attorneys' and experts' fees, and that the Court grant such other relief as it deems just and proper. Talmer, Chemical, and the individual defendants all believe that the claims asserted against each of them in this lawsuit are without merit and intend to vigorously defend against this lawsuit. On October 18, 2016, the Federal Court entered a stipulated order staying this action until the Oakland County Circuit Court issues rulings on motions for summary disposition *In re Talmer Bancorp Shareholder Litigation*, case number 2016-151641-CB. Following the Oakland County Circuit Court's denial of the Motions by KBW and the individual defendants and their ensuing application for leave to appeal that ruling, the Federal Court issued an order extending the stay of this action. On November 13, 2017, the Federal Court issued an Order Directing Plaintiff To Show Cause Why The Stay Should Not Be Lifted. On June 29, 2018, the Court issued an Order Lifting Stay. The plaintiff filed an amended complaint on July 27, 2018. In response to the amended complaint, the Defendants filed a Motion To Dismiss on August 24, 2018. A ruling on the Defendant's motion is awaited. On November 8, 2018, the Court entered an Order Staying Case Pending Appeal And Holding In Abeyance Motion To Dismiss. In the Order, the Court ruled that the case is stayed pending resolution of the appeals in the state court actions. The Order provides that if the Michigan

Court of Appeals upholds the trial court decisions, and that ruling becomes final, the doctrine of collateral estoppel will preclude the plaintiffs in the City of Livonia and Nicholl cases from pursuing the federal case.

In response to the failure of the *City of Livonia* case to qualify as a class action, on July 31, 2017, the same attorneys who filed the *City of Livonia* action filed a new lawsuit in the Oakland County, Michigan Circuit Court, based on the Talmer transaction. That case is styled *Kevin Nicholl v Gary Torgow et al*, Case No. 2017-160058-CB. The *Nicholl* case makes substantially the same claims as were brought in the *City of Livonia* case, and seeks certification of a shareholder class. The *Nicholl* case has been assigned to Judge Wendy Potts, the same judge presiding over the *City of Livonia* case. On November 22, 2017, the plaintiff filed a First Amended Complaint purporting to add the City of Livonia Employees' Retirement System and Regina Gertel Lee as additional named plaintiffs in the case. The Defendants moved to strike the class allegations in the *Nicholl* case based on the failure of the plaintiffs to timely file a motion to certify a class. On April 2, 2018, the Court entered an opinion and order confirming that the class allegations in the *Nicholl* case are stricken, and the *Nicholl* case will proceed as an individual action only. On April 23, 2018, the plaintiffs filed a claim of appeal with the Michigan Court of Appeals from the Court's April 2, 2018 opinion and order.

As in the *City of Livonia* case, the Defendants filed motions for summary disposition in the *Nicholl* case, seeking dismissal of the *Nicholl* case. Argument on these motions was heard on April 11, 2018, together with arguments on the summary disposition motions of the Defendants in the *City of Livonia* case. On May 8, 2018 the Court issued its opinion and order granting the motion of the Defendants, and dismissing the *Nicholl* case. On May 25, 2018 the plaintiffs filed a claim of appeal from the Court's decision with the Michigan Court of Appeals. The Court's dismissal of the *Nicholl* case obviates the April 23, 2018 appeal filed by the *Nicholl* plaintiff with respect to the Court's order of April 2, 2018 finding that the plaintiff failed to timely certify a class in the *Nicholl* litigation. By order dated August 7, 2018, the Michigan Court of Appeals consolidated the *Nicholl* case with the *City of Livonia* case. A ruling from the Court is awaited.

On January 3, 2018, the plaintiffs in the *City of Livonia* case filed a Motion For Voluntary Dismissal Without Prejudice. Defendants filed an opposition to that motion. The Court did not rule on that motion, pending ruling on the Defendant's summary disposition motions in the *City of Livonia* and *Nicholl* cases. The Court's dismissal of the *City of Livonia* case obviates the need for a ruling on this motion.

In addition, we are subject to certain legal actions arising in the ordinary course of business. In the opinion of management, after consultation with legal counsel, the ultimate disposition of these matters is not expected to have a material adverse effect on our Consolidated Financial Condition or Results of Operations.

Item 1A. Risk Factors

Information concerning risk factors is contained in this report under the heading "Forward-Looking Statements" and in Item 1A, "Risk Factors," in the Corporation's Annual Report on Form 10-K for the year ended December 31, 2018.

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

The following schedule summarizes our total monthly share repurchase activity for the three months ended March 31, 2019:

Period Beginning on First Day of Month Ended	Issuer Purchases of Equity Securities		Total Number of Shares Purchased as Part of P Announced Plans or Program
	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid Per Share	
January 31, 2019	39,353	\$ 42.13	
February 28, 2019	67,133	46.52	
March 31, 2019	4,480	42.62	
Total	110,966	\$ 44.81	

⁽¹⁾ Represents shares delivered or attested in satisfaction of the exercise price and/or tax withholding obligations by employees who received shares of our common stock in 2019 under our share-based compensation plans, as these plans permit employees to use our stock to satisfy such obligations based on the market value of the stock on the date of exercise or date of vesting, as applicable.

Item 6. Exhibits

Exhibits. The following exhibits are filed as part of this report on Form 10-Q:

Exhibit Number	Document
2.1	Agreement and Plan of Merger, dated as of January 27, 2019, by and between TCF Financial Corporation and Chemical Financial Corporation (included as Annex A to the joint proxy statement/prospectus contained in the Form S-4/A Registration Statement (File No. 333-230635) filed by the registrant on May 2, 2019). Here incorporated by reference.†
3.1	Restated Articles of Incorporation. Previously filed as Exhibit 3.1 to the registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017, filed with the SEC on May 10, 2017. Here incorporated by reference.
3.2	Bylaws. Previously filed as Exhibit 3.1 to the registrant's Form 8-K filed with the SEC on January 28, 2019. Here incorporated by reference.
4.1	Restated Articles of Incorporation. Exhibit 3.1 is here incorporated by reference.
4.2	Bylaws. Exhibit 3.2 is here incorporated by reference.
10.1*	Retention Agreement between David T. Provost and Chemical Financial Corporation, dated January 27, 2019. Previously filed as Exhibit 10.1 to the registrant's Form 8-K filed with the SEC on January 28, 2019. Here incorporated by reference.
10.2*	Retention Agreement between Gary Torgow and Chemical Financial Corporation, dated January 27, 2019. Previously filed as Exhibit 10.2 to the registrant's Form 8-K filed with the SEC on January 28, 2019. Here incorporated by reference.
10.3*	Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Performance-Based Restricted Stock awarded to Executive Leadership. Previously filed as Exhibit 10.29 to the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2019. Here incorporated by reference.
10.4*	Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Performance-Based Restricted Stock awarded to the Chairman and Chief Executive Officer. Previously filed as Exhibit 10.30 to the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2019. Here incorporated by reference.
10.5*	Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Time-Vested Restricted Stock awarded to Executive Leadership. Previously filed as Exhibit 10.31 to the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2019. Here incorporated by reference.
10.6*	Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Time-Vested Restricted Stock awarded to the Chairman and Chief Executive Officer. Previously filed as Exhibit 10.32 to the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2019. Here incorporated by reference.
31.1	Certification of Chief Executive Officer.
31.2	Certification of Chief Financial Officer.
32.1	Certification pursuant to 18 U.S.C. §1350.
101.1	Interactive Data File.

* Incorporated by reference. Copies of these have been filed with the SEC.

† Pursuant to Item 601(b)(2) of Regulation S-K, Chemical agrees to furnish supplementally a copy of any omitted schedule or exhibit to the Agreement and Plan of Merger to the SEC on a confidential basis upon request.

Signatures

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

CHEMICAL FINANCIAL CORPORATION

Date: May 8, 2019

By: /s/ David T. Provost
David T. Provost
Chief Executive Officer and President
(Principal Executive Officer)

Date: May 8, 2019

By: /s/ Dennis L. Klaeser
Dennis L. Klaeser
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Date: May 8, 2019

By: /s/ Kathleen S. Wendt
Kathleen S. Wendt
Executive Vice President and Deputy Chief Financial Officer
(Principal Accounting Officer)

Exhibit Index

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101.1	Interactive Data File.

* Incorporated by reference. Copies of these have been filed with the SEC.

† Pursuant to Item 601(b)(2) of Regulation S-K, Chemical agrees to furnish supplementally a copy of any omitted schedule or exhibit to the Agreement and Plan of Merger to the SEC on a confidential basis upon request.

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Section 2: EX-31.1 (EXHIBIT 31.1)

Exhibit 31.1

Certifications

I, David T. Provost, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 of Chemical Financial Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act

Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

- a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
- a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 8, 2019

/s/ David T. Provost

David T. Provost
Chief Executive Officer and President
Chemical Financial Corporation

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Section 3: EX-31.2 (EXHIBIT 31.2)

Exhibit 31.2

Certifications

I, Dennis L. Klaeser, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 of Chemical Financial Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over

financial reporting.

Date: May 8, 2019

/s/ Dennis L. Klaeser

Dennis L. Klaeser
Executive Vice President and
Chief Financial Officer
Chemical Financial Corporation

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Section 4: EX-32.1 (EXHIBIT 32.1)

Exhibit 32.1

Certification

Pursuant to 18 U.S.C. § 1350, each of the undersigned hereby certifies in his or her capacity as an officer of Chemical Financial Corporation (the "Company") that the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in such report fairly presents, in all material respects, the financial condition of the Company at the end of such period and the results of operations of the Company for such period.

Dated: May 8, 2019

/s/ David T. Provost

David T. Provost
Chief Executive Officer and President

Dated: May 8, 2019

/s/ Dennis L. Klaeser

Dennis L. Klaeser
Executive Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906 has been provided to Chemical Financial Corporation and will be retained by Chemical Financial Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

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