

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

CHEMICAL FINANCIAL CORP
Form 10-K
February 28, 2019

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

☒ Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2018.

or

☐ Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the transition period from _____ to _____.

Commission File Number: 000-08185

CHEMICAL FINANCIAL CORPORATION

(Exact Name of Registrant as Specified in Its Charter)

Michigan

38-2022454

(State or Other Jurisdiction of Incorporation or Organization) (I.R.S. Employer Identification No.)

333 W. Fort Street, Suite 1800, Detroit, Michigan

48226

(Address of Principal Executive Offices)

(Zip Code)

(800) 867-9757

(Registrant's Telephone Number, Including Area Code)

Securities Registered Pursuant to Section 12(b) of the Act:

Common Stock, \$1 Par Value Per Share The NASDAQ Stock Market

(Title of Class)

(Name of each exchange on which registered)

Securities Registered Pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. Yes ☐ No ☒

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

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

The aggregate market value of the registrant's outstanding voting common stock held by non-affiliates of the registrant as of June 30, 2018, determined using the closing price of the registrant's common stock on June 29, 2018 of \$55.67 per share, as reported on The NASDAQ Stock Market®, was \$3.87 billion. The number of shares outstanding of the registrant's Common Stock, \$1 par value per share, as of February 25, 2019, was 71,478,598 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement of Chemical Financial Corporation for the May 7, 2019 annual shareholders' meeting are incorporated by reference into Part III of this Form 10-K.

CHEMICAL FINANCIAL CORPORATION
ANNUAL REPORT ON FORM 10-K
Table of Contents

<u>Forward-Looking Statements</u>	<u>Page</u> <u>3</u>
<u>Part I.</u>	<u>4</u>
<u>Item 1. Business</u>	<u>4</u>
<u>Item 1A. Risk Factors</u>	<u>18</u>
<u>Item 1B. Unresolved Staff Comments</u>	<u>31</u>
<u>Item 2. Properties</u>	<u>32</u>
<u>Item 3. Legal Proceedings</u>	<u>32</u>
<u>Item 4. Mine Safety Disclosures</u>	<u>33</u>
<u>Part II.</u>	<u>33</u>
<u>Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>34</u>
<u>Item 6. Selected Financial Data</u>	<u>37</u>
<u>Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>39</u>
<u>Item 7A. Quantitative and Qualitative Disclosures About Market Risk</u>	<u>81</u>
<u>Item 8. Financial Statements and Supplementary Data</u>	<u>82</u>
<u>Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	<u>168</u>
<u>Item 9A. Controls and Procedures</u>	<u>169</u>
<u>Item 9B. Other Information</u>	<u>171</u>
<u>Part III.</u>	<u>173</u>
<u>Item 10. Directors, Executive Officers and Corporate Governance</u>	<u>173</u>
<u>Item 11. Executive Compensation</u>	<u>173</u>
<u>Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>173</u>
<u>Item 13. Certain Relationships and Related Transactions and Director Independence</u>	<u>174</u>
<u>Item 14. Principal Accounting Fees and Services</u>	<u>174</u>
<u>Part IV.</u>	<u>175</u>
<u>Item 15. Exhibits, Financial Statement Schedules</u>	<u>175</u>
<u>Signatures.</u>	<u>178</u>

FORWARD-LOOKING STATEMENTS

This Annual 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 expectation to continue to pay quarterly dividends through 2019, our belief that unrealized losses on our investment securities at December 31, 2018 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 in our primary markets, 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;

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 this Annual Report. 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.

Item 1. Business.

Overview

Chemical Financial Corporation (the "Corporation" or "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. In this Annual Report, unless the context indicates otherwise, all references to "we," "us," and "our" refer to Chemical Financial Corporation and Chemical Bank (the "Bank"). 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 Chemical. We changed the name of Chemical Bank and Trust Company to Chemical Bank on December 31, 2005.

Since our acquisition of Chemical Bank and Trust Company, we have acquired 25 community banks and 36 other branch bank offices through December 31, 2018. Our most recent transactions include our merger with Talmer Bancorp, Inc. ("Talmer") during the third quarter of 2016 and the acquisitions of Lake Michigan Financial Corporation ("Lake Michigan") and Monarch Community Bancorp, Inc. ("Monarch") during the second quarter of 2015. These transactions are discussed in more detail under the subheading "Mergers, Acquisitions and Branch Closings" included in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in this Annual Report.

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 market 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.

At December 31, 2018, we had consolidated total assets of \$21.50 billion, total loans of \$15.27 billion, total deposits of \$15.59 billion and shareholders' equity of \$2.84 billion. For more information about our financial condition and results of operations, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our Consolidated Financial Statements and related notes included in this Annual Report.

Proposed Merger with TCF Financial Corporation

Chemical and 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. 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 second half of 2019. The transaction is discussed in more detail in Note 26 to our Consolidated Financial Statements under Item 8 of this Annual Report.

Our Market Area

Our principal market concentrations are in Michigan, Ohio and Northern Indiana where Chemical Bank's branches are located and the areas surrounding these communities. As of December 31, 2018, we served these markets through 212 banking offices. In addition to the banking offices, Chemical Bank operated eight loan production offices and over 237 automated teller machines, both on and off bank premises, as of December 31, 2018.

Lending Activities

We offer a range of lending services including both commercial and consumer loans. Our commercial 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. Our consumer loan portfolio is comprised of residential mortgage, consumer installment and home equity loans. Our customers are generally commercial businesses, professional service firms and retail consumers within our market areas. At December 31, 2018, total loans, net of allowance for loan losses, were \$15.16 billion, representing 70.5% of our total assets.

A summary of the composition of our loan portfolio at December 31, 2018, 2017 and 2016 follows:

	December 31, 2018			2017			2016		
	Amount	Percent of Total		Amount	Percent of Total		Amount	Percent of Total	
(Dollars in thousands)									
Composition of Loans:									
Commercial	\$4,002,568	27 %		\$3,385,642	24 %		\$3,217,300	25 %	
Commercial real estate:									
Owner-occupied	2,059,557	13		1,813,562	13		1,697,238	13	
Non-owner occupied	2,785,020	18		2,606,761	18		2,217,594	17	
Vacant land	67,510	—		80,347	1		58,308	—	
Total commercial real estate	4,912,087	31		4,500,670	32		3,973,140	30	
Real estate construction and land development	597,212	4		574,215	4		403,772	3	
Residential mortgage	3,458,666	23		3,252,487	23		3,086,474	24	
Consumer installment	1,521,074	10		1,613,008	11		1,433,884	11	
Home equity	778,172	5		829,245	6		876,209	7	
Total composition of loans	\$15,269,779	100 %		\$14,155,267	100 %		\$12,990,779	100 %	

Commercial Loan Portfolio

Commercial loans

We offer 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 and operational needs and term financing of equipment. Our commercial loan portfolio is well diversified across business lines and has no concentration in any one industry.

In our credit underwriting process, we carefully evaluate the borrower's industry, management skills, operating performance, liquidity and financial condition. We underwrite commercial loans based on a multiple of repayment sources, including operating cash flow, liquidation of collateral and guarantor support, if any. We closely monitor the operating performance, liquidity and financial condition of the borrowers through analysis of required periodic financial statements and meetings with the borrower's management. We generally secure our commercial loans 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 Real Estate Loans

Our 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 are subject to the same general risks, are particularly sensitive to fluctuations in the value of real estate and 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. Fluctuations in the value of real estate, as well as other factors arising after a loan has been made, could negatively affect a borrower's cash flow, creditworthiness and ability to repay the loan. When we make new real estate loans, we obtain a security interest in real estate whenever possible, in addition to any other available collateral, to increase the likelihood of the ultimate repayment of the loan. We generally attempt to mitigate the risks associated with commercial real estate loans 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 our underwriting process.

Each commercial real estate borrower is evaluated on an individual basis to determine the business risks and credit profile of each borrower, and we generally require that a borrower maintain specific debt service covenants. To ensure secondary sources of payment and liquidity to support a loan, we review the financial statements of the operating company and the personal financial statements of the principal owners and may require their personal guarantees.

Real Estate Construction and Land Development Loans

Our 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. Our 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 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.

Consumer Loan Portfolio

Residential Mortgage

Our residential mortgage loans consist primarily of one- to four-family residential loans with fixed and adjustable interest rates, 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 also include loans to consumers for the construction of single family residences that are secured by these properties.

The mortgage loans that we originate to be held by us in our portfolio have generally been priced competitively with current market rates for such loans. We currently offer a number of adjustable-rate mortgage ("ARM") loans with terms of up to 30 years and interest rates that adjust at scheduled intervals based on the product selected. These interest rates can adjust annually, or remain fixed for an initial period of three, five, seven or ten years and thereafter adjust annually. The interest rates for ARM loans are generally indexed to the one-year U.S. Treasury Index or the one-year LIBOR rate. The ARM loans generally provide for periodic (not more than 2%) and overall (not more than 6%) caps on the increase or decrease in the interest rate at any adjustment date and over the life of the loan.

Because the majority of loans originated and retained in the residential portfolio are adjustable-rate one- to four-family mortgage loans, we limit our exposure to fluctuations in interest income due to rising interest rates. However, adjustable-rate loans generally pose credit risks not inherent in fixed-rate loans, primarily because as interest rates rise, the underlying payments of the borrower rise, thereby increasing the potential for default. Periodic and lifetime caps on interest rate increases help to reduce the credit risks associated with adjustable-rate loans but also limit the interest rate sensitivity of such loans. We require that adjustable-rate loans held in the loan portfolio have payments sufficient to amortize the loan over its term and the loans do not have negative principal amortization.

Consumer Installment

Our consumer installment loans consist of relatively small loan amounts to consumers to finance personal items (primarily automobiles, recreational vehicles and marine vehicles) and are comprised primarily of indirect loans purchased from dealerships. We originate consumer installment loans utilizing a computer-based credit scoring analysis to supplement the underwriting process. Consumer rates are both fixed and variable, with negotiable terms. Our consumer installment loans typically amortize over periods up to 60 months. Although we typically require monthly payments of interest and a portion of the principal on our loan products, we may offer consumer loans with a single maturity date when a specific source of repayment is available. Consumer loans not secured by real estate are generally considered to have greater risk than first or second mortgages on real estate because they may be unsecured, or, if they are secured, the value of the collateral may be difficult to assess and more likely to decrease in value, and is more difficult to control, than real estate.

Home Equity Loans and Lines of Credit

Our home equity loans and 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. 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. We also originate home equity loans utilizing a computer-based credit scoring analysis to supplement the underwriting process.

Mortgage Banking Activity

Sale of Residential Real Estate Loans

We engage in mortgage banking as part of an overall strategy to deliver loan products to customers. As a result, we sell a large portion of the residential loans we originate to Fannie Mae, Freddie Mac, Ginnie Mae or, to a lesser extent, private investors, while typically retaining the rights to provide loan servicing to our customers. As part of our overall asset/liability management strategic objectives, we may also originate and retain certain adjustable and fixed interest rate residential loans. To reduce the interest rate risk associated with commitments made to borrowers for mortgage loans that have not yet been closed and that we intend to sell in the secondary markets, we routinely enter into commitments to sell loans or mortgage-backed securities, considered to be derivatives, to limit our exposure to potential movements in market interest rates. We monitor our interest rate risk position daily to maintain appropriate coverage of our loan commitments made to borrowers.

We use derivative instruments to mitigate the interest rate risk associated with commitments to make mortgage loans that we intend to sell. We also enter into contracts for the future delivery of residential mortgage loans in order to economically hedge potential adverse effects of changes in interest rates. These contracts are also derivative instruments. Derivative instruments are recognized at fair value in our consolidated balance sheets as either assets or liabilities.

Loan Servicing

We service residential and commercial mortgage loans for investors under contracts where we receive a fee for performing mortgage servicing activities on mortgage loans that are not owned by us and are not included on our balance sheet. This process involves collecting monthly mortgage payments on behalf of investors, reporting information to those investors on a timely basis and maintaining custodial escrow accounts for the payment of principal and interest to investors, and property taxes and insurance premiums on behalf of borrowers.

As compensation for our loan servicing activities, we receive weighted average servicing fees of approximately 0.25% per year of the loan balances serviced, plus any late charges collected from the delinquent borrowers and other fees incidental to the services provided, offset by applicable subservicing fees. In the event of a default by the borrower, we receive no servicing fees until the default is cured. In times when interest rates are rising or at high levels, servicing mortgage loans can represent a steady source of noninterest income and can, at times, offset decreases in mortgage banking gains. Conversely, in times when interest rates are falling or at very low levels, servicing mortgage loans can become comparatively less profitable due to the rapid payoff of loans and the negative impact due to the change in fair value of the asset. We account for our loan servicing rights at fair value. The amount of loan servicing rights initially recorded is based on the fair value of the loan servicing rights determined on the date when the underlying loan is sold. Our determination of fair value and the amount we record is based on a valuation model using discounted cash-flow analysis and available market pricing. Third party valuations of the loan servicing rights portfolio are obtained on a regular basis and are used to determine the fair value of the servicing rights at the end of the reporting period. Estimates of fair value reflect the following variables:

- anticipated prepayment speeds;
- product type (i.e., conventional, government, balloon);
- fixed or adjustable rate of interest;
- interest rate;
- servicing costs per loan;
- discounted yield rate;
- estimate of ancillary income; and
- geographic location of the loan.

We monitor the level of our investment in mortgage servicing rights in relation to our other mortgage banking activities in order to limit our exposure to significant fluctuations in loan servicing income. Nonetheless, we remain exposed to significant potential volatility in the value of our loan servicing rights. Accordingly, in the future, we may sell loan servicing rights depending on a variety of factors, including capital sufficiency, the size of the mortgage servicing rights portfolio relative to total assets and current market conditions.

Credit Administration and Loan Review

Certain credit risks are inherent in making loans. These include repayment risks, risks resulting from uncertainties in the future value of collateral, risks resulting from changes in economic and industry conditions and risks inherent in dealing with individual borrowers. We attempt to mitigate repayment risks by adhering to internal credit policies and procedures. We employ consistent analysis and underwriting to examine credit information and prepare underwriting documentation. We monitor and approve exceptions to policy as required, and we also track and address technical exceptions.

Wealth Management

We offer services through the Wealth Management department of Chemical Bank. These services include investment management and custodial services; trust services; financial and estate planning; and retirement planning and employee benefit programs. The Wealth Management department earns revenue largely from fees based on the market value of those assets under management, which can fluctuate as the market fluctuates. The Wealth Management department had assets under custodial and management arrangements of \$4.60 billion at December 31, 2018, \$5.13 billion at December 31, 2017 and \$4.41 billion at December 31, 2016. The Wealth Management department also sells investment products (largely annuity products and mutual funds) through its Chemical Financial Advisors program. Customer assets within the Chemical Financial Advisors program were \$1.17 billion at December 31, 2018, \$1.31 billion at December 31, 2017 and \$1.15 billion at December 31, 2016.

Deposit Products

We offer a full range of deposit products and services that are typically available from most banks and savings institutions. These include consumer and business checking accounts, savings accounts, money market accounts and other time deposits of various types and maturity options. Interest bearing transaction accounts and time deposits are tailored to and offered at rates competitive with those offered in our primary market areas. In addition, we offer certain retirement account services. We solicit accounts from individuals, businesses, associations, organizations and governmental authorities. We believe that our significant branch network will assist us in continuing to attract and retain deposits from local customers in our market areas.

Employees

At December 31, 2018, we had approximately 3,100 full-time equivalent employees.

Competition

The business of banking is highly competitive. The principal methods of competition for financial services are price (interest rates paid on deposits, interest rates charged on loans and fees charged for services) and service (convenience and quality of services rendered to customers). In addition to competition from other commercial banks, we face significant competition from non-bank financial institutions, including savings and loan associations, credit unions, finance companies, insurance companies and investment firms. Credit unions and finance companies are particularly significant competitors in the consumer loan market. The financial services industry has become more competitive as technology advances have lowered barriers to entry, enabling more companies, including nonbank companies, to provide financial services. Technological advances may diminish the importance of depository institutions and other financial institutions. Mergers and acquisitions have also led to increased concentration in the banking industry, placing added competitive pressure on our core banking products and services as we see competitors enter some of our markets or offer similar products. We also compete for deposits with a broad range of other types of investments, including mutual funds and annuities.

The growth of our deposits can be impacted by competition from other investment products, such as mutual funds and various annuity products. These investment products are sold by a wide spectrum of organizations, such as brokerage and insurance companies, as well as by financial institutions. In response to the competition for other investment products, we, through our Chemical Financial Advisors program, offer a wide array of mutual funds, annuity products and marketable securities through an alliance with an independent, registered broker/dealer. We also compete with credit unions in most of our markets. These institutions are challenging competitors, as credit unions are exempt from federal income taxes, allowing them to potentially offer higher deposit rates.

Mergers, Acquisitions, Consolidations and Divestitures

Our current strategy for growth includes strengthening our presence in core markets, expanding into contiguous markets and broadening our product offerings, while taking into account the integration and other risks of growth. We evaluate strategic acquisition opportunities and conduct due diligence activities in connection with possible transactions. As a result, discussions, and in some cases, negotiations and transactions may take place and future acquisitions involving cash, debt or equity securities may occur, including future acquisitions that may extend beyond contiguous markets. These generally involve payment of a premium over book value and current market price, and therefore, dilution of book value per share will likely occur with any future transaction.

For more information, see the information under the heading "Mergers, Acquisitions and Branch Closings" included in Management's Discussion and Analysis of Financial Condition and Results of Operations, which is here incorporated by reference.

Availability of Information

We file reports with the Securities and Exchange Commission (SEC). Those reports include the annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy statements. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov.

Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and proxy statements, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, including the financial statements and the financial statement schedules, but not including exhibits to those reports, may be obtained without charge upon written request to Investor Relations, at 333 W. Fort Street, Suite 1800, Detroit, Michigan 48226-3154 and are accessible at no cost on our website at www.chemicalbank.com in the "Investor

Information" section, as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. No information contained on our website is intended to be included as part of, or incorporated by reference into, this Annual Report on Form 10-K. Copies of exhibits may be requested at the cost of 30 cents per page from our corporate offices.

Supervision and Regulation

Chemical Financial Corporation and Chemical Bank are subject to extensive supervision and regulation under various federal and state laws and regulations. The supervisory and regulatory framework is intended primarily for the protection of depositors and the banking system as a whole, and not for the protection of shareholders and creditors.

Banks are subject to a number of federal and state laws and regulations that have a material impact on their business. These include, among others, minimum capital requirements, state usury laws, state laws relating to fiduciaries, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act), the Truth in Lending Act, the Truth in Savings Act, the Equal Credit Opportunity Act, the Fair Housing Act, the Fair Credit Reporting Act, the Servicemembers Civil Relief Act, the Expedited Funds Availability Act, the Community Reinvestment Act, the Real Estate Settlement Procedures Act, the U.S.A. PATRIOT Act, the Bank Secrecy Act, the Foreign Account Tax Compliance Act, Office of Foreign Assets Controls regulations, electronic funds transfer laws, redlining laws, predatory lending laws, laws prohibiting unfair and deceptive acts or practices, antitrust laws, environmental laws, anti-money laundering laws and privacy laws. These laws and regulations can have a significant effect on the operating and financial results of banks.

A summary of significant elements of some of the laws, regulations and regulatory policies applicable to Chemical and Chemical Bank follows below. The descriptions are qualified in their entirety by reference to the full text of the statutes, regulations and policies that are described. The following discussion is not intended to be a complete list of all of the activities regulated by the banking laws or of the impact of those laws and regulations on our operations. It is intended only to briefly summarize some material provisions. These statutes, regulations and policies are continually subject to review by Congress, state legislatures and federal and state regulatory agencies. Changes in applicable laws or regulations may have a material effect on our business and prospects. Our operations may be affected by legislative changes and the policies of various regulatory authorities. We cannot predict the effect that fiscal or monetary policies, economic conditions or new federal or state legislation may have on our business and earnings in the future.

Regulatory Agencies

Chemical is a legal entity separate and distinct from Chemical Bank. Chemical is regulated by the Federal Reserve Board ("FRB") as a financial holding company and a bank holding company under the Bank Holding Company Act of 1956 ("BHC Act"). The BHC Act provides for general regulation of financial holding companies by the FRB and functional regulation of banking activities by banking regulators. Chemical is also under the jurisdiction of the Securities and Exchange Commission ("SEC") and is subject to the disclosure and regulatory requirements of the Securities Act of 1933 and the Securities Exchange Act of 1934. Chemical's common stock is traded on The NASDAQ Stock Market® ("NASDAQ") under the symbol CHFC and is subject to the NASDAQ Listing Rules.

Chemical Bank is chartered by the State of Michigan and supervised, examined and regulated by the Michigan Department of Insurance and Financial Services ("DIFS"). Chemical Bank, as a member of the Federal Reserve System, is also supervised, examined and regulated by the FRB. Chemical Bank is also subject to regulation by the Consumer Financial Protection Bureau, which has responsibility for enforcing the principal federal consumer protection laws, such as the Truth in Lending Act, the Equal Credit Opportunity Act, and Real Estate Settlement Procedures Act, and the Truth in Savings Act, among others, for institutions that have assets in excess of \$10 billion. Deposits of Chemical Bank are insured by the Federal Deposit Insurance Corporation ("FDIC") to the maximum extent provided by law.

Bank Holding Company Activities

In general, the BHC Act limits the business of bank holding companies to banking, managing or controlling banks and other activities that the FRB has determined to be closely related to the business of banking. In addition, bank holding companies that qualify and elect to be financial holding companies may engage in any activities that are financial in nature or complementary to a financial activity and do not pose a substantial risk to the safety and soundness of depository institutions or the financial system without prior approval of the FRB. Activities that are financial in nature include securities underwriting and dealing, insurance underwriting and making merchant banking investments.

In order for Chemical to maintain financial holding company status, both Chemical and Chemical Bank must be categorized as "well-capitalized" and "well-managed" under applicable regulatory guidelines. If Chemical or Chemical Bank ceases to meet these requirements, the FRB may impose corrective capital and/or managerial requirements and place limitations on Chemical's ability to conduct the broader financial activities permissible for financial holding companies. In addition, if the deficiencies persist, the FRB may require Chemical to divest of Chemical Bank. Chemical and Chemical Bank were both categorized as "well-capitalized" and "well-managed" as of December 31, 2018.

The BHC Act requires prior approval of the FRB for any direct or indirect acquisition of more than 5% of the voting shares of a commercial bank or its parent holding company by Chemical. In reviewing applications seeking approval of merger and acquisition transactions, the bank regulatory authorities will consider, among other things, the competitive effect and public benefits of the transactions, the capital position of the combined organization, Chemical's performance record under the Community Reinvestment Act of 1977 ("CRA"), Chemical's adherence to banking regulations and fair lending laws and the effectiveness of the subject organizations in combating money laundering activities.

Interstate Banking and Branching

Bank holding companies may acquire banks located in any state in the United States without regard to geographic restrictions or reciprocity requirements imposed by state law. Banks may establish interstate branch networks through acquisitions of other banks. The establishment of de novo interstate branches or the acquisition of individual branches of a bank in another state (rather than the acquisition of an out-of-state bank in its entirety) is allowed to the extent that state law would permit a bank chartered in that state to establish such a branch.

Michigan permits both U.S. and non-U.S. banks to establish branch offices in Michigan. The Michigan Banking Code permits, in appropriate circumstances and with the approval of the DIFS, (1) acquisition of Michigan banks by FDIC-insured banks, savings banks or savings and loan associations located in other states, (2) sale by a Michigan bank of branches to an FDIC-insured bank, savings bank or savings and loan association located in a state in which a Michigan bank could purchase branches of the purchasing entity, (3) consolidation of Michigan banks and FDIC-insured banks, savings banks or savings and loan associations located in other states having laws permitting such consolidation, (4) establishment of branches in Michigan by FDIC-insured banks located in other states, the District of Columbia or U.S. territories or protectorates having laws permitting a Michigan bank to establish a branch in such jurisdiction, and (5) establishment by foreign banks of branches located in Michigan. A Michigan bank holding company may acquire a non-Michigan bank and a non-Michigan bank holding company may acquire a Michigan bank.

Dividends

Our primary source of funds available to pay dividends to shareholders is from dividends paid to us by Chemical Bank. Federal and state banking laws and regulations limit both the extent to which Chemical Bank can lend or otherwise supply funds to us and also place certain restrictions on the amount of dividends Chemical Bank may pay to us.

Both Chemical and Chemical Bank are subject to regulatory policies and requirements relating to the payment of dividends, including requirements to maintain capital above regulatory minimums, which could prohibit the payment of dividends under circumstances where the payment could be deemed an unsafe and unsound banking practice. Chemical Bank is required to obtain prior approval from the FRB for the declaration and payment of dividends to us if the total of all dividends declared in any calendar year will exceed the total of (i) Chemical Bank's net income (as defined by regulation) for that year plus (ii) the retained net income (as defined by regulation) for the preceding two years. In addition, federal regulatory authorities have stated that banking organizations should generally pay dividends only out of current operating earnings. Further, the FRB has indicated that bank holding companies should carefully review their dividend policy and has discouraged payment ratios that are at maximum allowable levels unless both asset quality and capital are very strong. Chemical Bank declared and paid dividends to us of \$114.3 million and \$165.0 million in 2018 and 2017, respectively. Dividends received from Chemical Bank in the past are not necessarily indicative of amounts that may be paid or available to be paid in the future.

Source of Strength

Under FRB policy, we are expected to act as a source of financial strength to Chemical Bank and to commit resources to support Chemical Bank. Further, the FRB has discretion to require a bank holding company to divest itself of any bank or non-bank subsidiaries if the agency determines that any such divestiture may aid the depository institution's financial condition. In addition, if DIFS deems Chemical Bank's capital to be impaired, DIFS may require Chemical Bank to restore its capital by a special assessment on us as Chemical Bank's only shareholder. If we fail to pay any assessment, our directors would be required, under Michigan law, to sell the shares of Chemical Bank's stock owned by us to the highest bidder at either a public or private auction and use the proceeds of the sale to restore Chemical Bank's capital.

Change in Control

Two statutes, the BHC Act and the Change in Bank Control Act, together with regulations promulgated under them, require some form of regulatory review before any company acquires "control" of a bank or a bank holding company. Under the BHC Act, control is deemed to exist if a company acquires 25% or more of any class of voting securities of a bank holding company; controls the election of a majority of the members of the board of directors; or exercises a controlling influence over the management or policies of a bank or bank holding company. In guidance issued in 2008, the FRB has stated that it would not expect control to exist if a person acquires, in aggregate, less than 33% of the total equity of a bank or bank holding company (voting and nonvoting equity), provided such person's ownership does not include 15% or more of any class of voting securities. Prior FRB approval is necessary before an entity acquires sufficient control to become a bank holding company. Natural persons, certain non-business trusts, and other entities are not treated as companies (or bank holding companies), and their acquisitions are not subject to review under the BHC Act.

Under the Change in Bank Control Act, a person or company is required to file a notice with the FRB if it will, as a result of the transaction, own or control 10% or more of any class of voting securities or direct the management or policies of a bank or bank holding company and either if the bank or bank holding company has registered securities or if the acquirer would be the largest holder of that class of voting securities after the acquisition. For a change in control at the holding company level, both the FRB and the subsidiary bank's primary federal regulator must approve the change in control; at the bank level, only the bank's primary federal regulator is involved. Transactions subject to the BHC Act are exempt from Change in Control Act requirements.

Capital Requirements

Both Chemical and Chemical Bank are subject to regulatory "risk-based" capital guidelines. Failure to meet these capital guidelines could subject us or Chemical Bank to a variety of enforcement remedies, including issuance of a capital directive, the termination of deposit insurance by the FDIC, a prohibition on accepting brokered deposits, and other restrictions on its business. In addition, Chemical Bank would generally not receive regulatory approval of any application that requires the consideration of capital adequacy, such as a branch or merger application, unless it could demonstrate a reasonable plan to meet the capital requirement within a reasonable period of time.

The Federal Deposit Insurance Corporation Improvement Act ("FDICIA") requires, among other things, federal banking agencies to take "prompt corrective action" in respect of depository institutions that do not meet minimum capital requirements. FDICIA sets forth the following five capital categories: "well-capitalized," "adequately-capitalized," "undercapitalized," "significantly-undercapitalized" and "critically-undercapitalized." A depository institution's capital category will depend upon how its capital levels compare with various relevant capital measures as established by regulation, which include common equity Tier 1, Tier 1 and total risk-based capital ratio measures and a leverage capital ratio measure. The total minimum regulatory capital ratios and well-capitalized minimum ratios are reflected in the table below.

Federal banking regulators are required to take specified mandatory supervisory actions and are authorized to take other discretionary actions with respect to institutions in the three undercapitalized categories. The severity of the action depends upon the capital category in which the institution is placed. Subject to a narrow exception, the banking regulator must generally appoint a receiver or conservator for an institution that is critically undercapitalized. An institution in any of the undercapitalized categories is required to submit an acceptable capital restoration plan to its appropriate federal banking agency. An undercapitalized institution is also generally prohibited from paying any dividends, increasing its average total assets, making acquisitions, establishing any branches, accepting or renewing any brokered deposits or engaging in any new line of business, except under an accepted capital restoration plan or with FDIC approval.

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 requirement was phased in over a three-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 while remaining out of compliance with the capital conservation buffer.

The total minimum regulatory capital ratios and well-capitalized minimum ratios are reflected in the table below. The FRB has not yet revised the well-capitalized standard for bank holding companies to reflect the higher capital requirements imposed under the Basel III capital rules. For purposes of the FRB's Regulation Y, including determining whether a bank holding company meets the requirements to be a financial holding company, bank holding companies, such as Chemical, must maintain a Tier 1 risk-based capital ratio of 6.0% or greater and a total risk-based capital ratio of 10.0% or greater. If the FRB were to apply the same or a very similar well-capitalized standard to bank holding companies as that applicable to Chemical Bank, Chemical's capital ratios as of December 31, 2018 would exceed such revised well-capitalized standard. The FRB may require bank holding companies, including Chemical, to maintain capital ratios substantially in excess of mandated minimum levels, depending upon general economic conditions and a bank holding company's particular condition, risk profile, and growth plans.

A summary of the actual and minimum Basel III regulatory capital ratios for Chemical and Chemical Bank as of December 31, 2018 follows:

	Leverage Ratio	Common Equity Tier 1 Capital Ratio	Tier 1 Risk-Based Capital Ratio	Total Risk-Based Capital Ratio
Actual Capital Ratios:				
Chemical Financial Corporation	8.7%	10.7%	10.7%	11.5%
Chemical Bank	8.6%	10.6%	10.6%	11.4%
Minimum for capital adequacy purposes	4.0%	4.5%	6.0%	8.0%
Minimum to be well capitalized under prompt corrective action regulations	5.0%	6.5%	8.0%	10.0%
Minimum for capital adequacy, including capital conservation buffer ⁽¹⁾	4.0%	7.0%	8.5%	10.5%

(1) Reflects the now fully-phased in capital conservation buffer of 2.5%.

At December 31, 2018, Chemical's and Chemical Bank's capital ratios were above the well-capitalized standards and met the then-applicable capital conservation buffer and the capital conservation buffer on a fully phased-in basis. Under certain circumstances, the appropriate banking agency may treat a well-capitalized, adequately capitalized or undercapitalized institution as if the institution were in the next lower capital category. Additional information on Chemical's and Chemical Bank's capital ratios may be found under Note 21 to our Consolidated Financial Statements under Item 8 of this Annual Report.

FDIC Insurance

The FDIC formed the Deposit Insurance Fund ("DIF") in accordance with the Federal Deposit Insurance Reform Act of 2005 ("Reform Act"). The FDIC implemented the Reform Act to create a stronger and more stable insurance system. The FDIC maintains the insurance reserves of the DIF by assessing depository institutions an insurance premium. The DIF insures deposit accounts of Chemical Bank up to a maximum amount of \$250,000 per separately insured depositor, per institution.

FDIC insured depository institutions are required to pay deposit insurance premiums based on an insured depository institution's assessment base, calculated as its average consolidated total assets minus its average tangible equity. Chemical Bank's current annualized premium assessments can range from \$0.15 to \$0.40 for each \$100 of its assessment base. The rate charged depends on Chemical Bank's performance on the FDIC's "large and highly complex institution" risk-assessment scorecard, which includes factors such as Chemical Bank's regulatory rating, its ability to withstand asset and funding-related stress, and the relative magnitude of potential losses to the FDIC in the event of Chemical Bank's failure. Chemical's FDIC insurance premiums were \$18.5 million in 2018, compared to \$11.2 million in 2017 and \$7.4 million in 2016.

In addition to ordinary assessments, the FDIC has the ability to impose special assessments in certain circumstances. Under the Dodd-Frank Act, the minimum designated reserve ratio for the deposit insurance fund was increased to 1.35%. In March 2016, the FDIC adopted rules to impose a surcharge, as required by the Dodd-Frank Act, on the quarterly deposit insurance assessments of insured depository institutions that are deemed under the rules to be "large institutions," generally defined to include banks, like Chemical Bank, with total consolidated assets of \$10 billion or more, with such surcharges to continue until the reserve ratio reached 1.35%. The large institution surcharge became effective on July 1, 2016, and on September 30, 2018, the deposit insurance fund reached 1.36%, exceeding the statutorily required minimum reserve ratio of 1.35%. Accordingly, the last quarterly surcharge was reflected in large institutions' December 2018 assessment invoices, which covered the assessment period from July 1 through September 30. FDIC regulations provided for two changes to deposit insurance assessments upon reaching the minimum reserve ratio of 1.35%: (1) surcharges on insured depository institutions with total consolidated assets of \$10 billion or more (large institutions) will cease; and (2) small banks will receive assessment credits for the portion of their assessments that contributed

to the growth in the reserve ratio from between 1.15% and 1.35%, to be applied when the reserve ratio is at or above 1.38%. Assessment rates are expected to decrease if the reserve ratio increases such that it exceeds 2%.

Safety and Soundness Standards

As required by FDICIA, the federal banking agencies' prompt corrective action powers impose progressively more restrictive constraints on operations, management and capital distributions, depending on the category in which an institution is classified. These actions can include: requiring an insured depository institution to adopt a capital restoration plan guaranteed by the institution's parent company; placing limits on asset growth and restrictions on activities, including restrictions on transactions with affiliates; restricting the interest rates the institution may pay on deposits; prohibiting the payment of principal or interest on subordinated debt; prohibiting the holding company from making capital distributions without prior regulatory approval; and, ultimately, appointing a receiver for the institution.

The federal banking agencies also have adopted guidelines prescribing safety and soundness standards relating to internal controls and information systems, internal audit systems, loan documentation, credit underwriting, interest rate exposure, asset growth, and compensation and benefits. The federal regulatory agencies may take action against a financial institution that does not meet such standards.

Depositor Preference

The Federal Deposit Insurance Act provides that, in the event of the "liquidation or other resolution" of an insured depository institution, the claims of depositors of the institution, including the claims of the FDIC on behalf of insured depositors, and certain claims for administrative expenses of the FDIC as a receiver, will have priority over other general unsecured claims against the institution. If an insured depository institution fails, insured and uninsured depositors, along with the FDIC, will have priority in payment ahead of unsecured, non-deposit creditors, including depositors whose deposits are payable only outside of the United States and the parent bank holding company, with respect to any extensions of credit they have made to such insured depository institution.

Heightened Requirements for Bank Holding Companies with \$10 Billion or More in Assets

Various federal banking laws and regulations, including rules adopted by the Federal Reserve pursuant to the requirements of the Dodd-Frank Act, impose heightened requirements on certain large banks and bank holding companies. Most of these rules apply primarily to bank holding companies with at least \$250 billion in total consolidated assets, but certain rules also apply to banks and bank holding companies with at least \$10 billion in total consolidated assets, including among other requirements, the following:

Consumer Financial Protection Bureau (CFPB) Examination. The Dodd-Frank Act, enacted in July 2010, represents a comprehensive overhaul of the financial services industry within the United States, including establishing the federal CFPB and requiring the CFPB and other federal agencies to implement many new and significant rules and regulations, including the Equal Credit Opportunity Act, Truth in Lending Act, Real Estate Settlement Procedures Act, Fair Credit Reporting Act, Fair Debt Collection Practices Act, the Consumer Financial Privacy provisions of the Gramm-Leach-Bliley Act and certain other statutes. The CFPB has examination and primary enforcement authority with respect to depository institutions with \$10 billion or more in assets, such as Chemical Bank. Depository institutions with less than \$10 billion in assets are subject to rules promulgated by the CFPB, which may increase their compliance risk and the costs associated with their compliance efforts, but these banks will continue to be examined and supervised by federal banking regulators for consumer compliance purposes. The CFPB has authority to prevent unfair, deceptive or abusive practices in connection with the offering of consumer financial products. Chemical and Chemical Bank are now subject to examination by the CFPB.

The Dodd-Frank Act authorizes the CFPB to establish certain minimum standards for the origination of residential mortgages, including a determination of the borrower's ability to repay. In addition, the Dodd-Frank Act allows borrowers to raise certain defenses to foreclosure if they receive any loan other than a "qualified mortgage" as defined by the CFPB. The CFPB has issued a number of regulations related to the origination of mortgages, foreclosures, and overdrafts as well as many other consumer issues. These rules have impacted, and will continue to impact, the business practices of mortgage lenders, including us.

Enhanced Prudential Standards. As a publicly traded bank holding company with \$10 billion or more in consolidated assets, we must comply with certain provisions of the FRB's enhanced prudential standards. For example, Chemical is required to establish a stand-alone, board level risk committee that must have a formal written charter approved by the board of directors. The risk committee is charged with approving and periodically reviewing the risk-management policies of Chemical and overseeing the operation of its global risk-management framework. We have established a Risk Management Committee of the board of directors.

The Durbin Amendment. Beginning on January 1, 2017, we became subject to the so-called Durbin Amendment to the Dodd-Frank Act relating to debit card interchange fees. Under the Durbin Amendment and the FRB's implementing regulations, bank issuers who are not exempt may only receive an interchange fee from merchants that is reasonable and proportional to the cost of clearing the transaction. The maximum permissible interchange fee is equal to no more than \$0.21 plus five basis points of the transaction value for many types of debit interchange transactions. A debit card issuer may also recover \$0.01 per transaction for fraud prevention purposes if the issuer complies with certain fraud-related requirements required by the FRB.

The Volcker Rule

The Volcker Rule implements Section 619 of the Dodd-Frank Act. The Volcker Rule prohibits "banking entities," such as Chemical, Chemical Bank and their affiliates and subsidiaries, from owning, sponsoring, or having certain relationships with hedge funds and private equity funds (referred to as "covered funds") and engaging in short-term proprietary trading of securities, derivatives, commodity futures and options on these instruments.

The Volcker Rule excepts certain transactions from the general prohibition against proprietary trading, including transactions in government securities (e.g., U.S. Treasuries or any instruments issued by the GNMA, FNMA, FHLMC, a Federal Home Loan Bank, or any state or a political division of any state, among others); transactions in connection with underwriting or market-making activities; and, transactions as a fiduciary on behalf of customers. Banking entities may also engage in risk-mitigating hedges if the entity can demonstrate that the hedge reduces or mitigates a specific, identifiable risk or aggregate risk position of the entity. The banking entity is required to conduct an analysis supporting its hedging strategy and the effectiveness of the hedges must be monitored and, if necessary, adjusted on an ongoing basis. Banking entities with more than \$50 billion in total consolidated assets and liabilities that engage in permitted trading transactions are required to implement enhanced compliance programs, to regularly report data on trading activities to the regulators, and to provide a CEO attestation that the entity's compliance program is reasonably designed to comply with the Volcker Rule.

Consumer Protection Regulations

The activities of Chemical Bank are subject to a variety of statutes and regulations designed to protect consumers. Interest and other charges collected or contracted for by the Bank are subject to state usury laws and federal laws concerning interest rates. The loan operations of the Bank are also subject to federal laws applicable to credit transactions, such as:

- the Truth-In-Lending Act ("TILA") and Regulation Z, governing disclosures of credit and servicing terms to consumer borrowers and including substantial new requirements for mortgage lending and servicing, as mandated by the Dodd-Frank Act;
- the Home Mortgage Disclosure Act of 1975 and Regulation C, requiring financial institutions to provide information to enable the public and public officials to determine whether a financial institution is fulfilling its obligation to help meet the housing needs of the communities they serve;
- the Equal Credit Opportunity Act and Regulation B, prohibiting discrimination on the basis of race, color, religion, or other prohibited factors in extending credit;

the Fair Credit Reporting Act of 1978, as amended by the Fair and Accurate Credit Transactions Act and Regulation V, as well as the rules and regulations of the FDIC governing the use and provision of information to credit reporting agencies, certain identity theft protections and certain credit and other disclosures;

• the Fair Debt Collection Practices Act and Regulation F, governing the manner in which consumer debts may be collected by collection agencies; and

• the Real Estate Settlement Procedures Act and Regulation X, which governs aspects of the settlement process for residential mortgage loans.

The deposit operations of Chemical Bank are also subject to federal laws, such as:

- the Federal Deposit Insurance Act, which, among other things, limits the amount of deposit insurance available per account to \$250,000 and imposes other limits on deposit-taking;
- the Right to Financial Privacy Act, which imposes a duty to maintain the confidentiality of consumer financial records and prescribes procedures for complying with administrative subpoenas of financial records;
- the Electronic Funds Transfer Act and Regulation E, which governs automatic deposits to and withdrawals from deposit accounts and customers' rights and liabilities arising from the use of automated teller machines and other electronic banking services; and
- the Truth in Savings Act and Regulation DD, which requires depository institutions to provide disclosures so that consumers can make meaningful comparisons about depository institutions and accounts.

Community Reinvestment Act

Banks are subject to the provisions of the CRA. Under the terms of the CRA, the appropriate federal bank regulatory agency is required, in connection with its examination of a bank, to assess such bank's record in meeting the credit needs of the community served by that bank, including low and moderate income neighborhoods, consistent with the safe and sound operation of the institution. Under the CRA, institutions are assigned a rating of "outstanding," "satisfactory," "needs to improve," or "substantial non-compliance." The regulatory agency's assessment of the bank's record is made available to the public. Further, a bank's federal regulatory agency is required to assess the CRA compliance record of any bank that has applied to: (1) obtain deposit insurance coverage for a newly chartered institution, (2) establish a new branch office that will accept deposits, (3) relocate an office, or (4) merge or consolidate with, or acquire the assets or assume the liabilities of, a federally regulated financial institution. In the case of a bank holding company applying for approval to acquire a bank or another bank holding company, the FRB will assess the CRA compliance record of each subsidiary bank of the applicant bank holding company, and such compliance records may be the basis for denying the application. Upon receiving notice that a subsidiary bank is rated less than "satisfactory," a financial holding company will be prohibited from additional activities that are permitted to a financial holding company and from acquiring any company engaged in such activities. Chemical Bank's CRA rating was "satisfactory" as of December 31, 2018.

Financial Privacy

Federal banking regulations limit the ability of banks and other financial institutions to disclose non-public information about consumers to nonaffiliated third parties. These limitations require disclosure of privacy policies to consumers and, in some circumstances, allow consumers to prevent disclosure of certain personal information to a nonaffiliated third party. These regulations affect how consumer information is transmitted through diversified financial companies and conveyed to outside vendors.

Chemical Bank is also subject to regulatory guidelines establishing standards for safeguarding customer information. These guidelines describe the federal banking agencies' expectation for the creation, implementation and maintenance of an information security program, which would include administrative, technical and physical safeguards appropriate to the size and complexity of the institution and the nature and scope of its activities. The standards set forth in the guidelines are intended to ensure the security and confidentiality of customer records and information, protect against any anticipated threats or hazards to the security or integrity of such records and protect against unauthorized access to or use of such records or information that could result in substantial harm or inconvenience to any customer.

Anti-Money Laundering and the USA Patriot Act

A major focus of governmental policy on financial institutions has been aimed at combating money laundering and terrorist financing. The Bank Secrecy Act of 1970 ("BSA") and subsequent laws and regulations require Chemical Bank to take steps to prevent the use of the bank or its systems to facilitate the flow of illegal or illicit money or terrorist funds. Those requirements include ensuring effective board and management oversight, establishing policies and procedures, performing comprehensive risk assessments, developing effective monitoring and reporting capabilities, ensuring adequate training and establishing a comprehensive independent audit of BSA compliance activities. The USA PATRIOT Act of 2001 ("USA Patriot Act") substantially broadened the scope of United States anti-money laundering laws and regulations by imposing significant compliance and due diligence obligations, creating new crimes and penalties and expanding the extra-territorial jurisdiction of the United States. The United States Treasury Department has issued, and in some cases proposed, a number of regulations that apply various requirements of the USA Patriot Act to financial institutions. These regulations impose obligations on financial institutions to maintain appropriate policies, procedures and controls to detect, prevent and report money laundering and terrorist financing and to verify the identity of their customers. Certain of those regulations impose specific due diligence requirements on financial institutions that maintain correspondent or private banking relationships with non-U.S. financial institutions or persons. Failure of a financial institution to

maintain and implement adequate programs to combat money laundering and terrorist financing, or to comply with all of the relevant laws or regulations, could have serious legal and reputational consequences for the institution. In addition, bank regulators routinely examine institutions for compliance with these obligations, and this area has become a particular focus of the regulators in recent years. The regulators are required to consider compliance in connection with the regulatory review of applications. The regulatory authorities have been active in imposing “cease and desist” orders and money penalty sanctions against institutions found to be violating these obligations.

Office of Foreign Assets Control Regulation

The United States Treasury Department Office of Foreign Assets Control (“OFAC”) has imposed economic sanctions that affect transactions with designated foreign countries, nationals and others. OFAC sanctions targeting countries take many different forms. Generally, however, they contain one or more of the following elements: (1) restrictions on trade with or investment in a sanctioned country, including prohibitions on “U.S. persons” engaging in financial transactions relating to making investments in, or providing investment-related advice or assistance to, a sanctioned country; and (2) a blocking of assets in which the government or specially designated nationals of the sanctioned country have an interest, by prohibiting transfers of property subject to U.S. jurisdiction (including property in the possession or control of U.S. persons). Blocked assets (e.g., property and bank deposits) cannot be paid out, withdrawn, set off or transferred in any manner without a license from OFAC. Failure to comply with these sanctions could have serious legal and reputational consequences.

Incentive Compensation

The regulatory agencies have issued comprehensive guidance on incentive compensation policies intended to ensure that the incentive compensation policies of banking organizations do not undermine the safety and soundness of such organizations by encouraging excessive risk-taking. The guidance, which covers all employees that have the ability to materially affect the risk profile of an organization, either individually or as part of a group, is based upon the key principles that a banking organization's incentive compensation arrangements should (i) provide incentives that do not encourage risk-taking beyond the organization's ability to effectively identify and manage risks, (ii) be compatible with effective internal controls and risk management and (iii) be supported by strong corporate governance, including active and effective oversight by the organization's board of directors.

The FRB reviews, as part of the regular, risk-focused examination process, the incentive compensation arrangements of banking organizations, such as Chemical, that are not “large, complex banking organizations.” The findings will be included in reports of examination. Deficiencies will be incorporated into the organization's supervisory ratings, which can affect the organization's ability to make acquisitions and take other actions. Enforcement actions may be taken against a banking organization if its incentive compensation arrangements, or related risk-management control or governance processes, pose a risk to the organization's safety and soundness and the organization is not taking prompt and effective measures to correct the deficiencies.

Commercial Real Estate Guidance

In December 2015, the federal banking regulators released a statement entitled “Interagency Statement on Prudent Risk Management for Commercial Real Estate Lending” (the “CRE Guidance”). In the CRE Guidance, the federal banking regulators (1) expressed concerns with institutions that ease commercial real estate underwriting standards, (2) directed financial institutions to maintain underwriting discipline and exercise risk management practices to identify, measure and monitor lending risks, and (3) indicated that they will continue to pay special attention to commercial real estate lending activities and concentrations going forward. The federal banking regulators previously issued guidance in December 2006, entitled “Interagency Guidance on Concentrations in Commercial Real Estate Lending, Sound Risk Management Practices,” which stated that an institution is potentially exposed to significant commercial real estate concentration risk, and should employ enhanced risk management practices, where (1) total commercial real estate loans (excluding loans secured by owner-occupied properties) represent 300% or more of its total capital

and (2) the outstanding balance of such institution's commercial real estate loan portfolio (excluding loans secured by owner occupied properties) has increased by 50% or more during the prior 36 months. As of December 31, 2018, aggregate non-owner occupied commercial real estate loans as a percentage of our total capital was 153.7%.

Fiscal and Monetary Policy

Banking is a business that depends largely on interest rate differentials. In general, the difference between the interest we pay on our deposits and other borrowings, and the interest we receive on our loans and securities holdings, constitutes the major portion of our earnings. Thus, our earnings and growth will be subject to the influence of economic conditions generally, both domestic and foreign, and also to the monetary and fiscal policies of the United States and its agencies, particularly the FRB. The FRB regulates, among other things, the supply of money through various means, including open market dealings in United

States government securities, the discount rate at which banks may borrow from the FRB, and the reserve requirements on deposits. We cannot predict the nature and timing of any changes in such policies and their impact on our business.

Item 1A. Risk Factors.

There are risks, many beyond our control, which could cause our results to differ significantly from management's expectations. Some of these significant risks and uncertainties are described below. Any factor described in this Annual Report on Form 10-K could, by itself or together with one or more other factors, adversely affect our business, results of operations and/or financial condition, and the market price of our common stock could decline significantly. Additional risks and uncertainties not currently known to us or that we currently consider to not be material also may materially and adversely affect us. In assessing these risks, you should also refer to other information disclosed in our SEC filings, including the financial statements and notes thereto. The risks discussed below also include forward-looking statements, and actual results may differ substantially from those discussed or implied in these forward-looking statements.

Risks Related to our Business

If we fail to effectively manage credit risk, our business and financial condition will suffer.

We must effectively manage credit risk. As a lender, we are exposed to the risk that our borrowers will be unable to repay their loans according to their terms, and that the collateral securing repayment of their loans, if any, may not be sufficient to ensure repayment. In addition, there are risks inherent in making any loan, including risks relating to proper loan underwriting, risks resulting from changes in economic and industry conditions and risks inherent in dealing with individual borrowers, including the risk that a borrower may not provide information to us about its business in a timely manner, and/or may present inaccurate or incomplete information to us, and risks relating to the value of collateral. Collateral values are adversely affected by changes in prevailing economic, environmental and other conditions, including declines in the value of real estate, changes in interest rates, changes in monetary and fiscal policies of the federal government, terrorist activity, environmental contamination and other external events. In order to manage credit risk successfully, we must, among other things, maintain disciplined and prudent underwriting standards and ensure that our lenders follow those standards. The weakening of these standards for any reason, such as an attempt to attract higher yielding loans, a lack of discipline or diligence by our employees in underwriting and monitoring loans, the inability of our employees to adequately adapt policies and procedures to changes in economic or any other conditions affecting borrowers and the quality of our loan portfolio, may result in loan defaults, foreclosures and additional charge-offs and may necessitate that we significantly increase our allowance for loan losses, each of which could adversely affect our net income. As a result, our inability to successfully manage credit risk could have a material adverse effect on our business, financial condition or results of operations.

Our allowance for loan losses, and fair value adjustments with respect to loans acquired in our acquisitions, may prove to be insufficient to absorb actual losses in our loan portfolio, which may adversely affect our business, financial condition and results of operations.

We maintain an allowance for loan losses, which is a reserve established through a provision for loan losses charged to net income that represents management's estimate of probable losses that have been incurred within our existing loan portfolio. The level of the allowance for loan losses reflects management's continuing evaluation of specific credit risks, loan loss experience, current loan portfolio quality, the value of real estate, present economic, political and regulatory conditions and unidentified losses inherent in the current loan portfolio. The determination of the appropriate level of the allowance for loan losses inherently involves a high degree of subjectivity and requires us to make significant estimates of current credit risks and future trends, all of which may undergo material changes. Deterioration in economic conditions and declines in real estate values affecting borrowers, new information

regarding existing loans, identification of additional problem loans and other factors, both within and outside of our control, may require an increase in the allowance for loan losses.

The application of the purchase method of accounting in our acquisitions (and any future acquisitions) will impact our allowance for loan losses. Under the purchase method of accounting, all acquired loans were recorded in our Consolidated Financial Statements at their estimated fair value at the time of acquisition and any related allowance for loan loss was eliminated because credit quality, among other factors, was considered in the determination of fair value. To the extent that our estimates of fair value are too high, we will incur losses associated with the acquired loans. The allowance associated with our purchased credit impaired loans reflects deterioration in cash flows since acquisition resulting from our quarterly re-estimation of cash flows which involves complex cash flow projections and significant judgment on timing of loan resolution.

If our analysis or assumptions prove to be incorrect, our current allowance may not be sufficient, and adjustments may be necessary to allow for different economic conditions or adverse developments in our loan portfolio. Material additions to the allowance for loan losses would materially decrease our net income and adversely affect our general financial condition.

In addition, our regulators, as an integral part of their periodic examination, review our allowance for loan losses and may require an increase in the allowance for loan losses or the recognition of further loan charge-offs, based on judgments different than those of management.

Finally, the measure of our allowance for loan losses is dependent on the adoption and interpretation of accounting standards. The Financial Accounting Standards Board ("FASB") recently issued a new credit impairment model, the Current Expected Credit Loss, or CECL model, which will become applicable to us in 2020. Under the CECL model, we will be required to present certain financial assets carried at amortized cost, such as loans held for investment and held-to-maturity debt securities, at the net amount expected to be collected. The measurement of expected credit losses is to be based on information about past events, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. This measurement will take place at the time the financial asset is first added to the balance sheet and periodically thereafter. This differs significantly from the "incurred loss" model currently required under GAAP, which delays recognition until it is probable a loss has been incurred. Accordingly, we expect that the adoption of the CECL model will materially affect how we determine our allowance for loan losses and could require us to significantly increase our allowance. Moreover, the CECL model may create more volatility in the level of our allowance for loan losses. If we are required to materially increase our level of allowance for loan losses for any reason, such increase could adversely affect our business, financial condition and results of operations.

See the sections captioned "Allowance for Loan Losses" in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and Note 5 - Loans in the notes to our Consolidated Financial Statements in Item 8. Financial Statements and Supplementary Data, located elsewhere in this Annual Report for further discussion related to Chemical's process for determining the appropriate level of the allowance for loan losses.

We may be adversely affected by risks associated with future mergers and acquisitions, including execution risk, which could disrupt our business and dilute shareholder value.

We plan to grow our business both organically and through mergers and acquisitions. We periodically evaluate merger and acquisition opportunities and conduct due diligence activities related to possible transactions with other financial institutions and financial services companies. As a result, we may engage in discussions or negotiations that, if they were to result in a transaction, could have a material effect on our operating results and financial condition, including short- and long-term liquidity. Our merger and acquisition activities could be material and could require us to use a substantial amount of common stock, preferred stock, cash, other liquid assets, and/or incur debt. For example, in connection with our proposed merger of equals transaction with TCF announced on January 28, 2019, we will issue additional shares of our common stock to TCF stockholders, which will dilute our current shareholders' ownership interest in Chemical, and we will issue shares of a newly designated series of our preferred stock. Furthermore, failure to realize the expected revenue increases, cost savings, increases in geographic or product presence, and/or other projected benefits from our merger and acquisition activities, including our proposed merger with TCF, could have a material adverse effect on our financial condition and results of operations, including net income per common share.

Our merger and acquisition activities, including our proposed merger with TCF, could involve a number of additional risks, including the risks of:

- delay in completing an acquisition or merger due to litigation or the regulatory approval process;

the recording of assets and liabilities of the acquired or merged company at fair value may materially dilute shareholder value at the transaction date and could have a material adverse effect on our financial condition and results of operations;

• incurring the time and costs associated with identifying and evaluating potential acquisition or merger targets;

• difficulty or unanticipated expense associated with converting the operating systems of the acquired or merged company into ours;

• potential exposure to unknown or contingent liabilities of the acquired or merged company;

• our estimates and judgments used to evaluate credit, operations, management and market risks with respect to the acquired or merged company may not be accurate;

• our exposure to potential asset quality issues of the acquired or merged company;

the time and costs of evaluating new markets, hiring experienced local management and opening new offices, and the

time lags between these activities and the generation of sufficient assets and deposits to support the costs of the expansion;

- diversion of our management's attention to the negotiation of a transaction, and the integration of the operations and personnel of the combining businesses;
- the introduction of new products and services into our business;
- potential disruption to our business;
- the incurrence and possible impairment of goodwill and other intangible assets associated with an acquisition or merger and possible adverse short-term effects on our results of operations;
- the possible loss of key employees and customers of the acquired or merged company;
- difficulty in estimating the value of the acquired or merged company; and
- potential changes in banking or tax laws or regulations that may affect the acquired or merged company.

Failure to successfully address these and other issues related to acquisitions and mergers could have a material adverse effect on our financial condition and results of operations, and could adversely affect our ability to successfully implement our business strategy.

Future mergers and acquisitions may be delayed, impeded, or prohibited due to regulatory issues.

Our mergers and acquisitions, including our proposed merger with TCF, are subject to approval by a variety of federal and state regulatory agencies. The process for obtaining these required regulatory approvals has become substantially more difficult in recent years. Regulatory approvals could be delayed, impeded, restrictively conditioned or denied due to existing or new regulatory issues we or the target company has, or may have, with regulatory agencies, including, without limitation, issues related to anti-money laundering/Bank Secrecy Act compliance, fair lending laws, fair housing laws, consumer protection laws, unfair, deceptive, or abusive acts or practices regulations, Community Reinvestment Act issues, and other similar laws and regulations. We may fail to pursue, evaluate or complete strategic and competitively significant acquisition opportunities as a result of our inability, or perceived or anticipated inability, to obtain regulatory approvals in a timely manner, under reasonable conditions or at all. Difficulties associated with potential mergers and acquisitions that may result from these factors could have a material adverse effect on our business, and, in turn, our financial condition and results of operations.

We face risks and uncertainties related to our proposed merger with TCF.

Before the transactions contemplated in the merger agreement can be completed, various approvals must be obtained, including approval of the FRB and the Office of the Comptroller of the Currency. The terms and conditions of the approvals that are granted may impose conditions, limitations, obligations or costs, or place restrictions on the conduct of the combined company's business or require changes to the terms of the transactions contemplated by the merger agreement. There can be no assurance that regulators will not impose any such conditions, limitations, obligations or restrictions and that such conditions, limitations, obligations or restrictions will not have the effect of delaying the completion of any of the transactions contemplated by the merger agreement, imposing additional material costs on or materially limiting the revenues of the combined company following the merger or otherwise reduce the anticipated benefits of the merger if the merger were consummated successfully within the expected timeframe. In addition, there can be no assurance that any such conditions, terms, obligations or restrictions will not result in the delay or abandonment of the merger.

Chemical and TCF have operated and, until the completion of the merger, will continue to operate independently. There can be no assurances that the businesses of Chemical and TCF can be integrated successfully. It is possible that the integration process could result in the loss of key Chemical employees or key TCF employees, the loss of customers, the disruption of either company's or both companies' ongoing businesses, inconsistencies in standards, controls, procedures and policies, unexpected integration issues, higher than expected integration costs and an overall post-completion integration process that takes longer than originally anticipated. The success of the merger will depend on, among other things, the ability of Chemical and TCF to combine their businesses in a manner that facilitates growth opportunities and realizes cost savings. However, if the combined company is not able to

successfully achieve these objectives, the anticipated benefits of the merger may not be realized fully, or at all, or may take longer to realize than expected.

In addition, the merger agreement contains provisions that restrict each of Chemical's and TCF's ability to, among other things, initiate, solicit, knowingly encourage or knowingly facilitate, inquiries or proposals with respect to, or, subject to certain exceptions generally related to its board of directors' exercise of its fiduciary duties, engage in any negotiations concerning, or provide any confidential information relating to, any alternative acquisition proposals. These provisions, which include a \$134.0 million termination fee payable under certain circumstances, might discourage a potential competing acquirer that might have an interest in acquiring all or a significant part of Chemical from considering or proposing that acquisition, or might result in a potential competing acquirer proposing to pay a lower per share price to acquire Chemical than it might otherwise have proposed to pay.

Failure to complete our proposed merger with TCF could negatively impact our business, financial results and stock price.

If our proposed merger with TCF is not completed for any reason, our ongoing business may be adversely affected, and, without realizing any of the benefits of having completed the merger, we will be subject to a number of risks, including the following:

- we may be required, under certain circumstances, to pay TCF a termination fee of \$134.0 million under the merger agreement;
- we will be required to pay certain costs relating to the merger, whether or not the merger is completed, such as legal, accounting, financial advisor and printing fees;
- the merger agreement places certain restrictions on the conduct of both Chemical's and TCF's business prior to completion of the merger, which may adversely affect our ability to execute certain of our business strategies; and matters relating to the merger may require substantial commitments of time and resources by our management, which could otherwise have been devoted to other opportunities that may have been beneficial to us, as an independent company.

In addition, if the merger is not completed, we may experience negative reactions from the financial markets and from our customers and employees. For example, we may be impacted adversely by the failure to pursue other beneficial opportunities due to the focus of management on the merger, without realizing any of the anticipated benefits of completing the merger. The market price of our common stock could decline to the extent that the current market prices reflect a market assumption that the merger will be completed. We also could be subject to litigation related to any failure to complete the merger or to proceedings commenced against us to perform our obligations under the merger agreement. If the merger is not completed, we cannot assure you that the risks described above will not materialize and will not materially affect our business, financial results and stock price.

We face risk of noncompliance with the Bank Secrecy Act and other anti-money laundering statutes and regulations and corresponding enforcement proceedings.

The federal Bank Secrecy Act, the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (which we refer to as the "PATRIOT Act") and other laws and regulations require financial institutions, among other duties, to institute and maintain effective anti-money laundering programs and to file suspicious activity and currency transaction reports as appropriate. FinCEN, established by the U.S. Treasury Department to administer the Bank Secrecy Act, is authorized to impose significant civil money penalties for violations of those requirements and has engaged in coordinated enforcement efforts with the individual federal banking regulators, as well as the U.S. Department of Justice, Drug Enforcement Administration and Internal Revenue Service. There is also increased scrutiny of compliance with the rules enforced by the OFAC. Federal and state bank regulators also have focused on compliance with Bank Secrecy Act and anti-money laundering regulations. If our policies, procedures and systems are deemed deficient or the policies, procedures and systems of the financial institutions that we have already acquired or may acquire in the future are deficient, we would be subject to liability, including fines and regulatory actions such as restrictions on our ability to pay dividends and the necessity to obtain regulatory approvals to proceed with certain aspects of our business plan, including our acquisition plans, which would negatively impact our business, financial condition, results of operations and prospects. Sanctions that the regulators have imposed on banks that have not complied with all requirements have been especially severe. Failure to maintain and implement adequate programs to combat money laundering and terrorist financing could also have serious reputational consequences for us.

Litigation filed against Talmer, its board of directors and Chemical could result in the payment of damages.

In connection with the Talmer merger transaction, purported Talmer shareholders have filed putative class action lawsuits against Talmer, its board of directors and Chemical. These lawsuits could result in substantial costs to us, including any costs associated with indemnification. The defense or settlement of the lawsuits may adversely affect our business, financial condition, results of operations, cash flows and market price.

Because our total assets exceed \$10 billion, we are subject to additional regulation, increased supervision and increased costs.

The Dodd-Frank Act imposes additional regulatory requirements on financial institutions with \$10 billion or more in total assets, such as us. We are subject to the following additional requirements:

- supervision, examination and enforcement by the CFPB with respect to consumer financial protection laws;
- a modified methodology for calculating FDIC insurance assessments and potentially higher assessment rates as a result of institutions with \$10 billion or more in assets;

- heightened compliance standards under the Volcker Rule; and
- enhanced supervision as a larger financial institution.

In addition, under the Durbin Amendment to the Dodd-Frank Act, institutions with \$10 billion or more in assets are subject to a cap on the interchange fees that may be charged in certain electronic debit and prepaid card transactions. The maximum permissible interchange fee for electronic debit transactions is the sum of 21 cents per transaction and five basis points multiplied by the value of the transaction. In addition, an issuer may charge up to one cent on each transaction as a fraud prevention adjustment if the issuer meets certain fraud prevention standards.

The imposition of these regulatory requirements and increased supervision may require additional commitment of financial resources to regulatory compliance and may increase our cost of operations.

We have a continuing need for technological change, and we may not have the resources to effectively implement new technology, or we may experience operational challenges when implementing new technology.

The financial services industry is continually undergoing technological change with introductions of new technology-driven products and services. The effective use of technology increases efficiency and enables financial institutions to better serve customers and to assist in meeting regulatory requirements. Our future success depends on our ability to address the needs of our customers by using technology to provide products and services that will satisfy customer demands, as well as to create additional efficiencies in our operations and meet regulatory requirements as we continue to grow and expand our product and service offerings. Although we are committed to keeping pace with technological advances and to invest in new technology, our competitors may, through the use of new technologies that we have not implemented, whether due to cost or otherwise, be able to offer additional or superior products to those that we will be able to provide, which would put us at a competitive disadvantage.

We also may not be able to effectively implement new technology-driven products and services, be successful in marketing such products and services to our customers or replace technologies that are obsolete or out of date with new technologies, which could result in a loss of customers seeking new technology-driven products and services to the extent we are unable to provide such products and services. In addition, the recent conversion of our core operating system and any future implementation of technological changes and upgrades to maintain current systems represent significant operational and customer challenges upon implementation and for some time afterwards. Key challenges include service interruptions, transaction processing errors and system conversion delays, which may cause us to alienate customers or fail to comply with applicable laws, and may cause us to incur additional expenses, which may be substantial. Failure to successfully keep pace with technological change affecting the financial services industry and avoid interruptions, errors and delays could have a material adverse effect on our business, financial condition, results of operations and future prospects.

We may face increased pressure from purchasers of our residential mortgage loans to repurchase those loans or reimburse purchasers for losses related to those loans.

We sell fixed rate long-term residential mortgage loans we originate in the secondary market. Purchasers of residential mortgage loans, such as government sponsored entities, require sellers of residential mortgage loans to either repurchase loans previously sold or reimburse purchasers for losses related to loans previously sold when losses are incurred on a loan previously sold due to actual or alleged failure to strictly conform to the purchaser's purchase criteria. As a result, we may face increased pressure from purchasers of our residential mortgage loans to repurchase those loans or reimburse purchasers for losses related to those loans and we may face increasing expenses to defend against such claims. If we are required in the future to repurchase loans previously sold, reimburse purchasers for losses related to loans previously sold, or if we incur increasing expenses to defend against such claims, our financial condition and results of operations would be negatively affected.

We hold general obligation municipal bonds in our investment securities portfolio. If one or more issuers of these bonds were to become insolvent and default on its obligations under the bonds, it could have a negative effect on our financial condition and results of operations.

We held general obligation municipal bonds totaling \$888.9 million at December 31, 2018, which were issued by many different municipalities with no significant concentration in any single municipality. There can be no assurance that the financial conditions of these municipalities will not be materially and adversely affected by future economic conditions. If one or more of the issuers of these bonds were to become insolvent and default on their obligations under the bonds, it could have a negative effect on our financial condition and results of operations.

We are subject to liquidity risk in our operations, which could adversely affect our ability to fund our various obligations and jeopardize our business, financial condition and results of operations.

Liquidity risk is the possibility that we will not be able to meet our obligations as they come due or capitalize on growth opportunities as they arise because of an inability to liquidate assets or obtain adequate funding on a timely basis, at a reasonable cost and within acceptable risk tolerances. Liquidity is required to fund various obligations, including credit obligations to borrowers, loan originations, withdrawals by depositors, repayment of debt, dividends to shareholders, operating expenses and capital expenditures. Liquidity is derived primarily from retail deposit growth and earnings retention, principal and interest payments on loans and investment securities, net cash provided from operations and access to other funding. If we are unable to continue to attract and retain core deposits, to obtain third party financing on favorable terms, or to have access to interbank or other liquidity sources, we may not be able to grow our assets as quickly as we have historically. If customers move money out of bank deposits into other investments, we could lose a relatively low cost source of funds. This loss would require us to seek other funding alternatives, including wholesale funding, in order to continue to grow, thereby increasing our funding costs and reducing our net interest income and net income. If we are unable to maintain adequate liquidity, then our business, financial condition and results of operations would be negatively affected.

General economic conditions, and in particular conditions in our core markets in Michigan, Ohio and Indiana, affect our business.

Our business is affected by general economic conditions in the United States, although most directly within our core markets in Michigan, Ohio and Indiana. Our success depends primarily on the general economic conditions in the States of Michigan, Ohio and Indiana and the specific local markets in which we operate. The economic conditions in these local markets have a significant impact on the demand for our products and services as well as the ability of our customers to repay loans, the value of the collateral securing loans and the stability of our deposit funding sources. A significant majority of our loans are to individuals and businesses in Michigan. Consequently, any prolonged decline in Michigan's economy could have a materially adverse effect on our financial condition and results of operations. While economic conditions have improved since the end of the economic recession, a return of recessionary conditions could impact the United States and our local markets which, in turn, could have a material adverse effect on our financial condition and results of operations.

If we do not adjust to changes in the financial services industry, our financial performance may suffer.

Our ability to maintain our financial performance and return on investment to shareholders will depend largely on our ability to continue to grow our loan portfolio and also, in part, on our ability to maintain and grow our core deposit customer base and expand our financial services to our existing and/or new customers. In addition to other banks, competitors include savings and loan associations, credit unions, securities dealers, brokers, mortgage bankers, investment advisors and finance and insurance companies. The increasingly competitive environment is, in part, a result of changes in the economic environment within the states in which we do business, regulation, and changes in technology and product delivery systems. New competitors may emerge to increase the degree of competition for our customers and services. Financial services and products are also constantly changing. Our financial performance will also depend, in part, upon customer demand for our products and services and our ability to develop and offer competitive financial products and service.

Consumers may decide not to use banks to complete their financial transactions.

Technology and other changes are allowing customers to complete financial transactions without the involvement of banks. For example, consumers can now pay bills and transfer funds directly without banks. The process of eliminating banks as intermediaries in financial transactions, known as disintermediation, could result in the loss of fee income, the loss of customer deposits and income generated from those deposits and lending opportunities.

Changes in interest rates could reduce our net income and cash flow.

Our net income and cash flow depends, to a great extent, on the difference between the interest we earn on loans and securities and the interest we pay on deposits and other borrowings. Market interest rates are beyond our control, and they fluctuate in response to general economic conditions, the policies of various governmental and regulatory agencies and competition. Changes in monetary policy, including changes in interest rates and interest rate relationships, will influence the origination of loans, the purchase of investments, the generation of deposits, the interest received on loans and securities and the interest paid on deposits and other borrowings. Any significant adverse effects of changes in interest rates on the our results of operations, or any substantial, unexpected, prolonged change in market interest rates could have a material adverse effect on our financial condition and results of operations. See the sections captioned "Net Interest Income" in Item 7. Management's Discussion and Analysis of Financial

Condition and Results of Operations and "Market Risk" in Item 7A. Quantitative and Qualitative Disclosures About Market Risk, located elsewhere in this Annual Report, for further discussion related to our management of interest rate risk.

We may be required to pay additional deposit insurance premiums to the FDIC, which could negatively impact earnings.

The FDIC insures deposits at FDIC-insured depository institutions, such as Chemical Bank, up to \$250,000 per account. The amount of a particular institution's deposit insurance assessment is based on that institution's risk classification under an FDIC risk-based assessment system. Depending upon the magnitude of future losses that the FDIC deposit insurance fund suffers, there can be no assurance that there will not be additional premium increases or assessments in order to replenish the fund. The FDIC may need to set a higher base rate schedule based on future financial institution failures and updated failure and loss projections. Potentially higher FDIC assessment rates than those currently projected or special assessments could have an adverse impact on our financial condition and results of operations.

Our evaluation of investment securities for other-than-temporary impairment involves subjective determinations and could materially impact our financial condition and results of operations.

Our evaluation of impairments in our investment securities portfolio involves a quantitative and qualitative process, which is subject to risks and uncertainties and is intended to determine whether declines in the fair value of such investments should be recognized in current period earnings. The risks and uncertainties include changes in general economic conditions, the issuer's net income, projected net income and financial condition or future recovery prospects, the effects of changes in interest rates or credit spreads and the expected recovery period. Estimating future cash flows involves incorporating information received from third-party sources and making internal assumptions and judgments regarding the future performance of the underlying collateral and/or value of the underlying asset and also assessing the probability that an adverse change in future cash flows has occurred. The determination of the amount of other-than-temporary impairments is based upon our quarterly evaluation and assessment of known and inherent risks associated with the respective asset class. Such evaluations and assessments are revised as conditions change and new information becomes available.

Additionally, our management considers a wide range of factors about the security issuer and uses judgment in evaluating the cause of the decline in the estimated fair value of the security and in assessing the prospects for recovery. Inherent in management's evaluation of the security are assumptions and estimates about the operations of the issuer and its future earnings potential. Considerations in the impairment evaluation process include, but are not limited to: (i) the length of time and the extent to which the market value has been less than cost or amortized cost; (ii) the potential for impairments of securities when the issuer is experiencing significant financial difficulties; (iii) the potential for impairments in an entire industry sector or sub-sector; (iv) the potential for impairments in certain economically depressed geographic locations; (v) the potential for impairments of securities where the issuer, series of issuers or industry has suffered a catastrophic type of loss or has exhausted natural resources; (vi) our intent and ability to retain the investment for a period of time sufficient to allow for the recovery of its value; (vii) unfavorable changes in forecasted cash flows on residential mortgage-backed and asset-backed securities; and (viii) other subjective factors, including concentrations and information obtained from regulators and rating agencies. Impairments to the carrying value of our investment securities may need to be taken in the future, which could have a material adverse effect on our financial condition and results of operations.

We may be required to recognize an impairment of our goodwill or core deposit intangible assets, or to establish a valuation allowance against our deferred income tax assets, which could have a material adverse effect on our financial condition and results of operations.

Goodwill represents the excess of the amounts paid to acquire subsidiaries over the fair value of their net assets at the date of acquisition. We test goodwill at least annually for impairment. Substantially all of our goodwill at December 31, 2018 was recorded on the books of Chemical Bank. The fair value of Chemical Bank is impacted by the performance of its business and other factors. Core deposit intangible ("CDI") assets represent the estimated value of stable customer deposits, excluding time deposits, acquired in business combinations that provide a source of funds below market interest rates. We amortize our CDI assets over the estimated period the corresponding customer deposits are expected to exist. We test our CDI assets periodically for impairment. If we experience higher than expected deposit run-off, our CDI assets could be impaired. If we determined that our goodwill or CDI assets have been impaired, we must recognize a write-down by the amount of the impairment, with a corresponding charge to net income. Such write-downs could have a material adverse effect on our financial condition and results of operations. At December 31, 2018, we had \$1.13 billion of goodwill, representing 40.0% of shareholders' equity. We had \$28.6 million of CDI assets at December 31, 2018.

Deferred income tax represents the tax effect of the differences between the book and tax basis of assets and liabilities. Deferred tax assets are assessed periodically by management to determine if they are realizable. Factors in management's

determination include our performance, including the ability to generate taxable net income. If, based on available information, it is more-likely-than-not that the deferred income tax asset will not be realized, then a valuation allowance must be established with a corresponding charge to net income. As of December 31, 2018, we carried a valuation allowance against our deferred tax assets of \$1.5 million. Charges to establish a valuation allowance with respect to our deferred tax assets could have a material adverse effect on the financial condition and results of operations.

We may be a defendant in a variety of litigation and other actions, which may have a material adverse effect on our financial condition and results of operations.

We are regularly involved in a variety of litigation arising out of the normal course of our business. Our insurance may not cover all claims that may be asserted against us, and any claims asserted against us, regardless of merit or eventual outcome, may harm our reputation or cause us to incur unexpected expenses, which could be material in amount. Should the ultimate expenses, judgments or settlements in any litigation exceed our insurance coverage, they could have a material adverse effect on our financial condition and results of operations. In addition, we may not be able to obtain appropriate types or levels of insurance in the future, nor may we be able to obtain adequate replacement policies with acceptable terms, if at all.

We are subject to the Community Reinvestment Act and federal and state fair lending laws, and failure to comply with these laws could lead to material penalties.

The Community Reinvestment Act, the Equal Credit Opportunity Act and the Fair Housing Act impose nondiscriminatory lending requirements on financial institutions. The Federal Reserve, the CFPB, the Department of Justice, and other federal and state agencies are responsible for enforcing these laws and regulations. Private parties may also have the ability to challenge an institution's performance under fair lending laws in private class action litigation. A successful challenge to our performance under the fair lending laws and regulations could adversely impact our rating under the Community Reinvestment Act and result in a wide variety of sanctions, including the required payment of damages and civil money penalties, injunctive relief, imposition of restrictions on merger and acquisition activity and restrictions on expansion activity, which could negatively impact our reputation, business, financial condition and results of operations.

The impacts of recent tax reform are not yet fully known, and these and other tax regulations could be subject to potential legislative, administrative or judicial changes or interpretations.

The Tax Cuts and Jobs Act, which was signed into law on December 22, 2017, has had, and is expected to continue to have, far-reaching and significant effects on us, our customers and the U.S. economy. The act lowered the corporate federal statutory tax rate and eliminated or limited certain federal corporate deductions. While it is too early to evaluate all of the potential consequences of the act, such consequences could include lower commercial customer borrowings, either due to the increase in cash flows as a result of the reduction in the corporate statutory tax rate or the utilization by businesses in certain sectors of alternative non-debt financing and/or early retirement of existing debt. Further, there can be no assurance that any benefits realized as a result of the reduction in the corporate federal statutory tax rate will ultimately result in increased net income, whether due to decreased loan yields as a result of competition or other factors. Uncertainty also exists related to state and other taxing jurisdictions' response to federal tax reform, which we will continue to monitor and evaluate. Federal income tax treatment of corporations may be further clarified and modified by other legislative, administrative or judicial changes or interpretations at any time. Any such changes could adversely affect our business, financial condition and results of operations.

We are exposed to risk of environmental liabilities with respect to real properties that we may acquire.

In the course of our business, we may acquire, through foreclosure, properties securing loans we have originated or purchased that are in default. Particularly in commercial real estate lending, there is a risk that hazardous substances could be discovered on these properties. In this event, we might be required to remove these substances from the affected properties at our sole cost and expense. The cost of this removal could substantially exceed the value of the affected properties. In addition, if we are the owner or former owner of a contaminated site, we may be subject to common law claims by third parties seeking damages for environmental contamination emanating from the site. We may not have adequate remedies against the prior owner or other responsible parties and could find it difficult or impossible to sell the affected properties. If we were to become subject to significant environmental liabilities or costs, our business, results of operations and financial condition could be materially and adversely affected.

We depend on the accuracy and completeness of information about our customers and counterparties.

In deciding whether to extend credit or enter into other transactions, and in evaluating and monitoring our loan portfolio on an ongoing basis, we rely on information provided to us by or on behalf of our customers and counterparties, including financial statements, credit reports and other financial information. We may also rely on representations of those customers and counterparties or of other third parties, such as independent auditors, as to the accuracy and completeness of that information. Reliance on inaccurate, incomplete, fraudulent or misleading financial statements, credit reports or other financial or business information, or the failure to receive such information on a timely basis, could result in loan losses, reputational damage or other effects that could have a material adverse effect on our business, financial condition or results of operations.

We operate in a highly competitive industry and market area.

We face substantial competition in all areas of our operations from a variety of different competitors, many of which are larger and may have more financial resources than us. We compete with commercial banks, credit unions, savings and loan associations, mortgage banking firms, other financial service businesses, including investment advisory and wealth management firms, mutual fund companies, and securities brokerage and investment banking firms, as well as super-regional, national and international financial institutions that operate offices in our primary market areas and elsewhere. The financial services industry could become even more competitive as a result of legislative, regulatory and technological changes and continued consolidation. As customers' preferences and expectations continue to evolve, technology has lowered barriers to entry and made it possible for banks to expand their geographic reach by providing services over the Internet and for non-banks to offer products and services traditionally provided by banks, such as automatic transfer and automatic payment systems. Because of this rapidly changing technology, our future success will depend in part on our ability to address our customers' needs by using technology.

We compete with these institutions both in attracting deposits and assets under management, and in making new loans. We may not be able to compete successfully with other financial institutions in our markets, particularly with larger financial institutions operating in our markets that have significantly greater resources than us and offer financial products and services that we are unable to offer, putting us at a disadvantage in competing with them for loans and deposits and investment management clients, and we may have to pay higher interest rates to attract deposits, accept lower yields on loans to attract loans and pay higher wages for new employees, resulting in lower net interest margin and reduced profitability. In addition, many of our competitors have fewer regulatory constraints and may have lower cost structures, such as credit unions that are not subject to federal income tax.

Our ability to compete successfully depends on a number of factors, including, among other things:

- our ability to develop, maintain and build long-term customer relationships based on quality service, high ethical standards and safe, sound assets;
- our ability to expand our market position;
- our ability to keep up-to-date with technological advancements in both delivering new products and maintaining existing products, while continuing to invest in cybersecurity and control operating costs;
- the scope, relevance and pricing of products and services we offer to meet customer needs and demands;
- the rate at which we introduce new products and services relative to our competitors;
- customer satisfaction with our level of service; and
- industry and general economic trends.

Failure to perform in any of these areas could significantly weaken our competitive position, which could adversely affect our growth and profitability and have a material adverse effect on our financial condition and results of operations.

We depend on our executive officers and other key employees to continue the implementation of our long-term business strategy, and we could be harmed by the unexpected loss of their services.

We believe that our continued growth and future success will depend in large part on the skills of our executive officers and other key employees and our ability to motivate and retain these individuals, as well as our ability to attract, motivate and retain highly qualified senior and middle management and other skilled employees. Competition for employees is intense, and the process of locating key personnel with the combination of skills and attributes required to execute our business strategy may be lengthy. Employee retention may be particularly challenging during the pendency of our proposed merger with TCF, as employees of Chemical and TCF may experience uncertainty about their future roles with the combined company. If we are unable to retain personnel, including our key management, who are critical to the successful integration and our future operations, we could face disruptions in our operations, loss of existing customers, loss of key information, expertise or know-how, and unanticipated additional recruitment costs. If the services of any of our of key personnel should become unavailable for any reason, we may not

be able to identify and hire qualified persons on terms acceptable to us, or at all, which could have a material adverse effect on our business, financial condition, results of operation and future prospects. In addition, the loss of key personnel could diminish the anticipated benefits of the proposed merger with TCF.

The banking industry is heavily regulated and that regulation, together with any future legislation or regulatory changes, could limit or restrict our activities and adversely affect our operations or financial results.

We operate in an extensively regulated industry and we are subject to examination, supervision, and comprehensive regulation by various federal and state agencies. Our compliance with banking regulations is costly and restricts some of our activities, including payment of dividends, mergers and acquisitions, investments, loans and interest rates and locations of offices. We are also subject to capitalization guidelines established by our regulators, which require us to maintain adequate capital to support our business.

Since the recession ended, federal and state banking laws and regulations, as well as interpretations and implementations of these laws and regulations, have undergone substantial review and change. In particular, the Dodd-Frank Act drastically revised the laws and regulations under which we operate. The burden of regulatory compliance has increased under the Dodd-Frank Act and has increased our costs of doing business and, as a result, may create an advantage for our competitors who may not be subject to similar legislative and regulatory requirements. Any future changes in federal and state laws and regulations, as well as the interpretation and implementation of such laws and regulations, could affect us in substantial and unpredictable ways, including those listed above or other ways that could have a material adverse effect on our business, financial condition or results of operations.

Furthermore, our regulators also have the ability to compel us to take certain actions, or restrict us from taking certain actions entirely, such as actions that our regulators deem to constitute an unsafe or unsound banking practice. Our failure to comply with any applicable laws or regulations, or regulatory policies and interpretations of such laws and regulations, could result in sanctions by regulatory agencies, civil money penalties or damage to our reputation, all of which could have a material adverse effect on our business, financial condition or results of operations.

Our business needs and future growth may require us to raise additional capital, but that capital may not be available or may be dilutive.

We are required by federal and state regulatory authorities to maintain specified levels of capital to support our operations. We may need to raise additional capital, in the form of debt or equity, in the future to have sufficient capital resources to meet our commitments and to fund our business needs and future growth, particularly if the quality of our assets or earnings were to deteriorate significantly. In addition, we are required by federal regulatory authorities to maintain adequate levels of capital to support our operations. Our ability to raise additional capital will depend on conditions in the capital markets at that time, which are outside of our control, and on our financial performance. We cannot assure that we will be able to raise additional capital in the future on terms acceptable to us or at all. Any occurrence that limits our access to capital, may adversely affect our capital costs and our ability to raise capital and, in turn, our liquidity. Any inability to raise capital on acceptable terms when needed could have a material adverse effect on our business, financial condition and results of operations and could be dilutive to both tangible book value and our share price.

In addition, an inability to raise capital when needed may subject us to increased regulatory supervision and the imposition of restrictions on our growth and business. These restrictions could negatively affect our ability to operate or further expand our operations through loan growth, acquisitions or the establishment of additional branches. These restrictions may also result in increases in operating expenses and reductions in revenues that could have a material adverse effect on our financial condition, results of operations and our share price.

The soundness of other financial institutions could adversely affect us.

Our ability to engage in routine funding transactions could be adversely affected by the actions and commercial soundness of other financial institutions. Financial services institutions are interrelated as a result of trading, clearing, counterparty or other relationships. We have exposure to many different industries and counterparties, and we routinely execute transactions with counterparties in the financial services industry. As a result, defaults by, or even rumors or questions about, one or more financial services institutions, or the financial services industry generally, could lead to losses or defaults by us or by other institutions. Many of these transactions expose us to credit risk in the event of default of our counterparty or client. In addition, our credit risk may be exacerbated when the collateral that we hold cannot be realized or is liquidated at prices insufficient to recover the full amount of the loan. We can give no assurance that any such losses would not materially and adversely affect our business, financial condition or results of operations.

Our controls and procedures may fail or be circumvented.

Management regularly reviews and updates our internal controls and corporate governance policies and procedures. Any system of controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system are met. A significant failure or circumvention of our controls and procedures or failure to comply with regulations related to controls and procedures could have a material adverse effect on our business, results of operations and financial condition.

A failure in or breach of our operational or security systems or infrastructure, or those of our third party vendors and other service providers or other third parties, including as a result of cyberattacks, could disrupt our businesses, result in the disclosure or misuse of confidential or proprietary information, damage our reputation, increase our costs and cause losses.

Our operations rely on the secure processing, storage and transmission of confidential and other sensitive business and consumer information on our computer systems and networks and third party providers. Under various federal and state laws, we are responsible for safeguarding such information. For example, our business is subject to the Gramm-Leach-Bliley Act which, among other things: (1) imposes certain limitations on our ability to share nonpublic personal information about our customers with nonaffiliated third parties; (2) requires that we provide certain disclosures to customers about our information collection, sharing and security practices and afford customers the right to "opt out" of any information sharing by us with nonaffiliated third parties (with certain exceptions); and (3) requires that we develop, implement and maintain a written comprehensive information security program containing appropriate safeguards based on our size and complexity, the nature and scope of our activities, and the sensitivity of customer information we process, as well as plans for responding to data security breaches. Ensuring that our collection, use, transfer and storage of personal information complies with all applicable laws and regulations can increase our costs.

Although we take protective measures to maintain the confidentiality, integrity and availability of information across all geographic and product lines, and endeavor to modify these protective measures as circumstances warrant, the nature of the threats continues to evolve. As a result, our computer systems, software and networks may be vulnerable to unauthorized access, loss or destruction of data (including confidential client information), account takeovers, unavailability of service, computer viruses or other malicious code, cyber-attacks and other events that could have an adverse security impact. Despite the defensive measures we take to manage our internal technological and operational infrastructure, these threats may originate externally from third parties such as foreign governments, organized crime and other hackers, and outsource or infrastructure-support providers and application developers, or may originate internally from within our organization. Furthermore, we may not be able to ensure that all of our clients, suppliers, counterparties and other third parties have appropriate controls in place to protect the confidentiality of the information that they exchange with us, particularly where such information is transmitted by electronic means. Given the increasingly high volume of our transactions, certain errors may be repeated or compounded before they can be discovered and rectified. In addition, the increasing reliance on technology systems and networks and the occurrence and potential adverse impact of attacks on such systems and networks, both generally and in the financial services industry, have enhanced government and regulatory scrutiny of the measures taken by companies to protect against cyber-security threats. As these threats, and government and regulatory oversight of associated risks, continue to evolve, we may be required to expend additional resources to enhance or expand upon the security measures we currently maintain.

In particular, information pertaining to us and our customers is maintained, and transactions are executed, on the networks and systems of us, our customers and certain of our third-party partners, such as our online banking or reporting systems. The secure maintenance and transmission of confidential information, as well as execution of transactions over these systems, are essential to protect us and our customers against fraud and security breaches and to maintain our clients' confidence. While we have not experienced any material breaches of information security, such

breaches may occur through intentional or unintentional acts by those having access or gaining access to our systems or our customers' or counterparties' confidential information, including employees. In addition, increases in criminal activity levels and sophistication, advances in computer capabilities, new discoveries, vulnerabilities in third-party technologies (including browsers and operating systems) or other developments could result in a compromise or breach of the technology, processes and controls that we use to prevent fraudulent transactions and to protect data about us, our customers and underlying transactions, as well as the technology used by our customers to access our systems. We cannot be certain that the security measures or third party processors we have in place to protect this sensitive data will be successful or sufficient to protect against all current and emerging threats designed to breach our systems or those of processors. Although we have developed, and continue to invest in, systems and processes that are designed to detect and prevent security breaches and cyber-attacks and periodically test our security, a breach of our systems, or those of processors, could result in losses to us or our customers; loss of business and/or customers; damage to our reputation; the incurrence of additional expenses (including the cost of notification to consumers, credit monitoring and forensics, and fees and fines imposed by the card networks); disruption to our business; our inability to grow our online services or other businesses; additional regulatory scrutiny or penalties; or our exposure

to civil litigation and possible financial liability-any of which could have a material adverse effect on our business, financial condition and results of operations.

We depend on information technology and telecommunications systems of third-party servicers, and systems failures, interruptions or breaches of security involving these systems could have an adverse effect on our operations, financial condition and results of operations.

Our business is highly dependent on the successful and uninterrupted functioning of our information technology and telecommunications systems, third-party servicers accounting systems and mobile and online banking platforms. We outsource some of our major systems, such as payment processing systems, and online banking platforms. To revise based on outsourced systems. The failure of these systems, or the termination of a third-party software license or service agreement on which any of these systems is based, could interrupt our operations. Because our information technology and telecommunications systems interface with and depend on third-party systems, we could experience service denials if demand for such services exceeds capacity or such third-party systems fail or experience interruptions. If sustained or repeated, a system failure or service denial could result in a deterioration of our ability to process new and renewal loans, gather deposits and provide customer service, compromise our ability to operate effectively, damage our reputation, result in a loss of customer business and/or subject us to additional regulatory scrutiny and possible financial liability, any of which could have a material adverse effect on our financial condition and results of operations. In addition, failure of third parties to comply with applicable laws and regulations, or fraud or misconduct on the part of employees of any of these third parties could disrupt our operations or adversely affect our reputation.

It may be difficult for us to replace some of our third party vendors, particularly vendors providing our core banking, debit card services and information services, in a timely manner if they are unwilling or unable to provide us with these services in the future for any reason and even if we are able to replace them, it may be at higher cost or result in the loss of customers. Any such events could have a material adverse effect on our business, financial condition or results of operations.

Our operations rely heavily on the secure processing, storage and transmission of information and the monitoring of a large number of transactions on a minute-by-minute basis, and even a short interruption in service could have significant consequences. We also interact with and rely financial counterparties and regulators. Each of these third parties may be targets of the same types of fraudulent activity, computer break-ins and other cyber security breaches described above or herein, and the cyber security measures that they maintain to mitigate the risk of such activity may be different than our own and may be inadequate.

As a result of financial entities and technology systems becoming more interdependent and complex, a cyber incident, information breach or loss, or technology failure that compromises the systems or data of one or more financial entities could have a material impact on counterparties or other market participants, including ourselves. Although we review business continuity and backup plans for our vendors and take other safeguards to support our operations, such plans or safeguards may be inadequate. As a result of the foregoing, our ability to conduct business may be adversely affected by any significant disruptions to us or to third parties with whom we interact.

Additionally, regulators expect financial institutions to be responsible for all aspects of their performance, including aspects which they delegate to third parties. Disruptions or failures in the physical infrastructure or operating systems that support our businesses and clients, or cyber-attacks or security breaches of the networks, systems, devices, or software that our clients use to access our products and services could result in client attrition, regulatory fines, penalties or intervention, reputational damage, reimbursement or other compensation costs, and additional compliance costs, any of which could materially adversely affect our results of operations or financial condition.

We rely on quantitative models to manage certain accounting, risk management and capital planning functions.

We use quantitative models to help manage certain aspects of our business and to assist with certain business decisions, including estimating probable loan losses, measuring the fair value of financial instruments when reliable market prices are unavailable, estimating the effects of changing interest rates and other market measures on our financial condition and results of operations, risk management and for capital planning purposes. Our modeling methodologies rely on many assumptions, historical analyses and correlations. These assumptions may be incorrect, particularly in times of market distress, and the historical correlations on which we rely may no longer be relevant. Additionally, as businesses and markets evolve, our measurements may not accurately reflect this evolution. Even if the underlying assumptions and historical correlations used in our models are adequate, our models may be deficient due to errors in computer code, bad data, misuse of data, or the use of a model for a purpose outside the scope of the model's design.

All models have certain limitations. Reliance on models presents the risk that our business decisions based on information incorporated from models will be adversely affected due to incorrect, missing or misleading information. In addition, our models

may not capture or fully express the risks we face, may suggest that we have sufficient capitalization when we do not, or may lead us to misjudge the business and economic environment in which we will operate. If our models fail to produce reliable results on an ongoing basis, we may not make appropriate risk management, capital planning, or other business or financial decisions. Strategies that we employ to manage and govern the risks associated with our use of models may not be effective or fully reliable, and as a result, we may realize losses or other lapses. Also, information that we provide to the public or regulators based on poorly designed models could be inaccurate or misleading.

Banking regulators continue to focus on the models used by banks and bank holding companies in their businesses. Some of our decisions that the regulators evaluate, including distributions to our shareholders, could be affected adversely due to their perception that the quality of the models used to generate the relevant information is insufficient. Accordingly, the failure or inadequacy of a model may result in increased regulatory scrutiny on us or may result in an enforcement action or proceeding against us by one of our regulators.

Our ability to maintain our reputation is critical to the success of our business, including our ability to attract and retain customer relationships, and failure to do so may materially adversely affect our performance.

The reputation of Chemical Bank is one of the most valuable components of our business. As such, we strive to conduct our business in a manner that enhances our reputation. Damage to our reputation could undermine the confidence of our current and potential clients in our ability to provide financial services. Such damage could also impair the confidence of our investors, counterparties and business partners, and ultimately affect our ability to effect transactions or maintain or hire qualified management and personnel. Maintenance of our reputation depends not only on our success in controlling and mitigating the various risks described herein, but also on our success in identifying and appropriately addressing issues that may arise in areas such as potential conflicts of interest, anti-money laundering, client personal information and privacy issues, record-keeping, regulatory investigations and any litigation that may arise from the failure or perceived failure of us to comply with legal and regulatory requirements. If our reputation is negatively affected, by the actions of our employees or otherwise, our business and, therefore, our operating results may be materially adversely affected. Further, negative public opinion can expose us to litigation and regulatory action, which would adversely affect our business, financial condition and results of operations.

Severe weather, natural disasters, acts of war or terrorism and other external events could significantly impact our business.

Severe weather, natural disasters, acts of war or terrorism and other adverse external events could have a significant impact on our ability to conduct business. Such events could affect the stability of our deposit base, impair the ability of borrowers to repay outstanding loans, impair the value of collateral securing loans, cause significant property damage, result in loss of revenue and/or cause us to incur additional expenses. Although management has established disaster recovery policies and procedures, the occurrence of any such event in the future could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Our Common Stock

Investments in our common stock involve risk.

The market price of our common stock may fluctuate significantly in response to a number of factors, including, among other things:

- Variations in quarterly or annual results of operations
- Changes in dividends paid per share
- Deterioration in asset quality, including declining real estate values

• Changes in interest rates

• Changes in tax laws

• Significant acquisitions or business combinations, strategic partnerships, joint ventures or capital commitments by, or involving, Chemical or its competitors

• Failure to integrate acquisitions or realize anticipated benefits from acquisitions

• Regulatory actions, including changes to regulatory capital levels, the components of regulatory capital and how regulatory capital is calculated

• New regulations that limit or significantly change Chemical's ability to continue to offer existing banking products

• Volatility of stock market prices and volumes

• Issuance of additional shares of common stock or other debt or equity securities of Chemical

• Changes in market valuations of similar companies

• Uncertainties, disruptions and fluctuations in the credit and financial markets, either nationally or globally

Changes in securities analysts' estimates of financial performance or recommendations
New litigation or contingencies or changes in existing litigation or contingencies
New technology used, or services offered, by competitors
Breaches in information security systems of Chemical and/or its customers and competitors
Changes in accounting policies or procedures required by standard setting or other regulatory agencies

- New developments in the financial services industry

News reports relating to trends, concerns and other issues in the financial services industry
Perceptions in the marketplace regarding the financial services industry, the Corporation and/or its competitors
Rumors or erroneous information
Geopolitical conditions such as acts or threats of terrorism or military conflicts

We may issue debt and equity securities that are senior to our common stock as to distributions and in liquidation, which could negatively affect the value of our common stock.

Our authorized capital stock includes 135 million shares of common stock and two million shares of preferred stock, which can be issued without further shareholder approval. As of December 31, 2018, we had 71,460,119 shares of common stock outstanding and had 1,301,285 shares reserved for issuance underlying options and restricted stock awards under our existing equity plans. As of December 31, 2018, we had no shares of preferred stock outstanding. In connection with our planned merger with TCF, which was announced on January 28, 2019, based on the number of shares of Chemical common stock and TCF common stock outstanding as of December 31, 2018, and based on the number of shares of Chemical common stock expected to be issued in the merger, the former stockholders of TCF, as a group, will receive shares in the merger constituting approximately 54% of the outstanding shares of Chemical common stock immediately after the merger. As a result, current shareholders of Chemical, as a group, will own approximately 46% of the outstanding shares of Chemical common stock immediately after the merger. In connection with the merger, we will also issue shares of our preferred stock, to be designated Series C 5.70% Series C Non-Cumulative Perpetual Preferred Stock, with equivalent rights, preferences, privileges, as those of the TCF Series C 5.70% Series C Non-Cumulative Perpetual Preferred Stock, for which they are exchanged. The merger, which is expected to close the late third or early fourth quarter of 2019, is subject to, among other things, required regulatory approvals and the affirmative vote of both our shareholders and TCF's stockholders to approve or adopt the merger agreement, as applicable, and in the case of Chemical, to approve an amendment to our articles of incorporation to increase the number of authorized shares of Chemical common stock and to change our name to TCF Financial Corporation, effective only upon completion of the merger. In addition, in the future, we may increase our capital resources by entering into debt or debt-like financing or issuing debt or equity securities, which could include issuances of senior notes, subordinated notes, preferred stock or common stock.

In the event of our liquidation, our lenders and holders of our debt securities and preferred stock would receive a distribution of our available assets before distributions to the holders of our common stock. Our decision to incur debt and issue securities in future offerings may depend on market conditions and other factors beyond our control. We cannot predict or estimate the amount, timing or nature of our future offerings and debt financings, if any. Future offerings could reduce the value of shares of our common stock and dilute a shareholder's interest in Chemical.

Chemical relies on dividends from Chemical Bank for most of its revenue.

Chemical is a separate and distinct legal entity from Chemical Bank. It receives substantially all of its revenue from dividends from Chemical Bank. These dividends are the principal source of funds to pay cash dividends on Chemical's common stock. Various federal and/or state laws and regulations limit the amount of dividends that Chemical Bank may pay to Chemical. In the event Chemical Bank is unable to pay dividends to Chemical, Chemical may not be able to pay cash dividends on its common stock. The earnings of Chemical Bank have been the principal source of funds to pay cash dividends to shareholders. Over the long-term, cash dividends to shareholders are dependent upon earnings,

as well as capital requirements, regulatory restraints and other factors affecting Chemical Bank. See the section captioned "Supervision and Regulation" in Item 1. Business and Note 21 - Regulatory Capital and Reserve Requirements in the notes to our Consolidated Financial Statements included in Item 8. Financial Statements and Supplementary Data, which are located elsewhere in this Annual Report.

Shares of our common stock are not insured deposits.

Shares of our common stock are not bank deposits and are not insured or guaranteed by the FDIC or any other governmental agency, and are subject to investment risk, including the possible loss of principal.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our executive offices are located at 333 W. Fort Street, Suite 1800, in Detroit, Michigan, in an office building that is leased. The main branch office of Chemical Bank is located at 333 W. Fort Street, Suite 100, in Detroit, Michigan, in office space that we lease. We also operate a regional office located at 235 E. Main Street in downtown Midland, Michigan, in an office building that is owned by us.

We conduct business through 212 banking offices and eight loan production offices as of December 31, 2018. We have 186 banking offices located in Michigan, 24 banking offices located in Ohio and two banking offices located in Indiana through which we operate. Of our 212 banking offices, 33 are leased properties. Management believes the terms of the various leases are consistent with market standards and were arrived at through arm's-length bargaining. We consider our properties to be suitable and adequate for operating our banking business.

Item 3. 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 4. Mine Safety Disclosures.

Not applicable.

PART II.

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock is traded on The NASDAQ Stock Market® under the symbol CHFC. As of December 31, 2018, there were approximately 71.5 million shares of our common stock issued and outstanding, held by approximately 4,665 shareholders of record.

The earnings of Chemical Bank are the principal source of funds to pay cash dividends to our shareholders. Accordingly, cash dividends are dependent upon the earnings, capital needs, regulatory constraints, and other factors affecting Chemical Bank. See Note 21 to our Consolidated Financial Statements in Item 8 of this Annual Report for a discussion of such limitations. We have paid regular cash dividends every quarter since we began operation as a bank holding company in 1973. Based on our financial condition at December 31, 2018, management expects to continue to pay quarterly cash dividends on our common shares in 2019. However, there can be no assurance as to future dividends because they are dependent on our future earnings, capital requirements and financial condition, and may require regulatory approval. On January 22, 2019, we declared a first quarter 2019 cash dividend of \$0.34 per share, payable on March 15, 2019.

The following table summarizes the quarterly cash dividends paid to shareholders over the past five years.

	Years Ended December 31,				
	2018	2017	2016	2015	2014
First quarter	\$0.28	\$0.27	\$0.26	\$0.24	\$0.23
Second quarter	0.28	0.27	0.26	0.24	0.23
Third quarter	0.34	0.28	0.27	0.26	0.24
Fourth quarter	0.34	0.28	0.27	0.26	0.24
Total	\$1.24	\$1.10	\$1.06	\$1.00	\$0.94

Shareholder Return

The following line graph compares our cumulative total shareholder return on our common stock over the last five years, assuming the reinvestment of dividends, to the Standard and Poor's (S&P) 500 Stock Index and the KBW Nasdaq Regional Banking Index (Ticker: KRX). Both of these indices are based upon total return (including reinvestment of dividends) and are market-capitalization-weighted indices. The S&P 500 Stock Index is a broad equity market index published by S&P. The KBW Nasdaq Regional Banking Index is published by Keefe, Bruyette & Woods, Inc. (KBW), an investment banking firm that specializes in the banking industry. The KBW Nasdaq Regional Banking Index is composed of 50 small- and mid-cap U.S. regional banks or thrifts that are publicly traded. The line graph assumes \$100 was invested on December 31, 2013.

The dollar values for total shareholder return plotted in the above graph are shown below:

	December 31,					
	2013	2014	2015	2016	2017	2018
Chemical Financial Corporation	\$100.00	\$99.92	\$115.31	\$186.87	\$188.56	\$132.21
KBW NASDAQ Regional Banking Index	100.00	102.42	108.48	150.80	153.45	126.59
S&P 500 Stock Index	100.00	113.69	115.26	129.50	157.22	150.33

Equity Compensation Plans

Information about our equity compensation plans as of December 31, 2018 is set forth in Part III, Item 12 of this Annual Report, and is here incorporated by reference.

Purchases of Equity Securities

The following schedule summarizes total monthly share repurchase activity for the fourth quarter of 2018:

Period	Issuer Purchases of Equity Securities		Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs
	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid Per Share	
October 1, 2018 to October 31, 2018	1,680	\$ 50.42	—
November 1, 2018 to November 30, 2018	5,277	46.53	—
December 1, 2018 to December 31, 2018	10,145	37.08	—
Total	17,102	\$ 41.31	—

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 2018 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 our stock on the date of vesting or date of exercise, as applicable.

Item 6. Selected Financial Data.

The following table sets forth our selected historical consolidated financial information for the periods and as of the dates indicated. We derived our balance sheet and income statement data for the years ended December 31, 2018, 2017, 2016, 2015 and 2014 from our audited Consolidated Financial Statements. You should read this information together with Management's Discussion and Analysis of Financial Condition and Results of Operations and our audited Consolidated Financial Statements and the related notes thereto, which are included elsewhere in this Annual 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. The financial information includes the impact of our merger with Talmer on August 31, 2016, our acquisitions of Lake Michigan on May 31, 2015, Monarch on April 1, 2015 and Northwestern Bancorp, Inc. ("Northwestern") on October 31, 2014. See Note 2 to our Consolidated Financial Statements in Item 8 and under the subheading "Mergers, Acquisitions and Branch Closings" included in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in this Annual Report for additional information regarding our acquisitions. Our historical results shown in the following table and elsewhere in this Annual Report are not necessarily indicative of our future performance.

(Dollars in thousands, except per share data)	As of and for the years ended December 31,				
	2018	2017	2016	2015	2014
Summary of Operations					
Interest income	\$775,996	\$632,135	\$410,379	\$291,789	\$227,261
Interest expense	143,663	74,557	29,298	17,781	14,710
Net interest income	632,333	557,578	381,081	274,008	212,551
Provision for loan losses	30,750	23,300	14,875	6,500	6,100
Net interest income after provision for loan losses	601,583	534,278	366,206	267,508	206,451
Noninterest income	148,536	144,019	122,350	80,216	63,095
Operating expenses, core (non-GAAP) ⁽¹⁾⁽²⁾	411,914	384,340	277,284	216,090	173,537
Merger and restructuring expenses	—	28,402	61,134	7,804	6,388
Impairment of income tax credits	12,284	9,252	—	—	—
Income before income taxes	325,921	256,303	150,138	123,830	89,621
Income tax expense	41,901	106,780	42,106	37,000	27,500
Net income	\$284,020	\$149,523	\$108,032	\$86,830	\$62,121
Significant items, net of tax (non-GAAP) ⁽¹⁾⁽³⁾	—	70,033	35,695	5,484	4,555
Net income, excluding significant items(non-GAAP) ⁽¹⁾⁽³⁾	\$284,020	\$219,556	\$143,727	\$92,314	\$66,676
Per Common Share Data					
Net Income					
Basic	\$3.98	\$2.11	\$2.21	\$2.41	\$1.98
Diluted	3.94	2.08	2.17	2.39	1.97
Diluted, excluding significant items (non-GAAP) ⁽¹⁾⁽³⁾	3.94	3.06	2.88	2.54	2.11
Cash dividends declared and paid	1.24	1.10	1.06	1.00	0.94
Book value at end of period	39.69	37.48	36.57	26.62	24.32
Tangible book value per share (non-GAAP) ⁽¹⁾	23.54	21.21	20.20	18.73	18.57
Market value at end of period	36.61	53.47	54.17	34.27	30.64
Common shares outstanding (in thousands)	71,460	71,207	70,599	38,168	32,774
Average diluted common shares (in thousands)	72,025	71,513	49,603	36,353	31,588

Denotes a non-GAAP Financial Measure. Please refer to section entitled "Non-GAAP Financial Measures"

(1)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, restructuring expenses and impairment of income tax credits.

(3)For 2017, "significant items" are defined to include the fourth quarter of 2017 charge to income tax expense resulting from the revaluation of our net deferred tax assets completed following the signing of the Tax Cuts and

Jobs Act in December 2017, merger expenses, restructuring expenses and fourth quarter of 2017 losses on sales of investment securities as part of our treasury and tax management objectives. For years prior to 2017, "significant items" are defined to include merger expenses and gain on sales of branch offices.

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

	As of and for the years ended December 31,					
(Dollars in thousands, except per share data)	2018	2017	2016	2015	2014	
Balance Sheet Data						
Total assets	\$21,498,341	\$19,280,873	\$17,355,179	\$9,188,797	\$7,322,143	
Investment securities	3,645,931	2,640,639	1,858,391	1,063,702	1,065,277	
Loans	15,269,779	14,155,267	12,990,779	7,271,147	5,688,230	
Deposits	15,593,282	13,642,803	12,873,122	7,456,767	6,078,971	
Liabilities	18,662,081	16,612,124	14,773,653	8,172,823	6,525,010	
Shareholders' equity	2,836,260	2,668,749	2,581,526	1,015,974	797,133	
Tangible shareholders' equity (non-GAAP) ⁽¹⁾	1,682,383	1,510,011	1,425,998	714,901	606,419	
Performance Ratios						
Net interest margin	3.48	% 3.40	% 3.51	% 3.49	% 3.49	%
Net interest margin(fully taxable equivalent)(Non-GAAP) ⁽¹⁾⁽²⁾	3.53	% 3.48	% 3.60	% 3.58	% 3.59	%
Return on average assets	1.41	% 0.81	% 0.90	% 1.02	% 0.96	%
Return on average shareholders' equity	10.4	% 5.7	% 7.0	% 9.4	% 8.2	%
Return on average tangible shareholders' equity (Non-GAAP) ⁽¹⁾	17.9	% 10.2	% 11.2	% 12.9	% 10.4	%
Average shareholders' equity as a percentage of average assets	13.6	% 14.2	% 12.8	% 10.8	% 11.7	%
Efficiency ratio (GAAP)	54.3	% 60.1	% 67.2	% 63.2	% 65.3	%
Efficiency ratio adjusted (non-GAAP) ⁽¹⁾	51.5	% 51.9	% 54.4	% 58.7	% 60.9	%
Dividend payout ratio	31.5	% 52.9	% 48.8	% 41.8	% 47.7	%
Consolidated Capital Ratios						
Shareholders' equity as a percentage of total assets	13.2	% 13.8	% 14.9	% 11.1	% 10.9	%
Tangible shareholders' equity as a percentage of tangible assets (non-GAAP) ⁽¹⁾	8.3	% 8.3	% 8.8	% 8.0	% 8.5	%
Common equity tier 1 capital ⁽³⁾	10.7	% 10.2	% 10.7	% 10.6	% N/A	
Tier 1 leverage ratio ⁽³⁾	8.7	% 8.3	% 9.0	% 8.6	% 9.3	%
Tier 1 risk-based capital ratio ⁽³⁾	10.7	% 10.2	% 10.7	% 10.7	% 11.1	%
Total risk-based capital ratio ⁽³⁾	11.5	% 11.0	% 11.5	% 11.8	% 12.4	%
Asset Quality						
Net loan charge-offs	\$12,653	\$9,681	\$9,935	\$8,855	\$9,489	
Net loan charge-offs as a percentage of average loans	0.09	% 0.07	% 0.11	% 0.13	% 0.19	%
Year end balances:						
Allowance for loan losses — originated loans	\$109,564	\$91,887	\$78,268	\$73,328	\$75,183	
Allowance for loan losses — acquired loans	420	—	—	—	500	
Total nonaccrual loans	85,433	63,095	44,334	62,225	50,644	
Total nonperforming assets	91,689	71,902	61,521	72,160	64,849	
Allowance for originated loan losses as a percentage of total originated loans	0.93	% 0.94	% 1.05	% 1.26	% 1.51	%
Allowance for originated loan losses as a percentage of nonaccrual loans	128.2	% 145.6	% 176.5	% 117.8	% 148.5	%

Nonaccrual loans as a percentage of total loans	0.56	% 0.45	% 0.34	% 0.86	% 0.89	%
Nonperforming assets as a percentage of total assets	0.43	% 0.37	% 0.35	% 0.79	% 0.89	%

Denotes a non-GAAP Financial Measure. Please refer to section entitled "Non-GAAP Financial Measures"

(1) included within "Management's Discussion and Analysis of Financial Condition and Results of Operations" for a reconciliation to the most directly comparable GAAP financial measure.

(2) Presented on a tax equivalent basis using a 21% tax rate for 2018 and a 35% tax rate for all prior periods presented.

The years ended December 31, 2018, 2017, 2016 and 2015 are under Basel III framework and the year ended

(3) December 31, 2014 is under the Basel I framework. The Common Equity Tier 1 (CET1) capital ratio is a new ratio introduced under the Basel III framework.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion describes our results of operations for the years ended December 31, 2018, 2017 and 2016 and also analyzes our financial condition as of December 31, 2018, as compared to December 31, 2017. This discussion should be read in conjunction with the "Selected Financial Data" and our audited Consolidated Financial Statements and accompanying footnotes thereto included elsewhere in this Annual Report. Historical results of operations and the percentage relationships among any amounts included, and any trends that may appear, may not indicate trends in operations or results of operations for any future periods.

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 disclosures, see "Forward-Looking Statements" of this Annual Report.

Business Overview

Chemical Financial Corporation is a financial holding company headquartered in Detroit, Michigan. Our common stock is listed on the NASDAQ under the symbol "CHFC." At December 31, 2018, we had consolidated total assets of \$21.50 billion, total loans of \$15.27 billion, total deposits of \$15.59 billion and total shareholders' equity of \$2.84 billion.

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.

The principal markets for our products and services are communities in Michigan, Northeast Ohio and Northern Indiana where our bank branches are located and the areas surrounding these communities. As of December 31, 2018, we served these markets through 186 banking offices located in Michigan, 24 branches located in Northeast Ohio and two branches located in Northern Indiana. In addition to our banking offices, we operated eight loan production offices and 237 automated teller machines, both on and off bank premises. In addition, we own, directly or indirectly, various non-bank operating and non-operating subsidiaries.

Our principal source of revenue is interest and fees on loans, which accounted for 86.6% of total revenue in 2018, 81.7% of total revenue in 2017 and 76.2% of total revenue in 2016. Interest on investment securities, service charges and fees on deposit accounts, wealth management revenue and mortgage banking revenue are also significant sources of revenue, which combined, accounted for 23.7% of total revenue in 2018, 20.8% of total revenue in 2017 and 19.6% of total revenue in 2016. Revenue is influenced by overall economic factors including market interest rates, business and consumer spending, consumer confidence and competitive conditions in the marketplace.

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. 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 second half of 2019. The transaction is discussed in more detail in Note 26 to our Consolidated Financial Statements under Item 8 of this Annual Report.

2017 Restructuring Efforts

During the third quarter of 2017, we launched a project to identify strategies that could be deployed to drive revenue growth and steps to be taken to further improve operating efficiency as part of an effort to refine and clarify our overall strategic plan of how we allocate our capital across the organization and better position ourselves for growth. The project resulted in

restructuring efforts including a reduction of approximately 7% in total employees and consolidation of 25 branches, each of which were completed during the fourth quarter of 2017, in addition to 13 branches that were consolidated during the third quarter of 2017. Under the restructuring efforts, we also discontinued our title insurance services and reduced resources devoted to indirect auto lending.

Mergers, Acquisitions and Branch Closings

Since our acquisition of Chemical Bank and Trust Company in 1974, we have acquired 25 community banks and 36 other branch bank offices through December 31, 2018. Our most recent transactions include our merger with Talmer Bancorp, Inc. ("Talmer") during the third quarter of 2016, our acquisitions of Lake Michigan Financial Corporation ("Lake Michigan") and Monarch Community Bancorp, Inc. ("Monarch") during the second quarter of 2015 and our acquisition of Northwestern Bancorp, Inc. ("Northwestern") in the fourth quarter of 2014.

Merger with Talmer Bancorp, Inc.

On August 31, 2016, we acquired all the outstanding stock of Talmer for total consideration of \$1.61 billion, which included stock consideration of \$1.50 billion and cash consideration of \$107.6 million. As a result of the merger, we issued 32.1 million shares of our common stock based on an exchange ratio of 0.4725 shares of our common stock, and paid \$1.61 in cash, for each share of Talmer common stock outstanding. Talmer, a bank holding company, owned Talmer Bank and Trust, which was consolidated with and into Chemical Bank effective November 10, 2016. Talmer Bank and Trust operated a full service community bank offering a full suite of commercial banking, retail banking, mortgage banking, wealth management and trust services to small and medium-sized businesses and individuals through 80 full service banking offices located primarily within southeast Michigan and northeast Ohio, as well as in west Michigan, northeast Michigan, and northern Indiana. The merger with Talmer resulted in increases in our total assets of \$7.71 billion, including total loans of \$4.88 billion, total deposits of \$5.29 billion and investment securities of \$810.6 million. In connection with the merger with Talmer, we recorded \$847.7 million of goodwill, which was primarily due to the synergies and economies of scale expected from combining our operations with those of Talmer. In addition, we recorded \$19.1 million of core deposit intangibles in conjunction with the merger.

We incurred \$8.5 million and \$61.1 million of merger and acquisition-related transaction expenses during the years ended December 31, 2017 and 2016, respectively, primarily related to the merger with Talmer, which reduced diluted earnings per share by \$0.08 in 2017 and \$0.81 in 2016.

Acquisition of Lake Michigan Financial Corporation

On May 31, 2015, we acquired all of the outstanding stock of Lake Michigan for total consideration of \$187.4 million, which included stock consideration of \$132.9 million and cash consideration of \$54.5 million. As a result of the acquisition, we issued approximately 4.3 million shares of our common stock, based on an exchange ratio of 1.326 shares of our common stock, and paid \$16.64 in cash, for each share of Lake Michigan common stock outstanding. Lake Michigan, a bank holding company, owned The Bank of Holland and The Bank of Northern Michigan, which combined operated five banking offices in Holland, Grand Haven, Grand Rapids, Petoskey and Traverse City, Michigan. The Bank of Holland and The Bank of Northern Michigan were consolidated with and into Chemical Bank on November 13, 2015. The acquisition of Lake Michigan resulted in increases in total assets of \$1.24 billion, including total loans of \$985.5 million, and total deposits of \$924.7 million, as of the acquisition date. In connection with the acquisition of Lake Michigan, we recorded \$101.1 million of goodwill, which was primarily attributable to the synergies and economies of scale expected from combining our operations with those of Lake Michigan. In addition, we recorded \$8.6 million of core deposit and other intangible assets in conjunction with the acquisition. Acquisition expenses associated with the acquisition of Lake Michigan totaled \$5.5 million during 2015, which reduced net income per common share by \$0.11 in 2015.

Acquisition of Monarch Community Bancorp, Inc.

On April 1, 2015, we acquired all of the outstanding stock of Monarch in an all-stock transaction valued at \$27.2 million. As a result of the acquisition, we issued 860,575 shares of our common stock based on an exchange ratio of 0.0982 shares of our common stock for each share of Monarch common stock outstanding. Monarch, a bank holding company, owned Monarch Community Bank, which operated five full service branch offices in Coldwater, Marshall, Hillsdale and Union City, Michigan. Monarch Community Bank was consolidated with and into Chemical Bank on May 8, 2015. The acquisition of Monarch resulted in increases in our total assets of \$182.8 million, including total loans of \$121.8 million, and total deposits of \$144.3 million, as of the acquisition date. In connection with the

acquisition of Monarch, we recorded \$5.3 million of goodwill, which was primarily attributable to the synergies and economies of scale expected from combining our operations with Monarch. In addition, we recorded \$1.9 million of core deposit intangible assets in conjunction with the acquisition.

Acquisition expenses associated with the acquisition of Monarch totaled \$2.3 million during 2015, which reduced net income per common share by \$0.04 in 2015.

Acquisition of Northwestern Bancorp, Inc.

On October 31, 2014, we acquired all of the outstanding stock of Northwestern for total cash consideration of \$121.0 million. Northwestern, a bank holding company, owned Northwestern Bank, provided traditional banking services and products through 25 banking offices serving communities in the northwestern lower peninsula of Michigan. At the acquisition date, Northwestern added total assets of \$815.0 million, including total loans of \$475.3 million, and total deposits of \$794.4 million, to our operations. Northwestern Bank was consolidated with and into Chemical Bank as of the acquisition date. In connection with the acquisition of Northwestern, we recorded \$60.3 million of goodwill, which was primarily attributable to the synergies and economies of scale expected from combining our operations with those of Northwestern. In addition, we recorded \$12.9 million of core deposit intangible assets in conjunction with the acquisition.

Acquisition expenses associated with the acquisition of Northwestern totaled \$5.8 million during 2014, which reduced net income per common share by \$0.14 in 2014.

Branch Closings and Consolidation

On April 15, 2016, we closed eleven branch locations which were identified as having a small core deposit base and/or being in close proximity to other Chemical Bank branch locations.

In conjunction with the consolidation of Talmer Bank and Trust with and into Chemical Bank during the fourth quarter of 2016, we closed seven branches in communities where Talmer Bank and Trust and Chemical Bank had overlapping branches.

Expenses associated with the closing of the aforementioned branch office locations were not significant, with the exception of \$1.0 million of fair value write-downs recognized in the second quarter of 2016 related to the eleven branch locations that were closed, as the majority of the employees of these closed branch offices were transferred to other nearby Chemical Bank branch locations or other open positions within Chemical Bank.

During the third quarter of 2017 we initiated restructuring efforts that included the consolidation of 25 branches in the fourth quarter of 2017. These branch consolidations were in addition to the 13 branches consolidated during the third quarter 2017. The expense related to branch closings was approximately \$5.1 million during the year ended December 31, 2017, included in "restructuring expenses" on our Consolidated Statements of Income. At December 31, 2018, we operated a total of 212 branches.

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 utilize third-party sources to assist with developing estimates, assumptions and judgments regarding certain amounts reported in our Consolidated Financial Statements and accompanying notes. When third-party sources are utilized, 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.

The significant accounting policies we follow are presented in Note 1 to our Consolidated Financial Statements included in Item 8 of this Annual Report. These policies, along with the disclosures presented in the other notes to our Consolidated Financial Statements and in "Management's Discussion and Analysis of Financial Condition and Results of Operations," provide information on how significant assets and liabilities are measured in our Consolidated Financial Statements and how those measurements are determined. Based on the techniques used and the sensitivity of

financial statement amounts to the methods, estimates and assumptions underlying those amounts, management has 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. Management reviews the following critical accounting policies with the Audit Committee of the board of directors at least annually.

Allowance for Loan Losses

We use a defined methodology to quantify the necessary allowance for loan losses ("allowance") and related provision for loan losses, but there can be no assurance that the methodology will successfully identify and estimate all of the losses that are inherent in our loan portfolio. Our methodology uses our historical loss experience (net charge-offs) adjusted for qualitative factors, including trends in credit quality, composition of and growth in our loan portfolio, and the overall economic environment in our markets. These qualitative factors include many estimates and judgments. As a result, we could record future provisions for loan losses that may be significantly different than the levels that have been recorded in the three-year period ended December 31, 2018. Note 1 and Note 5 to our Consolidated Financial Statements further describe the methodology we use to determine the allowance. In addition, a discussion of the factors driving changes in the amount of the allowance is included under the subheading "Allowance for Loan Losses" in "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Our allowance has two components: (1) the allowance for loan losses (including both our originated and acquired loan portfolios) and (2) the reserve for unfunded credit commitments. Unfunded credit commitments include items such as letters of credit, financial guarantees and binding unfunded loan commitments. The allowance represents management's estimate of probable credit losses inherent in our loan and unfunded credit commitment portfolios as of period end.

We calculate the allowance with the objective of maintaining a reserve sufficient to absorb losses inherent in the loan portfolio. We consider the allowance to be a critical accounting estimate because it requires significant judgment and the use of estimates to determine the amount and timing of expected cash flows on acquired loans and impaired loans, the collateral values on impaired loans, and estimated losses on pools of homogeneous originated loans based on historical loss experience, and consideration of current economic trends and conditions, all of which may be susceptible to significant change. The principal assumption used in deriving the allowance is the estimate of a loss percentage for each type of loan.

In determining the allowance for the originated loan portfolio and the related provision for loan losses, we consider three principal elements: (1) valuation allowances based on probable losses identified during the review of impaired loans, (2) reserves, by loan classes, on all other loans based on six-years of historical loan loss experience, loan loss trends and consideration of estimated loss emergence periods, and (3) a reserve for qualitative factors that take into consideration risks inherent in the originated loan portfolio that differ from historical loan loss experience.

We have a loan review function that is independent of the loan origination function. At least annually, the loan review function performs a detailed credit quality review, including analysis of collateral values, of the majority of the loans in our commercial loan portfolio, with a particular focus on larger balance loans and loans that have deteriorated below certain levels of credit risk. In many cases, the estimate of collateral values includes significant judgments and assumptions.

The following section, "Accounting for Acquired Loans", describes the process for determining the allowance for the acquired loan portfolio.

Accounting for Acquired Loans under ASC Topic 310-30

ASC Topic 310-30, Loans and Debt Securities Acquired with Deteriorated Credit Quality (ASC 310-30), provides guidance for accounting for loans acquired in a business combination that have experienced a deterioration in credit quality since origination for which it is probable that the purchaser will be unable to collect all contractually required payments, including both principal and interest. Such purchased loans are considered impaired.

In assessing credit quality deterioration, we must make numerous assumptions, interpretations and judgments using internal and third-party credit quality information to determine whether or not it is probable that we will be able to collect all contractually required payments. This is a point in time assessment and inherently subjective due to the nature of the available information and judgment involved. Evidence of credit quality deterioration as of the acquisition date may include statistics such as past due and nonaccrual status, recent borrower credit scores and loan-to-value percentages. Those loans that qualify under ASC 310-30 are recorded at fair value at acquisition, which involves estimating the expected cash flows to be collected, both principal and interest, discounted at the prevailing market rate of interest. Accordingly, the associated allowance for loan losses on these loans is not carried over at the acquisition date. ASC 310-30 also allows purchasers to aggregate acquired loans into loan pools with common risk characteristics and apply a composite interest rate and estimate cash flow expectations for all loans in the pool. We elected to apply ASC 310-30, by analogy, to loans acquired in our Talmer, Lake Michigan, Monarch, Northwestern and O.A.K. Financial Corporation ("OAK") acquisitions and, therefore, we follow the accounting and disclosure guidance of ASC 310-30 for all of these acquired loans.

The excess of cash flows we expect to collect over the estimated fair value of a loan, or pool of loans, is referred to as the "accretable yield" and is recognized in interest income over the estimated remaining life of the loan, or pool of loans, on a level-yield basis. The difference between the contractually required payments on a loan, or pool of loans, and the cash flows we expect to collect at acquisition, considering the impact of prepayments and estimates of future credit losses expected to be incurred over the life of the loan, or pool of loans, is referred to as the "nonaccretable difference" and is sensitive to unexpected prepayments and/or payoffs and changes in loan credit quality.

We evaluate estimated cash flows on our acquired loans on a quarterly basis. These evaluations require us to continue to use key assumptions and estimates, similar to the initial estimate of fair value. A decrease in estimated cash flows due to deterioration of credit quality will generally result in a charge to the provision for loan losses and a resulting increase to the allowance for loan losses in addition to a transfer from accretable yield to nonaccretable difference. A decrease in estimated cash flows due to unexpected prepayments and/or payoffs will generally result in a transfer from accretable yield to nonaccretable difference. Increases in the estimates of estimated cash flows will first reverse any previously established allowance for loan losses and then result in increases to the accretable yield, which will increase amounts recognized in interest income in subsequent periods. The disposition of acquired loans including loan sales to third parties, the receipt of payments in full or in part by the borrower and foreclosure of the underlying collateral, will result in removal of the loan from the acquired loan portfolio at its carrying amount. As a result of the significant amount of judgment involved in estimating future cash flows we expect to be collected on acquired loans, the adequacy of the allowance for loan losses could be significantly impacted by changes in cash flow expectations resulting from changes in the credit quality of acquired loans.

Acquired loans that were classified as nonperforming loans before being acquired and acquired loans that are not performing in accordance with contractual terms subsequent to acquisition are not classified as nonperforming loans subsequent to acquisition because the loans are recorded in pools at net realizable value based on the principal and interest we expect to collect on such loans. Judgment is required to estimate the timing and amount of cash flows expected to be collected when the loans are not performing in accordance with the original contractual terms.

Note 1, Note 2 and Note 5 to our Consolidated Financial Statements contain additional information related to acquired loans.

Income and Other Taxes

We are subject to the income and other tax laws of the United States, the States of Michigan, Ohio, Indiana and other states where nexus has been created. These laws are complex and are subject to different interpretations by the taxpayer and the various taxing authorities. In determining the provisions for income and other taxes, management must make judgments and estimates about the application of these inherently complex laws, related regulations and case law. In the process of preparing our tax returns, management attempts to make reasonable interpretations of enacted tax laws. These interpretations are subject to challenge by the tax authorities upon audit or to reinterpretation based on management's ongoing assessment of facts and evolving case law. On December 22, 2017, H.R.1, referred to as the "Tax Cuts and Jobs Act", was signed into law. The Tax Cuts and Jobs Act, among other items, reduced the corporate income tax rate from 35% to 21%, effective January 1, 2018. As such, we completed a revaluation of the net deferred tax assets and estimated a reduction in our deferred tax asset as of December 31, 2017.

When income and expenses are recognized in different periods for tax purposes than for book purposes, applicable deferred tax assets and liabilities are recognized for the future tax consequences attributable to the differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized as income or expense in the period that includes the enactment date.

Management assesses the reasonableness of our effective federal tax rate on a quarterly basis based on management's estimate of taxable income and the applicable taxes expected for the full year, including the impact of any discrete items that have occurred. Deferred tax assets and liabilities are reassessed on a quarterly basis, including the need for a valuation allowance for deferred tax assets. The need for reserves for uncertain tax positions is reviewed quarterly based upon developments in tax law and the status of examinations or audits.

Note 17 to our Consolidated Financial Statements contains additional information related to income taxes.

Valuation of Loan Servicing Rights

We recognize as assets the rights to service loans for others, known as loan servicing rights ("LSRs"). As of January 1, 2017, we elected to account for LSRs under the fair value option. Prior to January 1, 2017, we accounted for LSRs at the lower of cost or fair value. To determine the fair value of LSRs, we use an independent third party valuation model requiring the incorporation of assumptions that market participants would use in estimating future net servicing income, which include estimates of prepayment speeds, discount rate, cost to service and escrow account earnings. Changes in the fair value of LSRs directly impacts earnings. See Note 3 and Note 9 to our Consolidated Financial Statements for more information on fair value measurements.

Accounting Standards Updates

See Note 1 to our Consolidated Financial Statements included in this Annual Report for details of accounting pronouncements adopted during 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
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	At adoption on January 1, 2019, we expect to recognize additional operating liabilities and ROU assets
ASU No. 2018-01 - Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842	on-balance sheet, lessors to classify leases as sales-type, direct financing, or operating, and disclose key information about leasing arrangements. 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; and ASU No. 2018-20, Narrow Scope Improvements for Lessors.	ranging from \$35 million to \$40 million, representing less than 1% of total assets. We will begin providing the newly required disclosures regarding our leasing activities beginning in our Form 10-Q for the first quarter of 2019.
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	We intend to elect certain practical expedients in transition offered through the guidance, including foregoing the restatement of
ASU No. 2018-11 - Leases (Topic 842) Targeted Improvements	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	comparative periods, the 'package of practical expedients' which permits us not to reassess under the new standard our prior conclusions about lease identification, lease
ASU No. 2018-20 - Leases (Topic 842): Narrow Scope Improvements for Lessors	unchanged as it is substantially equivalent to existing guidance for sales-type leases, direct financing leases and operating leases.	classification, and initial direct costs, as well as the use of hindsight.
	Upon adoption, a modified retrospective transition approach is required, applying the new standard to all leases existing at the date of initial application.	We believe substantially all of our leases will continue to be classified as operating leases under the new standard. The adoption is not expected to have a material impact on our results of operations or significantly change our leasing
	Required adoption date is January 1, 2019, with early adoption permitted.	

activities.

Standard	Description/Required Date of Adoption	Expected impact on the financial statements and other significant matters
ASU No. 2016-13 - Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments	<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. 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, with early adoption permitted as of January 1, 2019. Currently, we do not have plans for early adoption.</p>	<p>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. We are currently evaluating the potential impact adoption of ASU 2016-13 will have on our consolidated financial statements and disclosures. 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. 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 to develop and refine multiple scenarios and identify portfolio segmentation. We will continue this process in 2019 and run parallel analysis with our current credit loss model. We will additionally continue our analysis of other applicable requirements of the standard.</p>
ASU No. 2018-19 - Codification Improvements to Topic 326, Financial Instruments: Credit Losses		
ASU No. 2017-04, Intangible - Goodwill and Other (Topic 350)	<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</p>	<p>Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.</p>

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.

Required adoption date of January 1, 2020, with early adoption permitted.

ASU No. 2017-06,
Plan Accounting:
Defined Benefit
Pension Plans (Topic
960)

This update clarifies the reporting requirements by an employee benefit plan for its interest in a master trust and removes redundancy relating to 401(h) account disclosures. The amendment requires a plan's interest in a master trust to be presented in separate line items in the statement of net assets available and in the statement of changes in net assets available. Additionally, the requirement to disclose the percentage interest in the master trust is removed and replaced by the required disclosure of the dollar amount of interest in each investment type.

Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.

Required adoption date of January 1, 2019, with early adoption permitted.

ASU No. 2018-07,
Compensation-Stock
Compensation (Topic
718)

This update expands the scope of stock compensation requirements to include share-based payment transactions for acquiring goods and services from nonemployees. The amendment requires that nonemployee share-based payment awards meet the accounting requirements of employee share-based payment awards.

Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.

Required adoption date of January 1, 2019, with early adoption permitted.

Standard	Description/Required Date of Adoption	Expected impact on the financial statements and other significant matters
ASU No. 2018-08, Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made	<p>This update clarifies the scope and the accounting guidance for contributions received and contributions made. The guidance clarifies the criteria on determining whether a contribution is conditional or unconditional.</p> <p>Required adoption date of January 1, 2019, with early adoption permitted.</p>	Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.
ASU No. 2018-09, Codification Improvements	<p>This update clarifies and makes minor improvements to the current codification. The amendments are made to a number of subtopics in order to allow for clearer understanding of the codification.</p> <p>Required adoption date of January 1, 2019, with early adoption permitted.</p> <p>The amendments in this update improves 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>	Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.
ASU 2018-13, Fair Value Measurement (Topic 820): Disclose Framework-Changes to the Disclosure Requirements for Fair Value Measurement	<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>	Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.
ASU 2018-14, Compensation-Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20): Disclosure Framework-Changes to the Disclosure Requirements for Defined Benefit Plans	<p>The amendments in this update remove disclosures that no longer are considered cost-beneficial, clarify the specific requirements of disclosures, and add disclosure requirements identified as relevant based on the concepts in the Concepts Statement, Conceptual Framework for Financial Reporting-Chapter 8: Notes to Financial Statements.</p>	Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.

ASU 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

Required adoption date of January 1, 2021, with early adoption permitted. Currently, we do not have plans for early adoption.

The amendments in this update permit the use of an alternative reference rate, the OIS rate based on SOFR, as a U.S. benchmark interest rate for hedge accounting purposes under Topic 815 in addition to the U.S. Treasury (UST) Rate, the London Interbank Offered Rate (LIBOR) swap rate, the OIS rate based on the Fed Funds Effective Rate, and the Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Rate.

Adoption is not expected to have a material impact on our consolidated financial condition or results of operations.

Required adoption date of January 1, 2019, with early adoption permitted.

Non-GAAP Financial Measures

This Annual 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 and restructuring expenses 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, efficiency ratio (which excludes merger and restructuring expenses, impairment of income tax credits and amortization of intangibles); the adjusted efficiency ratio (which excludes merger and restructuring expenses, impairment of income tax credits, amortization of intangibles, net interest FTE adjustments, the change in fair value of loan servicing rights and gains and losses from sale of investment securities) and other information presented excluding significant items (merger and restructuring expenses, certain losses on sale of investment securities and gain on sale of branch offices) 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 Annual Report.

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

	Year Ended December 31,					
(Dollars in thousands, except per share data)	2018	2017	2016	2015	2014	
Reconciliation of Non-GAAP Operating Results						
Net Income						
Net income, as reported	\$284,020	\$149,523	\$108,032	\$86,830	\$62,121	
Merger expenses	—	8,522	61,134	7,804	6,388	
Restructuring expenses	—	19,880	—	—	—	
Gain on sales of branch offices	—	—	(7,391)	—	—	
Losses on sales of investment securities ⁽¹⁾	—	7,556	—	—	—	
Significant items	—	35,958	53,743	7,804	6,388	
Income tax benefit ⁽²⁾	—	(12,585)	(18,048)	(2,320)	(1,833)	
Revaluation of net deferred tax assets	—	46,660	—	—	—	
Significant items, net of tax	—	70,033	35,695	5,484	4,555	
Net income, excluding significant items	\$284,020	\$219,556	\$143,727	\$92,314	\$66,676	
Diluted Earnings Per Share						
Diluted earnings per share, as reported	\$3.94	\$2.08	\$2.17	\$2.39	\$1.97	
Effect of significant items, net of tax	—	0.98	0.71	0.15	0.14	
Diluted earnings per share, excluding significant items	\$3.94	\$3.06	\$2.88	\$2.54	\$2.11	
Return on Average Assets						
Return on average assets, as reported	1.41	% 0.81	% 0.90	% 1.02	% 0.96	%
Effect of significant items, net of tax	—	0.38	0.29	0.07	0.07	
Return on average assets, excluding significant items	1.41	% 1.19	% 1.19	% 1.09	% 1.03	%
Return on Average Shareholders' Equity						
Return on average shareholders' equity, as reported	10.4	% 5.7	% 7.0	% 9.4	% 8.2	%
Effect of significant items, net of tax	—	2.7	2.3	0.6	0.6	
Return on average shareholders' equity, excluding significant items	10.4	% 8.4	% 9.3	% 10.0	% 8.8	%
Return on Average Tangible Shareholders' Equity						
Average shareholders' equity	\$2,740,399	\$2,627,862	\$1,546,721	\$919,328	\$754,211	
Average goodwill, CDI and noncompete agreements, net of tax	1,156,371	1,155,734	582,536	245,894	157,634	
Average tangible shareholders' equity	\$1,584,028	\$1,472,128	\$964,185	\$673,434	\$596,577	
Return on average tangible shareholders' equity	17.9	% 10.2	% 11.2	% 12.9	% 10.4	%
Effect of significant items, net of tax	—	4.7	3.7	0.8	0.8	
Return on average tangible shareholders' equity, excluding significant items	17.9	% 14.9	% 14.9	% 13.7	% 11.2	%
Efficiency Ratio						
Net interest income	\$632,333	\$557,578	\$381,081	\$274,008	\$212,551	
Noninterest income	148,536	144,019	122,350	80,216	63,095	
Total revenue - GAAP	780,869	701,597	503,431	354,224	275,646	
Net interest income FTE adjustment	9,458	13,078	9,642	7,452	5,975	
Loan servicing rights change in fair value (gains) losses	(1,827)	6,375	(5,112)	—	—	
Gains on sale of branch offices	—	—	(7,391)	—	—	
(Gains) losses from closed branch locations and sale of investment securities	(224)	7,388	(669)	(779)	—	

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

Total revenue - non-GAAP	\$788,276	\$728,438	\$499,901	\$360,897	\$281,621
Operating expenses - GAAP	\$424,198	\$421,994	\$338,418	\$223,894	\$179,925
Merger expenses	—	(8,522)	(61,134)	(7,804)	(6,388)
Restructuring expenses	—	(19,880)	—	—	—
Impairment of income tax credits ⁽³⁾	(12,284)	(9,252)	—	—	—
Operating expense, core - Non-GAAP	411,914	384,340	277,284	216,090	173,537
Amortization of intangibles	(5,716)	(6,089)	(5,524)	(4,389)	(2,029)
Operating expenses, efficiency ratio - Non-GAAP	\$406,198	\$378,251	\$271,760	\$211,701	\$171,508
Efficiency ratio - GAAP	54.3	% 60.1	% 67.2	% 63.2	% 65.3
Efficiency ratio - adjusted Non-GAAP	51.5	% 51.9	% 54.4	% 58.7	% 60.9

⁽¹⁾ Fourth quarter of 2017 losses on sales of investment securities are deemed a significant item for 2017 as they were taken as part of our treasury and tax management objectives associated with the Tax Cuts and Jobs Act.

⁽²⁾ Assumes merger expenses are deductible at an income tax rate of 35%, except for the impact of estimated nondeductible expenses incurred in periods when merger and acquisition transactions are completed.

⁽³⁾ The impairment of income tax credits is related to federal historic tax credits that provide a reduction to our income tax expense. The impairment, included within other operating expenses, is more than offset by a reduction to our income tax expense related to the same tax credits included within other operating expenses.

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

	Year Ended December 31,				
(Dollars in thousands, except per share data)	2018	2017	2016	2015	2014
Total operating expenses as a percentage of total average assets					
Average assets	\$20,200,530	\$18,465,156	\$12,037,155	\$8,481,228	\$6,473,144
Operating expenses - GAAP	\$424,198	\$421,994	\$338,418	\$223,894	\$179,925
Merger and restructuring expenses	—	(28,402)	(61,134)	(7,804)	(6,388)
Impairment of income tax credits	(12,284)	(9,252)	—	—	—
Operating expense, core - non-GAAP	411,914	384,340	277,284	216,090	173,537
Total operating expenses as a percentage of total average assets	2.10	% 2.29	% 2.81	% 2.64	% 2.78
Total operating expenses, core, as a percentage of total average assets - adjusted non-GAAP	2.04	% 2.08	% 2.30	% 2.55	% 2.68
	December 31,				
(Dollars in thousands, except per share data)	2018	2017	2016	2015	2014
Tangible Book Value					
Shareholders' equity, as reported	\$2,836,260	\$2,668,749	\$2,581,526	\$1,015,974	\$797,133
Goodwill, CDI and noncompete agreements, net of tax	(1,153,877)	(1,158,738)	(1,155,528)	(301,073)	(190,714)
Tangible shareholders' equity	\$1,682,383	\$1,510,011	\$1,425,998	\$714,901	\$606,419
Common shares outstanding	71,460	71,207	70,599	38,168	32,774
Book value per share (shareholders' equity, as reported, divided by common shares outstanding)	\$39.69	\$37.48	\$36.57	\$26.62	\$24.32
Tangible book value per share (tangible shareholders' equity divided by common shares outstanding)	\$23.54	\$21.21	\$20.20	\$18.73	\$18.50
Tangible Shareholders' Equity to Tangible Assets					
Total assets, as reported	\$21,498,341	\$19,280,873	\$17,355,179	\$9,188,797	\$7,322,143
Goodwill, CDI and noncompete agreements, net of tax	(1,153,877)	(1,158,738)	(1,155,528)	(301,073)	(190,714)
Tangible assets	\$20,344,464	\$18,122,135	\$16,199,651	\$8,887,724	\$7,131,429
Shareholders' equity to total assets	13.2	% 13.8	% 14.9	% 11.1	% 10.9
Tangible shareholders' equity to tangible assets	8.3	% 8.3	% 8.8	% 8.0	% 8.5
Statements of Financial Position Review Overview					

Total assets were \$21.50 billion at December 31, 2018, an increase of \$2.22 billion, or 11.5%, compared to total assets at December 31, 2017 of \$19.28 billion. Interest-earning assets were \$19.46 billion at December 31, 2018, an increase of \$2.20 billion, or 12.8%, compared to interest-earning assets of \$17.26 billion at December 31, 2017. The increase in both total assets and interest-earnings assets in 2018, compared to 2017, was primarily attributable to a \$1.11 billion increase in total loans and a \$1.01 billion increase in our investment securities portfolio.

Total liabilities were \$18.66 billion at December 31, 2018, an increase of \$2.05 billion, or 12.3%, compared to total liabilities at December 31, 2017 of \$16.61 billion. The increase in liabilities in 2018, compared to 2017, was primarily

attributable to a \$1.95 billion increase in deposits.

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 December 31, 2018 and 2017:

	Maturity as of December 31, 2018 ⁽¹⁾										Total Fair Value
	Within One Year	Yield ⁽³⁾	After One but Within Five Years	Yield ⁽³⁾	After Five but Within Ten Years	Yield ⁽³⁾	After Ten Years	Yield ⁽³⁾	Total Carrying Value ⁽²⁾	Yield ⁽³⁾	
(Dollars in thousands)	Amount		Amount		Amount		Amount		Amount		
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	618,229
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	618,669
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%	\$3,640,501

Residential mortgage-backed securities, collateralized mortgage obligations and certain government and (1) 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.

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 (3) at December 31, 2018. Approximately 24% of investment securities at December 31, 2018 were variable-rate financial instruments.

	Maturity as of December 31, 2017 ⁽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⁾		
(Dollars in thousands)	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Amount	Yield ⁽³⁾	Value
Carried at fair value:											
Government and											
government-sponsored enterprises	\$30,241	2.29 %	\$81,106	2.39 %	\$61,461	2.43 %	\$30,108	2.43 %	\$202,916	2.39 %	\$202,916
State and political subdivisions	9,219	2.55	60,691	2.14	115,623	2.63	160,437	3.70	345,970	3.04	345,970
Residential mortgage-backed securities	21,922	2.44	66,510	2.46	38,594	2.52	23,105	2.58	150,131	2.49	150,131
Collateralized mortgage obligations	223,295	2.65	500,467	2.61	231,658	2.74	78,425	2.98	1,033,845	2.68	1,033,845
Corporate bonds	13,968	1.73	37,308	2.01	141,518	3.68	—	—	192,794	3.22	192,794
Trust preferred securities	—	—	—	—	22,967	3.62	13,099	2.93	36,066	3.37	36,066
Total debt securities carried at fair value	298,645	2.55	746,082	2.50	611,821	2.92	305,174	3.27	1,961,722	2.76	1,961,722
Held-to-Maturity:											
State and political subdivisions	89,359	2.33	237,113	3.12	152,299	3.92	197,822	3.64	676,593	3.35	662,516
Trust preferred securities	—	—	—	—	—	—	500	4.75	500	4.75	390
Total investment securities held-to-maturity	89,359	2.33	237,113	3.12	152,299	3.92	198,322	3.64	677,093	3.35	662,906
Total investment securities	\$388,004	2.50 %	\$983,195	2.65 %	\$764,120	3.12 %	\$503,496	3.42 %	\$2,638,815	2.92 %	\$2,624,6

Residential mortgage-backed securities, collateralized mortgage obligations and certain government and

(1) 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.

Yields are weighted by amount and time to contractual maturity, are on a taxable equivalent basis using a 35% federal income tax rate and are based on carrying value. Yields disclosed are actual yields based on carrying value at December 31, 2017. Approximately 22% of our investment securities at December 31, 2017 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 \$3.65 billion at December 31, 2018, an increase of \$1.01 billion or 38.1%, from investment securities of \$2.64 billion at December 31, 2017, 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 December 31, 2018 had a weighted average life of approximately 5.3 years and an effective duration of approximately 2.6 years.

The following table summarizes the carrying value of investment securities at December 31, 2018, 2017 and 2016:

	December 31,		
(Dollars in thousands)	2018	2017	2016
Carried at Fair Value:			
U.S. Treasury securities	\$—	\$—	\$5,793
Government and government-sponsored enterprises	351,700	202,916	215,011
State and political subdivisions	516,286	345,970	300,088
Residential mortgage-backed securities	213,428	150,131	272,282
Collateralized mortgage obligations	1,601,298	1,033,845	320,025
Corporate bonds	293,063	192,794	89,474
Trust preferred securities	46,057	36,066	30,553
Preferred stock	—	1,824	1,738
Total investment securities carried at fair value	3,021,832	1,963,546	1,234,964
Held-to-Maturity:			
State and political subdivisions	623,599	676,593	622,927
Trust preferred securities	500	500	500
Total investment securities held-to-maturity	624,099	677,093	623,427
Total investment securities	\$3,645,931	\$2,640,639	\$1,858,391

At December 31, 2018, 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 \$351.7 million; state and political subdivisions debt obligations, comprised primarily of general debt obligations, totaling \$1.14 billion; residential mortgage-backed securities (MBSs), comprised primarily of fixed-rate instruments backed by U.S. government agencies or government-sponsored enterprises, totaling \$213.4 million; collateralized mortgage obligations (CMOs), comprised of approximately 86.8% fixed-rate and 13.2% variable-rate instruments primarily backed by U.S. government agencies and government-sponsored enterprises, totaling \$1.60 billion; corporate bonds, comprised primarily of debt obligations of large U.S. global financial organizations, totaling \$293.1 million; and preferred stock and trust preferred securities (TRUPs), comprised of preferred stock debt instruments of two large regional/national banks and variable-rate TRUPs from both publicly-traded bank holding companies and small non-public bank holding companies, totaling \$46.6 million. Fixed-rate instruments comprised approximately 75.5% of our investment securities portfolio at December 31, 2018.

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 \$3.65 billion at December 31, 2018, with gross unrealized losses of \$61.4 million at that date. We believe that the unrealized losses on debt securities at December 31, 2018 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 December 31, 2018 were temporary in nature, and therefore, no impairment loss was recognized in our Consolidated Statement of Income in 2018. 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 December 31, 2018, the gross unrealized losses in our investment securities portfolio of \$61.4 million were comprised as follows: Government and GSE securities, residential MBSs and CMOs, combined of \$32.2 million, state and political subdivisions securities of \$16.0 million, corporate bonds of \$11.4 million, and TRUPs of \$1.8 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 \$2.19 billion and gross unrealized losses of \$32.2 million at December 31, 2018. 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 \$410.2 million and gross unrealized losses of \$9.5 million at December 31, 2018. 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 December 31, 2018.

State and political subdivisions securities, included in our carried at fair value and held-to-maturity investment securities portfolios, had an amortized cost of \$1.15 billion and gross unrealized losses of \$16.0 million at December 31, 2018. Approximately 78.0% 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 \$863.8 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 December 31, 2018.

Corporate bonds included in our carried at fair value investment securities portfolio had an amortized cost of \$304.2 million and gross unrealized losses of \$11.4 million at December 31, 2018. 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 December 31, 2018. Trust preferred securities included in our carried at fair value investment securities portfolio had an amortized cost of \$47.5 million and gross unrealized losses of \$1.7 million at December 31, 2018. 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 December 31, 2018 as the ability of each of these entities to repay remains strong.

At December 31, 2018, 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 December 31, 2018.

At December 31, 2018, 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 December 31, 2018, 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 December 31, 2018, our loan portfolio was \$15.27 billion and consisted of loans in the commercial loan

portfolio totaling \$9.51 billion, or 62.3% of total loans, and loans in the consumer loan portfolio totaling \$5.76 billion, or 37.7% 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 and additional communities located within 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 our loan portfolio.

Total loans were \$15.27 billion at December 31, 2018, an increase of \$1.11 billion, or 7.9%, from total loans of \$14.16 billion at December 31, 2017. The increase in total loans during 2018 was attributable to originated loan growth of \$2.10 billion, or 21.5%, partially offset by run-off in the acquired loan portfolio of \$982.8 million. Total loans increased \$1.16 billion, or 9.0%, during 2017, from total loans of \$12.99 billion at December 31, 2016, resulting from originated loan growth of \$2.29 billion, or 30.7%, partially offset by run-off in the acquired loan portfolio of \$1.12 billion.

The following table includes the composition of our loan portfolio, by major loan category, as of December 31 for each of the past five years.

	December 31,				
(Dollars in thousands)	2018	2017	2016	2015	2014
Commercial loan portfolio:					
Commercial	\$4,002,568	\$3,385,642	\$3,217,300	\$1,905,879	\$1,354,881
Commercial real estate:					
Owner-occupied	2,059,557	1,813,562	1,697,238	1,073,463	825,372
Non-owner occupied	2,785,020	2,606,761	2,217,594	982,280	690,018
Vacant land	67,510	80,347	58,308	56,419	42,258
Total commercial real estate	4,912,087	4,500,670	3,973,140	2,112,162	1,557,648
Real estate construction and land development	597,212	574,215	403,772	232,076	171,495
Subtotal — commercial loan portfolio	9,511,867	8,460,527	7,594,212	4,250,117	3,084,024
Consumer loan portfolio:					
Residential mortgage	3,458,666	3,252,487	3,086,474	1,429,636	1,110,390
Consumer installment	1,521,074	1,613,008	1,433,884	877,457	829,570
Home equity	778,172	829,245	876,209	713,937	664,246
Subtotal — consumer loan portfolio	5,757,912	5,694,740	5,396,567	3,021,030	2,604,206
Total loans	\$15,269,779	\$14,155,267	\$12,990,779	\$7,271,147	\$5,688,230

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 December 31, 2018 included 180 loan relationships of \$10.0 million or greater. These 180 loan relationships totaled \$3.92 billion, which represented 41.2% of the commercial loan portfolio at December 31, 2018 and included 102 loan relationships that had outstanding balances of \$15.0 million or higher, totaling \$2.97 billion, or 31.2% of the commercial loan portfolio, at that date. We had 63 loan relationships that had outstanding balances of \$20.0 million or higher, totaling \$2.29 billion, or 24.1% of the commercial loan portfolio, at December 31, 2018. We had 28 loan relationships at December 31, 2018 with loan balances greater than \$10.0 million and less than \$15.0 million, totaling \$366.2 million, that had unfunded credit commitments totaling \$188.6 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 December 31, 2018. Commercial loans at fixed interest rates comprised 51.1% of our total commercial loan portfolio at December 31, 2018, compared to 56.8% at December 31, 2017. The percentage of these loans maturing within one year was 21.4% at December 31, 2018, while the percentage of these loans maturing beyond five years was 22.8% at December 31, 2018. At December 31, 2018, loans in the commercial loan portfolio with maturities beyond one year totaled \$7.48 billion, with 56.6% of these loans at fixed interest rates.

(Dollars in thousands)	December 31, 2018			
	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

The following table presents the contractual maturities of our \$8.46 billion commercial loan portfolio at December 31, 2017.

(Dollars in thousands)	December 31, 2017			
	Due In 1 Year or Less	1 to 5 Years	Over 5 Years	Total
Loan maturities:				
Commercial	\$1,175,608	\$1,766,562	\$443,472	\$3,385,642
Commercial real estate:				
Owner-occupied	254,935	1,048,786	509,841	1,813,562
Non-owner occupied	304,692	1,493,661	808,408	2,606,761
Vacant land	21,211	41,334	17,802	80,347
Total commercial real estate	580,838	2,583,781	1,336,051	4,500,670
Real estate construction and land development	128,706	231,557	213,952	574,215
Total	\$1,885,152	\$4,581,900	\$1,993,475	\$8,460,527
Percent of total	22.3	% 54.1	% 23.6	% 100.00 %
Interest sensitivity of above loans:				
Fixed interest rates	\$717,547	\$3,074,906	\$1,013,538	\$4,805,991
Variable interest rates	1,167,605	1,506,994	979,937	3,654,536
Total	\$1,885,152	\$4,581,900	\$1,993,475	\$8,460,527

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 \$4.00 billion at December 31, 2018, an increase of \$616.9 million, or 18.2%, compared to \$3.39 billion at December 31, 2017. Originated commercial loans grew by \$879.5 million, or 36.5%, during 2018, partially offset by run-off in the acquired loan portfolio of \$262.6 million. Commercial loans increased \$168.3 million, or 5.2%, during 2017, compared to \$3.22 billion at December 31, 2016. Originated commercial loans grew by \$506.1 million, or 26.6%, during 2017, partially offset by run-off in the acquired portfolio of \$337.7 million. Commercial loans represented 26.2% of our loan portfolio at December 31, 2018, compared to 23.9% and 24.8% at December 31, 2017 and 2016, respectively.

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 \$4.91 billion at December 31, 2018, an increase of \$411.4 million, or 9.1%, compared to \$4.50 billion at December 31, 2017. Loans secured by owner occupied properties, non-owner occupied properties and vacant land comprised 41.9%, 56.7% and 1.4%, respectively, of our commercial real estate loans outstanding at December 31, 2018. Commercial real estate loans increased \$527.5 million, or 13.3%, during 2017, compared to \$3.97 billion at December 31, 2016. Commercial real estate loans represented 32.2% of our loan portfolio at December 31, 2018, compared to 31.8% and 30.6% at December 31, 2017 and 2016, respectively.

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 \$597.2 million at December 31, 2018, an increase of \$23.0 million, or 4.0%, compared to \$574.2 million at December 31, 2017. Real estate construction and land development loans increased \$170.4 million, or 42.2%, during 2017, compared to \$403.8 million at December 31, 2016. Real estate construction and land development loans represented 3.9% of our loan portfolio at December 31, 2018, compared to 4.1% and 3.1% at December 31, 2017 and 2016, respectively.

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 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, 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, 2017, \$0.3 million, or 0.1% of our \$574.2 million of real estate construction and land development loans were considered impaired.

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 \$3.46 billion at December 31, 2018, an increase of \$206.2 million, or 6.3%, compared to \$3.25 billion at December 31, 2017. Residential mortgage loans increased \$166.0 million during 2017

from residential mortgage loans of \$3.09 billion at December 31, 2016. 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 \$249.4 million at December 31, 2018, compared to \$272.3 million at December 31, 2017 and \$169.5 million at December 31, 2016. Residential mortgage loans represented 22.7% of our loan portfolio at December 31, 2018, compared to 23.0% and 23.8% at December 31, 2017 and 2016, respectively. We had residential mortgage loans with maturities beyond five years and that were at fixed interest rates totaling \$929.5 million at December 31, 2018, compared to \$495.8 million at December 31, 2017.

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 \$1.52 billion at December 31, 2018, a decrease of \$91.9 million, or 5.7%, compared to \$1.61

billion at December 31, 2017. Consumer installment loans increased \$179.1 million, or 12.5%, during 2017, compared to \$1.43 billion at December 31, 2016. At December 31, 2018, collateral securing consumer installment loans was comprised approximately as follows: automobiles - 52.7%; recreational vehicles - 22.6%; marine vehicles - 20.5%; other collateral - 1.8%; and unsecured - 2.4%. Consumer installment loans represented 10.0% of the loan portfolio at December 31, 2018, compared to 11.4% and 11.0% at December 31, 2017 and 2016, respectively.

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 \$778.2 million at December 31, 2018, a decrease of \$50.9 million, or 6.2%, from home equity loans of \$829.2 million at December 31, 2017. Home equity loans decreased \$47.0 million, or 5.4%, during 2017 from home equity loans of \$876.2 million at December 31, 2016. Home equity loans represented 5.1% of the loan portfolio at December 31, 2018, compared to 5.9% and 6.7% at December 31, 2017 and 2016, respectively. Home equity lines of credit comprised \$368.0 million, or 47.3% of our home equity loans at December 31, 2018, compared to \$396.2 million, or 47.8%, of home equity loans at December 31, 2017. 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 23 basis points during 2018, compared to 20 basis points during 2017. 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%, 4.6% and 3.6%, respectively, at December 31, 2018, compared to 4.7%, 4.7% and 3.4%, respectively, at December 31, 2017. The national average unemployment rate was 3.9% at December 31, 2018, compared to 4.1% at December 31, 2017.

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 our 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 \$91.7 million at December 31, 2018, an increase of \$19.8 million, or 27.5%, from \$71.9 million at December 31, 2017. The increase in nonperforming assets during 2018 was primarily attributable to one non-owner occupied loan relationship and one commercial loan relationship that we downgraded to nonaccrual status. Nonperforming assets increased \$10.4 million, or 16.9%, during 2017 from \$61.5 million at December 31, 2016. The

increase in nonperforming assets during 2017 was primarily attributable to two commercial loan credits, each greater than \$5 million, added during the year, with significant collateral coverage, partially offset by a decrease in other real estate and repossessed assets. Nonperforming assets represented 0.43%, 0.37% and 0.35% of total assets at December 31, 2018, 2017 and 2016, 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 five-year history of impaired assets.

	December 31,					
(Dollars in thousands)	2018	2017	2016	2015	2014	
Nonaccrual loans ⁽¹⁾ :						
Commercial loan portfolio:						
Commercial	\$30,139	\$19,691	\$13,178	\$28,554	\$16,418	
Commercial real estate:						
Owner-occupied	16,056	19,070	12,104	17,141	16,587	
Non-owner occupied	23,021	5,270	3,900	4,333	3,977	
Vacant land	3,337	5,205	3,873	3,689	4,402	
Total commercial real estate	42,414	29,545	19,877	25,163	24,966	
Real estate construction and land development	12	77	80	521	387	
Total commercial loan portfolio	72,565	49,313	33,135	54,238	41,771	
Consumer loan portfolio:						
Residential mortgage	7,988	8,635	6,969	5,557	6,706	
Consumer installment	1,276	842	879	451	500	
Home equity	3,604	4,305	3,351	1,979	1,667	
Total consumer loan portfolio	12,868	13,782	11,199	7,987	8,873	
Total nonaccrual loans	85,433	63,095	44,334	62,225	50,644	
Other real estate and repossessed assets	6,256	8,807	17,187	9,935	14,205	
Total nonperforming assets	91,689	71,902	61,521	72,160	64,849	
Accruing troubled debt restructurings						
Commercial loan portfolio	32,508	34,484	45,388	46,141	44,450	
Consumer loan portfolio	13,072	14,298	17,147	21,037	19,681	
Total performing troubled debt restructurings	45,580	48,782	62,535	67,178	64,131	
Total impaired assets	\$137,269	\$120,684	\$124,056	\$139,338	\$128,980	
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	\$939	\$13	\$288	\$618	\$170	
Consumer loan portfolio	488	1,364	995	1,669	1,903	
Total accruing loans contractually past due 90 days or more as to interest or principal payments	\$1,427	\$1,377	\$1,283	\$2,287	\$2,073	
Nonperforming loans as a percent of total loans	0.56	% 0.45	% 0.34	% 0.86	% 0.89	%
Nonperforming assets as a percent of total assets	0.43	% 0.37	% 0.35	% 0.79	% 0.89	%
Impaired assets as a percent of total assets	0.64	% 0.63	% 0.71	% 1.52	% 1.76	%

⁽¹⁾ Includes nonaccrual troubled debt restructurings.

Nonaccrual loans that meet the definition of a TDR (nonaccrual TDR) totaled \$28.1 million, \$29.1 million, \$30.5 million, \$35.9 million and \$37.2 million at December 31, 2018, 2017, 2016, 2015 and 2014, respectively. 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 December 31, 2018 and 2017 and partial loan charge-offs (confirmed losses) taken on these impaired loans:

(Dollars in thousands)	Amount	Valuation Allowance	Confirmed Losses	Cumulative Inherent Loss Percentage	
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	\$105,038	\$ 5,474	\$ 9,016	13	%
December 31, 2017					
Impaired loans — originated commercial loan portfolio:					
With valuation allowance and no charge-offs	\$48,622	\$ 4,618	\$ —	9	%
With valuation allowance and charge-offs	8,591	919	9,335	57	%
With charge-offs and no valuation allowance	4,695	—	2,568	35	%
Without valuation allowance or charge-offs	21,889	—	—	—	%
Total impaired loans to commercial borrowers	\$83,797	\$ 5,537	\$ 11,903	18	%

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 \$53.6 million at December 31, 2018 required a specific allocation of the allowance for loan losses (valuation allowance) of \$5.5 million, compared to \$57.2 million of impaired loans in the commercial loan portfolio at December 31, 2017 which 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 December 31, 2018 and 2017.

(Dollars in thousands)	December 31, 2018		2017	
	Amount	Percent of Total	Amount	Percent of Total
Commercial loan portfolio:				
Commercial	\$30,139	35.3 %	\$19,691	31.2 %
Commercial real estate:				
Owner-occupied	16,056	18.8	19,070	30.2
Non-owner occupied	23,021	26.9	5,270	8.4
Vacant land	3,337	3.9	5,205	8.3
Commercial real estate	42,414	49.6	29,545	46.9
Real estate construction and land development	12	—	77	0.1
Subtotal — commercial loan portfolio	72,565	84.9	49,313	78.2
Consumer loan portfolio:				
Residential mortgage	7,988	9.4	8,635	13.7
Consumer installment	1,276	1.5	842	1.3
Home equity	3,604	4.2	4,305	6.8
Subtotal — consumer loan portfolio	12,868	15.1	13,782	21.8
Total nonperforming loans	\$85,433	100.0 %	\$63,095	100.0 %

Total nonperforming loans were \$85.4 million at December 31, 2018, an increase of \$22.3 million, or 35.4%, compared to \$63.1 million at December 31, 2017. The increase in nonperforming loans during 2018 was primarily attributable to one non-owner occupied loan relationship and one commercial loan relationship that we downgraded to

nonaccrual status. Nonperforming

59

loans in the commercial loan portfolio were \$72.6 million at December 31, 2018, an increase of \$23.3 million, or 47.2%, from \$49.3 million at December 31, 2017. Nonperforming loans in the commercial loan portfolio comprised 84.9% of total nonperforming loans at December 31, 2018, compared to 78.2% at December 31, 2017. Nonperforming loans in the consumer loan portfolio were \$12.9 million at December 31, 2018, a decrease of \$0.9 million, or 6.6%, from \$13.8 million at December 31, 2017.

The following schedule summarizes changes in nonaccrual loans (including nonaccrual TDRs) during 2018 and 2017:

(Dollars in thousands)	Years Ended December 31,	
	2018	2017
Balance at beginning of period	\$ 63,095	\$ 44,334
Additions during period	105,032	57,936
Principal balances charged off	(15,033)	(13,392)
Transfers to other real estate/repossessed assets	(5,210)	(5,891)
Return to accrual status	(10,276)	(4,606)
Payments received	(52,175)	(15,286)
Balance at end of period	\$ 85,433	\$ 63,095

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 December 31, 2018 and 2017.

(Dollars in thousands)	December 31,		2017	
	2018	2017	2018	2017
	Number of Borrowers	Amount	Number of Borrowers	Amount
\$5,000,000 or more	1	\$14,121	2	\$10,426
\$2,500,000 - \$4,999,999	5	16,085	—	—
\$1,000,000 - \$2,499,999	4	6,059	7	10,063
\$500,000 - \$999,999	13	9,232	12	8,593
\$250,000 - \$499,999	29	10,390	27	9,473
Under \$250,000	225	16,678	150	10,758
Total	277	\$72,565	198	\$49,313

Nonperforming commercial loans within the commercial loan portfolio were \$30.1 million at December 31, 2018, an increase of \$10.4 million, or 53.1%, from \$19.7 million at December 31, 2017. Nonperforming commercial loans comprised 0.8% of total commercial loans at December 31, 2018, compared to 0.6% at December 31, 2017. There were no individual nonperforming commercial loans greater than \$2.0 million at December 31, 2018.

Nonperforming commercial real estate loans within the commercial loan portfolio were \$42.4 million at December 31, 2018, an increase of \$12.9 million, or 43.6%, from \$29.5 million at December 31, 2017. Nonperforming commercial real estate loans comprised 0.9% of total commercial real estate loans at December 31, 2018, compared to 0.7% at December 31, 2017. 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. Nonperforming commercial real estate loans secured by owner occupied real estate, non-owner occupied real estate and vacant land totaled \$19.1 million, \$5.3 million and \$5.2 million, respectively, at December 31, 2017. At December 31, 2018, 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 concentrations of the \$42.4 million in nonperforming commercial real estate loans at December 31, 2018 was one customer relationship totaling \$14.1 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 \$12 thousand at December 31, 2018, a decrease of \$65 thousand compared to \$77 thousand at December 31, 2017. Nonperforming real estate construction and land development loans comprised less than 0.01% of total real estate construction and land development loans at both December 31, 2018 and 2017.

At December 31, 2018, we had nonperforming loans in the commercial loan portfolio of \$1.1 million that were secured by real estate and were in various stages of foreclosure, compared to \$1.2 million at December 31, 2017.

Nonperforming Loans — Consumer Loan Portfolio

Nonperforming residential mortgage loans were \$8.0 million at December 31, 2018, a decrease of \$0.6 million, or 7.5%, from \$8.6 million at December 31, 2017. Nonperforming residential mortgage loans comprised 0.2% of total residential mortgage loans at December 31, 2018, compared to 0.3% at December 31, 2017. At December 31, 2018, a total of \$1.1 million of nonperforming residential mortgage loans were in various stages of foreclosure, compared to \$0.5 million at December 31, 2017.

Nonperforming consumer installment loans were \$1.3 million at December 31, 2018, compared to \$0.8 million at December 31, 2017. Nonperforming consumer installment loans comprised 0.1% of total consumer installment loans at both December 31, 2018 and 2017.

Nonperforming home equity loans were \$3.6 million at December 31, 2018, a decrease of \$0.7 million, or 16.3%, from \$4.3 million at December 31, 2017. Nonperforming home equity loans comprised 0.5% of total home equity loans at both December 31, 2018 and 2017.

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 December 31, 2018 and 2017:

(Dollars in thousands)	Accruing TDRs				
	Current	Past Due 31-89 Days	Sub- Total	Nonaccrual TDRs	Total
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
December 31, 2017					
Commercial loan portfolio	\$30,706	\$ 3,778	\$34,484	\$ 24,358	\$58,842
Consumer loan portfolio	13,552	746	14,298	4,748	19,046
Total TDRs	\$44,258	\$ 4,524	\$48,782	\$ 29,106	\$77,888

A summary of changes in accruing TDRs in the commercial loan portfolio follows:

(Dollars in thousands)	Years Ended	
	December 31, 2018	2017
Balance at beginning of period	\$34,484	\$45,388
Additions for modifications	13,137	5,273
Principal payments and pay-offs	(7,810)	(8,530)
Transfers from nonaccrual status	2,242	3,286
Transfers to nonaccrual status	(9,545)	(10,933)
Balance at end of period	\$32,508	\$34,484

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 \$5.8 million at December 31, 2018, a decrease of \$2.4 million, or 28.7%, from \$8.2 million at December 31, 2017. The decrease in ORE during 2018 was primarily attributable to ORE sales. Repossessed assets decreased to \$0.4 million at December 31, 2018, compared to \$0.6 million at December 31, 2017.

The following schedule provides the composition of ORE at December 31, 2018 and 2017:

	December 31,	
(Dollars in thousands)	2018	2017
Composition of ORE:		
Vacant land	\$305	\$2,064
Commercial real estate properties	2,465	3,363
Residential real estate properties	3,062	2,755
Total ORE	\$5,832	\$8,182

The following schedule summarizes ORE activity for the years ended December 31, 2018, 2017, and 2016:

	Years Ended December 31,		
(Dollars in thousands)	2018	2017	2016
Balance at beginning of year	\$8,182	\$16,812	\$9,716
Transfers based on adoption of ASU 2014-09 ⁽¹⁾	(189)	—	—
Additions attributable to acquisitions (at fair value)	—	—	13,227
Additions ⁽²⁾	7,179	6,905	9,938
Write-downs	(1,266)	(1,640)	(636)
Net payments received	(249)	(1,064)	(1,560)
Dispositions	(7,825)	(12,831)	(13,873)
Balance at end of year	\$5,832	\$8,182	\$16,812

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 Classified Statements of Financial Position to loans

⁽¹⁾ and the related \$0.9 million of deferred gains were recognized in income as an adjustment to opening retained earnings. Refer to Note 1, Summary of Significant Accounting Policies to our Consolidated Financial Statements 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 \$0.7 million in ORE at December 31, 2018 that had been held in excess of one year, of which \$0.1 million had been held in excess of three years. We had \$10.7 million of nonperforming loans that were in the process of foreclosure at December 31, 2018. 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 December 31, 2018, the carrying value of ORE of \$5.8 million was reflective of \$1.1 million in charge-offs, write-downs and acquisition-related fair value adjustments. During 2018, we sold 119 ORE properties for net proceeds of \$9.2 million. On an average basis, the net proceeds from these sales represented 116% of the carrying value of the property at the time of sale, with the net proceeds representing 62% 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 \$420 thousand of allowance established for our acquired loan portfolios at December 31, 2018, compared to no allowance at December 31, 2017.

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 the allowance for loan losses:

	December 31,					
(Dollars in thousands)	2018	2017	2016	2015	2014	
Allowance for loan losses:						
Originated loans	\$ 109,564	\$ 91,887	\$ 78,268	\$ 73,328	\$ 75,183	
Acquired loans	420	—	—	—	500	
Total	\$ 109,984	\$ 91,887	\$ 78,268	\$ 73,328	\$ 75,683	
Originated loans	\$ 11,844,756	\$ 9,747,429	\$ 7,458,401	\$ 5,807,934	\$ 4,990,067	
Acquired loans	3,425,023	4,407,838	5,532,378	1,463,213	698,163	
Total loans	\$ 15,269,779	\$ 14,155,267	\$ 12,990,779	\$ 7,271,147	\$ 5,688,230	
Nonperforming loans	\$ 85,433	\$ 63,095	\$ 44,334	\$ 62,225	\$ 50,644	
Allowance for originated loan losses as a percent of:						
Total originated loans	0.93	% 0.94	% 1.05	% 1.26	% 1.51	%
Nonperforming loans	128	% 146	% 177	% 118	% 148	%
	144	% 157	% 194	% 169	% 216	%

Nonperforming loans, less impaired
 originated loans for which the expected
 loss has been charged-off

Credit mark as a percent of unpaid principal balance on acquired loans	1.7	% 2.4	% 3.1	% 4.4	% 5.4	%
---	-----	-------	-------	-------	-------	---

63

A summary of the activity in the allowance for loan losses for the five years ended December 31, 2018 is included in the table below.

	Years Ended December 31,				
(Dollars in thousands)	2018	2017	2016	2015	2014
Allowance for loan losses - originated loan portfolio					
Allowance for loan losses - beginning of year	\$91,887	\$78,268	\$73,328	\$75,183	\$78,572
Provision for loan losses	30,330	23,300	14,875	6,500	6,100
Loan charge-offs:					
Commercial	(4,775)	(7,274)	(6,012)	(3,051)	(3,169)
Commercial real estate:					
Owner-occupied	(2,332)	(996)	(2,318)	(2,123)	(1,483)
Non-owner occupied	(1,071)	(161)	(268)	(523)	(1,175)
Vacant land	(1,376)	(129)	(266)	(47)	(271)
Total commercial real estate	(4,779)	(1,286)	(2,852)	(2,693)	(2,929)
Real estate construction and land development	(9)	(10)	(42)	(141)	(301)
Residential mortgage	(1,475)	(1,206)	(1,080)	(2,427)	(2,277)
Consumer installment	(6,377)	(6,281)	(4,751)	(4,182)	(4,194)
Home equity	(1,049)	(810)	(565)	(507)	(1,359)
Total loan charge-offs	(18,464)	(16,867)	(15,302)	(13,001)	(14,229)
Recoveries of loans previously charged off:					
Commercial	1,815	2,075	1,258	970	900
Commercial real estate:					
Owner-occupied	1,119	1,146	892	639	473
Non-owner occupied	555	888	889	547	392
Vacant land	9	386	10	32	8
Total Commercial real estate	1,683	2,420	1,791	1,218	873
Real estate construction and land development	35	—	36	—	836
Residential mortgage	318	472	376	515	651
Consumer installment	1,683	2,049	1,703	1,391	1,279
Home equity	277	170	203	552	201
Total loan recoveries	5,811	7,186	5,367	4,646	4,740
Net loan charge-offs	(12,653)	(9,681)	(9,935)	(8,355)	(9,489)
Allowance for loan losses - end of year	109,564	91,887	78,268	73,328	75,183
Allowance for loan losses - acquired loan portfolio					
Allowance for loan losses - beginning of period	—	—	—	500	500
Provision for loan losses	420	—	—	—	—
Net loan charge-offs - acquired (commercial)	—	—	—	(500)	—
Allowance for loan losses - end of period	420	—	—	—	500
Total allowance for loan losses	\$109,984	\$91,887	\$78,268	\$73,328	\$75,683
Net loan charge-offs as a percentage of average loans	0.09 %	0.07 %	0.11 %	0.13 %	0.19 %

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.

	December 31, 2018			2017			2016			2015			2014		
	Percent of Loans			Percent of Loans			Percent of Loans			Percent of Loans			Percent of Loans		
(Dollars in thousands)	Allowance Amount	in Each Category to Total Loans		Allowance Amount	in Each Category to Total Loans		Allowance Amount	in Each Category to Total Loans		Allowance Amount	in Each Category to Total Loans		Allowance Amount	in Each Category to Total Loans	
Originated loans:															
Commercial	\$36,931	21	%	\$25,329	17	%	\$22,388	14	%	\$21,909	20	%	\$17,951	22	%
Commercial real estate:															
Owner-occupied	19,586	10		15,664	8		12,275	7		12,941	11		13,883	12	
Non-owner occupied	21,789	13		18,309	11		12,569	7		9,207	8		8,955	8	
Vacant land	532	—		1,145	—		552	1		662	1		709	1	
Total commercial real estate	41,907	23		35,118	19		25,396	15		22,810	20		23,547	21	
Real estate construction and land development	3,921	4		5,686	4		3,417	2		2,515	3		2,658	3	
Residential mortgage	14,815	16		13,375	14		13,760	11		14,308	17		11,286	18	
Consumer Installment	8,542	10		8,577	11		8,907	10		5,677	12		9,411	14	
Home equity	3,448	4		3,802	4		4,400	5		6,109	8		7,606	10	
Unallocated	—	—		—	—		—	—		—	—		2,724	—	
Subtotal — originated loans	109,564	78	%	91,887	69	%	78,268	57	%	73,328	80	%	75,183	88	%
Acquired loans	420	22	%	—	31	%	—	43	%	—	20	%	500	12	%
Total	\$109,984	100	%	\$91,887	100	%	\$78,268	100	%	\$73,328	100	%	\$75,683	100	%

Deposits

Total deposits were \$15.59 billion at December 31, 2018, an increase of \$1.95 billion, or 14.3%, from total deposits at December 31, 2017 of \$13.64 billion. The increase in total deposits during 2018 was spread across all deposit types. Interest and noninterest-bearing demand deposit, and savings and money market accounts totaled \$11.22 billion at December 31, 2018, compared to \$10.10 billion at December 31, 2017. Time and brokered deposits were \$4.37 billion at December 31, 2018, compared to \$3.54 billion at December 31, 2017.

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 2018 and 2017, 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 continuing increases in customer deposits.

At December 31, 2018, time deposits, which consist of certificates of deposit, including CDARs, IRA deposits and other brokered funds, totaled \$4.07 billion, of which \$2.78 billion have stated maturities in 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 December 31, 2018:

(Dollars in thousands)	Amount	Weighted Average Interest Rate
2019 maturities:		
First quarter	\$952,768	1.71 %
Second quarter	926,723	1.83
Third quarter	448,972	1.89
Fourth quarter	447,634	2.02
Total 2019 maturities	2,776,097	1.83
2020 maturities	1,032,314	2.26
2021 maturities	148,995	1.52
2022 maturities	82,076	1.58
2023 maturities	33,900	1.63
2024 maturities and beyond	866	1.49
Total time deposits	\$4,074,248	1.92 %

The below table presents the maturity distribution of time deposits of \$250,000 or more at December 31, 2018. Time deposits of \$250,000 or more totaled \$2.07 billion and represented 13.3% of total deposits at December 31, 2018.

	December 31, 2018	
(Dollars in thousands)	Amount	Percent
Maturity:		
Within 3 months	\$702,450	33.9 %
After 3 but within 6 months	558,065	26.9
After 6 but within 12 months	514,775	24.8
After 12 months	299,633	14.4
Total	\$2,074,923	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 Federal Home Loan Bank ("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. Long-term borrowings consist of long-term FHLB advances and subordinated debt obligations. Long-term borrowings also included a non-revolving line-of-credit as of December 31, 2017.

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 \$382.7 million and \$415.2 million at December 31, 2018 and 2017, respectively.

Short-term Borrowings

Short-term borrowings were \$2.04 billion and \$2.00 billion at December 31, 2018 and 2017, respectively, and were comprised of FHLB borrowings at each period end. Short-term borrowings increased \$35.0 million, or 1.8%, during 2018, primarily due to the addition of short-term FHLB advances used to fund short-term liquidity needs resulting from loan growth and an increase in investment securities.

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 \$7.81 billion at December 31, 2018. We rely on short-term FHLB advances to cover short-term liquidity needs.

(Dollars in thousands)	December 31,			
	2018	2017	2016	
Short-term borrowings:				
Short-term FHLB advances				
Maximum outstanding at any month-end during the year	\$2,400,000	\$2,000,000	\$825,000	
Balance outstanding at end of year	\$2,035,000	\$2,000,000	\$825,000	
Weighted average interest rate at end of year	2.47	% 1.39	% 0.65	%
Average balance outstanding during the year	\$1,962,288	\$1,612,123	\$277,391	
Weighted average interest rate during the year	1.90	% 1.18	% 0.49	%
Federal Funds Purchased and Other Short-Term Borrowings				
Maximum outstanding at any month-end during the year	\$—	\$—	\$—	
Balance outstanding at end of year	\$—	\$—	\$—	
Weighted average interest rate at end of year	—	% —	% —	%
Average balance outstanding during the year	\$7,721	\$—	\$—	
Weighted average interest rate during the year	3.96	% —	% —	%

Long-term Borrowings

Long-term borrowings were \$426.0 million and \$372.9 million at December 31, 2018 and 2017, respectively.

Long-term borrowings increased \$53.1 million, or 14.2%, during 2018, primarily due to an increase in funding to support our asset growth. Our line-of-credit relationship was repaid in the second quarter of 2018 and the contract ended in the third quarter of 2018.

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

(Dollars in thousands)	December 31,	
	2018	2017
Long-term borrowings:		
Long-term FHLB advances	\$410,102	\$337,204
Non-revolving line-of-credit	—	19,963
Subordinated debt obligations	15,900	15,715
Total long-term borrowings	\$426,002	\$372,882

Contractual Obligations and Credit-Related Commitments

We have various financial obligations, including contractual obligations and commitments, which may require future cash payments. Refer to Note 1, Note 13, Note 14 and Note 15 to our Consolidated Financial Statements for a further discussion of these contractual obligations.

Contractual Obligations

The following schedule summarizes the aggregate contractual obligations and commitments at December 31, 2018.

(Dollars in thousands)	December 31, 2018				
	Minimum Payments Due by Period				
	Less than 1 year	1-3 years	3-5 years	More than 5 years	Total
Contractual Obligations:					
Deposits with no stated maturity ⁽¹⁾	\$11,519,034	\$—	\$—	\$—	\$11,519,034
Time deposits with a stated maturity ⁽¹⁾	2,776,097	1,181,309	115,976	866	4,074,248
Short-term borrowings ⁽¹⁾	2,035,000	—	—	—	2,035,000
Long-term borrowings ⁽¹⁾	100,058	110,044	—	215,900	426,002
Operating leases ⁽²⁾	7,251	11,374	9,150	12,107	39,882
Other noncancelable contracts	46,225	68,896	57,973	46,771	219,865
Other contractual obligations ⁽³⁾	40,821	31,640	143	321	72,925
Total contractual obligations	\$16,524,486	\$1,403,263	\$183,242	\$275,965	\$18,386,956

⁽¹⁾ Deposits, short-term borrowings and long-term borrowings exclude accrued interest.

⁽²⁾ Future minimum lease payments are reduced by \$632 thousand related to sublease income to be received in the following periods: \$211 thousand (less than 1 year); \$421 thousand (1 to 3 years).

⁽³⁾ Includes commitments to fund qualified low income housing and other tax investment projects, private equity capital investments and other similar types of investments.

Credit-Related Commitments

We also have credit-related commitments that may impact liquidity. The following schedule summarizes credit-related commitments and expected expiration dates by period as of December 31, 2018. 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	\$1,502,175	\$886,211	\$330,077	\$212,992	\$2,931,455
Loans to consumer borrowers	113,566	131,422	163,525	210,627	619,140
Total unused commitments to extend credit	1,615,741	1,017,633	493,602	423,619	3,550,595
Undisbursed loan commitments ⁽¹⁾	493,286	—	—	—	493,286
Standby letters of credit	61,777	18,313	21,810	17,081	118,981
Total credit-related commitments	\$2,170,804	\$1,035,946	\$515,412	\$440,700	\$4,162,862

⁽¹⁾ Excludes \$67.9 million of residential mortgage loan originations that were expected to be sold in the secondary market.

Cash Dividends

Annual cash dividends paid per common share over the past five years were as follows:

Years Ended December 31,
2018 2017 2016 2015 2014

Annual Cash Dividend (per common share) \$1.24 \$1.10 \$1.06 \$1.00 \$0.94

We have paid regular cash dividends every quarter since we began operating as a bank holding company in 1973. The earnings of Chemical Bank have been the principal source of funds to pay cash dividends to shareholders. Over the long term, cash dividends to shareholders are dependent upon earnings, capital requirements, legal and regulatory restraints and other factors affecting Chemical and Chemical Bank. On January 22, 2019, we declared a cash dividend on our common stock of \$0.34 per share. The dividend will be paid on March 15, 2019 to shareholders of record as of March 1, 2019. Refer to Note 21 to our Consolidated Financial Statements for a further discussion of factors affecting cash dividends.

Capital

Capital supports current operations and provides the foundation for future growth and expansion. Our total shareholders' equity was \$2.84 billion at December 31, 2018, an increase of \$167.5 million, or 6.3%, from total shareholders' equity of \$2.67 billion at December 31, 2017. Our total shareholders' equity as a percentage of total assets was 13.2% at December 31, 2018, compared to 13.8% at December 31, 2017. Our tangible shareholders' equity, which is defined as total shareholders' equity less goodwill and other acquired intangible assets, totaled \$1.68 billion and \$1.51 billion at December 31, 2018 and 2017, respectively. Our tangible shareholders' equity to tangible assets ratio was 8.3% at both December 31, 2018 and 2017. 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 \$16.10 billion and \$16.07 billion, respectively, at December 31, 2018, compared to \$14.74 billion and \$14.70 billion, respectively, at December 31, 2017. The increase in risk-weighted assets during 2018 was largely attributable to originated loan growth and 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 three-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 while remaining 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 as shown in the following schedule:

	Leverage Ratio		Common Equity Tier 1 Capital Ratio		Tier 1 Risk-Based Capital Ratio		Total Risk-Based Capital Ratio	
December 31, 2018								
Actual Capital Ratios:								
Chemical Financial Corporation	8.7	%	10.7	%	10.7	%	11.5	%
Chemical Bank	8.6		10.6		10.6		11.4	
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 December 31, 2018, Chemical's and Chemical Bank's regulatory capital ratios were above the well-capitalized standards and met the then-applicable capital conservation buffer and the capital conservation buffer on a fully phased-in basis. See Note 21 to our Consolidated Financial Statements for more information regarding Chemical's and Chemical Bank's regulatory capital ratios.

Shelf Registration

On May 10, 2017, we filed an updated automatic shelf registration statement on Form S-3ASR with the SEC for an indeterminate amount of securities, which became immediately effective. The shelf registration statement provides us with the ability to raise capital, subject to SEC rules and limitations, if the board of directors decides to do so.

Results of Operations

Overview

Our net income in 2018 was \$284.0 million, or \$3.94, per diluted share, compared to net income in 2017 of \$149.5 million, or \$2.08 per diluted share, and net income in 2016 of \$108.0 million, or \$2.17 per diluted share. Net income in 2017, excluding significant items, a non-GAAP financial measure, was \$219.6 million, or \$3.06 per diluted share. Significant items in 2017 consisted of a \$46.7 million charge to income tax expense resulting from the revaluation of our net deferred tax assets completed following the signing of the Tax Cuts and Jobs Act in December 2017, merger and restructuring expenses of \$28.4 million and fourth quarter of 2017 losses of \$7.6 million on sales of investment securities as part of our treasury and tax management objectives. Net income in 2016, excluding significant items, a non-GAAP financial measure, was \$143.7 million, or \$2.88 per diluted share. Significant items in 2016 consisted of merger expenses of \$61.1 million and a \$7.4 million net gain on the sales of branches. We had no significant items during 2018. The increase in net income in 2018, excluding significant items, compared to 2017, was driven by an increase in net interest income, largely due to an increase in average balances and yields earned on loans and investment securities, partially offset by increases in average deposit balances and cost of funds, as well as the benefit from a decrease in our income tax following the enactment of the Tax Cuts and Jobs Act, which reduced the federal corporate tax rate to 21% from 35%, effective January 1, 2018. The increase in net income in 2017, excluding significant items, compared to 2016, was primarily attributable to an increase in net interest income, resulting from an increase in average loans and securities and the impact of our merger with Talmer.

Return on average assets was 1.41% in 2018, compared to 0.81% in 2017, and 0.90% in 2016. Return on average assets, excluding significant items, a non-GAAP financial measure, was 1.19% in both 2017 and 2016. Return on average shareholders' equity was 10.4% in 2018, compared to 5.7% in 2017 and 7.0% in 2016. Return on average shareholders' equity, excluding significant items, was 8.4% in 2017 and 9.3% in 2016. Our return on average tangible shareholders' equity was 17.9% in 2018, compared to 10.2% in 2017 and 11.2% in 2016. Our return on average tangible equity in both 2017 and 2016, excluding significant items, a non-GAAP financial measure, was 14.9%. 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 81.0%, 79.5% and 75.7% of net revenue in 2018, 2017 and 2016, respectively. 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. 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 2018, 2017 and 2016. 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."

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

	Years Ended December 31, 2018			2017			2016			
(Dollars in thousands)	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⁾	\$ 14,605,963	\$ 678,911	4.65 %	\$ 13,607,683	\$ 576,429	4.24 %	\$ 9,304,573	\$ 386,575	4.15 %	
Taxable investment securities	2,098,894	62,231	2.96	1,431,167	31,496	2.20	706,567	10,989	1.56	
Tax-exempt investment securities ⁽¹⁾	1,036,269	30,708	2.96	905,831	28,120	3.10	595,677	18,929	3.18	
Other interest-earning assets	189,153	7,877	4.16	157,738	4,924	3.12	55,341	1,973	3.57	
Interest-bearing deposits with FRB and other banks and federal funds sold	263,210	5,727	2.18	298,006	4,244	1.42	194,637	1,555	0.80	
Total interest-earning assets	18,193,489	785,454	4.32 %	16,400,425	645,213	3.93 %	10,856,795	420,021	3.87 %	
Less: Allowance for loan losses	(99,152)			(82,644)			(73,136)			
Other assets:										
Cash and cash due from banks	215,284			235,621			186,706			
Premises and equipment	125,606			144,114			118,080			
Interest receivable and other assets	1,765,303			1,767,640			948,710			
Total assets	\$ 20,200,530			\$ 18,465,156			\$ 12,037,155			
Liabilities and shareholders' equity										
Interest-bearing liabilities:										
Interest-bearing demand deposits	\$ 2,786,138	\$ 10,029	0.36 %	\$ 2,753,294	\$ 4,870	0.18 %	\$ 2,143,064	\$ 3,277	0.15 %	
Savings deposits	4,246,063	29,636	0.70	3,940,499	13,049	0.33	2,534,038	2,877	0.11	
Time deposits	3,654,470	57,315	1.57	3,014,302	28,808	0.96	2,154,118	16,867	0.78	
Collateralized customer deposits	391,703	2,607	0.67	366,828	1,269	0.35	294,101	303	0.10	
Short-term borrowings	1,970,009	37,510	1.90	1,612,123	19,052	1.18	277,409	1,357	0.49	
Long-term borrowings	369,910	6,566	1.77	455,246	7,509	1.67	418,636	4,617	1.10	

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

Total interest-bearing liabilities	13,418,293	143,663	1.07	12,142,292	74,557	0.61	7,821,366	29,298	0.37
Noninterest-bearing deposits	3,845,773	—	—	3,547,271	—	—	2,566,342	—	—
Total deposits and borrowed funds	17,264,066	143,663	0.83	15,689,563	74,557	0.48	10,387,708	29,298	0.28
Interest payable and other liabilities	196,065			147,731			102,726		
Shareholders' equity	2,740,399			2,627,862			1,546,721		
Total liabilities and shareholders' equity	\$20,200,530			\$18,465,156			\$12,037,155		
Net Interest Spread (average yield earned minus average rate paid)			3.25 %			3.32 %			3.50 %
Net Interest Income (FTE)		\$641,791			\$570,656			\$390,723	
Net Interest Margin (Net interest income (FTE) divided by total average interest-earning assets)			3.53 %			3.48 %			3.60 %
Reconciliation to Reported Net Interest Income									
Net interest income, fully taxable equivalent (non-GAAP)		\$641,791			\$570,656			\$390,723	
Adjustments for taxable equivalent interest ⁽¹⁾ :									
Loans		(3,036)			(3,301)			(3,030)	
Tax-exempt investment securities		(6,422)			(9,777)			(6,612)	
Total taxable equivalent interest adjustments		(9,458)			(13,078)			(9,642)	
Net interest income (GAAP)		\$632,333			\$557,578			\$381,081	
Net interest margin (GAAP)		3.48 %			3.40 %			3.51 %	

⁽¹⁾ Fully taxable equivalent (FTE) basis using a federal income tax rate of 21% for 2018 and 35% for 2017 and 2016. 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. Also, tax equivalent interest includes net loan fees.

Net interest income (FTE) of \$641.8 million in 2018 was \$71.1 million, or 12.5%, higher than net interest income (FTE) of \$570.7 million in 2017, primarily attributable to increases in average balances and yields earned on loans and investment securities, partially offset by an increase in our average balances of deposits and cost of funds. The net interest margin (FTE) increased to 3.53% in 2018, compared to 3.48% in 2017. The average yield on interest-earning assets increased 39 basis points to 4.32% in 2018 from 3.93% in 2017, with the increase primarily attributable to the benefit received from the increases in volume and yields earned on loans and taxable investment securities. The average yield on loans increased 41 basis points to 4.65% in 2018 from 4.24% in 2017. Interest accretion from purchase accounting discounts on acquired loans contributed 25 basis points to the net interest margin (FTE) in 2018, compared to 20 basis points in 2017. The increase in our investment securities portfolio was primarily due to management's long-term plan to increase investment securities as a percent of total assets. The average cost of interest-bearing liabilities increased 46 basis points to 1.07% in 2018 from 0.61% in 2017, primarily due to an increase in funding costs resulting from a rising interest rate environment combined with an increase in average balances of deposits and short-term borrowings.

Net interest income (FTE) of \$570.7 million in 2017 was \$179.9 million, or 46.1%, higher than net interest income (FTE) of \$390.7 million in 2016. The increase in net interest income (FTE) in 2017, compared to 2016, was primarily attributable to originated loan growth, and increases in the investment securities portfolio and interest accretion from purchase accounting discounts on acquired loans. The net interest margin (FTE) was 3.48% in 2017, compared to 3.60% in 2016. The average yield on interest-earning assets increased six basis points to 3.93% in 2017 from 3.87% in 2016, with the increase primarily attributable to increases and improvement in yield earned in our investment securities portfolio. Interest accretion from purchase accounting discounts on acquired loans contributed 20 basis points to the net interest margin (FTE) in 2017, compared to nine basis points in 2016, with the increase primarily due to the addition of the loans from our merger with Talmer in August of 2016. The average yield on loans increased nine basis points to 4.24% in 2017 from 4.15% in 2016, primarily due to the increased benefit from interest accretion from purchase accounting discounts on acquired loans. The average cost of interest-bearing liabilities increased 24 basis points to 0.61% in 2017 from 0.37% in 2016, primarily due to an increase in short-term borrowings and deposit rates, both resulting from a rise in market rates.

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 Statement 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" in Item 7A of this Annual Report. 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, 4.50% in December 2017, 4.25% in June 2017, 4.00% in March 2017 and 3.50% in December 2016. 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)	2018 Compared to 2017			2017 Compared to 2016		
	Increase (Decrease)			Increase (Decrease)		
	Due to Changes in Average Volume ⁽¹⁾	Average Yield/Rate ⁽¹⁾	Combined Increase/(Decrease)	Due to Changes in Average Volume ⁽¹⁾	Average Yield/Rate ⁽¹⁾	Combined Increase/(Decrease)
Changes in Interest Income on Interest-Earning Assets:						
Loans	\$48,225	\$54,257	\$102,482	\$185,042	\$4,812	\$189,854
Taxable investment securities/other assets	18,843	14,845	33,688	17,914	5,544	23,458
Tax-exempt investment securities	3,928	(1,340)	2,588	9,689	(498)	9,191
Interest-bearing deposits with the FRB and other banks	(671)	2,154	1,483	1,615	1,074	2,689
Total change in interest income on interest-earning assets	70,325	69,916	140,241	214,260	10,932	225,192
Changes in Interest Expense on Interest-Bearing Liabilities:						
Interest-bearing demand deposits	60	5,099	5,159	1,015	578	1,593
Savings deposits	3,027	13,560	16,587	3,726	6,446	10,172
Time deposits	7,477	21,030	28,507	7,995	3,946	11,941
Collateralized customer deposits	92	1,246	1,338	87	879	966
Short-term borrowings	4,865	13,593	18,458	13,689	4,006	17,695
Long-term borrowings	(2,998)	2,055	(943)	950	1,942	2,892
Total change in interest expense on interest-bearing liabilities	12,523	56,583	69,106	27,462	17,797	45,259
Total Change in Net Interest Income (FTE) ⁽²⁾	\$57,802	\$13,333	\$71,135	\$186,798	\$(6,865)	\$179,933

(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.

Fully taxable equivalent basis using a federal income tax rate of 21% in 2018 and 35% for 2017 and 2016. The

(2) 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 \$30.8 million in 2018, compared to \$23.3 million in 2017 and \$14.9 million in 2016. The increase in the provision in 2018, compared to 2017, was primarily due to the continued growth in our originated loan portfolio as a percentage of our total loans, an increase in impaired loans and impairment recorded resulting from our quarterly re-estimation of cash flows on acquired loans. Net originated loan growth was \$2.10 billion in 2018, which was partially offset by run-off in our acquired loan portfolio of \$0.98 billion during the same period. All acquired loans were recorded at their estimated fair value at each respective acquisition date without a carryover of the related allowance and, as of December 31, 2018, the allowance recorded for this population of loans was \$420 thousand, compared to no allowance at December 31, 2017.

We experienced net loan charge-offs of \$12.7 million, or 0.09% of average loans, in 2018, compared to \$9.7 million, or 0.07% of average loans, in 2017 and \$9.9 million, or 0.11% of average loans, in 2016. Net loan charge-offs in the commercial loan portfolio totaled \$6.0 million in 2018, compared to \$4.1 million in 2017 and \$5.8 million in 2016 and represented 47.7% of total net loan charge-offs during 2018, compared to 42.1% during 2017 and 58.6% during 2016. Net loan charge-offs in the consumer loan portfolio totaled \$6.6 million in 2018, compared to \$5.6 million in 2017 and \$4.1 million in 2016.

Noninterest Income

The following table presents the major components of noninterest income:

(Dollars in thousands)	Years Ended December 31,		
	2018	2017	2016
Noninterest income			
Service charges and fees on deposit accounts	\$37,097	\$38,367	\$30,724
Wealth management revenue	25,996	25,512	22,601
Electronic banking fees ⁽¹⁾	16,777	22,646	22,115
Net gain on sale of loans and other mortgage banking revenue ⁽²⁾	33,366	38,580	16,747
Change in fair value in loan servicing rights ⁽²⁾	1,827	(6,375)	5,112
Other fees for customer services ⁽¹⁾	4,599	4,965	3,669
Insurance commissions ⁽¹⁾	61	1,794	1,874
Gain (loss) on sale of investment securities	224	(7,388)	129
Bank-owned life insurance ⁽³⁾	4,000	4,818	1,836
Rental income ⁽³⁾	750	762	592
Gain on sale of branch offices	—	—	7,391
Other ⁽³⁾	23,839	20,338	9,560
Total noninterest income	\$148,536	\$144,019	\$122,350
Significant items ⁽⁴⁾	—	(7,556)	7,391
Noninterest income excluding significant items ⁽⁴⁾⁽⁵⁾	\$148,536	\$151,575	\$114,959
Noninterest income as a percentage of:			
Net revenue (net interest income plus noninterest income)	19.0	% 20.5	% 24.3 %
Average total assets	0.74	% 0.78	% 1.02 %
Net revenue, excluding significant items ⁽⁴⁾⁽⁵⁾	19.0	% 21.4	% 23.2 %
Average total assets, excluding significant items ⁽⁴⁾⁽⁵⁾	0.74	% 0.82	% 0.96 %

(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.

For 2017, "significant items" include the fourth quarter of 2017 losses on sales of investment securities taken as part of our treasury and tax management objectives following the signing of the Tax Cuts and Jobs Act. For 2016, "significant items" include net gain on the sales of branch offices.

(5) Noninterest income, excluding significant items, as a percentage of net revenue and average total assets, are non-GAAP financial measures. See the section entitled "Non-GAAP Financial Measures."

Noninterest income was \$148.5 million in 2018, \$144.0 million in 2017 and \$122.4 million in 2016. Noninterest income in 2017 included a \$7.6 million loss incurred on sales of investment securities as part of our treasury and tax management objectives following the signing of the Tax Cuts and Jobs Act, noted as a significant item for 2017, and 2016 included \$7.4 million of net gain on the sales of branches, noted as a significant item for 2016. The \$3.0 million decrease in noninterest income in 2018, when compared to 2017, excluding significant items, was primarily due to decreases in electronic banking fees of \$5.9 million, net gain on sale of loans and other mortgage banking revenue of \$5.2 million and service charges and fees on deposit accounts of \$1.3 million, partially offset by the change in the impact to earnings from the change in fair value in loan servicing rights of \$8.2 million and an increase in "other" noninterest income of \$3.5 million which benefited from an increase in interest rate swap income. Noninterest income, excluding significant items, in 2017, compared to 2016, increased \$36.6 million, or 31.9%, with the increase primarily attributable to the incremental revenue resulting from the addition of Talmer into our operations in addition to growth in deposits and services.

Service charges and fees on deposit accounts, which include overdraft/non-sufficient funds fees, checking account fees and other deposit account charges, were \$37.1 million in 2018, \$38.4 million in 2017 and \$30.7 million in 2016.

Service charges and fees on deposit accounts decreased \$1.3 million, or 3.3%, in 2018, compared to 2017, primarily due to a decrease in overdraft/non-sufficient funds fees as a temporary hold was placed on charging certain account types during our system conversion, partially offset by an increase in checking account service fees. Service charges and fees on deposits accounts increased \$7.6 million, or 24.9%, in 2017, compared to 2016, primarily due to additional fees earned as a result of our merger with Talmer and organic

growth in customer deposit accounts. Overdraft/non-sufficient funds fees included in service charges and fees on deposit accounts were \$22.3 million in 2018, compared to \$25.1 million in 2017 and \$21.0 million in 2016.

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 \$26.0 million in 2018, \$25.5 million in 2017 and \$22.6 million in 2016. Wealth management revenue increased \$0.5 million, or 1.9%, in 2018, compared to 2017, and increased \$2.9 million, or 12.9%, in 2017, compared to 2016. The increase in 2017, compared to 2016, was primarily due to increases in average trust assets under administration and fees from the sale of investment products.

At December 31, 2018, the estimated fair value of trust assets under administration was \$4.60 billion (including discretionary assets of \$2.42 billion and nondiscretionary assets of \$2.19 billion), compared to \$5.13 billion at December 31, 2017 (including discretionary assets of \$2.67 billion and nondiscretionary assets of \$2.46 billion), and \$4.41 billion at December 31, 2016 (including discretionary assets of \$2.43 billion and nondiscretionary assets of \$1.97 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 \$5.4 million in 2018, compared to \$5.2 million in 2017 and \$4.7 million in 2016. We had customer assets in the Chemical Financial Advisors program of \$1.17 billion at December 31, 2018, compared to \$1.31 billion at December 31, 2017 and \$1.15 billion at December 31, 2016.

Electronic banking fees, which represent income earned from ATM transactions, debit card activity and internet banking fees, were \$16.8 million in 2018, \$22.6 million in 2017 and \$22.1 million in 2016. Electronic banking fees decreased \$5.8 million, or 25.9%, in 2018, compared to 2017, primarily due to a reduction in interchange fees resulting from limitations set by the Durbin amendment, which became effective for us on July 1, 2017. Electronic banking fees increased \$0.5 million, or 2.4%, in 2017, compared to 2016, primarily due to a combination of higher volume of customers due to our merger with Talmer, partially offset by a reduction in interchange fees resulting from limitation set by the Durbin amendment.

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 \$35.2 million in 2018, \$32.2 million in 2017 and \$21.9 million in 2016. MBR increased \$3.0 million, or 9.3%, in 2018, compared to 2017, due primarily to the change in the impact to earnings from the change in fair value in loan servicing rights, partially offset by a decrease in loan sales. MBR increased \$10.3 million, or 47.3%, in 2017, compared to 2016, due primarily to the impact of our merger with Talmer and a higher volume of loans sold in the secondary market, partially offset by the change in the impact to earnings from the change in fair value in loan servicing rights. The change in fair value in loan servicing rights resulted in income of \$1.8 million in 2018, compared to a loss of \$6.4 million in 2017 and income of \$5.1 million in 2016. We sold \$729.7 million of residential mortgage loans in the secondary market during 2018, compared to \$806.8 million during 2017 and \$707.8 million during 2016. At December 31, 2018, we were servicing \$6.87 billion of residential mortgage loans that had been originated in our market areas and subsequently sold in the secondary market, compared to \$7.11 billion at December 31, 2017 and \$7.37 billion at December 31, 2016.

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 \$4.1 million at December 31, 2018, compared to \$5.3 million at December 31, 2017 and \$6.5 million at December 31, 2016.

All other categories of noninterest income, including other fees for customer services, insurance commissions, gain (loss) on sale of investment securities, bank-owned life insurance, rental income, gain on sale of branch offices (in 2016), and other noninterest income totaled \$33.5 million in 2018, \$25.3 million in 2017 and \$25.1 million in 2016. Gain (loss) on investment securities for 2017 included the loss incurred on the sales of investment securities late in the fourth quarter of 2017 as part of our treasury and tax management objectives following the signing of the Tax Cuts and Jobs Act. 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)	Years Ended December 31,		
	2018	2017	2016
Operating expense			
Salaries and wages ⁽¹⁾	\$ 191,122	\$ 179,992	\$ 135,407
Employee benefits ⁽¹⁾	34,305	35,570	30,455
Occupancy	31,670	30,554	23,525
Equipment and software	31,761	32,248	24,408
Outside processing and service fees	45,387	35,142	21,199
FDIC insurance premiums ⁽²⁾	18,508	11,190	7,407
Professional fees ⁽²⁾	12,619	11,507	5,832
Intangible asset amortization ⁽²⁾	5,716	6,089	5,524
Advertising and marketing ⁽²⁾	8,175	5,907	3,740
Postage and express mail ⁽²⁾	5,162	5,309	3,777
Training, travel and other employee expenses ⁽²⁾	6,852	6,572	4,025
Telephone ⁽²⁾	3,371	3,704	2,964
Supplies ⁽²⁾	1,818	2,614	2,318
Donations ⁽²⁾	2,664	1,775	1,951
Credit-related expenses ⁽²⁾	4,841	5,772	(2,701)
Merger expenses ⁽³⁾	—	8,522	61,134
Restructuring expenses ⁽³⁾	—	19,880	—
Impairment of federal historic income tax credits ⁽²⁾⁽³⁾	12,284	9,252	—
Other ⁽²⁾	7,943	10,395	7,453
Total operating expenses	\$424,198	\$421,994	\$338,418
Significant and other non-core items ⁽³⁾	12,284	37,654	61,134
Operating expenses, core (non-GAAP) ⁽³⁾⁽⁴⁾	\$411,914	\$384,340	\$277,284
Full-time equivalent staff (at December 31)	3,117	3,010	3,261
Average assets	\$20,200,530	\$18,465,156	\$12,037,155
Efficiency ratio - GAAP	54.3	% 60.1	% 67.2
Efficiency ratio - adjusted non-GAAP ⁽⁴⁾	51.5	% 51.9	% 54.4
Total operating expenses as a percentage of total average assets	2.10	% 2.29	% 2.81
Total operating expenses as a percentage of total average assets - adjusted non-GAAP ⁽⁴⁾	2.04	% 2.08	% 2.30

(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 and restructuring expenses during the years ended December 31, 2017 and December 31, 2016. 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 \$424.2 million in 2018, \$422.0 million in 2017 and \$338.4 million in 2016. Operating expenses included \$12.3 million and \$9.3 million of impairment taken on federal historic income tax credits in 2018 and 2017, respectively, and \$28.4 million and \$61.1 million of merger and restructuring expenses in 2017 and 2016, respectively. The merger and restructuring expenses are noted as "significant" items and the federal historic income tax credits are noted as "other non-core" items for the applicable periods. Operating expenses, core, a non-GAAP financial measure that excludes these significant and other non-core items for each applicable period, increased \$27.6 million, or 7.2%, to \$411.9 million in 2018, compared to \$384.3 million in 2017, primarily due to increases in salaries and wages of \$11.1 million, outside processing and service fees of \$10.3 million, and FDIC insurance premiums of \$7.3 million. Operating expenses, core, increased \$107.1 million, or 38.6%, in 2017, compared to 2016, due largely to

incremental operating costs associated with our merger with Talmer.

Salaries and wages were \$191.1 million in 2018, compared to \$180.0 million in 2017 and \$135.4 million in 2016. Salaries and wages expense increased \$11.1 million, or 6.2%, in 2018, compared to 2017, largely due to an increase in performance-based compensation expense as a result of a shift in the mix of employees and additional expense related to the implementation of upgrades to our core operating systems, partially offset by a reduction in share-based compensation expense. Salaries and wages increased \$44.6 million, or 32.9%, in 2017, compared to 2016, primarily due to incremental costs associated with our merger with Talmer in addition to merit increases and market-based salary adjustments that took effect at the beginning of the year. Salary and wage expense related to the implementation of upgrades to our core operating systems was \$1.4 million in 2018. Performance-based compensation expense was \$40.2 million in 2018, compared to \$33.8 million in 2017 and \$21.8 million in 2016.

Employee benefits expense was \$34.3 million in 2018, compared to \$35.6 million in 2017 and \$30.5 million in 2016. Employee benefits expense decreased \$1.3 million, or 3.6%, in 2018, compared to 2017, primarily due a reduction in 401(k) contribution expense. Employee benefits expense increased \$5.1 million, or 16.8%, in 2017, compared to 2016, due primarily to incremental costs associated with our merger with Talmer.

Our total compensation expenses, which include salaries and wages and employee benefits, as a percentage of total operating expenses were 53.1% in 2018, 51.1% in 2017 and 49.0% in 2016.

Occupancy expense was \$31.7 million in 2018, compared to \$30.6 million in 2017 and \$23.5 million in 2016. Occupancy expense increased \$1.1 million, or 3.7%, in 2018, compared to 2017, primarily due to a \$0.9 million of early lease termination expense resulting from the consolidation of office space housing our wealth management unit. The increase in occupancy expense in 2017 was \$7.0 million, or 30%, compared to 2016, primarily due to incremental operating costs associated with our merger with Talmer, partially offset by the consolidation of branches as part of our restructuring efforts. Occupancy expense included depreciation expense on buildings of \$6.6 million in 2018, \$6.9 million in 2017 and \$5.5 million in 2016.

Equipment and software expense was \$31.8 million in 2018, compared to \$32.2 million in 2017 and \$24.4 million in 2016. Equipment and software expense decreased \$0.4 million, or 1.5%, in 2018, compared to 2017, primarily due to a decrease in software license expense. In 2017, the increase of \$7.8 million, or 32.1%, compared to 2016, was due primarily to incremental operating costs associated with our merger with Talmer. Equipment and software expense included depreciation expense of \$10.4 million in 2018, compared to \$10.9 million in 2017 and \$7.7 million in 2016.

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 \$45.4 million in 2018, compared to \$35.1 million in 2017 and \$21.2 million in 2016. Outside processing and service fees increased \$10.3 million, or 29.2%, in 2018, compared to 2017, primarily due to core operating system conversion expenses and operating costs associated with the enhancement in our overall technology platform. Expenses specifically attributed to our core operating system conversion included within outside processing and service fees were \$3.0 million in 2018. The increase in outside processing and service fees of \$13.9 million, or 65.8%, in 2017, compared to 2016, was due largely to incremental operating costs associated with our merger with Talmer.

FDIC insurance premiums were \$18.5 million in 2018, compared to \$11.2 million in 2017 and \$7.4 million in 2016. Changes in our FDIC insurance premiums are primarily due to changes in our assessment base, which consist of average consolidated total assets less average Tier 1 capital. Additionally, included in our FDIC insurance premiums is 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.

Professional fees were \$12.6 million in 2018, compared to \$11.5 million in 2017 and \$5.8 million in 2016.

Professional fees increased \$1.1 million, or 9.7%, in 2018, compared to 2017, primarily due to core operating system conversion expenses of \$1.5 million. The increase in professional fees of \$5.7 million, or 97.3%, in 2017, compared to 2016, was primarily due to incremental operating costs associated with the merger with Talmer and additional legal fees incurred in defense of various litigation matters.

Advertising and marketing expenses were \$8.2 million in 2018, compared to \$5.9 million in 2017 and \$3.7 million in 2016. Advertising and marketing expense increased \$2.3 million, or 38.4%, in 2018, compared to 2017, primarily due to expenses attributed to our core operating system conversion of \$1.2 million and an increase in community-related sponsorships. The increase

in advertising and marketing expenses of \$2.2 million, or 57.9%, in 2017, compared to 2016, was primarily due to incremental operating costs associated with the merger with Talmer.

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 \$4.8 million in 2018, compared to \$5.8 million in 2017 and a net benefit of \$2.7 million in 2016. Credit-related expenses decreased \$1.0 million in 2018, compared to 2017, primarily due to a decrease in operating expenses due to a reduction in our ORE assets. Credit-related expenses increased \$8.5 million in 2017, compared to 2016, primarily due to a lower net gain on sale of ORE and an increase in incremental operating costs associated with additional properties added in our merger with Talmer. We recognized fair value write-downs and net gains on the sale of ORE properties of \$0.1 million in 2018, \$1.4 million in 2017 and \$4.7 million in 2016. ORE operating and loan collection costs were \$4.6 million in 2018, \$6.7 million in 2017 and \$3.0 million in 2016.

Impairment of federal historic income tax credits of \$12.3 million in 2018 and \$9.3 million in 2017 were the result of federal historic tax credits placed into service in each respective period. In 2018, the \$12.3 million of impairment, or \$9.7 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 \$12.9 million. In 2017, the \$9.3 million of impairment, or \$6.0 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 \$7.9 million. There were no impairment of federal historic tax credits in 2016.

We incurred restructuring expenses of \$19.9 million during the second half of 2017. Our restructuring efforts included us identifying strategies that could be deployed to drive revenue growth and to further improve operating efficiency as part of an effort to refine and clarify our overall strategic plan of how we allocate our capital across the organization and better position us for growth. Our restructuring efforts resulted in a reduction of approximately 7% in total employees and our consolidation of 25 branches completed in the fourth quarter of 2017, in addition to 13 branches that were consolidated in the third quarter of 2017. As part of our restructuring efforts, we also discontinued our title insurance services and reduced resources devoted to indirect auto lending.

All other categories of operating expenses not discussed above totaled \$33.5 million in 2018, \$45.0 million in 2017 and \$89.1 million in 2016. All other categories of operating expenses decreased \$11.5 million, or 25.5%, in 2018, compared to 2017, primarily due to merger expenses of \$8.5 million recognized in 2017. The decrease of \$44.1 million, or 49.5%, in 2017, compared to 2016, in all other categories of operating expenses was due largely to the decrease in merger related expenses, partially offset by incremental costs associated with our merger with Talmer and restructuring expense recognized in 2017.

Our efficiency ratio, which measures total operating expenses divided by the sum of net interest income (FTE) and noninterest income, was 54.3% in 2018, compared to 60.1% in 2017 and 67.2% in 2016. Our adjusted efficiency ratio, a non-GAAP financial measure that excludes merger expenses, restructuring expenses, the change in fair value in loan servicing rights, amortization of intangibles, impairment of historic income tax credits, net interest income FTE adjustment, gains on sales of branches, gain (loss) from sale of investment securities and closed branch locations, was 51.5% in 2018, compared to 51.9% in 2017 and 54.4% in 2016.

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

Our effective income tax rate was 12.9% in 2018, 41.7% in 2017 and 28.0% in 2016. The fluctuations in our effective income tax rate reflect changes each year in the proportion of interest income exempt from taxation and other nondeductible expenses relative to pretax income and tax credits. The decrease in our effective income tax rate in 2018, compared to 2017, was primarily due to the 2017 increase to income tax expense of \$46.7 million as a result of the enactment of the Tax Cuts and Jobs Act, the benefit from the enactment of the Tax Cuts and Jobs Act which reduced the federal corporate tax rate (as discussed below) and a \$5.0 million increase in the benefit from federal historic tax credits, partially offset by the benefit from stock option exercises that occurred in 2017. The income tax benefit from the federal historic tax credits placed into service were partially offset by impairment recorded on the same tax credits included within other operating expenses.

During the fourth quarter 2017, the Tax Cuts and Jobs Act was signed into law. The Tax Cuts and Jobs Act, among other items, reduced the corporate income tax rate from a maximum rate of 35% to a flat tax rate of 21% effective January 1, 2018. Accounting guidance required the effects of changes in tax law be recognized and recorded in the interim period in which the law is enacted. As such, our deferred tax assets and liabilities which were valued at a federal rate of 35% prior to the enactment, were revalued to the enacted federal tax rate of 21%. The impact of enactment was \$46.7 million increase to income tax expense related to continuing operations as a result of the revaluation of the net deferred tax asset of \$46.0 million and an acceleration of amortization expense on the low income housing tax credit investment portfolio of \$0.7 million in the fourth quarter of 2017. We did not have any provisional adjustments to our net deferred tax asset as a result of the tax reform at December 31, 2017 under Staff Accounting Bulletin No. 118, but continued to obtain, prepare and analyze information as it became available during 2018 in order to complete the accounting requirements under ASC Topic 740 by utilizing the measurement period afforded under SAB 118. These adjustments were finalized with the filing of our 2017 Federal tax return in the fourth quarter and resulted in a tax benefit of \$2.9 million.

The increase in the effective income tax rate in 2017, compared to 2016, was primarily due to the \$46.7 million charge to income tax expense from continuing operations resulting from the impact of the Tax Cuts and Jobs Act.

Additionally, the effective income tax rate was impacted by \$7.9 million of tax benefit received from federal historic tax credits placed into service during 2017 and growth in lending on real estate projects that receive either low income housing or historic tax credits. See Note 17 to our Consolidated Financial Statements for additional details on income taxes. We had no uncertain tax positions during the three years ended December 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 \$1.95 billion during 2018 and increased \$0.77 billion during 2017. Our loan-to-total deposits ratio was 95.6% at December 31, 2018 and 100.7% at December 31, 2017. We had \$157.1 million of cash deposits held at the FRB at December 31, 2018, compared to \$143.7 million at December 31, 2017. At December 31, 2018, we had unpledged investment securities available-for-sale with an amortized cost of \$2.62 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 \$2.45 billion at December 31, 2018. Additional borrowing availability from the FHLB, subject to certain requirements, was \$2.3 billion at December 31, 2018. 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 December 31, 2018, we maintained an unused borrowing capacity of \$117.4 million with the FRB's discount window based upon pledged collateral as of that date. We also had the ability to borrow an additional \$425.0 million of federal funds and \$305.0 million from unsecured overnight lines of credit from multiple third-party financial institutions at December 31, 2018. 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.

80

Federal and state banking laws place certain restrictions on the amount of dividends that a bank may pay to its parent company. During the year ended December 31, 2018, Chemical Bank paid \$114.3 million in dividends to us, and we paid cash dividends to shareholders of \$89.0 million. During 2017, Chemical Bank paid \$165.0 million in dividends to us and we paid cash dividends to shareholders of \$78.5 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 \$295.3 million during the year ended December 31, 2018, compared to net income of \$162.7 million during the year ended December 31, 2017. 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.

	December 31,			
	2018	2017	2016	
Investment securities carried at fair value to total deposits	19.4%	14.4 %	9.6 %	
Loans to total deposits ⁽¹⁾	95.6	100.7	98.3	
Interest-earning assets to total assets	89.6	88.6	87.4	
Interest-bearing deposits to total deposits	75.6	72.7	74.0	

⁽¹⁾ For liquidity purposes, securities sold under agreements to repurchase with customers are treated similarly to deposits and are included in this calculation.

Item 7A. Quantitative and Qualitative Disclosures About 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 we use to measure our interest rate risk is simulation analyses. 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 analysis 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.

81

At December 31, 2018 and 2017, 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 December 31, 2018 and 2017, assuming immediate parallel moves in interest rates is presented in the table below.

	December 31, 2018		December 31, 2017	
	Following	Following	Following	Following
	12	24	12	24
	months	months	months	months
+400 basis points	(0.5)%	(0.5)%	(4.2)%	(3.0)%
+300 basis points	(0.8)	(0.7)	(3.6)	(2.7)
+200 basis points	(0.7)	(0.7)	(2.7)	(2.0)
+100 basis points	(0.1)	(0.2)	(1.2)	(1.0)
-100 basis points	(1.1)	(1.1)	(4.0)	(4.9)
-200 basis points	(7.7)	(9.2)	(12.5)	(15.2)
-300 basis points ⁽¹⁾	(18.0)	(22.4)		
-400 basis points ⁽¹⁾	(24.0)	(28.4)		

⁽¹⁾ We did not project a 300 or 400 basis point decrease in interest rates at December 31, 2017 as the likelihood of a decrease of this size was considered unlikely given prevailing interest rate levels.

Item 8. Financial Statements and Supplementary Data.

Report of Independent Registered Public Accounting Firm

The Shareholders and Board of Directors

Chemical Financial Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of financial position of Chemical Financial Corporation and subsidiaries (the Corporation) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for each of the years in the three year period ended December 31, 2018, and the related notes (collectively, the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Corporation as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Corporation's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 28, 2019 expressed an unqualified opinion on the effectiveness of the Corporation's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Corporation's auditor since 2006.

Detroit, Michigan

February 28, 2019

Chemical Financial Corporation
Consolidated Statements of Financial Position

(Dollars in thousands, except per share data)	December 31, 2018	December 31, 2017
Assets		
Cash and cash equivalents:		
Cash and cash due from banks	\$228,527	\$226,003
Interest-bearing deposits with the Federal Reserve Bank and other banks	267,312	229,988
Total cash and cash equivalents	495,839	455,991
Investment securities:		
Carried at fair value	3,021,832	1,963,546
Held-to-maturity, at amortized cost (fair value of \$618,672 and \$662,906, respectively)	624,099	677,093
Total investment securities	3,645,931	2,640,639
Loans held-for-sale, at fair value	85,030	52,133
Loans	15,269,779	14,155,267
Allowance for loan losses	(109,984)	(91,887)
Net loans	15,159,795	14,063,380
Premises and equipment	123,442	126,896
Loan servicing rights, at fair value	71,013	63,841
Goodwill	1,134,568	1,134,568
Other intangible assets	28,556	34,271
Interest receivable and other assets	754,167	709,154
Total assets	\$21,498,341	\$19,280,873
Liabilities		
Deposits:		
Noninterest-bearing	\$3,809,252	\$3,725,779
Interest-bearing	11,784,030	9,917,024
Total deposits	15,593,282	13,642,803
Collateralized customer deposits	382,687	415,236
Short-term borrowings	2,035,000	2,000,000
Long-term borrowings	426,002	372,882
Interest payable and other liabilities	225,110	181,203
Total liabilities	18,662,081	16,612,124
Shareholders' equity		
Preferred stock, no par value:		
Authorized – 2,000,000 shares at 12/31/18 and 12/31/17, none issued	—	—
Common stock, \$1.00 par value per share:		
Authorized — 135,000,000 shares at 12/31/18 and 12/31/17		
Issued and outstanding — 71,460,119 shares at 12/31/18 and 71,207,114 shares at 12/31/17	71,460	71,207
Additional paid-in capital	2,209,761	2,203,637
Retained earnings	616,149	419,403
Accumulated other comprehensive loss	(61,110)	(25,498)
Total shareholders' equity	2,836,260	2,668,749
Total liabilities and shareholders' equity	\$21,498,341	\$19,280,873
See accompanying notes to Consolidated Financial Statements.		

Chemical Financial Corporation
Consolidated Statements of Income

	Year Ended December 31,		
(Dollars in thousands, except per share data)	2018	2017	2016
Interest income			
Interest and fees on loans	\$675,875	\$573,128	\$383,545
Interest on investment securities:			
Taxable	62,231	31,496	10,989
Tax-exempt	24,286	18,343	12,317
Dividends on nonmarketable equity securities	7,877	4,924	1,973
Interest on deposits with the Federal Reserve Bank, other banks and Federal funds sold	5,727	4,244	1,555
Total interest income	775,996	632,135	410,379
Interest expense			
Interest on deposits	96,980	46,727	23,021
Interest on collateralized customer deposits	2,607	1,269	303
Interest on short-term borrowings	37,510	19,052	1,357
Interest on long-term borrowings	6,566	7,509	4,617
Total interest expense	143,663	74,557	29,298
Net interest income	632,333	557,578	381,081
Provision for loan losses	30,750	23,300	14,875
Net interest income after provision for loan losses	601,583	534,278	366,206
Noninterest income			
Service charges and fees on deposit accounts	37,097	38,367	30,724
Wealth management revenue	25,996	25,512	22,601
Other charges and fees for customer services	21,437	29,405	27,658
Net gain on sale of loans and other mortgage banking revenue	35,193	32,205	21,859
Net gain (loss) on sale of investment securities	224	(7,388)	129
Net gain on sale of branch offices	—	—	7,391
Other	28,589	25,918	11,988
Total noninterest income	148,536	144,019	122,350
Operating expenses			
Salaries, wages and employee benefits	225,427	215,562	165,862
Occupancy	31,670	30,554	23,525
Equipment and software	31,761	32,248	24,408
Outside processing and service fees	45,387	35,142	21,199
Merger expenses	—	8,522	61,134
Restructuring expenses	—	19,880	—
Other	89,953	80,086	42,290
Total operating expenses	424,198	421,994	338,418
Income before income taxes	325,921	256,303	150,138
Income tax expense	41,901	106,780	42,106
Net income	\$284,020	\$149,523	\$108,032
Earnings per common share:			
Basic	\$3.98	\$2.11	\$2.21
Diluted	3.94	2.08	2.17

See accompanying notes to Consolidated Financial Statements.

Chemical Financial Corporation
Consolidated Statements of Comprehensive Income

	Year Ended December 31,		
(Dollars in thousands)	2018	2017	2016
Net income	\$284,020	\$149,523	\$108,032
Other comprehensive income (loss), net of tax:			
Unrealized holding gains (losses) on securities carried at fair value arising during the period	(34,054)	1,269	(18,723)
Reclassification adjustment for (gains) losses on realized income	(224)	7,388	(129)
Tax effect	7,198	(3,029)	6,598
Net unrealized gains (losses) on securities carried at fair value, net of tax	(27,080)	5,628	(12,254)
Unrealized gains on interest rate swaps designated as cash flow hedges	2,841	4,263	—
Reclassification adjustment for (gains) losses included in net income	(1,871)	1,633	—
Tax effect	(203)	(2,064)	—
Net unrealized gains on interest rate swaps designated as cash flow hedges, net of tax	767	3,832	—
Plan remeasurement	—	13,011	(707)
Adjustment for pension and other postretirement benefits	(11,339)	1,752	2,630
Tax effect	2,381	(5,167)	(673)
Net adjustment for pension and other postretirement benefits	(8,958)	9,596	1,250
Other comprehensive income (loss), net of tax	(35,271)	19,056	(11,004)
Total comprehensive income, net of tax	\$248,749	\$168,579	\$97,028

See accompanying notes to Consolidated Financial Statements.

Chemical Financial Corporation
Consolidated Statements of Changes in Shareholders' Equity

(Dollars in thousands)	Common Stock	Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Shareholders' Equity
Balances at December 31, 2015	\$ 38,168	\$ 725,280	\$ 281,558	\$ (29,032)	\$ 1,015,974
Comprehensive income			108,032	(11,004)	97,028
Cash dividends declared and paid of \$1.06 per share			(49,389)		(49,389)
Issuance of common stock and common stock equivalents in business combinations	32,074	1,472,737			1,504,811
Net shares issued under share-based compensation plans	351	(701)			(350)
Share-based compensation expense	6	13,446			13,452
Balances at December 31, 2016	\$ 70,599	\$ 2,210,762	\$ 340,201	\$ (40,036)	\$ 2,581,526
Cumulative effect adjustment of change in accounting policy, net of tax impact ⁽¹⁾			3,659		3,659
Comprehensive income			149,523	19,056	168,579
Cash dividends declared and paid of \$1.10 per share			(78,498)		(78,498)
Net shares issued under share-based compensation plans	608	(24,471)			(23,863)
Share-based compensation expense	—	17,346			17,346
Reclassification of certain income tax effects ⁽²⁾			4,518	(4,518)	—
Balances at December 31, 2017	\$ 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			284,020	(35,271)	248,749
Cash dividends declared and paid of \$1.24 per share			(88,954)		(88,954)
Net shares issued under share-based compensation plans	253	(2,454)			(2,201)
Share-based compensation expense	—	8,578			8,578
Balances at December 31, 2018	\$ 71,460	\$ 2,209,761	\$ 616,149	\$ (61,110)	\$ 2,836,260

Refer to Note 1, Summary of Significant Accounting Policies, Note 4, Investment Securities, Note 7, Other Real

⁽¹⁾ Estate Owned and Repossessed Assets and Note 9, Loan Servicing Rights, for further details on the changes in accounting policy.

⁽²⁾ The reclassification from accumulated other comprehensive income (loss) to retained earnings was due to the early adoption of ASU 2018-02, refer to Note 1 for further details on the adoption.

See accompanying notes to Consolidated Financial Statements.

Chemical Financial Corporation
Consolidated Statements of Cash Flows

	Year Ended December 31,		
(Dollars in thousands)	2018	2017	2016
Cash flows from operating activities			
Net income	\$284,020	\$149,523	\$108,032
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for loan losses	30,750	23,300	14,875
Gains on sales of loans	(12,173)	(31,734)	(15,686)
Proceeds from sales of loans	741,902	838,549	723,521
Loans originated for sale	(760,591)	(772,968)	(534,422)
Net losses (gains) on sale of investment securities	(224)	7,388	(129)
Net losses (gains) from sales/writedowns of other real estate and repossessed assets	203	(1,017)	(5,212)
Depreciation of premises and equipment	17,026	17,722	13,270
Amortization of intangible assets	5,716	6,090	10,046
Additions to loan servicing rights	(8,226)	(8,745)	(4,333)
Valuation change in loan servicing rights	1,054	8,880	(4,585)
Net amortization of premiums and discounts on investment securities	19,446	19,262	9,713
Share-based compensation expense	8,578	17,346	13,452
Deferred income tax expense	41,916	93,184	24,091
Change in deferred tax valuation allowance	317	(1,089)	(706)
Net increase in interest receivable and other assets	(74,723)	(150,585)	(24,977)
Net increase (decrease) in interest payable and other liabilities	29,410	59,760	(46,449)
Net cash provided by operating activities	324,401	274,866	280,501
Cash flows from investing activities			
Investment securities — carried at fair value:			
Proceeds from maturities, calls and principal reductions	291,008	318,952	248,772
Proceeds from sales and redemptions	4,215	409,220	41,446
Purchases	(1,405,798)	(1,480,524)	(187,702)
Investment securities — held-to-maturity:			
Proceeds from maturities, calls and principal reductions	104,535	93,600	90,933
Purchases	(52,752)	(141,489)	(206,023)
Net increase in loans	(1,140,686)	(1,189,865)	(860,135)
Proceeds from sales of other real estate and repossessed assets	13,396	19,879	22,147
Purchases of premises and equipment, net of disposals	(13,572)	(12,852)	(18,098)
Proceeds from returns of investment in equity method investments	326	143	77
Cash acquired, net of cash paid, in business combinations	—	—	325,714
Net cash used in investing activities	(2,199,328)	(1,982,936)	(542,869)
Cash flows from financing activities			
Net increase in interest and noninterest-bearing demand deposits and savings accounts	1,111,747	243,110	672,584
Net increase (decrease) in time deposits	838,732	526,571	(550,847)
Net increase in collateralized customer deposits and other short-term borrowings	2,451	1,247,189	401,144
Proceeds from issuance of long-term borrowings	200,000	—	375,000
Repayment of long-term borrowings	(147,000)	(224,850)	(351,018)
Cash dividends paid	(88,954)	(78,498)	(49,389)
Proceeds from directors' stock plans and exercise of stock options, net of shares withheld	3,115	3,991	1,572
Cash paid for payroll taxes upon conversion of share-based awards	(5,316)	(27,854)	(1,065)
Net cash provided by financing activities	1,914,775	1,689,659	497,981

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

Net increase (decrease) in cash and cash equivalents	39,848	(18,411)	235,613
Cash and cash equivalents at beginning of year	455,991	474,402	238,789
Cash and cash equivalents at end of year	\$495,839	\$455,991	\$474,402
Supplemental disclosures of cash flow information:			
Interest paid	\$136,706	\$73,643	\$25,460
Income tax payments, net	4,063	2,252	22,200
Non-cash activities:			
Loans transferred to other real estate and repossessed assets	11,486	11,546	12,970
Net transfer of loans held-for-sale to loans held- for-investment	(2,035)	(4,150)	(289)
Closed branch offices transferred to other assets	—	13,246	4,846
Business combinations:			
Fair value of tangible assets acquired (noncash)	—	420	6,371,781
Goodwill, loan servicing rights and other identifiable intangible assets acquired	—	1,034	908,217
Liabilities assumed	—	1,454	6,100,901
Common stock and stock options issued	—	—	1,504,811
See accompanying notes to Consolidated Financial Statements.			

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Note 1: Summary of 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, net gain on sale of loans and other mortgage banking revenue.

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 the second half of 2019. The transaction is discussed in more detail in Note 26.

Basis of Presentation and Principles of Consolidation

The accounting and reporting policies of the Corporation and its subsidiaries have been prepared in accordance with U.S. Generally Accepted Accounting Principles ("GAAP"), Securities and Exchange Commission ("SEC") rules and interpretive releases and prevailing practices within the banking industry. The Consolidated Financial Statements of the Corporation include the accounts of the Corporation and its wholly owned subsidiaries. All significant income and expenses are recorded on the accrual basis. Intercompany accounts and transactions have been eliminated in preparing the Consolidated Financial Statements.

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.

Business Combinations

Pursuant to the guidance of the Financial Accounting Standards Board's ("FASB") Accounting Standards Codification ("ASC") Topic 805, Business Combinations ("ASC 805"), the Corporation recognizes assets acquired, including identified intangible assets, and the liabilities assumed in acquisitions at their fair values as of the acquisition date, with the acquisition-related transaction and restructuring costs expensed in the period incurred.

See Note 2 for further information regarding the Corporation's mergers and acquisitions.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Cash and Cash Equivalents

For purposes of reporting cash flows, cash and cash equivalents include cash on hand and interest-bearing deposits held at the Federal Reserve Bank ("FRB").

Investment Securities

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. The Corporation held no trading investment securities at December 31, 2018 or 2017.

Debt securities classified as available-for-sale and equity securities 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. Unrealized gains or losses on equity securities were recorded as part of accumulated other comprehensive income in stockholders' equity through December 31, 2017. Effective January 1, 2018, the amendments within FASB Accounting Standard Update ("ASU") 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, require that equity investments be measured at fair value with changes in fair value recognized in net income. At January 1, 2018, the Corporation's equity securities consisted of \$1.8 million in preferred stocks. The Corporation recognized a cumulative effect adjustment in the amount of \$344 thousand as of January 1, 2018 to reclassify the fair value position into retained earnings. Beginning January 1, 2018, the fair value changes on equity securities are recognized in net income, rather than in accumulated other comprehensive income. The Corporation sold its remaining position in equity securities during the second quarter of 2018.

Designation as an investment security held-to-maturity is based on the Corporation's intent and ability to hold the security to maturity. Investment securities held-to-maturity are carried at amortized cost, adjusted for purchase price premiums and accretion of discounts. Investment securities that are not held-to-maturity are accounted for as securities available-for-sale, and are stated at estimated fair value, with the aggregate unrealized gains and losses classified as a component of accumulated other comprehensive income (loss), net of income taxes. Realized gains and losses on the sale of investment securities charges are determined using the specific identification method and are included within noninterest income in the Consolidated Statements of Income. Premiums and discounts on investment securities are amortized over the estimated lives of the related investment securities based on the effective interest yield method and are included in interest income in the Consolidated Statements of Income.

The Corporation assesses debt securities that have fair values below amortized cost basis to determine whether declines (impairment) are other-than-temporary. If the Corporation intends to sell an impaired security or it is more-likely-than-not that the Corporation will be required to sell an impaired security prior to the recovery of its amortized cost, an other-than-temporary impairment ("OTTI") write-down is recognized in earnings equal to the entire difference between the investment security's amortized cost basis and its fair value. In assessing whether OTTI exists, management considers, among other things, (i) the length of time and the extent to which the fair value has been less than 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. For the years ended December 31, 2018, 2017 and 2016, the Corporation did not recognize OTTI.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Nonmarketable Equity Securities

The Corporation is required to hold non-marketable equity securities, comprised of Federal Home Loan Bank of Indianapolis ("FHLB") and FRB stock, as a condition of membership. These securities are accounted for at cost, which equals par or redemption value, and included in "interest receivable and other assets" on the Consolidated Statements of Financial Position. These securities do not have a readily determinable fair value as their ownership is restricted and there is no market for these securities. These securities can only be redeemed or sold at their par value and only to the respective issuing government supported institution or to another member institution. FHLB stock can only be redeemed upon giving a five year written notice and FRB stock can only be redeemed upon giving six months written notice, with no more than 25.0% eligible for redemption in any calendar year. The Corporation records these non-marketable equity securities as a component of other assets and they are periodically evaluated for impairment. Management considers these non-marketable equity securities to be long-term investments. Accordingly, when evaluating these securities for impairment, management considers the ultimate recoverability of the par value rather than recognizing temporary declines in value, if applicable. The estimated loss is recognized as a loss from equity investments in other noninterest income in the Consolidated Statements of Income. The Corporation's ownership of FHLB stock totaled \$125.2 million at December 31, 2018 and \$112.0 million at December 31, 2017. The Corporation's ownership of FRB stock totaled \$68.1 million at both December 31, 2018 and December 31, 2017.

Loans Held for Sale

Mortgage and construction loans intended for sale in the secondary market are carried at fair value based on the Corporation's election of the fair value option, as prescribed by ASC Topic 820, Fair Value Measurements and Disclosures. The estimated fair value of loans held for sale are based on quoted market prices for securities backed by similar types of loans, where available, or by discounting estimated cash flows using observable inputs inclusive of interest rates, prepayment speeds and loss assumptions for similar collateral. The fair value includes the servicing value of the loans as well as any accrued interest. These loans are sold both with servicing rights retained and with servicing rights released.

Originated Loans Held for Investment

Originated loans include the Corporation's entire portfolio loans held for investment, excluding loans acquired in business combinations, as further discussed below. Originated loans are stated at their principal amount outstanding, net of unearned income, charge-offs and unamortized deferred fees and costs. Loan interest income is recognized on the accrual basis. Deferred loan fees and costs are amortized over the loan term based on the level-yield method. Net loan commitment fees are deferred and amortized into fee income on a straight-line basis over the commitment period.

If a loan is transferred from the loan held for investment portfolio to the held for sale portfolio, any write-down in the carrying amount of the loan at the date of transfer is recorded as a charge-off. The loans are transferred at fair value determined using the same methods described above for held for sale loans. When loans classified as held for investment are transferred to loans held for sale due to a change in intent, cash flows associated with the loans will be classified in the Consolidated Statements of Cash Flows as operating or investing, as appropriate, in accordance with the initial classification of the loans.

The past due status of a loan is based on the loan's contractual terms. A loan is placed in nonaccrual status (accrual of interest is discontinued) when principal or interest is past due 90 days or when doubt exists as to the ultimate collection of principal or interest, unless the loan is both well-secured and in the process of collection, or earlier when,

in the opinion of management, there is sufficient reason to doubt the collectibility of principal or interest. Interest previously accrued, but not collected, is reversed and charged against interest income at the time the loan is placed in nonaccrual status. Subsequent receipts of interest while a loan is in nonaccrual status are recorded as a reduction of principal. Loans are returned to accrual status when principal and interest payments are brought current and are anticipated to be fully collectible, payments have been received consistently for a period of time (generally six months) and collectibility is no longer in doubt.

Loans Acquired in a Business Combination

Loans acquired in a business combination ("acquired loans") consist of loans acquired on August 31, 2016 in the merger with Talmer, on May 31, 2015 in the acquisition of Lake Michigan Financial Corporation ("Lake Michigan"), on April 1, 2015 in the acquisition of Monarch Community Bancorp, Inc. ("Monarch"), on October 31, 2014 in the acquisition of Northwestern Bancorp, Inc. ("Northwestern"), and on April 30, 2010 in the acquisition of O.A.K. Financial Corporation ("OAK"). Acquired

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

loans were recorded at fair value at the date of acquisition, without a carryover of the associated allowance for loan losses related to these loans.

At each acquisition date, the Corporation elected to account for acquired loans, which are recorded at fair value at acquisition using an estimate of cash flows deemed to be collectible and an accretable yield, in accordance with ASC Topic 310-30, Loans and Debt Securities Acquired with Deteriorated Credit Quality ("ASC 310-30"), by analogy. ASC 310-30 allows investors to aggregate loans acquired into loan pools that have common risk characteristics and thereby use a composite interest rate and expectation of cash flows expected to be collected for the loan pools. Under the provisions of ASC 310-30, the Corporation aggregated acquired loans into pools within each merger or acquisition based upon common risk characteristics, including types of loans, commercial type loans with similar risk grades and whether loans were performing or nonperforming. A pool is considered a single unit of accounting for the purposes of applying the guidance prescribed in ASC 310-30. A loan will be removed from a pool of acquired loans only if the loan is sold, foreclosed, paid off or written off, and will be removed from the pool at the carrying value. The estimate of expected credit losses was determined based on due diligence performed by executive and senior officers of the Corporation, with assistance from third-party consultants. The Corporation estimated the cash flows expected to be collected over the life of the pools of loans at acquisition and estimates expected cash flows quarterly thereafter, based on a set of assumptions including expectations as to default rates, prepayment rates and loss severities. The Corporation must make numerous assumptions, interpretations and judgments using internal and third-party credit quality information to determine whether it is probable that the Corporation will be able to collect all contractually required payments. This is a point in time assessment and inherently subjective due to the nature of the available information and judgment involved.

The calculation of the fair value of the acquired loan pools entails estimating the amount and timing of cash flows attributable to both principal and interest expected to be collected on such loan pools and then discounting those cash flows at market interest rates. The excess of a loan pool's expected cash flows at the acquisition date over its estimated fair value is referred to as the "accretable yield," which is recognized into interest income over the estimated remaining life of the loan pool on a level-yield basis. The difference between a loan pool's contractually required principal and interest payments at the acquisition date and the cash flows expected to be collected at the acquisition date is referred to as the "nonaccretable difference," which includes an estimate of future credit losses expected to be incurred over the estimated life of the loan pool and interest payments that are not expected to be collected. Decreases to the expected cash flows due to deterioration in credit quality in each loan pool in subsequent periods generally require the Corporation to record a provision for loan losses and an increase to the allowance for loan losses and generally results in a transfer from accretable yield to nonaccretable difference. Decreases in the expected cash flows due to unexpected prepayments and/or payoffs will generally result in a transfer from accretable to nonaccretable difference. Improvements in expected cash flows due to improvements in credit quality in each loan pool in subsequent periods will first reverse any previously established allowance for loan losses and will generally result in reversing a portion of the nonaccretable difference, which is then classified as part of the accretable yield and subsequently recognized into interest income over the estimated remaining life of the loan pool.

Loans Modified Under Troubled Debt Restructurings

Loans modified under TDRs involve granting a concession to a borrower who is experiencing financial difficulty. Concessions generally include modifications to original loan terms, including changes to a loan's payment schedule, principal forgiveness, interest rate reductions, or other actions intended to minimize our economic loss and to avoid foreclosure or repossession of the collateral, if applicable, which generally would not otherwise be considered. The Corporation's TDRs include accruing TDRs, which consist of originated loans that continue to accrue interest as the

Corporation expects to collect the remaining principal and interest on the loan, and nonaccrual TDRs, which include originated loans that are in a nonaccrual status and are no longer accruing interest, as the Corporation does not expect to collect the full amount of principal and interest owed from the borrower on these loans. All TDRs are accounted for as impaired loans and are included in the Corporation's analysis of the allowance for loan losses. A TDR that has been renewed by a borrower who is no longer experiencing financial difficulty and which yields a market rate of interest at the time of a renewal is no longer reported as a TDR, but only if they have been refinanced or restructured at market terms and qualify as a new loan.

Loans in the Corporation's commercial loan portfolio (comprised of commercial, commercial real estate, real estate construction and land development loans) that meet the definition of a TDR generally consist of loans where the Corporation has allowed borrowers to defer scheduled principal payments and make interest-only payments for a specified period of time at the stated interest rate of the original loan agreement or reduced payments due to a moderate extension of the loan's contractual term. If the Corporation does not expect to collect all principal and interest on the loan, the modified loan is classified as a nonaccrual TDR and impairment is measured based on collateral values, if the loan is collateral dependent. If the Corporation does not expect

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

to incur a loss on the loan based on its assessment of the borrowers' expected cash flows, as the pre- and post-modification effective yields are approximately the same, the loan is current and a six-month payment history has been sustained, the loan is classified as an accruing TDR. Since no loss is expected to be incurred on these loans, no additional provision for loan losses has been recognized for these loans and they continue to accrue interest at their contractual interest rate. Accruing TDRs are transferred to nonaccrual status if they become 90 days past due as to principal or interest payments or if it is probable that any remaining principal and interest payments due on the loan will not be collected in accordance with the modified terms of the loan. If accruing TDRs are deemed to be collateral dependent, they are measured based on collateral values.

Loans in the Corporation's consumer loan portfolio (comprised of residential mortgage, consumer installment and home equity loans) that meet the definition of a TDR include a concession that reduces a borrower's monthly payments by decreasing the interest rate charged on the loan for a specified period of time (generally 24 months) under a formal modification agreement. The Corporation recognizes an additional provision for loan losses related to impairment on these loans on an individual basis based on the present value of expected future cash flows discounted at the loan's original effective interest rate. These loans continue to accrue interest at their effective interest rate, which consists of contractual interest under the terms of the modification agreement in addition to an adjustment for the accretion of computed impairment. TDRs are placed on nonaccrual status if they become 90 days past due as to principal or interest payments, or sooner if conditions warrant and measure impairment based on collateral values, if the loan is collateral dependent.

Impaired Loans

Impaired loans include loans on nonaccrual status and TDRs. Loans are considered impaired when based on current information and events it is probable the Corporation will be unable to collect all amounts due in accordance with the original contractual terms of the loan agreements. Impaired loans are accounted for at the lower of the present value of expected cash flows discounted at the loan's original effective interest rate or the estimated fair value of the collateral, if the loan is collateral dependent. When the present value of expected cash flows or the fair value of collateral of an impaired loan in the originated loan portfolio is less than the amount of unpaid principal outstanding on the loan, the principal balance of the loan is reduced to its carrying value through either a specific allowance for loan losses or a partial charge-off of the loan balance.

Nonperforming Loans

Nonperforming loans are comprised of loans for which the accrual of interest has been discontinued (nonaccrual loans, including nonaccrual TDRs).

Acquired loans that were classified as nonperforming loans prior to being acquired and acquired loans that are not performing in accordance with contractual terms subsequent to acquisition are not classified as nonperforming loans subsequent to acquisition because the loans are recorded in pools at net realizable value based on the principal and interest the Corporation expects to collect on such loans. They continue to earn interest from accretable yield, independent of performance in accordance of their contractual terms, and are expected to be fully collected under the new carrying values of such loans (that is, the new cost basis arising out of purchase accounting).

Allowance for Loan Losses

The allowance for credit losses ("allowance") consists of two components: the allowance for loan losses (including both the originated and acquired loan portfolios) and the reserve for unfunded credit commitments. Unfunded credit commitments include items such as letters of credit, financial guarantees and binding unfunded loan commitments. The allowance represents management's estimate of probable credit losses inherent in the loan and credit commitment portfolios as of period end.

The allowance is calculated with the objective of maintaining a reserve sufficient to absorb losses inherent in the loan portfolio. The determination of the amount of the allowance requires significant judgment and the use of estimates related to the amount and timing of expected cash flows on acquired loans and impaired loans, collateral values on impaired loans, and estimated losses on pools of homogeneous loans based on historical loss experience, and consideration of current economic trends and conditions, all of which may be susceptible to significant change. The principal assumption used in deriving the allowance is the estimate of a loss percentage for each type of loan.

In determining the allowance for the originated loan portfolio and the related provision for loan losses, the Corporation considers three principal elements: (i) valuation allowances based upon probable losses identified during the review of impaired

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

loans, (ii) reserves, by loan classes, on all other loans based on a six-year historical loan loss experience, loan loss trends and giving consideration to estimated loss emergence periods, and (iii) a reserve for qualitative factors that take into consideration risks inherent in the originated loan portfolio that differ from historical loan loss experience.

The first element reflects the Corporation's estimate of probable losses based upon the systematic review of individually impaired loans in the originated loan portfolio. These estimates are based upon a number of objective factors, such as payment history, financial condition of the borrower and discounted collateral exposure. The Corporation measures the investment in an impaired loan based on one of three methods: the loan's observable market price; the fair value of the collateral; or the present value of expected future cash flows discounted at the loan's effective interest rate. Loans in the commercial loan portfolio that were in nonaccrual status (including nonaccrual TDRs) were valued based on the fair value of the collateral securing the loan, while accruing TDRs in the commercial loan portfolio and consumer loans were valued based on the present value of expected future cash flows discounted at the loan's effective interest rate. It is the Corporation's general policy to obtain new appraisals at initial impairment and updated when deemed necessary on nonaccrual loans in the commercial loan portfolio. Appraisals on nonaccrual loans in the consumer loan portfolio are updated at initial impairment and when deemed necessary where there is a delay in the foreclosure process. When the Corporation determines that the fair value of the collateral is less than the carrying value of an impaired loan and a portion is deemed not collectible, the portion of the impairment that is deemed not collectible is charged off (confirmed loss) and deducted from the allowance. The remaining carrying value of the impaired loan is classified as a nonperforming loan. When the Corporation determines that the fair value of the collateral is less than the carrying value of an impaired loan but believes it is probable it will recover this impairment, the Corporation establishes a valuation allowance for such impairment.

The second element is determined by assigning allocations based principally upon a six-year historical loan loss experience for each class of loan. Average losses may be adjusted based on current loan loss experience, delinquency trends, estimated loss emergence periods and other industry specific environmental factors. This component considers the lagging impact of historical charge-off ratios in periods where future loan charge-offs are expected to increase or decrease, trends in delinquencies and nonaccrual loans, the changing portfolio mix in terms of collateral, average loan balance, loan growth and the degree of seasoning in the various loan portfolios. Loan loss analyses are performed quarterly and certain inputs and parameters are updated as necessary to reflect the current credit environment.

The third element is based on qualitative factors that cannot be associated with a specific credit or loan class and reflects an attempt to ensure that the overall allowance appropriately reflects additional losses that are inherent in the Corporation's loan portfolio. Determination of the probable losses inherent in the portfolio, which are not necessarily captured by the allocation methodology discussed above, involves the exercise of judgment. This qualitative portion of the allowance is judgmentally determined and generally serves to compensate for the uncertainty in estimating inherent losses, particularly in times of changing economic conditions, and also considers the inherent judgment associated with risk rating commercial loans. The qualitative portion of the allowance also takes into consideration, among other things, economic conditions within our geographic areas and nationwide, including unemployment levels, industry-wide and Corporation specific loan delinquency rates, changes in composition of and growth in the Corporation's loan portfolio and changing commercial and residential real estate values.

Consumer loans secured by real estate are charged-off to the estimated fair value of the collateral when a loss is confirmed or at 180 days past due, whichever is sooner. Loss confirming events include, but are not limited to, bankruptcy (unsecured), continued delinquency, foreclosure or receipt of an asset valuation indicating a collateral deficiency and the asset is the sole source of repayment. For consumer loans not secured by real estate, the charge-off is taken upon confirmation or 120 days past due.

Commercial loans are evaluated on a loan level basis and either charged-off or written down to net realizable value if a loss confirming event has occurred. Loss confirming events include, but are not limited to, bankruptcy (unsecured), continued delinquency, foreclosure, or receipt of an asset valuation indicating a collateral deficiency and that asset is the sole source of repayment.

Although the Corporation allocates portions of the allowance to specific loans and loan types, the entire allowance attributable to originated loans is available for any loan losses that occur in the originated portfolio. Loans that are deemed not collectible are charged off and reduce the allowance. The provision for loan losses and recoveries on loans previously charged off increase the allowance. Collection efforts may continue and recoveries may occur after a loan is charged off.

Acquired loans are aggregated into pools based upon common risk characteristics. An allowance may be recorded related to an acquired loan pool if it experiences a decrease in expected cash flows, as compared to those projected at the acquisition date.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

On a quarterly basis, the expected future cash flow of each pool is estimated based on various factors, including changes in property values of collateral dependent loans, default rates, loss severities and prepayment speeds. Decreases in estimates of expected cash flows within a pool generally result in a charge to the provision for loan losses and a corresponding increase in the allowance allocated to acquired loans for the particular pool. Increases in estimates of expected cash flows within a pool generally result in a reduction in the allowance allocated to acquired loans for the particular pool, if applicable, and then an adjustment to the accretable yield for the pool, which will increase amounts recognized in interest income in subsequent periods.

Various regulatory agencies, as an integral part of their examination processes, periodically review the allowance. Such agencies may require additions to the allowance, based on their judgment, reflecting information available to them at the time of their examinations.

Mortgage Banking Operations

The Corporation generally sells conforming long-term fixed interest rate mortgage loans it originates in the secondary market. Gains on the sales of these loans are determined using the specific identification method. The Corporation sells residential mortgage loans in the secondary market primarily on a servicing retained basis.

The Corporation elected the fair value measurement option, as prescribed by ASC Topic 820, Fair Value Measurements and Disclosures ("ASC 820"), for all residential mortgage loans held-for-sale originated on or after July 1, 2012. This election allows for a more effective offset of the changes in fair value of residential mortgage loans held-for-sale and the derivative instruments used to economically hedge them without having to apply complex hedge accounting provisions. Residential mortgage loans held-for-sale are carried at fair value, with changes in fair value recorded through earnings. Residential mortgage loan commitments, forward commitments, are generally entered into at the time interest-rate locks are accepted to protect the value of the mortgage loans from increases in market interest rates during the period held and are generally settled with the investor in the secondary market within 90 days after entering into the forward commitment.

Forward loan commitments are accounted for as derivatives and recorded at fair value, with changes in fair value recorded through earnings. The Corporation recognizes revenue associated with the expected future cash flows of servicing loans for loans held-for-sale at the time a forward loan commitment is made to originate a held-for-sale loan, as required under SEC Staff Accounting Bulletin No. 109, Written Loan Commitments Recorded at Fair Value through Earnings.

The Corporation purchases and originates loans for sale to the secondary market and sell the loans on either a servicing retained or servicing-released basis. If we retain the right to service the loan, a loan servicing right ("LSR") is created at the time of sale which is recorded at fair value. Effective January 1, 2017, the Corporation elected to account for all LSRs previously accounted for under the lower of cost or fair value method under the fair value method. Management believes this election will provide more comparable results to peers as many of those within our industry group account for loan servicing rights under the fair value method. The change in accounting policy in the first quarter of 2017 resulted in a cumulative adjustment to increase retained earnings in the amount of \$3.7 million, net of taxes.

LSRs are established and recorded at the estimated fair value by calculating the present fair value of estimated future net servicing cash flows. To determine the fair value of LSRs, the Corporation uses an independent third party valuation model requiring the incorporation of assumptions that market participants would use in estimating future net

servicing income, which include estimates of prepayment speeds, discount rate, cost to service and escrow account earnings. Changes in the fair value of LSRs directly impact earnings. Servicing income is recognized in net gain on sale of loans and other mortgage banking revenue in the Consolidated Statements of Income when earned.

Derivatives

The Corporation enters into derivatives to manage the fair value changes, exposure to fluctuations exposed to price and interest rate risk, facilitate asset/liability management, minimize the variability of future cash flows on long-term debt, and to provide a service to certain qualifying customers to help facilitate their respective risk management strategies ("customer-initiated derivatives"). All derivatives are recognized on the Consolidated Statements of Financial Condition as other assets and liabilities, as applicable, at their estimated fair value. For derivatives designated as qualified cash flow hedges, changes in the fair value of the derivatives, to the extent effective as a hedge, are recorded in accumulated other comprehensive income, net of income taxes, and reclassified into earnings concurrently with the earnings of the hedged item. For customer-initiated and mortgage banking derivatives, changes in the fair value of the derivative are recognized immediately in earnings.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Interest rate swaps are entered into in order to economically hedge the effect of changes and to mitigate the impact of fluctuations in interest rate volatility to manage exposures that arise from business activities that result in the receipt or payment of future known and uncertain cash amounts. These derivatives are designated as cash flow hedges. 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. Interest rate swaps, are valued based on quoted prices for similar assets in an active market with inputs that are observable.

The Corporation utilizes interest rate derivatives to provide a service to certain qualifying customers to help facilitate their respective risk management strategies, customer-initiated derivatives. Therefore, these derivatives are not used to manage interest rate risk in the Corporation's assets or liabilities. The Corporation generally takes offsetting positions with dealer counterparties to mitigate the valuation risk of the customer-initiated derivatives. Income primarily results in the spread between the customer derivatives and offsetting dealer positions. The gains or losses derived from changes in fair value are recognized in current earnings during the period of change in other noninterest income on the Consolidated Statements of Income. The Corporation calculates a credit valuation adjustment 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.

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.

Premises and Equipment

Land is carried at cost. Premises and equipment are stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method with useful lives ranging from 25 to 40 years for buildings and three to ten years for all other depreciable assets. Maintenance and repairs are charged to expense as incurred.

Other Real Estate Owned and Repossessed Assets

Other real estate owned ("ORE") and repossessed assets represent property acquired by the Corporation as part of an acquisition or subsequently through the loan foreclosure or repossession process, or any other resolution activity that results in partial or total satisfaction of problem loans. ORE is primarily comprised of commercial and residential real estate properties, including vacant land and development properties, obtained in partial or total satisfaction of loan obligations. The acquired properties are recorded at fair value at the date of acquisition. Losses arising at the time of acquisition of properties not acquired as part of an acquisition are charged against the allowance for loan and lease losses. Foreclosed properties are initially recorded at the lower of cost, or the estimated fair value of the property, less estimated costs to sell, based upon the property's appraised value at the date of transfer to ORE and management's

estimate of the fair value of the collateral, establishing a new cost basis. Any difference between the net realizable value of the property and the carrying value of the loan is charged to the allowance for loan losses. Subsequently, all other real estate owned is valued at the lower of cost or fair value, less estimated costs to sell, based on periodic valuations performed by management, with any difference between the net realizable value of the property and the carrying value of the loan charged to the allowance for loan losses. If fair value declines subsequent to foreclosure, a valuation allowance is recorded through expense. Subsequent write-downs, for amounts not expected to be recovered, in the carrying value of other real estate owned and repossessed asset properties that may be required are expensed as incurred. Improvements to the properties may be capitalized if the improvements contribute to the overall value of the property. Improvement amounts may not be capitalized in excess of the net realizable value of the property. Any gains or losses realized at the time of disposal are reflected in other noninterest expense on the Consolidated Statements of Income. Other real estate owned and repossessed assets totaling \$6.3 million and \$8.8 million at December 31, 2018 and 2017, respectively, was included in "Interest receivable and other assets" in the Consolidated Statements of Financial Position.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Goodwill

Goodwill is not amortized, but rather is subject to impairment tests annually or more frequently if triggering events occur and indicate potential impairment. The Corporation's annual goodwill impairment assessment was performed as of October 31, 2018. The Corporation elected to utilize the qualitative assessment of goodwill impairment allowed under ASC Topic 350-20, Goodwill ("ASC 350-20") that became acceptable as a result of ASU 2011-08, Testing Goodwill for Impairment. In accordance with ASC 350-20, the Corporation assessed qualitative factors to determine whether it is more likely than not that the fair value of its reporting units were less than their carrying amounts.

In evaluating whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Corporation assesses relevant events and circumstances, including macroeconomic conditions, industry and market considerations, overall financial performance, changes in the composition or carrying amount of assets and liabilities, the market price of the Corporation's common stock, and other relevant factors. Based on the qualitative assessment performed, the Corporation determined that no goodwill impairment was evident as of the October 31, 2018 assessment date. The Corporation also determined that no triggering events occurred that indicated impairment from the most recent assessment date through December 31, 2018 and that the Corporation's goodwill was not impaired at December 31, 2018.

Other Intangible Assets

Intangible assets consist of core deposit intangible assets and additionally included non-compete intangible assets at December 31, 2017. Core deposit intangible assets arose as the result of business combinations or other acquisitions and are amortized over periods ranging from 10 to 15 years, primarily on an accelerated basis, as applicable. Non-compete intangible assets arose as the result of business combinations and are amortized over the period of the non-compete agreements. Intangible assets are tested for impairment on an annual basis in accordance with ASC Topic 350, "Intangibles-Goodwill and Other."

Share-based Compensation

The Corporation grants stock options, Time-Based Restricted Stock Units ("TRSUs"), Performance-Based Restricted Stock Units ("PRSUs"), and other stock awards to certain executive and senior management employees. The Corporation accounts for share-based compensation expense using the modified-prospective transition method. Under that method, compensation expense is recognized for stock options based on the estimated grant date fair value as computed using the Black-Scholes option pricing model and the probability of issuance. The Corporation accounts for stock awards based on the closing stock price of the Corporation's common stock on the date the award is granted. The fair values of stock options, stock awards and restricted stock awards are recognized as compensation expense on a straight-line basis over the requisite service period. The Corporation accounts for PRSUs based on the closing stock price of the Corporation's common stock on the date of grant, discounted by the present value of estimated future dividends to be declared over the requisite performance or service period. The fair value of PRSUs is recognized as compensation expense over the expected requisite performance period, or requisite service period for awards with multiple performance and service conditions. The Corporation accounts for TRSUs based on the closing stock price of the Corporation's common stock on the date of grant, as these awards accrue dividend equivalents equal to the amount of any cash dividends that would have been payable to a shareholder owning the number of shares of the Corporation's common stock represented by the TRSUs. The fair value of the TRSUs is recognized as compensation expense over the requisite service period.

Bank-Owned Life Insurance

The Corporation has life insurance policies on certain key officers of Chemical Bank. The majority of the bank-owned life insurance policies of the Corporation were obtained through its acquisition of Lake Michigan and the merger with Talmer. Bank-owned life insurance is recorded at the cash surrender value, net of surrender charges, and is included within "Interest receivable and other assets" on the Consolidated Statements of Financial Position and tax-exempt income from the periodic changes in the cash surrender values are recorded as "Other noninterest income" on the Consolidated Statements of Income. The total cash surrender value of our bank owned life insurance policies totaled \$152.1 million and \$147.6 million at December 31, 2018 and 2017, respectively. Bank owned life insurance income was \$4.0 million, \$4.8 million and \$1.8 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Collateralized Customer Deposits

Collateralized customer deposits 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 and are reflected as a liability in the accompanying Consolidated Statements of Financial Position. The Corporation's collateralized customer deposits are considered a stable source of liquidity, much like its core deposit base, and are generally only provided to customers that have an established banking relationship with Chemical Bank.

Short-term Borrowings

Short-term borrowings are comprised of short-term FHLB advances with original scheduled maturities of one year or less. From time to time, the Corporation may also utilized federal funds purchased, which represent unsecured borrowings from nonaffiliated third-party financial institutions, generally on an overnight basis, to cover short-term liquidity needs.

Long-term Borrowings

Long-term borrowings are comprised of securities sold under agreements to repurchase with an unaffiliated third-party financial institution, subordinated debentures and long-term FHLB advances and additionally included a secured non-revolving line-of-credit with an unaffiliated third-party financial institution at December 31, 2017. Securities sold under agreements to repurchase are collateralized financing transactions and the obligations to repurchase securities sold are reflected as a liability in the accompanying Consolidated Statements of Financial Position. The dollar amount of the securities underlying the agreements remains in the Corporation's investment securities portfolio.

FHLB advances, both short-term and long-term, are borrowings from the FHLB to fund short-term liquidity needs as well as a portion of the loan and investment securities portfolios. These advances are secured, under a blanket security agreement, by first lien residential mortgage loans with an aggregate book value equal to at least 140.0% of the FHLB advances and the FHLB stock owned by the Corporation. FHLB advances with an original maturity of more than one year are classified as long-term.

Fair Value Measurements

Fair value for assets and liabilities measured at fair value on a recurring or nonrecurring basis refers to the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants in the market in which the reporting entity transacts such sales or transfers based on the assumptions market participants would use when pricing an asset or liability. Assumptions are developed based on prioritizing information within a fair value hierarchy that gives the highest priority to quoted prices in active markets and the lowest priority to unobservable data, such as the reporting entity's own data.

The Corporation may choose to measure eligible items at fair value at specified election dates. Unrealized gains and losses on items for which the fair value measurement option has been elected are reported in earnings at each subsequent reporting date. At December 31, 2018 and 2017, the Corporation had elected the fair value option on all of its loans held-for-sale. In addition, the Corporation elected to account for loan servicing rights under the fair value method effective January 1, 2017. The Corporation has not elected the fair value option for any other financial assets or liabilities as of December 31, 2018.

Pension and Postretirement Benefit Plan Actuarial Assumptions

The Corporation's defined benefit pension, supplemental pension and postretirement benefit obligations and related costs are calculated using actuarial concepts and measurements. Two critical assumptions, the discount rate and the expected long-term rate of return on plan assets, are important elements of expense and/or benefit obligation measurements. Other assumptions involve employee demographic factors such as retirement patterns, mortality, turnover and the rate of future compensation increases, as well as future health care costs. The Corporation evaluates all assumptions annually.

The discount rate enables the Corporation to state expected future benefit payments as a present value on the measurement date. The Corporation determined the discount rate at December 31, 2018 and 2017 by utilizing the results from a discount rate model that involves selecting a portfolio of bonds to settle the projected benefit payments of each plan.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

To determine the expected long-term rate of return on defined benefit pension plan assets, the Corporation considers the current asset allocation of the defined benefit pension plan, as well as historical and expected returns on each asset class. A lower expected rate of return on defined benefit pension plan assets will increase pension expense.

The Corporation recognizes the over- or under-funded status of a plan within "Interest receivable and other assets" or "Interest payable and other liabilities" in the Consolidated Statements of Financial Position as measured by the difference between the fair value of the plan assets and the projected benefit obligation. Unrecognized prior service costs and actuarial gains and losses are recognized as a component of accumulated other comprehensive income (loss). The Corporation measures defined benefit plan assets and obligations as of December 31.

Advertising Costs

Advertising costs are expensed as incurred. Advertising and marketing expense was \$8.2 million, \$5.9 million and \$3.7 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Income and Other Taxes

The Corporation is subject to the income and other tax laws of the United States, the States of Michigan, Ohio and Indiana and other states where nexus has been created. These laws are complex and are subject to different interpretations by the taxpayer and the various taxing authorities. In determining the provision for income and other taxes, management must make judgments and estimates about the application of these inherently complex laws, related regulations and case law. In the process of preparing the Corporation's tax returns, management attempts to make reasonable interpretations of enacted tax laws. These interpretations are subject to challenge by the tax authorities upon audit or to reinterpretation based on management's ongoing assessment of facts and evolving case law.

The Corporation and its subsidiaries file a consolidated federal income tax return. The provision for federal income taxes is based on income and expenses, as reported in the Consolidated Financial Statements, rather than amounts reported on the Corporation's federal income tax return. The difference between the federal statutory income tax rate and the Corporation's effective federal income tax rate is primarily a function of the proportion of the Corporation's interest income exempt from federal taxation, nondeductible interest expense and other nondeductible expenses relative to pretax income and tax credits. When income and expenses are recognized in different periods for tax purposes than for book purposes, deferred tax assets and liabilities are recognized for the future tax consequences attributable to the temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Differences in the tax and book carrying amounts of assets and liabilities can also be generated when the Corporation acquires other banks or bank branches. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized as income or expense in the period that includes the enactment date of the change. On December 22, 2017, H.R.1, commonly referred to as the "Tax Cuts and Jobs Act" was signed into law. The Tax Cuts and Jobs Act, among other items, reduced the corporate income tax rate from 35% to 21%, effective January 1, 2018. As such, the Corporation completed a revaluation of the net deferred tax assets and estimated a reduction in the Corporation's deferred tax asset as of December 31, 2018.

On a quarterly basis, management assesses the reasonableness of its effective federal tax rate based upon its estimate of taxable income and the applicable taxes expected for the full year. Deferred tax assets and liabilities are reassessed

on a quarterly basis, including the need for a valuation allowance for deferred tax assets.

Uncertain income tax positions are evaluated to determine whether it is more-likely-than-not that a tax position will be sustained upon examination based on the technical merits of the tax position. The Corporation records unrecognized tax benefits as liabilities in accordance with ASC Topic 740, Income Taxes, and adjusts these liabilities when management's judgment changes as a result of the evaluation of new information not previously available. The potential for reserves for uncertain tax positions are reviewed quarterly for adequacy based upon developments in tax law and the status of audits or examinations. The Corporation had no unrecognized tax benefits for uncertain tax positions recorded at December 31, 2018 and 2017.

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

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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. 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.

Under the proportional amortization method, the Corporation amortizes the initial cost of the investment in proportion to the tax credits and other tax benefits. 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 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.

Earnings Per Share

The Corporation applies the two-class method of computing earnings per share as the Corporation has unvested restricted stock awards which qualify as participating securities. Under this calculation, all outstanding unvested share-based payment awards that contain rights to nonforfeitable dividends are considered participating securities and earnings per share is determined according to dividends declared and participating right in undistributed earnings.

Accumulated Other Comprehensive Income (Loss)

Comprehensive income of the Corporation includes net income and adjustments to shareholders' equity for changes in unrealized gains and losses on investment securities available-for-sale, unrealized gains and losses on interest rate swaps designated as cash flow hedges and changes in the net actuarial gain/loss for the Corporation's defined benefit pension and postretirement plans, net of income taxes. The Corporation presents "Comprehensive income" as a component in the Consolidated Statements of Changes in Shareholders' Equity and the components of other comprehensive income (loss) separately in the Consolidated Statements of Comprehensive Income.

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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 under the modified retrospective method	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 will be 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. The comparative information has not been restated and
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. 2016-20 - Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers			
ASU No. 2017-13 - Revenue from Contracts with Customers (Topic 606): Amendments to SEC Paragraphs Pursuant to the Staff Announcement at the July 20, 2017 EITF Meeting and Rescission of Prior SEC Staff Announcements and Observer Comments			
ASU No. 2017-14 - Income Statement - Revenue from Contracts with Customers (Topic 606) (SEC Update)			

continues to be reported under the accounting standards in effect for those periods. Additional required disclosures have been included in Note 16, 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 7, Other Real Estate Owned and Repossessed Assets, for further detail.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Standard	Description	Adoption Date	Effect on the financial statements
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 investments that do not have readily determinable fair values at either fair value or cost minus impairment, changes in measurement is recognized in net income, (iii) simplifying impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment, (iv) eliminating the requirement to disclose the methods and assumptions used to estimate the fair value of financial instruments measured at 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. 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 a modified retrospective approach with the exception of disclosure requirements which are adopted on a prospective basis	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 updated disclosures related to the fair value of financial instruments to the use of the exit price notion. Refer to Note 3, Fair Value Measurements and Note 4, Investment Securities, for further detail.
ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts as Cash Payments ("ASU 2016-15")		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 resulted in a reclassification of \$1.7 million and \$0.6 million of net periodic income from salaries, wages and employee benefits expense to other expenses on the Consolidated Statements of Income during the year ended December 31, 2017 and 2016, respectively.
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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Standard	Description	Adoption Date	Effect on the financial statements
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 did not have a material effect on the Consolidated Financial Statements.

Note 2: Mergers and Acquisitions

Merger with Talmer Bancorp, Inc.

On August 31, 2016, the Corporation completed the merger with Talmer for total consideration of \$1.61 billion. As a result of the merger, the Corporation issued 32.1 million shares of its common stock based on an exchange ratio where each Talmer shareholder received 0.4725 shares of the Corporation's common stock, and \$1.61 in cash, for each share of Talmer common stock. In conjunction with the merger, the Corporation entered into and drew on a \$125.0 million credit facility. The proceeds from the credit facility were used to pay off the Corporation's \$25.0 million line-of-credit and a \$37.5 million line-of-credit of Talmer, with the remaining proceeds used to partially fund the cash portion of the merger consideration. The credit facility was paid off during the year ended December 31, 2018. The Corporation had no merger and acquisition-related expenses during the year ended December 31, 2018 and incurred \$8.5 million and \$61.1 million of merger-related expenses during the years ended December 31, 2017 and 2016, respectively. As a result of the merger, Talmer Bank and Trust became a wholly-owned subsidiary of the Corporation. Talmer Bank and Trust was consolidated with and into Chemical Bank during the fourth quarter of 2016.

The Corporation determined that the merger with Talmer constitutes a business combination as defined by ASC 805. Accordingly, the assets acquired and liabilities assumed were recorded at their fair values on the date of acquisition. Fair values were determined in accordance with the guidance provided in ASC Topic 820, Fair Value Measurements, as of the merger date as presented in the following table.

(Dollars in thousands)

Consideration paid:

Stock	\$1,504,811
Cash	107,638
Total consideration	\$1,612,449

Fair value of identifiable assets acquired:

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

Cash and cash equivalents	\$433,352
Investment securities:	
Available-for-sale	808,894
Held-to-maturity	1,657
Loans held-for-sale	244,916
Loans	4,882,402
Premises and equipment	38,793
Loan servicing rights	42,462
Other intangible assets	19,088
Interest receivable and other assets	395,539
Total identifiable assets acquired	\$6,867,103
Fair value of liabilities assumed:	
Noninterest-bearing deposits	\$1,236,902
Interest-bearing deposits	4,057,716
Interest payable and other liabilities	100,936
Securities sold under agreements to repurchase with customers	19,704
Short-term borrowings	387,500
Long-term borrowings	299,597
Total liabilities assumed	\$6,102,355
Fair value of net identifiable assets acquired	\$764,748
Goodwill resulting from acquisition	\$847,701

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Information regarding loans accounted for under ASC 310-30 at the merger date is as follows:

(Dollars in thousands)

Accounted for under ASC 310-30:

Contractual cash flows	\$5,968,488
Contractual cash flows not expected to be collected (nonaccretable difference)	223,959
Expected cash flows	5,744,529
Interest component of expected cash flows (accretable yield)	862,127
Fair value at acquisition	\$4,882,402

Unaudited Pro Forma Combined Results of Operations

The following unaudited pro forma financial information presents the consolidated results of operation of the Corporation and Talmer as if the merger had occurred as of January 1, 2015. The unaudited pro forma combined results of operations are presented solely for information purposes and are not intended to represent or be indicative of the consolidated results of operations that Chemical would have reported had these transactions been completed as of the dates and for the periods presented, nor are they necessarily indicative of future results. In particular, no adjustments have been made to eliminate the amount of Talmer's provision for loan losses incurred prior to the acquisition date that would not have been necessary had the acquired loans been recorded at fair value as of the beginning of each period indicated. In accordance with Article 11 of SEC Regulation S-X, transaction costs directly attributable to the acquisitions have been excluded.

	Years ended December 31,		
(In thousands, except per share data)	2018	2017	2016
Net interest and other income	\$780,869	\$701,597	\$492,323
Net Income	284,020	149,523	115,847
Earnings per share:			
Basic	\$3.98	\$2.11	\$1.65
Diluted	\$3.94	\$2.08	\$1.62

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 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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.

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, preferred stock 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 2

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, non-compete 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 asset 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 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 has 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Loan servicing rights: The Corporation 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 9, "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 December 31, 2018 and 2017 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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
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

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

(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, 2017				
Investment securities — carried at fair value:				
Government and government-sponsored enterprises	\$	—\$202,916	\$ —	\$202,916
State and political subdivisions	—	345,970	—	345,970
Residential mortgage-backed securities	—	150,131	—	150,131
Collateralized mortgage obligations	—	1,033,845	—	1,033,845
Corporate bonds	—	192,794	—	192,794
Trust preferred securities	—	36,066	—	36,066
Preferred stock	—	1,824	—	1,824
Total investment securities — carried at fair value	—	1,963,546	—	1,963,546
Loans held-for-sale	—	52,133	—	52,133
Loan servicing rights	—	—	63,841	63,841
Derivative assets:				
Customer-initiated derivatives	—	9,376	—	9,376
Interest rate lock commitments	—	1,222	—	1,222
Power Equity CD	—	2,184	—	2,184
Risk management derivatives	—	5,899	—	5,899
Total derivatives	—	18,681	—	18,681
Total assets at fair value	\$	—\$2,034,360	\$ 63,841	\$2,098,201
Derivative liabilities:				
Customer-initiated derivatives	—	10,139	—	10,139
Forward contracts related to mortgage loans to be delivered for sale	—	34	—	34
Power Equity CD	—	2,184	—	2,184
Total derivatives	—	12,357	—	12,357
Total liabilities at fair value	\$	—\$12,357	\$ —	\$12,357

There were no transfers between levels within the fair value hierarchy during the years ended December 31, 2018 and 2017.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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

	Year Ended December 31,		
	2018	2017	2016
(Dollars in thousands)			
Balance, beginning of period	\$63,841	\$48,085	\$—
Additions due to acquisition	—	—	42,462
Transfer in based on new accounting policy election ⁽¹⁾	—	15,891	—
Gains (losses):			
Recorded in earnings (realized):			
Recorded in "Net gain on sale of loans and other mortgage banking revenue"	(1,054)	(8,880)	4,593
New originations	8,226	8,745	1,030
Balance, end of period	\$71,013	\$63,841	\$48,085

⁽¹⁾ Refer to Note 1, Summary of Significant Accounting Policies, for further details.

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 December 31, 2018 and 2017.

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:

	December 31,	
(Dollars in thousands)	2018	2017
Aggregate fair value	\$85,030	\$52,133
Contractual balance	82,080	50,597
Unrealized gain	2,950	1,536

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

	Year Ended December 31,		
(Dollars in thousands)	2018	2017	2016
Interest income ⁽¹⁾	\$2,788	\$2,540	\$1,606
Change in fair value ⁽²⁾	1,414	715	39
Net gain on sales of loans ⁽²⁾	12,173	31,734	15,686
Total included in earnings	\$16,375	\$34,989	\$17,331

⁽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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 December 31, 2018 and 2017, no goodwill was impaired.

Other intangible assets: Other intangible assets consist of core deposit intangible assets and non-compete intangible assets. These items are recorded at fair value when initially recorded. Subsequently, core deposit intangible assets and non-compete intangible assets are amortized primarily on an accelerated basis over periods ranging from ten to fifteen years for core deposit intangible assets and 1 year for non-compete intangible assets 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 or non-compete intangible asset impairment is identified, the Corporation classifies impaired core deposit intangible assets and impaired non-compete intangible assets subject to nonrecurring fair value measurements as Level 3 valuations. At December 31, 2018 and 2017, there was no impairment identified for core deposit intangible assets or non-compete 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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)
December 31, 2018	
Impaired loans	\$ 63,247
Other real estate and repossessed assets	883
Total	\$ 64,130
December 31, 2017	
Impaired loans	\$ 70,619
Other real estate and repossessed assets	2,899
Total	\$ 73,518

There were no liabilities recorded at fair value on a nonrecurring basis at either December 31, 2018 or 2017.

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 December 31, 2018	Valuation Technique	Significant Unobservable Inputs	Range
Impaired loans	\$ 63,247	Appraisal of collateral	Discount for type of collateral and age of appraisal	20%-30%
Other real estate and repossessed assets	883	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 following the adoption of ASU 2016-01 on January 1, 2018 and used the present value method prior to the adoption of ASU 2016-01, using unobservable inputs requiring management's judgment to estimate the fair values of its financial instruments, which are considered Level 3 valuations. These Level 3 valuations are affected by the assumptions made and, accordingly, are 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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	December 31, 2018		2017	
		Carrying Amount	Fair Value	Carrying Amount	Fair Value
Financial assets:					
Investment securities:					
Held-to-maturity	Level 2	\$623,599	\$618,232	\$676,593	\$662,516
Held-to-maturity	Level 3	500	440	500	390
Net loans ⁽¹⁾	Level 3	15,159,795	14,907,789	14,063,380	14,114,545
Financial liabilities:					
Time deposits	Level 2	\$4,074,248	\$4,041,212	\$3,217,207	\$3,225,847
Collateralized customer deposits	Level 2	382,687	382,370	415,236	415,236
Short-term borrowings	Level 2	2,035,000	2,034,719	2,000,000	1,999,137
Long-term borrowings	Level 2	426,002	423,258	372,882	367,984

⁽¹⁾ Included \$63.2 million and \$70.6 million of impaired loans recorded at fair value on a nonrecurring basis at December 31, 2018 and 2017, 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 December 31, 2018 and 2017:

(Dollars in thousands)	Investment Securities Carried at Fair Value			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
December 31, 2018				
Debt securities				
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
December 31, 2017				
Debt securities				
Government and government-sponsored enterprises	\$203,099	\$ 765	\$ 948	\$202,916
State and political subdivisions	350,088	310	4,428	345,970
Residential mortgage-backed securities	151,752	5	1,626	150,131
Collateralized mortgage obligations	1,042,240	89	8,484	1,033,845
Corporate bonds	193,230	1,156	1,592	192,794
Trust preferred securities	34,848	1,280	62	36,066
Total debt securities available-for-sale	1,975,257	3,605	17,140	1,961,722
Equity securities				
Preferred stock	1,389	435	—	1,824
Total equity securities	1,389	435	—	1,824
Total	\$1,976,646	\$ 4,040	\$ 17,140	\$1,963,546

(Dollars in thousands)	Investment Securities Held-to-Maturity			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
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
December 31, 2017				
State and political subdivisions	\$676,593	\$ 3,856	\$ 17,933	\$662,516
Trust preferred securities	500	—	110	390
Total	\$677,093	\$ 3,856	\$ 18,043	\$662,906

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 and equity securities 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. Unrealized gains or losses on

equity securities were recorded as part of accumulated other comprehensive income in stockholders' equity through December 31, 2017. Effective January 1, 2018, the amendments within ASU 2016-01, require that equity investments

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

be measured at fair value with changes in fair value recognized in net income. At January 1, 2018, the Corporation's equity securities consisted of \$1.8 million in preferred stocks. The Corporation recognized a cumulative effect adjustment in the amount of \$344 thousand as of January 1, 2018 to reclassify the fair value position into retained earnings. Beginning January 1, 2018, the fair value changes on equity securities are recognized in net income, rather than in accumulated other comprehensive income. The Corporation sold its remaining position in equity securities during the year ended December 31, 2018. 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). Proceeds from sales of investment securities carried at fair value and the associated gains and losses recorded in earnings are listed below:

	For the years ended December 31,		
(Dollars in thousands)	2018	2017	2016
Proceeds	\$4,215	\$409,220	\$41,446
Gross gains	263	178	325
Gross losses	(39)	(7,566)	(196)

The following is a summary of the amortized cost and fair value of investment securities at December 31, 2018, 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.

	December 31, 2018	
(Dollars in thousands)	Amortized Cost	Fair Value
Investment Securities Carried at Fair Value:		
Due in one year or less	\$51,523	\$51,244
Due after one year through five years	109,918	108,051
Due after five years through ten years	515,050	498,612
Due after ten years	2,393,154	2,363,925
Total	\$3,069,645	\$3,021,832
Investment Securities Held-to-Maturity:		
Due in one year or less	\$55,840	\$55,728
Due after one year through five years	230,154	228,528
Due after five years through ten years	164,325	162,764
Due after ten years	173,780	171,652
Total	\$624,099	\$618,672

Securities with a carrying value of \$1.05 billion and \$937.2 million were pledged at December 31, 2018 and 2017, respectively, to secure borrowings and deposits.

At December 31, 2018 and 2017, 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.

The following schedule summarizes information for debt securities both carried at fair value and held-to-maturity with gross unrealized losses at December 31, 2018 and 2017, aggregated by category and length of time that individual securities have been in a continuous unrealized loss position. As of December 31, 2018, the Corporation's securities portfolio consisted of 2,096 securities, 1,408 of which were in an unrealized loss position.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

(Dollars in thousands)	Less Than 12 Months Fair Value	Gross Unrealized Losses	12 Months or More Fair Value	Gross Unrealized Losses	Total Fair Value	Gross Unrealized Losses
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
December 31, 2017						
Government and government-sponsored enterprises	\$ 63,818	\$ 510	\$ 24,621	\$ 438	\$ 88,439	\$ 948
State and political subdivisions	437,407	12,268	349,242	10,093	786,649	22,361
Residential mortgage-backed securities	93,508	383	56,576	1,243	150,084	1,626
Collateralized mortgage obligations	713,525	7,235	73,707	1,249	787,232	8,484
Corporate bonds	71,447	1,138	47,878	454	119,325	1,592
Trust preferred securities	—	—	11,164	172	11,164	172
Total	\$ 1,379,705	\$ 21,534	\$ 563,188	\$ 13,649	\$ 1,942,893	\$ 35,183

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 December 31, 2018, 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 December 31, 2018 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 December 31, 2018, 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 December 31, 2018, 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.

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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 December 31, 2018 and 2017 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 \$85.0 million at December 31, 2018 and \$52.1 million at December 31, 2017. The Corporation sold loans totaling \$741.9 million, \$838.5 million and \$723.5 million during the years ended December 31, 2018, 2017 and 2016, respectively.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Commercial, commercial real estate, 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
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
December 31, 2017			
Commercial loan portfolio:			
Commercial	\$2,407,606	\$978,036	\$3,385,642
Commercial real estate:			
Owner-occupied	1,185,614	627,948	1,813,562
Non-owner occupied	1,518,787	1,087,974	2,606,761
Vacant land	47,024	33,323	80,347
Total commercial real estate	2,751,425	1,749,245	4,500,670
Real estate construction and land development	498,155	76,060	574,215
Subtotal	5,657,186	2,803,341	8,460,527
Consumer loan portfolio:			
Residential mortgage	1,967,857	1,284,630	3,252,487
Consumer installment	1,510,540	102,468	1,613,008
Home equity	611,846	217,399	829,245
Subtotal	4,090,243	1,604,497	5,694,740
Total loans ⁽²⁾	\$9,747,429	\$4,407,838	\$14,155,267

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

(2) Reported net of deferred costs totaling \$19.7 million and \$26.1 million at December 31, 2018 and 2017, respectively.

The Corporation acquired loans at fair value as of the acquisition date, which includes loans acquired in the acquisitions of Talmer, Lake Michigan, Monarch, Northwestern and 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 discount 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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	
Year Ended December 31, 2018						
Balance at beginning of period	\$731,353	\$95,124	\$22,496	\$ 60,814	\$17,110	\$926,897
Accretion recognized in interest income	(164,614)	(24,722)	(3,881)	(17,988)	(10,214)	(221,419)
Net reclassification (to) from nonaccretable difference ⁽¹⁾⁽²⁾	(61,407)	2,730	(783)	(1,371)	2,678	(58,153)
Balance at end of period	\$505,332	\$73,132	\$17,832	\$ 41,455	\$9,574	\$647,325
Year Ended December 31, 2017						
Balance at beginning of period	\$798,210	\$121,416	\$27,182	\$ 69,847	\$23,316	\$1,039,971
Accretion recognized in interest income	(175,678)	(29,077)	(4,533)	(20,318)	(12,563)	(242,169)
Net reclassification (to) from nonaccretable difference ⁽¹⁾	108,821	2,785	(153)	11,285	6,357	129,095
Balance at end of period	\$731,353	\$95,124	\$22,496	\$ 60,814	\$17,110	\$926,897
Year Ended December 31, 2016						
Balance at beginning of period	\$—	\$152,999	\$34,558	\$ 82,623	\$28,077	\$298,257
Addition attributable to acquisitions	862,127	—	—	—	—	862,127
Accretion recognized in interest income	(63,917)	(33,031)	(5,468)	(15,791)	(13,352)	(131,559)
Net reclassification (to) from nonaccretable difference ⁽¹⁾	—	1,448	(1,908)	3,015	8,591	11,146
Balance at end of period	\$798,210	\$121,416	\$27,182	\$ 69,847	\$23,316	\$1,039,971

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 (1) 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.

(2) The 2018 net reclassification from accretable to nonaccretable difference in the Talmer portfolio was primarily the result of unexpected prepayments and payoffs.

Chemical Bank has extended loans to its directors, executive officers and their affiliates. These loans were made in the ordinary course of business upon normal terms, including collateralization and interest rates prevailing at the time, and did not involve more than the normal risk of repayment by the borrower. The aggregate loans outstanding to the directors, executive officers and their affiliates totaled \$3.6 million at December 31, 2018 and \$3.8 million at December 31, 2017. During 2018 and 2017, there were \$3.8 million and \$44.1 million, respectively, of new loans and other additions, while repayments and other reductions totaled \$4.0 million and \$64.2 million, respectively.

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 loan ranging in amounts from \$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 from \$7.0 million up to Chemical Bank's internal lending limit, depending on risk rating and credit action

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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.

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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following schedule presents the recorded investment of loans in the commercial loan portfolio by credit risk categories at December 31, 2018 and 2017:

(Dollars in thousands)	Pass	Special Mention	Substandard	Doubtful	Total
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
December 31, 2017					
Originated Portfolio:					
Commercial	\$2,316,464	\$41,059	\$ 50,083	\$ —	\$2,407,606
Commercial real estate:					
Owner-occupied	1,133,609	19,438	32,567	—	1,185,614
Non-owner occupied	1,504,195	4,728	9,864	—	1,518,787
Vacant land	39,775	38	7,211	—	47,024
Total commercial real estate	2,677,579	24,204	49,642	—	2,751,425
Real estate construction and land development	494,528	837	2,790	—	498,155
Subtotal	5,488,571	66,100	102,515	—	5,657,186
Acquired Portfolio:					
Commercial	873,861	68,418	35,539	218	978,036
Commercial real estate:					
Owner-occupied	580,127	23,998	23,036	787	627,948
Non-owner occupied	995,709	43,645	48,620	—	1,087,974
Vacant land	27,849	327	5,147	—	33,323
Total commercial real estate	1,603,685	67,970	76,803	787	1,749,245
Real estate construction and land development	72,346	2,218	1,496	—	76,060
Subtotal	2,549,892	138,606	113,838	1,005	2,803,341
Total	\$8,038,463	\$204,706	\$ 216,353	\$ 1,005	\$8,460,527

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 December 31, 2018 and 2017:

(Dollars in thousands)	Residential mortgage	Consumer installment	Home equity	Total consumer
December 31, 2018				
Originated Portfolio:				
Performing	\$2,399,317	\$1,450,076	\$ 608,525	\$4,457,918
Nonperforming	7,988	1,276	3,604	12,868
Subtotal	2,407,305	1,451,352	612,129	4,470,786
Acquired Loans	1,051,361	69,722	166,043	1,287,126
Total	\$3,458,666	\$1,521,074	\$ 778,172	\$5,757,912
December 31, 2017				
Originated Portfolio:				
Performing	\$1,959,222	\$1,509,698	\$ 607,541	\$4,076,461
Nonperforming	8,635	842	4,305	13,782
Subtotal	1,967,857	1,510,540	611,846	4,090,243
Acquired Loans	1,284,630	102,468	217,399	1,604,497
Total	\$3,252,487	\$1,613,008	\$ 829,245	\$5,694,740

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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

A summary of nonperforming assets follows:

	December 31,	
(Dollars in thousands)	2018	2017
Nonperforming assets		
Nonaccrual loans:		
Commercial	\$30,139	\$19,691
Commercial real estate:		
Owner-occupied	16,056	19,070
Non-owner occupied	23,021	5,270
Vacant land	3,337	5,205
Total commercial real estate	42,414	29,545
Real estate construction and land development	12	77
Residential mortgage	7,988	8,635
Consumer installment	1,276	842
Home equity	3,604	4,305
Total nonaccrual loans	85,433	63,095
Other real estate owned and repossessed assets	6,256	8,807
Total nonperforming assets	\$91,689	\$71,902

The Corporation's nonaccrual loans at December 31, 2018 and 2017 included \$28.1 million and \$29.1 million, respectively, of nonaccrual TDRs.

There was no interest income recognized on nonaccrual loans during 2018, 2017 and 2016 while the loans were in nonaccrual status. During 2018, 2017 and 2016, the Corporation recognized \$2.1 million, \$1.3 million and \$0.4 million, respectively, of interest income on these loans while they were in an accruing status. Additional interest income that would have been recorded on nonaccrual loans had they been current in accordance with their original terms was \$4.8 million in 2018, \$3.1 million in 2017 and \$2.9 million in 2016. During 2018, 2017 and 2016, the Corporation recognized interest income of \$2.7 million, \$2.6 million and \$3.9 million, respectively, on performing TDRs.

The Corporation had \$4.5 million of residential mortgage loans that were in the process of foreclosure at December 31, 2018, compared to \$4.2 million at December 31, 2017.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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

(Dollars in thousands)	Loans Past Due and Still Accruing		Total past due	Nonaccrual Loans	Current	Total loans
	30-89 days past due	90 days or more past due				
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
December 31, 2017						
Originated Portfolio:						
Commercial	\$16,269	\$—	\$16,269	\$19,691	\$2,371,646	\$2,407,606
Commercial real estate:						
Owner-occupied	4,078	—	4,078	19,070	1,162,466	1,185,614
Non-owner occupied	1,595	13	1,608	5,270	1,511,909	1,518,787
Vacant land	83	—	83	5,205	41,736	47,024
Total commercial real estate	5,756	13	5,769	29,545	2,716,111	2,751,425
Real estate construction and land development	—	—	—	77	498,078	498,155
Residential mortgage	2,325	—	2,325	8,635	1,956,897	1,967,857
Consumer installment	3,663	—	3,663	842	1,506,035	1,510,540
Home equity	2,891	1,364	4,255	4,305	603,286	611,846
Total	\$30,904	\$1,377	\$32,281	\$63,095	\$9,652,053	\$9,747,429

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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following schedules present impaired loans by classes of loans at December 31, 2018 and December 31, 2017:

(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

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

(Dollars in thousands)	Recorded investment	Unpaid principal balance	Related valuation allowance
December 31, 2017			
Impaired loans with a valuation allowance:			
Commercial	\$28,897	\$31,655	\$ 2,296
Commercial real estate:			
Owner-occupied	17,774	21,588	2,317
Non-owner occupied	5,307	7,870	316
Vacant land	4,922	5,122	594
Total commercial real estate	28,003	34,580	3,227
Real estate construction and land development	313	313	14
Residential mortgage	15,872	15,872	1,487
Consumer installment	966	966	120
Home equity	4,570	4,570	858
Subtotal	78,621	87,956	8,002
Impaired loans with no related valuation allowance:			
Commercial	8,504	9,291	—
Commercial real estate:			
Owner-occupied	11,351	12,631	—
Non-owner occupied	5,977	6,438	—
Vacant land	752	792	—
Total commercial real estate	18,080	19,861	—
Residential mortgage	4,902	4,902	—
Home equity	1,770	1,770	—
Subtotal	33,256	35,824	—
Total impaired loans:			
Commercial	37,401	40,946	2,296
Commercial real estate:			
Owner-occupied	29,125	34,219	2,317
Non-owner occupied	11,284	14,308	316
Vacant land	5,674	5,914	594
Total commercial real estate	46,083	54,441	3,227
Real estate construction and land development	313	313	14
Residential mortgage	20,774	20,774	1,487
Consumer installment	966	966	120
Home equity	6,340	6,340	858
Total	\$111,877	\$123,780	\$ 8,002

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 at December 31, 2018, 2017 and 2016 and the respective interest income amounts recognized:

(Dollars in thousands)	For the years ended December 31, 2018		2017		2016	
	Average annual recorded investment	Interest income recognized while on impaired status	Average annual recorded investment	Interest income recognized while on impaired status	Average annual recorded investment	Interest income recognized while on impaired status
Impaired loans with a valuation allowance:						
Commercial	\$17,683	\$ 457	\$25,099	\$ 939	\$7,829	\$ —
Commercial real estate:						
Owner-occupied	13,103	352	14,143	531	3,694	583
Non-owner occupied	6,440	48	3,274	89	1,711	139
Vacant land	1,881	47	2,566	57	253	113
Total commercial real estate	21,424	447	19,983	677	5,658	835
Real estate construction and land development	4,619	8	175	10	19	—
Residential mortgage	12,179	457	16,390	538	23,958	1,285
Consumer installment	989	8	744	4	359	—
Home equity	3,262	80	4,201	82	1,759	—
Subtotal	60,156	1,457	66,592	2,250	39,582	2,120
Impaired loans with no related valuation allowance:						
Commercial	21,954	577	10,196	28	29,559	1,343
Commercial real estate:						
Owner-occupied	13,807	296	11,999	—	20,306	17
Non-owner occupied	10,681	263	9,143	241	14,306	339
Vacant land	2,730	—	3,516	4	7,034	45
Total commercial real estate	27,218	559	24,658	245	41,646	401
Real estate construction and land development	1,520	7	78	—	585	22
Residential mortgage	7,594	110	4,622	38	1,519	—
Consumer installment	304	—	205	—	—	—
Home equity	2,217	25	1,392	14	555	—
Subtotal	60,807	1,278	41,151	325	73,864	1,766
Total impaired loans:						
Commercial	39,637	1,034	35,295	967	37,388	1,343
Commercial real estate:						
Owner-occupied	26,910	648	26,142	531	24,000	600
Non-owner occupied	17,121	311	12,417	330	16,017	478
Vacant land	4,611	47	6,082	61	7,287	158
Total commercial real estate	48,642	1,006	44,641	922	47,304	1,236
Real estate construction and land development	6,139	15	253	10	604	22
Residential mortgage	19,773	567	21,012	576	25,477	1,285
Consumer installment	1,293	8	949	4	359	—
Home equity	5,479	105	5,593	96	2,314	—

Total	\$ 120,963	\$ 2,735	\$ 107,743	\$ 2,575	\$ 113,446	\$ 3,886
-------	------------	----------	------------	----------	------------	----------

126

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 \$45.6 million and \$48.8 million at December 31, 2018 and December 31, 2017, 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 years ended December 31, 2018, 2017 and 2016 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 year ended December 31, 2018							
Commercial loan portfolio:							
Commercial	\$4,967	\$ —	\$4,129	\$ 1,438	67	\$10,566	\$ 10,534
Commercial real estate:							
Owner-occupied	981	—	2,945	953	19	5,018	4,879
Non-owner occupied	68	66	—	—	2	143	134
Total commercial real estate	1,049	66	2,945	953	21	5,161	5,013
Subtotal	6,016	66	7,074	2,391	88	15,727	15,547
Consumer loan portfolio:							
Residential mortgage	269	151	147	—	9	577	567
Consumer installment	192	168	113	—	47	492	473
Home equity	469	73	453	—	25	1,076	995
Subtotal	930	392	713	—	81	2,145	2,035
Total loans	\$6,946	\$ 458	\$7,787	\$ 2,391	169	\$17,872	\$ 17,582

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

(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 year ended December 31, 2017							
Commercial loan portfolio:							
Commercial	\$2,308	\$ —	\$ 1,827	\$ 2,176	36	\$6,416	\$ 6,311
Commercial real estate:							
Owner-occupied	512	—	311	582	13	1,468	1,405
Non-owner occupied	194	—	27	371	3	629	592
Total commercial real estate	706	—	338	953	16	2,097	1,997
Real estate construction and land development	35	—	—	—	1	36	35
Subtotal	3,049	—	2,165	3,129	53	8,549	8,343
Consumer loan portfolio:							
Residential mortgage	297	—	383	—	11	763	680
Consumer installment	118	37	37	—	34	208	192
Home equity	389	—	52	—	14	537	441
Subtotal	804	37	472	—	59	1,508	1,313
Total loans	\$3,853	\$ 37	\$2,637	\$ 3,129	112	\$10,057	\$ 9,656

(Dollars in thousands)	Concession type				Forbearance agreement	Total number of loans	Pre-modification recorded investment	Post-modification recorded investment
	Principal deferral	Principal reduction	A/B Note Restructure ⁽¹⁾	Interest rate				
For the year ended December 31, 2016								
Commercial loan portfolio:								
Commercial	\$11,533	\$ 1,527	\$ 43	\$ —	\$ 1,750	54	\$14,853	\$ 14,853
Commercial real estate:								
Owner-occupied	2,508	1,866	—	—	—	13	4,374	4,374
Non-owner occupied	485	—	—	—	—	3	485	485
Total commercial real estate	2,993	1,866	—	—	—	16	4,859	4,859
Subtotal	14,526	3,393	43	—	1,750	70	19,712	19,712
Consumer loan portfolio:								
Residential mortgage	477	—	—	—	—	4	477	477
Consumer installment	87	—	—	—	—	14	87	87
Home equity	179	—	—	364	—	10	543	543
Subtotal	743	—	—	364	—	28	1,107	1,107
Total loans	\$15,269	\$ 3,393	\$ 43	\$ 364	\$ 1,750	98	\$20,819	\$ 20,819

(1) Loan restructurings whereby the original loan is restructured into two notes: an "A" note, which generally reflects the portion of the modified loans which is expected to be collected; and a "B" note, which is fully charged off.

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 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.

128

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following schedule presents the Corporation's TDRs at December 31, 2018 and 2017:

(Dollars in thousands)	Accruing TDRs	Nonaccrual TDRs	Total
December 31, 2018			
Commercial loan portfolio	\$ 32,508	\$ 24,343	\$56,851
Consumer loan portfolio	13,072	3,732	16,804
Total	\$ 45,580	\$ 28,075	\$73,655
December 31, 2017			
Commercial loan portfolio	\$ 34,484	\$ 24,358	\$58,842
Consumer loan portfolio	14,298	4,748	19,046
Total	\$ 48,782	\$ 29,106	\$77,888

The following schedule includes TDRs for which there was a payment default during the years ended December 31, 2018, 2017 and 2016, 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 years ended December 31,					
	2018		2017		2016	
	Number of loans	Principal balance at year end	Number of loans	Principal balance at year end	Number of loans	Principal balance at year end
Commercial loan portfolio:						
Commercial	6	\$ 700	5	\$ 1,617	—	\$ —
Commercial real estate	3	508	—	—	2	1,721
Commercial loan portfolio	9	\$ 1,208	5	\$ 1,617	2	\$ 1,721
Consumer loan portfolio (residential mortgage)	18	413	17	434	14	259
Total	27	\$ 1,621	22	\$ 2,051	16	\$ 1,980

Commitments to lend additional funds to borrowers whose terms have been modified in TDRs totaled \$3.2 million and \$2.0 million at December 31, 2018 and 2017, respectively.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Allowance for Loan Losses

The following schedule presents, by loan portfolio segment, the changes in the allowance for the originated loan portfolio for the years ended December 31, 2018, 2017 and 2016.

(Dollars in thousands)	Commercial loan portfolio	Consumer loan portfolio	Total
Originated Loan Portfolio			
Changes in allowance for loan losses for the year ended December 31, 2018:			
Beginning balance	\$ 66,133	\$ 25,754	\$ 91,887
Provision for loan losses	22,656	7,674	30,330
Charge-offs	(9,563)	(8,901)	(18,464)
Recoveries	3,533	2,278	5,811
Ending balance	\$ 82,759	\$ 26,805	\$ 109,564
Changes in allowance for loan losses for the year ended December 31, 2017:			
Beginning balance	\$ 51,201	\$ 27,067	\$ 78,268
Provision for loan losses	19,007	4,293	23,300
Charge-offs	(8,570)	(8,297)	(16,867)
Recoveries	4,495	2,691	7,186
Ending balance	\$ 66,133	\$ 25,754	\$ 91,887
Changes in allowance for loan losses for the year ended December 31, 2016:			
Beginning balance	\$ 47,234	\$ 26,094	\$ 73,328
Provision for loan losses	9,788	5,087	14,875
Charge-offs	(8,906)	(6,396)	(15,302)
Recoveries	3,085	2,282	5,367
Ending balance	\$ 51,201	\$ 27,067	\$ 78,268

The following schedule presents, by loan portfolio segment, the changes in the allowance for the acquired loan portfolio for the year ended December 31, 2018. There was no allowance established for the acquired loan portfolio for the years ended December 31, 2017 and 2016.

(Dollars in thousands)	Commercial loan portfolio	Consumer loan portfolio	Total
Acquired Loan Portfolio			
Changes in allowance for loan losses for the year ended December 31, 2018:			
Beginning balance	\$ —	\$ —	\$ —
Provision for loan losses	420	—	420
Charge-offs	—	—	—
Recoveries	—	—	—
Ending balance	\$ 420	\$ —	\$ 420

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following schedule presents by loan portfolio segment, details regarding the balance in the allowance and the recorded investment in loans at December 31, 2018 and 2017 by impairment evaluation method.

	Commercial	Consumer	
(Dollars in thousands)	Loan	Loan	Total
	Portfolio	Portfolio	
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 accounted for under ASC 310-30	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 accounted for under ASC 310-30	2,137,897	1,287,126	3,425,023
Total	\$9,511,867	\$5,757,912	\$15,269,779
Allowance for loan losses balance at December 31, 2017 attributable to:			
Loans individually evaluated for impairment	\$5,537	\$2,465	\$8,002
Loans collectively evaluated for impairment	60,596	23,289	83,885
Loans accounted for under ASC 310-30	—	—	—
Total	\$66,133	\$25,754	\$91,887
Recorded investment (loan balance) at December 31, 2017:			
Loans individually evaluated for impairment	\$83,797	\$28,080	\$111,877
Loans collectively evaluated for impairment	5,573,389	4,062,163	9,635,552
Loans accounted for under ASC 310-30	2,803,341	1,604,497	4,407,838
Total	\$8,460,527	\$5,694,740	\$14,155,267

Note 6: Premises and Equipment

The following table summarizes premises and equipment:

(Dollars in thousands)	December 31,	
	2018	2017
Land and land improvements	\$31,357	\$31,427
Buildings	133,720	130,028
Furniture and equipment	107,660	100,932
Total	272,737	262,387
Less accumulated depreciation	(149,295)	(135,491)
Premises and equipment, net	\$123,442	\$126,896

The Corporation leases certain branch properties and equipment under operating leases. Net rent expense was \$7.7 million, \$6.4 million and \$3.3 million for the years ended December 31, 2018, 2017 and 2016, respectively.

During the years ended December 31, 2018 and 2017, the Corporation had no transfers and \$13.2 million transferred from premises and equipment to other assets, respectively, due to branch or building operation closings/consolidations.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 7: 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, 2016	\$ 9,716	\$ 219
Additions due to acquisitions	13,227	313
Other additions ⁽¹⁾	9,938	3,032
Net payments received	(1,560)	) (763)
Disposals	(13,873)	) (2,426)
Write-downs	(636)) —
Balance at December 31, 2016	\$ 16,812	\$ 375
Other additions ⁽¹⁾	6,905	4,641
Net payments received	(1,064)) —
Disposals	(12,831)	) (4,391)
Write-downs	(1,640)) —
Balance at December 31, 2017	\$ 8,182	\$ 625
Transfers based on adoption of ASU 2014-09 ⁽²⁾	(189)) —
Other additions ⁽¹⁾	7,179	4,307
Net payments received	(249)) —
Disposals	(7,825)	) (4,508)
Write-downs	(1,266)) —
Balance at December 31, 2018	\$ 5,832	\$ 424

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

In accordance with the updates to Topic 606 adopted by the Corporation effective January 1, 2018, \$1.1 million of

⁽²⁾ 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, Summary of Significant Accounting Policies for further information.

At December 31, 2018, the Corporation had \$1.3 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 \$4.5 million of consumer mortgage loans secured by residential real estate properties for which formal foreclosure proceedings are in process, as of December 31, 2018.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 year ended December 31, 2018		
Net gain (loss) on sale	\$ 1,372	\$ (309)
Write-downs	(1,266)	—
Net operating expenses	(858)	(5)
Total	\$ (752)	\$ (314)
For the year ended December 31, 2017		
Net gain (loss) on sale	\$ 3,038	\$ (381)
Write-downs	(1,640)	—
Net operating expenses	(1,981)	(41)
Total	\$ (583)	\$ (422)
For the year ended December 31, 2016		
Net gain on sale	\$ 5,325	\$ 523
Write-downs	(636)	—
Net operating expenses	(740)	(60)
Total	\$ 3,949	\$ 463

Note 8: Goodwill

Goodwill was \$1.13 billion at both December 31, 2018 and 2017. The difference between consideration paid for the business and the net fair value of assets and liabilities is recognized as goodwill. The Corporation recorded goodwill in the amount of \$847.7 million related to the merger with Talmer completed on August 31, 2016.

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 December 31, 2018 and that the Corporation's goodwill was not impaired at December 31, 2018.

Note 9: 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 elected to account for LSRs acquired related to the merger with Talmer under the fair value measurement method. Prior to January 1, 2017, the Corporation accounted for all other LSRs at the lower of cost or fair value ("Amortized LSRs"). The Corporation elected as of January 1, 2017 to account for all previously amortized LSRs and all other LSRs under the fair value measurement method. This change in accounting policy resulted in a cumulative adjustment to retained earnings as of January 1, 2017 in the amount of \$3.7 million. For further information on this election, refer to Note 1, Summary of Significant Accounting Policies.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 year ended December 31, 2018			
Fair value, beginning of period	\$ 427	\$63,414	\$63,841
Additions from loans sold with servicing retained	139	8,087	8,226
Changes in fair value due to:			
Reductions from pay-offs, pay downs and run-off	(115)	(2,766)	(2,881)
Changes in estimates of fair value ⁽¹⁾	—	1,827	1,827
Fair value, end of period	\$ 451	\$70,562	\$71,013
Principal balance of loans serviced	\$ 41,127	\$6,826,952	\$6,868,079
For the year ended December 31, 2017			
Fair value, beginning of period	\$ 344	\$47,741	\$48,085
Transfers in based on new accounting policy election ⁽²⁾	—	15,891	15,891
Additions from loans sold with servicing retained	188	8,557	8,745
Changes in fair value due to:			
Reductions from pay-offs, pay downs and run-off	(105)	(2,400)	(2,505)
Changes in estimates of fair value ⁽¹⁾	—	(6,375)	(6,375)
Fair value, end of period	\$ 427	\$63,414	\$63,841
Principal balance of loans serviced	\$ 40,316	\$7,068,431	\$7,108,747
For the year ended December 31, 2016			
Fair value, beginning of period	\$ —	\$—	\$—
Acquired in Talmer Bancorp, Inc. merger	365	42,097	42,462
Additions from loans sold with servicing retained	—	1,030	1,030
Changes in fair value due to:			
Reductions from pay-offs, pay downs and run-off	(17)	(502)	(519)
Changes in estimates of fair value ⁽¹⁾	(4)	5,116	5,112
Fair value, end of period	\$ 344	\$47,741	\$48,085
Principal balance of loans serviced under the fair value measurement method	\$ 64,756	\$5,235,415	\$5,300,171

Represents estimated LSR value change resulting primarily from market-driven changes in interest rates and

⁽¹⁾ prepayments. Included in "Net gain on sale of loans and other mortgage banking revenue" in the Consolidated Statements of Income.

The Corporation elected as of January 1, 2017 to account for all loan servicing rights previously accounted for at

⁽²⁾ the lower of cost or fair value under the fair value measurement method. For further information on this election, refer to Note 1, Summary of Significant Accounting Policies.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following shows the net carrying value and fair value of LSRs and the total loans that the Corporation serviced for others accounted for at the lower of cost or fair value for the year ended December 31, 2016:

	Year Ended December 31, 2016
(Dollars in thousands)	
Net carrying value of LSRs	\$10,230
Fair value of LSRs	\$15,891
Valuation allowance	\$8
Loans serviced for others that have servicing rights capitalized	\$2,074,057

Activity for LSRs accounted for at the lower of cost or fair value and the related valuation allowance for the year ended December 31, 2016 is as follows:

	Year Ended December 31, 2016
(Dollars in thousands)	
Balance at beginning of period	\$ 11,122
Additions	3,303
Amortization	(4,187)
Change in valuation allowance	(8)
Balance at end of period	\$ 10,230

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 December 31, 2018 and 2017.

	Mortgage
As of December 31, 2018	
Prepayment speed	0.00 - 26.4%
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, 2017	
Prepayment speed	0.00 - 38.8%
WA discount rate	10.1 %
WA Cost to service/per year	\$ 66
Ancillary income/per year	\$ 31
WA float range	1.6 %

The Corporation realized total loan servicing fee income of \$17.6 million, \$18.2 million and \$8.7 million for the years ended December 31, 2018, 2017 and 2016, respectively, recorded as a component of "Net gain on sale of loans and

other mortgage banking revenue" in the Consolidated Statements of Income.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 10: Other Intangible Assets

The following table shows the net carrying value of the Corporation's other intangible assets.

	December 31,	
(Dollars in thousands)	2018	2017
Core deposit intangible assets	\$28,556	\$34,259
Non-compete intangible assets	—	12
Total other intangible assets	\$28,556	\$34,271

Core Deposit Intangible Assets

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 6.6 years as of December 31, 2018.

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:

	December 31,	
(Dollars in thousands)	2018	2017
Gross original amount	\$56,456	\$59,143
Accumulated amortization	27,900	24,884
Net carrying amount	\$28,556	\$34,259

Amortization expense recognized on core deposit intangible assets was \$5.7 million, \$6.0 million and \$5.2 million for the years ended December 31, 2018, 2017 and 2016, respectively.

The estimated future amortization expense on core deposit intangible assets for the next five years is as follows:

	Estimated
(Dollars in thousands)	amortization expense
2019	\$ 5,441
2020	4,851
2021	4,471
2022	4,218
2023	3,591

Note 11: 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

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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)	December 31, 2018			2017		
	Notional Amount (1)	Fair Value Gross Derivative Assets (2)	Gross Derivative Liabilities (2)	Notional Amount (1)	Fair Value Gross Derivative Assets (2)	Gross Derivative Liabilities (2)
Risk management purposes:						
Derivatives designated as hedging instruments:						
Interest rate swaps	\$820,000	\$10,148	\$ 3,278	\$620,000	\$5,899	\$ —
Total risk management purposes	820,000	10,148	3,278	620,000	5,899	—
Customer-initiated and mortgage banking derivatives:						
Customer-initiated derivatives	2,477,640	26,680	27,664	1,365,119	9,376	10,139
Foreign exchange forwards ⁽³⁾	—	—	—	—	—	—
Forward contracts related to mortgage loans to be delivered for sale	127,159	—	719	115,996	—	34
Interest rate lock commitments	54,848	1,049	—	71,003	1,222	—
Power Equity CD	36,771	718	718	38,807	2,184	2,184
Total customer-initiated and mortgage banking derivatives	2,696,418	28,447	29,101	1,590,925	12,782	12,357
Total gross derivatives	\$3,516,418	\$38,595	\$ 32,379	\$2,210,925	\$18,681	\$ 12,357

(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 \$0.9 million at December 31, 2018 and \$0.8 million at December 31, 2017.

(3) The foreign exchange forwards that were entered into during the years ended December 31, 2018 and 2017 matured prior to each respective year end.

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.

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)	For the years ended December 31,		
		2018	2017	2016
Forward contracts related to mortgage loans to be delivered for sale	Net gain on sale of loans and other mortgage banking revenue	\$(685)	\$(669)	\$692
Interest rate lock commitments		(173)	266	(1,356)

	Net gain on sale of loans and other			
	mortgage banking revenue			
Power Equity CD	Other noninterest income	—	—	—
Foreign exchange forwards	Other noninterest income	—	—	—
Customer-initiated derivatives	Other noninterest income	(221)	(1,028)	581
Total gain (loss) recognized in income		\$(1,079)	\$(1,431)	\$(83)

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 years ended December 31, 2018 and 2017. The Corporation first began entering into interest rate swaps designated as cash flow hedges during the year ended December 31, 2017.

(Dollars in thousands)	Amount of gain recognized in other comprehensive income	Amount of gain (loss) reclassified from other comprehensive income to interest income or expense
Year Ended December 31, 2018		
Interest rate swaps designated as cash flow hedges	\$ 2,841	\$ 1,871
Year Ended December 31, 2017		
Interest rate swaps designated as cash flow hedges	\$ 4,263	\$ (1,633)

At December 31, 2018, the Corporation expected \$4.5 million of unrealized gains to be reclassified as a decrease 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.

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 Financial instruments Collateral (received)/posted	Net Amount
December 31, 2018					
Offsetting derivative assets					
Derivative assets ⁽¹⁾	\$ 36,791	\$ —	\$ 36,791	\$ — \$ (16,120)	\$ 20,671
Offsetting derivative liabilities					
Derivative liabilities ⁽¹⁾	30,822	—	30,822	— 430	30,392
December 31, 2017					
Offsetting derivative assets					
Derivative assets ⁽¹⁾	\$ 15,228	\$ —	\$ 15,228	\$ — \$ —	\$ 15,228
Offsetting derivative liabilities					

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

Derivative liabilities	10,139	—	10,139	—	1,081	9,058
------------------------	--------	---	--------	---	-------	-------

(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 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 \$4.2 million, \$3.4 million and \$2.6 million during the years ended December 31, 2018, 2017 and 2016, respectively. The Corporation's remaining investment in qualified affordable housing projects accounted for under the proportional amortization method totaled \$84.9 million at December 31, 2018 and \$51.4 million at December 31, 2017.

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 new market projects accounted for under the equity method totaled \$13.3 million and \$17.3 million at December 31, 2018 and 2017, 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 \$72.0 million and \$48.1 million at December 31, 2018 and 2017, 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 year ended December 31, 2018, federal housing tax credits resulted in income tax benefit of \$12.9 million, partially offset by impairment expense of \$12.3 million, representing \$9.7 million net of tax, recorded in "other noninterest expense." During the year ended December 31, 2017, federal housing tax credits were placed into service resulting in income tax benefit of \$7.9 million, partially offset by impairment expense of \$9.3 million, representing \$6.0 million net of tax, recorded in "Other" operating expenses. There was no impairment loss recognized as of December 31, 2016.

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.

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 December 31, 2018 and 2017, the Corporation had \$119.0 million and \$187.6 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 December 31, 2018 and 2017.

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

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 December 31, 2018 and 2017, the Corporation had \$3.55 billion and \$3.03 billion, respectively, of commitments to extend credit. The Corporation had undisbursed loan commitments of \$493.3 million and \$571.0 million at December 31, 2018 and 2017, 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 and \$1.2 million at December 31, 2018 and 2017, respectively, 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 \$11.6 million and \$13.3 million at December 31, 2018 and 2017, 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 \$11.4 million and \$12.8 million at December 31, 2018 and 2017, respectively. In the event of nonperformance, the Corporation has rights to the underlying collateral securing the loans. At December 31, 2018 and 2017, the Corporation had recorded a liability of \$0.1 million and \$0.2 million, respectively, 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 \$19.1 million and \$20.6 million at December 31, 2018 and 2017, respectively. In the event of default, the Corporation has rights to the underlying collateral securing the loans. At both December 31, 2018 and 2017, the Corporation had recorded a liability of \$1.2 million.

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 December 31, 2018 and 2017, respectively, the liability recorded in connection with these representations and warranties totaled \$4.1 million and \$5.3 million, respectively.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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

	For the years ended December 31,		
(Dollars in thousands)	2018	2017	2016
Reserve balance at beginning of period	\$5,349	\$6,459	\$4,048
Addition of fair value of representations and warranties due to mergers and acquisitions	—	—	3,100
Reserve reduction	(1,217)	(1,095)	(580)
Charge-offs	(48)	(15)	(109)
Ending reserve balance	\$4,084	\$5,349	\$6,459
Reserve balance:			
Liability for specific claims	\$398	\$531	\$730
General allowance	3,686	4,818	5,729
Total reserve balance	\$4,084	\$5,349	\$6,459

Operating Leases and Other Noncancelable Contractual Obligations

The Corporation has operating leases and other noncancelable contractual obligations on buildings, equipment, computer software and other expenses that will require annual payments through 2034, including renewal option periods for those building leases that the Corporation expects to renew.

Future minimum lease payments for operating leases and other noncancelable contractual obligations are as follows:

(Dollars in thousands)	Future Minimum Lease Payments ⁽¹⁾	Other Noncancelable Contracts	Total
Years ending December 31,			
2019	\$ 7,251	\$ 46,225	\$53,476
2020	6,239	37,566	43,805
2021	5,135	31,330	36,465
2022	4,775	30,124	34,899
2023	4,375	27,849	32,224
Thereafter	12,107	46,771	58,878
Total	\$ 39,882	\$ 219,865	\$259,747

(1) Future minimum lease payments are reduced by \$632 thousand related to sublease income to be received within the next five years.

Minimum payments include estimates, where applicable, of estimated usage and annual Consumer Price Index increases of approximately 1.9%. Total expense recorded under operating leases and other noncancelable contractual obligations was \$55.2 million in 2018, compared to \$30.8 million in 2017 and \$20.4 million in 2016.

Legal Proceedings

The Corporation and Chemical Bank are subject to various pending or threatened legal proceedings arising out of the normal course of business and related to our merger and acquisition history.

The Corporation assesses its liabilities and contingencies in connection with outstanding legal proceedings utilizing the latest information available. Where it is probable that the Corporation will incur a loss and the amount of the loss can be reasonably estimated, the Corporation records a liability in the Consolidated Financial Statements. While the ultimate liability with respect to these litigation matters and claims cannot be determined at this time, in the opinion of management, the ultimate disposition of these matters is not expected to have a material adverse effect on the financial position or results of operations of the Corporation.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 14: Deposits

A summary of deposits follows:

	December 31,	
(Dollars in thousands)	2018	2017
Noninterest-bearing demand	\$3,809,252	\$3,725,779
Savings and money market accounts	4,092,082	3,655,671
Interest-bearing demand	3,316,278	2,724,415
Brokered deposits	985,522	453,227
Other time deposits	3,390,148	3,083,711
Total deposits	\$15,593,282	\$13,642,803

Excluded from total deposits are demand deposit account overdrafts (overdrafts) which have been classified as loans. At December 31, 2018 and 2017, overdrafts totaled \$7.9 million and \$5.9 million, respectively.

Deposits from executive officers, directors, principal shareholders and their related interests were \$9.8 million at December 31, 2018.

Time deposits, including certificates of deposit and certain individual retirement account deposits, of \$250 thousand or more totaled \$2.1 billion and \$1.6 billion at December 31, 2018 and 2017, respectively. At December 31, 2018, the scheduled maturities of time deposits for the next five years were as follows:

(Dollars in thousands)	
2019	\$2,776,097
2020	1,032,314
2021	148,995
2022	82,076
2023	33,900
Thereafter	866
Total	\$4,074,248

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 15: 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)	December 31, 2018		2017	
	Amount	Weighted Average Rate ⁽¹⁾	Amount	Weighted Average Rate ⁽¹⁾
Short-term borrowings:				
FHLB advances: 2.46% - 2.59% fixed-rate notes	\$2,035,000	2.47 %	\$2,000,000	1.39 %
Long-term borrowings:				
FHLB advances: 1.00% - 2.72% fixed-rate notes due 2019 to 2025 ⁽²⁾	410,102	2.00 %	337,204	1.26 %
Line-of-credit: floating-rate based on one-month LIBOR plus 1.75%	—	—	19,963	3.10 %
Subordinated debt obligations: floating-rate based on three-month LIBOR plus 1.45% - 2.85% due 2034 to 2035 ⁽³⁾	11,572	4.85 %	11,425	3.69 %
Subordinated debt obligations: floating-rate based on three-month LIBOR plus 3.25% due in 2032 ⁽⁴⁾	4,328	5.65 %	4,290	4.59 %
Total long-term borrowings	426,002	2.11 %	372,882	1.47 %
Total borrowings	\$2,461,002	2.41 %	\$2,372,882	1.40 %
Other short-term liabilities:				
Collateralized customer deposits	\$382,687	0.75 %	\$415,236	0.44 %

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

The December 31, 2018 balance includes advances payable of \$410.0 million and purchase accounting premiums

(2) of \$0.1 million. The December 31, 2017 balance includes advances payable of \$337.0 million and purchase accounting premiums of \$0.2 million.

The December 31, 2018 balance includes advances payable of \$15.0 million and purchase accounting discounts of \$3.4 million. The December 31, 2017 balance includes advance payable of \$15.0 million and purchase accounting discounts of \$3.6 million.

The December 31, 2018 balance includes advances payable of \$5.0 million and purchase accounting discounts of \$0.7 million. The December 31, 2017 balance includes advance 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 \$7.81 billion as of December 31, 2018. 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 \$230.1 million at December 31, 2018. Effective January 1, 2018, the Corporation adopted ASU 2016-01. As a result, the Corporation will continue to report FHLB and FRB stock at cost.

At December 31, 2018, the contractual principal payments due and the amortization/accretion of purchase accounting adjustments for the remaining maturities of long-term debt over the next five years and thereafter are as follows:

(Dollars in thousands)	Long-term Debt by Maturity
------------------------	----------------------------------

Years Ending December 31,	
2019	\$ 100,058
2020	110,044
2021	—
2022	—
2023	—
Thereafter	215,900
Total	\$426,002

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 16: 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.

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.

	Year
	Ended
	December
	31,
	2018
(Dollars in thousands)	
Noninterest income	

Edgar Filing: CHEMICAL FINANCIAL CORP - Form 10-K

Service charges and fees on deposit accounts	\$22,858
Wealth management revenue	5,099
Other charges and fees for customer services	5,556
Noninterest income from contracts with customers within the scope of ASC 606	33,513
Noninterest income within the scope of other GAAP topics	115,023
Total noninterest income	\$148,536
Noninterest expense	
Other	\$(1,063)

145

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 December 31, 2018 and December 31, 2017, the Corporation did not have a material amount of contract balances.

Note 17: Income Taxes

The current and deferred components of the provision for income taxes were as follows:

	Years Ended December 31,		
(Dollars in thousands)	2018	2017	2016
Current income tax expense (benefit)			
Federal	\$(653)	\$14,665	\$19,144
State	321	20	(423)
Total current income tax expense	(332)	14,685	18,721
Deferred income tax expense			
Federal	41,687	92,636	23,649
State	229	548	442
Total deferred income tax expense	41,916	93,184	24,091
Change in valuation allowance	317	(1,089)	(706)
Income tax provision	\$41,901	\$106,780	\$42,106

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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

(Dollars in thousands)	Years Ended December 31,					
	2018		2017		2016	
	Amount	Rate	Amount	Rate	Amount	Rate
Tax at statutory rate	\$68,443	21.0 %	\$89,706	35.0 %	\$52,548	35.0 %
Changes resulting from:						
Tax-exempt interest income	(6,513)	(2.0)	(9,001)	(3.5)	(5,320)	(3.5)
State taxes, net of federal benefit	434	0.1	369	0.1	13	—
Change in valuation allowance	317	0.1	(1,089)	(0.4)	(706)	(0.5)
Bank-owned life insurance adjustments	(838)	(0.2)	(1,696)	(0.7)	(832)	(0.6)
Director plan change in control	—	—	—	—	(508)	(0.3)
Income tax credits, net	(16,148)	(4.9)	(11,449)	(4.4)	(2,454)	(1.6)
Nondeductible transaction expenses	—	—	156	0.1	2,100	1.4
Nondeductible FDIC insurance premiums	1,095	0.3	—	—	—	—
Tax benefit in excess of compensation costs on share-based payments ⁽¹⁾	(1,782)	(0.5)	(5,886)	(2.3)	(2,240)	(1.5)
Impact of the Tax Cuts and Jobs Act ⁽²⁾	(2,939)	(0.9)	46,660	18.2	—	—
Other, net	(168)	(0.1)	(990)	(0.4)	(495)	(0.4)
Income tax expense	\$41,901	12.9 %	\$106,780	41.7 %	\$42,106	28.0 %

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

The year ended December 31, 2017 included the initial calculated impact of the enactment of H.R.1 (the "Tax Cuts and Jobs Act"), which required a revaluation of net deferred tax assets and liabilities. The year ended December 31,

⁽²⁾ 2018 included the impact of analyzing additional information in the year following the enactment date of the Tax Cuts and Jobs Act that was not previously available, as allowed by Staff Accounting Bulletin (SAB) No. 118, issued in late December 2017. See below for further details.

On December 22, 2017, H.R.1 (known as the "Tax Cuts and Jobs Act") was signed into law. Among other provisions, the Tax Cuts and Jobs Act, reduced the statutory corporate income tax rate from a maximum rate of 35% to a flat tax rate of 21%, effective January 1, 2018. ASC Topic 740 requires the recognition of the effects of tax law changes be recorded in the period in which the law is enacted. Therefore, the Corporation's deferred tax assets and liabilities which were previously valued at a federal rate of 35%, were revalued to the current enacted federal tax rate of 21% as of December 31, 2017. In addition, the SEC issued Staff Accounting Bulletin No. 118 to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available in reasonable detail to complete the accounting for certain income tax effects of the Tax Cuts and Jobs Act, thereby allowing a measurement period to reflect provisional adjustments as information becomes available. The measurement period includes the Tax Cuts and Jobs Acts' enactment date up until one year after.

During the year ended December 31, 2017, the impact of the Tax Cuts and Jobs Act resulted in a \$46.7 million increase to income tax expense related to continuing operations as a result of the revaluation of the net deferred tax asset of \$46.0 million and an acceleration of amortization expense on the low income housing tax credit investment portfolio of \$0.7 million. The Corporation did not have any provisional adjustments to its net deferred tax asset as a result of the tax reform at December 31, 2017 under Staff Accounting Bulletin No. 118, but continued to obtain, prepare and analyze information as it became available during 2018 in order to complete the accounting requirements under ASC Topic 740 by utilizing the measurement period afforded under SAB 118. These adjustments were finalized with the filing of the Company's 2017 Federal tax return in the fourth quarter and resulted in a tax benefit of \$2.9

million.

147

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The significant components of the deferred tax assets and liabilities at December 31, 2018 and 2017 were as follows:

	December 31,	
(Dollars in thousands)	2018	2017
Deferred tax assets:		
Allowance for loan losses	\$24,019	\$20,446
Acquisition-related fair value adjustments	16,511	27,607
Unrealized loss on securities	10,040	2,751
Accrued stock-based compensation	3,239	4,082
Loss and tax credit carry forwards	30,169	57,969
Nonaccrual loan interest	10,830	6,155
Accrued expense	7,397	9,200
Other	4,888	9,330
Total deferred tax assets	107,093	137,540
Deferred tax liabilities:		
Loan servicing rights	14,941	13,446
Core deposit intangible assets	4,966	6,022
Goodwill	4,281	4,076
Deferred loan fees	4,963	4,551
Prepaid expenses	5,625	7,390
Other	5,894	3,184
Total deferred tax liabilities	40,670	38,669
Net deferred tax asset before valuation allowance	66,423	98,871
Valuation allowance	(1,467)	(1,150)
Net deferred tax asset	\$64,956	\$97,721

The valuation allowance against the Corporation's deferred tax assets at December 31, 2018 and 2017 totaled \$1.5 million and \$1.2 million respectively. The valuation allowance at December 31, 2018 included management's estimate of capital loss carry forwards more likely than not to expire unutilized. Included in the valuation allowance at December 31, 2017 was \$0.6 million due to IRC Section 382 limitations on the utilization of pre-ownership change loss and tax credit carry forwards associated with previously acquired entities and \$0.6 million due to management's estimate of capital loss carry forwards more likely than not to expire unutilized. Actual outcomes could vary from the Corporation's current estimates, resulting in future increases or decreases in the valuation allowance and corresponding future tax expense or benefit.

Management concluded that no valuation allowance was necessary on the remainder of the Corporation's net deferred tax assets at December 31, 2018 and 2017. This determination was based on the Corporation's history of pre-tax and taxable income over the prior three years, as well as management's expectations for sustainable profitability in the future. Management monitors deferred tax assets quarterly for changes affecting the ability to realize and the valuation allowance could be adjusted in future periods.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following table is a summary of the loss attributes, Section 382 limitations, and tax expiration periods as of December 31, 2018.

	From the Acquisition of:						
	Talmer Bancorp and Talmer Bank Prior Ownership Changes						
	First Place Bank	Talmer Bank	First of Huron Corp./Signature Bank	From 2009 Ownership change	Not Limited by Section 382	Total	
(Dollars in thousands)	Monarch Holdings Bank	First Bank	Bank				
Tax Loss and Credit Carryforwards as of 12/31/18:							
Years Expiring (except AMT Credits)	2026-2027	2027-2031	2028-2032	2029-2032	2027-2029		
Annual Section 382 limitation-base ⁽¹⁾	\$673	\$6,650	\$ 3,028	\$ 365	\$ 145	\$ — \$ N/A	
Gross Federal Net Operating Losses	12,350	—	41,039	247	1,595	— 55,231	
Gross Capital Losses	—	—	—	—	—	6,987 6,987	
Realized Built-in Losses	—	61,317	8,936	—	—	— 70,253	
Business Tax Credits	1,651	781	—	—	—	— 2,432	
Less amounts not recorded due to Sec 382 Limitation	(1,738)	(140)	—	—	(145)	— (2,023)	
Alternative Minimum Tax Credits - no expiration	106	2,115	—	303	—	— 2,524	
Valuation Allowance	—	—	—	—	—	(1,467) (1,467)	

In respect to the Monarch acquisition, in addition to the statutory "base" Section 382 limitation, recognized built in gain increases the Section 382 limitation during the five year period beginning on the acquisition date. The Corporation estimates that the recognized built in gain will total \$1.6 million.

At December 31, 2018, the Corporation had approximately \$36.0 million of bad debt reserve in equity for which no provision for federal income taxes was recorded. This amount represents Talmer's qualifying thrift bad debt reserve at December 31, 1987 through its acquisition of First Place Bank, which is only required to be recaptured into taxable income if certain events occur. At December 31, 2018, the potential tax on the above amount was approximately \$7.5 million. The Corporation concluded its audit for Talmer Bancorp's Financial Institutions tax for the years ended December 31, 2013, 2014 and 2015, with no changes.

The Corporation's federal tax returns for the years ended December 31, 2015 to present are open to potential examination. Talmer amended its four federal tax returns for the years 2011, 2012, 2013 and 2014 to reflect the impact of changes to First Place Bank due to an IRS settlement in January of 2016. These four amendments were selected for audit which concluded with no changes and all expected refunds were received in 2017. The Corporation's most significant states of operation, Michigan and Ohio, do not impose income-based taxes on financial institutions. The Corporation and/or its subsidiaries are subject to immaterial amounts of income tax in various other states, with varying years open to potential examination. The Corporation concluded its audit for Talmer Bancorp's Ohio Financial Institutions tax for the years ended December 31, 2013, 2014, and 2015, with no changes.

The Corporation had no unrecognized tax benefits at December 31, 2018 or 2017 and does not expect to record unrecognized tax benefits of any significance during the next twelve months. The Corporation recognizes interest and/or penalties related to income tax matters in income tax expense, when applicable. There were no liabilities accrued for interest and/or penalties at December 31, 2018 or 2017.

Note 18: 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 years ended December 31, 2018, 2017 and 2016, share-based compensation expense related to share-based awards totaled \$8.6 million, \$17.3 million and \$14.7 million, respectively. The excess tax benefit realized from share-based compensation transactions during the years ended December 31, 2018, 2017 and 2016 was \$1.8 million, \$6.1 million and \$2.2 million, respectively. During the year ended December 31, 2018, the Corporation granted 321,043 restricted stock units to certain officers of the Corporation.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 December 31, 2018, there were 1,301,285 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 fully vested upon completion of the merger with Talmer. Stock options assumed by the Corporation in the merger with Talmer were fully vested prior to assumption.

The following summarizes information about stock options outstanding and exercisable at December 31, 2018:

Range of exercise prices per share	Options outstanding			Options exercisable		
	Number outstanding	Weighted average exercise price per share	Weighted average contractual term (in years)	Number exercisable	Weighted average exercise price per share	Weighted average contractual term (in years)
\$11.09 - 12.80	32,691	\$ 12.37	1.93	32,691	\$ 12.37	1.93
\$13.20 - 16.24	26,669	15.73	4.00	26,669	15.73	4.00
\$19.97 - 21.10	22,955	20.15	1.99	22,955	20.15	1.99
\$23.78 - 25.14	162,561	24.59	3.59	162,561	24.59	3.59
\$29.45 - 32.81	428,350	31.71	6.64	267,067	31.05	6.33
\$46.95 - 53.72	104,217	53.35	8.25	43,842	53.54	8.24
\$11.09 - 53.72	777,443	\$ 31.42	5.79	555,785	\$ 28.65	5.13

The intrinsic value of all outstanding in-the-money stock options and exercisable in-the-money stock options was \$5.8 million and \$5.2 million, respectively, at December 31, 2018. The aggregate intrinsic values of outstanding and exercisable options at December 31, 2018 were calculated based on the closing market price of the Corporation's common stock on December 31, 2018 of \$36.61 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 for the years ended December 31, 2017 and 2016 was \$26.6 million and \$80.4 million, respectively.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

A summary of activity for the Corporation's stock options as of and during the years ended December 31, 2018, 2017 and 2016 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, 2015	479,755	\$ 28.75	\$ 8.49	1,054,739	\$ 25.38
Granted	441,167	32.81	6.15	441,167	32.81
Acquired	—	—	—	1,466,408	15.08
Exercised	—	—	—	(450,296)	) 20.02
Vested	(454,360)	28.74	8.49	—	—
Forfeited/expired	(58,623)	) 31.10	7.17	(58,623)	) 31.10
Outstanding at December 31, 2016	407,939	\$ 32.81	\$ 6.15	2,453,395	\$ 21.41
Granted	132,414	53.43	9.94	132,414	53.43
Exercised	—	—	—	(1,427,159)	) 17.50
Vested	(161,751)	37.73	7.07	—	—
Forfeited/expired	(47,732)	) 37.55	7.03	(47,732)	) 37.55
Outstanding at December 31, 2017	330,870	\$ 37.97	\$ 7.09	1,110,918	\$ 29.56
Exercised	—	—	—	(302,796)	) 24.00
Vested	(78,533)	) 37.16	6.94	—	—
Forfeited/expired	(30,679)	) 37.20	6.97	(30,679)	) 37.20
Outstanding at December 31, 2018	221,658	\$ 38.37	\$ 7.16	777,443	\$ 31.42
Exercisable/vested at December 31, 2018				555,785	\$ 28.65

Total cash received from option exercises during the years ended December 31, 2018, 2017 and 2016 was \$2.6 million, \$3.2 million and \$2.7 million, respectively, resulting in the issuance of 179,887 shares, 621,355 shares and 229,055 shares, respectively.

At December 31, 2018, unrecognized compensation expense related to stock options totaled \$1.2 million and is expected to be recognized over a remaining weighted average period of 2.6 years.

The fair value of the stock options granted during the years ended December 31, 2017 and 2016 were estimated on the date of grant using the Black-Scholes option pricing model with the following assumptions. The Corporation did not grant any stock options during the year ended December 31, 2018.

	2017	2016
Expected dividend yield	3.31 %	3.30 %
Risk-free interest rate	2.05 %	1.39 %
Expected stock price volatility	26.7 %	27.9 %
Expected life of options — in years	6.0	6.5
Weighted average fair value of options granted	\$9.94	\$6.15

The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant and the expected life of the options granted. Expected stock volatility was based on historical volatility of the Corporation's common stock over the expected life of the option. The expected life of options represents the period of time that options granted are expected to be outstanding and is based primarily upon historical experience, including option exercise behavior. Because of the unpredictability of the assumptions required, the Black-Scholes (or any other valuation) model is incapable of accurately predicting the Corporation's common stock price or of placing an accurate present value on

options to purchase its

151

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

stock. In addition, the Black-Scholes model was designed to approximate value for types of options that are very different from those issued by the Corporation. In spite of any theoretical value that may be placed on a stock option grant, no value is possible under options issued by the Corporation without an increase in the market price per share of the Corporation's common stock over the market price per share of the Corporation's common stock at the date of grant.

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 during the year ended December 31, 2018 is presented below:

	Number of units	Weighted-average grant date fair value per unit
Outstanding at December 31, 2017	380,940	\$ 41.29
Granted	321,043	54.15
Converted into shares of common stock	(102,553)	34.77
Forfeited/expired	(22,940)	47.87
Outstanding at December 31, 2018	576,490	\$ 49.35

At December 31, 2018, unrecognized compensation expense related to RSUs totaled \$16.4 million and is expected to be recognized over a remaining weighted average period of 3.1 years.

Restricted Stock Awards

The Corporation assumed restricted stock awards in the merger with Talmer that vest upon completion of future 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. If an individual that has been awarded restricted stock awards terminates their employment prior to the end of the vesting period, the unvested portion of the stock is forfeited, with certain exceptions.

The following table provides information regarding nonvested restricted stock awards:

	Number of awards	Weighted-average acquisition-date fair value
Nonvested restricted stock awards		
Nonvested at January 1, 2018	83,228	\$ 46.23
Vested	(41,784)	46.23
Forfeited	(592)	46.23
Nonvested at December 31, 2018	40,852	\$ 46.23

At December 31, 2018, unrecognized compensation expense related to nonvested restricted stock awards totaled \$0.3 million and is expected to be recognized over a remaining weighted average period of 0.2 years.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 19: 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 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.

The freeze of the Pension Plan effective September 30, 2017, required a remeasurement of the plan's projected benefit obligation. The combined impact of the remeasurement, an increase in fair value of underlying assets, the impact of the freeze and changes to participant's status as a result of the Corporation's restructuring efforts during the year ended December 31, 2017, resulted in an increase of the funded status of the Pension Plan. A discount rate of 3.68% was utilized to remeasure the projected benefit obligation as of December 31, 2017. There was less than \$0.1 million of curtailment cost to the Corporation as a result of the amendment. A discount rate of 4.32% was utilized for the projected benefit obligation as of December 31, 2018. The Pension Plan is fully funded as of December 31, 2018. At December 31, 2018, the Corporation had 80 employees who had accrued benefits under the Pension Plan, which contributions are intended to provide benefits attributable to service-to-date employees.

Pension Plan expense was a benefit of \$3.8 million in 2018, compared to a benefit of \$1.5 million in 2017 and an expense of \$0.1 million in 2016.

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 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. The curtailment, in addition to changes in valuation of liabilities, resulted in a reduction in obligation during the year ended December 31, 2017. As of December 31, 2018, 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 December 31, 2018, 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,

153

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 Corporation's 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.

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. Prior to January 1, 2018, the Corporation provided an employer match, in addition to a 4.0% contribution for all employees, with the exception of employees participating the Pension Plan discussed above, during the time period they were eligible to earn service credits. The Corporation previously matched 50.0% of the participants' elective deferrals on the first 4.0% of the participants' base compensation up to the maximum amount allowed under the Internal Revenue Code. The 401(k) Savings Plan provides employees with the option to invest in the Corporation's common stock. The Corporation's combined amount of the employer match and 4.0% to the 401(k) Savings Plan totaled \$8.4 million in 2018, \$9.1 million in 2017 and \$6.5 million in 2016.

Multi-Employer Defined Benefit Plan

In conjunction with the April 1, 2015 acquisition of Monarch, the Corporation acquired a participation in the Pentegra Defined Benefit Plan for Financial Institutions (Pentegra DB Plan), a qualified defined benefit plan. Employee benefits for Monarch employees under the Pentegra DB Plan were frozen effective April 1, 2004. The Pentegra DB Plan operates as a multi-employer plan for accounting purposes and as a multiple employer plan under the Employee Retirement Income Security Act of 1974 and the Internal Revenue Code (IRC). The Pentegra DB Plan is a single plan under IRC Section 413(c) and, as a result, all the plan's assets stand behind all of the plan's liabilities. Accordingly, contributions made by a participating employer may be used to provide benefits to participants of other participating employers. No contributions were made to the Pentegra DB Plan during the years ended December 31, 2018, 2017 and 2016.

The Pentegra DB Plan's Employer Identification Number is 13-5645888 and the Plan Number is 333. Financial information for the Pentegra DB Plan, which maintains a June 30 year end, is made available through the public Form 5500 which is available by April 15th of the year following the plan year end. The Pentegra DB Plan was fully funded as of its most recent year end. The Corporation's allocation of assets and liabilities in the Pentegra DB Plan totaled \$3.8 million and \$3.7 million respectively, as of December 31, 2018 and 2017, and the Corporation's allocation of assets comprised 0.1% of the plan's total assets at those dates.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Benefit Obligations and Plan Expenses

The following schedule sets forth the changes in the projected benefit obligation and plan assets of the Corporation's Plans:

(Dollars in thousands)	Pension Plan		Postretirement Plan		SERP	
	2018	2017	2018	2017	2018	2017
Projected benefit obligation:						
Benefit obligation at beginning of year	\$121,361	\$123,968	\$2,512	\$2,601	\$2,423	\$2,567
Service cost	—	639	3	5	—	61
Interest cost	4,356	4,966	82	94	12	69
Net actuarial loss (gain)	(7,048)	10,131	(208)	10	(36)	(274)
Benefits paid	(7,237)	(6,432)	(189)	(198)	(2,062)	—
Curtailment	—	(11,911)	—	—	—	—
Benefit obligation at end of year	111,432	121,361	2,200	2,512	337	2,423
Fair value of plan assets:						
Fair value of plan assets at beginning of year	145,901	132,751	—	—	—	—
Actual return on plan assets	(10,312)	19,582	—	—	—	—
Employer contributions	—	—	—	198	—	—
Benefits paid	(7,237)	(6,432)	—	(198)	—	—
Fair value of plan assets at end of year	128,352	145,901	—	—	—	—
Funded (unfunded) status at December 31	\$16,920	\$24,540	\$(2,200)	\$(2,512)	\$(337)	\$(2,423)
Accumulated benefit obligation	\$111,432	\$121,361	\$2,200	\$2,512	\$337	\$2,423

The Corporation did not make a contribution to the Pension Plan in either 2018 or 2017. The Corporation is not required to make a contribution to the Pension Plan in 2019.

Weighted-average rate assumptions of the Corporation's Plans follow:

	Pension Plan			Postretirement Plan			SERP		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Discount rate used in determining benefit obligation — December 31	4.32 %	3.68 %	4.22 %	4.11 %	3.41 %	3.79 %	4.32 %	3.38 %	3.63 %
Discount rate used in determining expense	3.68	4.22	4.55	3.41	3.79	4.23	—	—	4.51
Discount rate used in determining expense — prior to remeasurement	—	3.81	—	—	—	—	3.38	3.63	2.87
Expected long-term return on Pension Plan assets	6.50	6.75	6.75	—	—	—	—	—	—
Rate of compensation increase used in determining benefit obligation — December 31	—	—	3.50	—	—	—	—	—	3.50
Rate of compensation increase used in determining pension expense	—	3.50	3.50	—	—	—	—	3.50	3.50
Year 1 increase in cost of postretirement benefits	—	—	—	7.50	6.50	7.00	—	—	—

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Net periodic pension cost (income) of the Corporation's Plans was as follows for the years ended December 31:

	Pension Plan			Postretirement Plan			SERP		
(Dollars in thousands)	2018	2017	2016	2018	2017	2016	2018	2017	2016
Service cost	\$—	\$639	\$1,041	\$3	\$5	\$9	\$—	\$61	\$77
Interest cost	4,356	4,966	5,335	82	94	132	12	69	92
Expected return on plan assets	(8,879)	(8,938)	(8,562)	—	—	—	—	—	—
Amortization of prior service credit	—	—	—	—	—	117	—	—	—
Amortization of net actuarial loss (gain)	710	1,837	2,259	(143)	(162)	(100)	(7)	77	78
Curtailment	—	1	—	—	—	—	—	—	—
Settlement ⁽¹⁾	—	—	—	—	—	—	—	322	120
Net cost (income)	\$(3,813)	\$(1,495)	\$73	\$(58)	\$(63)	\$158	\$5	\$529	\$367

The settlement charge relates to the settlement of liabilities under the SERP for the retirement of the plan

⁽¹⁾ participant during the third quarter of 2017 and the change in control as a result of the merger with Talmer as of August 31, 2016.

The following schedule presents estimated future benefit payments for the next 10 years under the Corporation's Plans for retirees already receiving benefits and future retirees, assuming they retire and begin receiving unreduced benefits as soon as they are eligible:

(Dollars in thousands)	Pension Plan	Postretirement Plan	SERP
2019	\$ 6,387	\$ 241	\$ 22
2020	6,522	237	22
2021	6,680	231	22
2022	6,795	221	22
2023	6,895	209	22
2024 - 2028	35,908	853	106
Total	\$ 69,187	\$ 1,992	\$ 216

For measurement purposes for the Postretirement Plan, the annual rates of increase in the per capita cost of covered health care benefits and dental benefits for 2019 were each assumed at 7.5%. These rates were assumed to decrease gradually to 5.0% in 2020 and remain at that level thereafter.

The assumed health care and dental cost trend rates could have a significant effect on the amounts reported for the Postretirement Plan. A one percentage-point change in these rates would have the following effects:

	One Percentage-Point	
(Dollars in thousands)	Increase	Decrease
Effect on total of service and interest cost component in 2017	\$ 7	\$ (6)
Effect on postretirement benefit obligation as of December 31, 2017	157	(143)

Pension Plan Assets

The assets of the Pension Plan are invested by the Wealth Management department of Chemical Bank. The investment policy and allocation of the assets of the pension trust were approved by the Compensation and Pension Committee of the board of directors of the Corporation.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The Pension Plan's primary investment objective is long-term growth coupled with income. In consideration of the Pension Plan's fiduciary responsibilities, emphasis is placed on quality investments with sufficient liquidity to meet benefit payments and plan expenses, as well as providing the flexibility to manage the investments to accommodate current economic and financial market conditions. To meet the Pension Plan's long-term objective within the constraints of prudent management, target ranges have been set for the three primary asset classes: an equity securities range from 40.0% to 70.0%, a debt securities range from 20.0% to 60.0%, and a cash and cash equivalents and other range from 0.0% to 10.0%. Modest asset positions outside of these targeted ranges may occur due to the repositioning of assets within industries or other activity in the financial markets. Equity securities are primarily comprised of both individual securities and equity-based mutual funds, invested in either domestic or international markets. The stocks are diversified among the major economic sectors of the market and are selected based on balance sheet strength, expected earnings growth, the management team and position within their industries, among other characteristics. Debt securities are comprised of U.S. dollar denominated bonds issued by the U.S. Treasury, U.S. government agencies and investment grade bonds issued by corporations. The notes and bonds purchased are primarily rated "A" or better by the major bond rating companies from diverse industries.

The Pension Plan's asset allocation by asset category was as follows:

Asset Category	December 31,	
	2018	2017
Equity securities	67 %	68 %
Debt securities	26	28
Other	7	4
Total	100 %	100 %

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following schedule sets forth the fair value of the Pension Plan's assets and the level of the valuation inputs used to value those assets at December 31, 2018 and 2017:

(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				
Cash	\$ 8,770	\$ —	\$ —	—\$8,770
Equity securities:				
U.S. large- and mid-cap stocks ⁽¹⁾	63,823	—	—	63,823
U.S. small-cap mutual funds	4,713	—	—	4,713
International large-cap mutual funds	11,091	—	—	11,091
Emerging markets mutual funds	6,439	—	—	6,439
Debt securities:				
U.S. Treasury and government sponsored agency bonds and notes	—	547	—	547
Mutual funds ⁽²⁾	32,969	—	—	32,969
Total	\$ 127,805	\$ 547	\$ —	—\$128,352
December 31, 2017				
Cash	\$ 5,238	\$ —	\$ —	—\$5,238
Equity securities:				
U.S. large- and mid-cap stocks ⁽¹⁾	68,909	—	—	68,909
U.S. small-cap mutual funds	5,377	—	—	5,377
International large-cap mutual funds	18,341	—	—	18,341
Emerging markets mutual funds	7,363	—	—	7,363
Debt securities:				
U.S. Treasury and government sponsored agency bonds and notes	—	548	—	548
Mutual funds ⁽²⁾	40,046	—	—	40,046
Other	79	—	—	79
Total	\$ 145,353	\$ 548	\$ —	—\$145,901

⁽¹⁾ Comprised of common stocks and mutual funds traded on U.S. Exchanges whose issuers had market capitalizations exceeding \$3 billion.

⁽²⁾ Comprised primarily of fixed-income bonds issued by the U.S. Treasury and government sponsored agencies and bonds of U.S. and foreign issuers from diverse industries.

At December 31, 2018 and 2017, the Pension Plan did not hold any shares of the Corporation's common stock. During 2017, cash dividends of \$0.2 million were paid on the Corporation's common stock held by the Pension Plan.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Accumulated Other Comprehensive Loss

The following sets forth the changes in accumulated other comprehensive income (loss), net of tax, related to the Corporation's Pension Plan, Postretirement Plan and SERP during 2018:

(Dollars in thousands)	Pension Plan	Postretirement Plan	SERP	Total
Accumulated other comprehensive income (loss) at beginning of year	\$(20,483)	\$ 744	\$(69)	\$(19,808)
Comprehensive income (loss) adjustment:				
Net actuarial income (loss)	(9,032)	51	23	(8,958)
Comprehensive income (loss) adjustment	(9,032)	51	23	(8,958)
Accumulated other comprehensive income (loss) at end of year	\$(29,515)	\$ 795	\$(46)	\$(28,766)

The estimated income (loss) that will be amortized from accumulated other comprehensive income (loss) into net periodic cost, net of tax, in 2019 is as follows:

(Dollars in thousands)	Pension Plan	Postretirement Plan	SERP	Total
Net gain (loss)	\$(444)	\$ 143	\$ (1)	\$(302)

Note 20: Equity

Shelf Registration

On May 10, 2017, the Corporation filed an automatic shelf registration statement on Form S-3ASR with the SEC for an indeterminate amount of securities, which became immediately effective. The shelf registration statement provides the Corporation with the ability to raise capital, subject to SEC rules and limitations, if the board of directors of the Corporation decides to do so.

Preferred Stock

On April 20, 2015, the shareholders of the Corporation approved an amendment to the restated articles of incorporation which eliminated and replaced the previous class of 200,000 shares of preferred stock, approved by shareholders on April 20, 2009, with a new class of 2,000,000 shares of preferred stock. As of December 31, 2018, no shares of preferred stock were issued and outstanding.

Common Stock

On July 19, 2016, the shareholders of the Corporation approved an amendment to the restated articles of incorporation to increase the number of authorized shares of common stock from 60,000,000 to 100,000,000 in anticipation of the merger with Talmer.

On April 26, 2017, the shareholders of the Corporation approved an amendment to the restated articles of incorporation to increase the number of authorized shares of common stock from 100,000,000 to 135,000,000.

Note 21: 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 December 31, 2018, 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.

Banking regulations require that banks maintain cash reserve balances in vault cash, with the Federal Reserve Bank, or with certain other qualifying banks. The aggregate average amount of the regulatory balances required to be maintained by Chemical Bank during 2018 and 2017 were \$57.0 million and \$71.7 million, respectively. During 2018, Chemical Bank satisfied its regulatory reserve requirements by maintaining a combination of vault cash balances and cash held with the FRB in excess of regulatory reserve requirements. Chemical Bank was not required to maintain compensating balances with correspondent banks during 2018 or 2017.

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 December 31, 2018, the Corporation and Chemical Bank met all capital adequacy requirements to which they are subject.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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 \$16.10 billion and \$16.07 billion, respectively, at December 31, 2018, compared to \$14.74 billion and \$14.70 billion at December 31, 2017, respectively.

Effective January 1, 2015, the Corporation adopted the Basel III regulatory capital framework as approved by federal banking agencies, which is 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 is phased-in over a four-year period beginning January 1, 2016. The capital conservation buffer for 2018 is 1.875% and was 1.25% for 2017. The Corporation has elected to opt-out of including accumulated other comprehensive income in common equity tier 1 capital.

At December 31, 2018 and 2017, 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.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

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		Minimum Required for Capital Adequacy Purposes Plus Capital Conservation Buffer		Required to be Well Capitalized Under Prompt Corrective Action Regulations	
(Dollars in thousands)	Capital Amount	Ratio	Capital Amount	Ratio	Capital Amount	Ratio	Capital Amount	Ratio
December 31, 2018								
Total Capital to Risk-Weighted Assets								
Corporation	\$1,855,922	11.5 %	\$1,288,363	8.0 %	\$1,590,323	9.9 %	N/A	N/A
Chemical Bank	1,825,742	11.4	1,285,444	8.0	1,586,719	9.9	\$1,606,804	10.0 %
Tier 1 Capital to Risk-Weighted Assets								
Corporation	1,723,004	10.7	966,272	6.0	1,268,232	7.9	N/A	N/A
Chemical Bank	1,708,724	10.6	964,083	6.0	1,265,358	7.9	1,285,444	8.0
Common Equity Tier 1 Capital to Risk-Weighted Assets								
Corporation	1,723,004	10.7	724,704	4.5	1,026,664	6.4	N/A	N/A
Chemical Bank	1,708,724	10.6	723,062	4.5	1,024,338	6.4	1,044,423	6.5
Leverage Ratio								
Corporation	1,723,004	8.7	793,669	4.0	793,669	4.0	N/A	N/A
Chemical Bank	1,708,724	8.6	792,184	4.0	792,184	4.0	990,230	5.0
December 31, 2017								
Total Capital to Risk-Weighted Assets								
Corporation	\$1,614,046	11.0 %	\$1,179,076	8.0 %	\$1,363,307	9.3 %	N/A	N/A
Chemical Bank	1,613,087	11.0	1,176,361	8.0	1,360,167	9.3	\$1,470,451	10.0 %
Tier 1 Capital to Risk-Weighted Assets								
Corporation	1,498,463	10.2	884,307	6.0	1,068,538	7.3	N/A	N/A
Chemical Bank	1,513,219	10.3	882,271	6.0	1,066,077	7.3	1,176,361	8.0
Common Equity Tier 1 Capital to Risk-Weighted Assets								
Corporation	1,498,463	10.2	663,230	4.5	847,461	5.8	N/A	N/A
Chemical Bank	1,513,219	10.3	661,703	4.5	845,509	5.8	955,793	6.5
Leverage Ratio								
Corporation	1,498,463	8.3	720,890	4.0	720,890	4.0	N/A	N/A
Chemical Bank	1,513,219	8.4	720,043	4.0	720,043	4.0	900,053	5.0

During the years ended December 31, 2018, 2017 and 2016, Chemical Bank paid dividends to the Corporation totaling \$114.3 million, \$165.0 million and \$110.5 million, respectively.

On January 22, 2019, a cash dividend on the Corporation's common stock of \$0.34 per share was declared. The dividend will be paid on March 15, 2019 to shareholders of record as of March 1, 2019.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 22: Parent Company Only Financial Statements

Condensed financial statements of Chemical Financial Corporation (parent company) only follow:

Condensed Statements of Financial Position

	December 31,	
(Dollars in thousands)	2018	2017
Assets		
Cash at subsidiary bank	\$11,477	\$5,761
Investment in subsidiaries	2,820,866	2,673,858
Premises and equipment	3,595	3,931
Goodwill	1,092	1,092
Deferred tax asset	5,865	7,203
Other assets	27,157	31,459
Total assets	\$2,870,052	\$2,723,304
Liabilities		
Other liabilities	\$17,892	\$18,877
Non-revolving line-of-credit	—	19,963
Subordinated debentures	15,900	15,715
Total liabilities	33,792	54,555
Shareholders' equity	2,836,260	2,668,749
Total liabilities and shareholders' equity	\$2,870,052	\$2,723,304
Condensed Statements of Income		

	Years Ended December 31,		
(Dollars in thousands)	2018	2017	2016
Income			
Cash dividends from subsidiaries	\$114,300	\$165,000	\$110,450
Other (loss) income	(269)	921	151
Total income	114,031	165,921	110,601
Expenses			
Interest expense	1,601	3,076	1,816
Operating expenses	13,784	23,298	30,589
Total expenses	15,385	26,374	32,405
Income before income taxes and equity in undistributed net income of subsidiaries	98,646	139,547	78,196
Income tax benefit	4,472	12,670	11,378
Equity in undistributed net income (loss) of subsidiaries	180,902	(2,694)	18,458
Net income	\$284,020	\$149,523	\$108,032

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Condensed Statements of Cash Flows

(Dollars in thousands)	Years Ended December 31,		
	2018	2017	2016
Cash Flows From Operating Activities			
Net income	\$284,020	\$149,523	\$108,032
Adjustments to reconcile net income to net cash provided by operating activities:			
Share-based compensation expense	8,578	17,346	13,452
Depreciation of premises and equipment	435	408	355
Equity in undistributed net (income) loss of subsidiaries	(180,902)	2,694	(18,458)
Net decrease in other assets	4,302	1,410	9,752
Net increase (decrease) in other liabilities	537	25,178	(11,830)
Net cash provided by operating activities	116,970	196,559	101,303
Cash Flows From Investing Activities			
Cash paid, net of cash assumed, in business combinations	—	—	(107,622)
Purchases of premises and equipment, net	(99)	(288)	(774)
Net cash used in investing activities	(99)	(288)	(108,396)
Cash Flows From Financing Activities			
Cash dividends paid	(88,954)	(78,498)	(49,389)
Proceeds from issuance of common stock, net of issuance costs	—	—	—
Repayment of subordinated debt obligations	—	—	(18,558)
Repayments of other borrowings	(20,000)	(105,000)	(62,500)
Proceeds from issuance of other borrowings	—	—	125,000
Proceeds from directors' stock purchase plan and exercise of stock options	3,115	3,991	1,572
Cash paid for payroll taxes upon conversion of restricted stock units	(5,316)	(27,854)	(1,065)
Net cash used in financing activities	(111,155)	(207,361)	(4,940)
Net increase (decrease) in cash and cash equivalents	5,716	(11,090)	(12,033)
Cash and cash equivalents at beginning of year	5,761	16,851	28,884
Cash and cash equivalents at end of year	\$11,477	\$5,761	\$16,851
Business combinations:			
Fair value of assets acquired (noncash)	\$—	\$—	\$46,898
Liabilities assumed	—	—	58,309
Common stock and stock options issued	—	—	1,504,811

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 23: 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)	For the years ended December 31,		
	2018	2017	2016
Net income	\$284,020	\$149,523	\$108,032
Net income allocated to participating securities	186	495	166
Net income allocated to common shareholders ⁽¹⁾	\$283,834	\$149,028	\$107,866
Weighted average common shares - issued	71,385	71,103	49,091
Average unvested restricted share awards	(47)	(238)	(139)
Weighted average common shares outstanding - basic	71,338	70,865	48,952
Effect of dilutive securities			
Weighted average common stock equivalents	687	648	651
Weighted average common shares outstanding - diluted	72,025	71,513	49,603
EPS available to common shareholders			
Basic earnings per common share	\$3.98	\$2.11	\$2.21
Diluted earnings per common share	\$3.94	\$2.08	\$2.17

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 and warrants 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 assumed average stock valuation is \$53.70 per share, \$50.26 per share and \$40.58 per share for the years ended December 31, 2018, 2017 and 2016, 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 61,298 for the year ended December 31, 2018, 107,272 for the year ended December 31, 2017 and zero for the year ended December 31, 2016.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 24: 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 years ended December 31, 2018, 2017 and 2016:

(Dollars in thousands)	Unrealized gains (losses) on securities carried at fair value, net of tax	Defined Benefit Pension Plans	Unrealized gains (losses) on cash flow hedges, net of tax	Total
For the year ended December 31, 2018				
Beginning balance	\$ (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	(26,903)	—	2,245	(24,658)
Amounts reclassified from accumulated other comprehensive income (loss)	(177)	(8,958)	(1,478)	(10,613)
Net current period other comprehensive income (loss)	(27,080)	(8,958)	767	(35,271)
Ending balance	\$ (37,772)	\$ (28,766)	\$ 5,428	\$(61,110)
For the year ended December 31, 2017				
Beginning balance	\$ (14,142)	\$ (25,894)	\$ —	\$(40,036)
Other comprehensive income before reclassifications	826	8,457	2,771	12,054
Amounts reclassified from accumulated other comprehensive income	4,802	1,139	1,061	7,002
Net current period other comprehensive income	5,628	9,596	3,832	19,056
Reclassification of certain deferred tax effects ⁽²⁾	(1,834)	(3,510)	826	(4,518)
Ending balance	\$ (10,348)	\$ (19,808)	\$ 4,658	\$(25,498)
For the year ended December 31, 2016				
Beginning balance	\$ (1,888)	\$ (27,144)	\$ —	\$(29,032)
Other comprehensive (loss) before reclassifications	(12,170)	(229)	—	(12,399)
Amounts reclassified from accumulated other comprehensive income (loss)	(84)	1,479	—	1,395
Net current period other comprehensive income (loss)	(12,254)	1,250	—	(11,004)
Ending balance	\$ (14,142)	\$ (25,894)	\$ —	\$(40,036)

(1) Refer to Note 1, Summary of Significant Accounting Policies and Note 4, Investment Securities, for further details on the changes in accounting policy.

(2) The reclassification from accumulated other comprehensive income (loss) to retained earnings was due to the early adoption of ASU 2018-02, see Note 1 for further information.

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

The following table summarizes the amounts reclassified out of each component of accumulated other comprehensive income (loss) for the years ended December 31, 2018, 2017 and 2016:

(Dollars in thousands)	Amounts Reclassified from Accumulated Other Comprehensive Income (Loss) December 31, 2018 December 31, 2017 December 31, 2016			Affected Line Item in the Income Statement
Gains and losses on available-for-sale securities	\$224	\$ (7,388)	\$ 129	Net gain (loss) on sale of investment securities (noninterest income)
	(47)	2,586	(45)	Income tax (expense)/benefit
	\$177	\$ (4,802)	\$ 84	Net income (loss)
Amortization of defined benefit pension plan items	\$11,339	\$ (1,752)	\$ (2,276)	Salaries, wages and employee benefits (operating expenses)
	(2,381)	613	797	Income tax expense/(benefit)
	\$8,958	\$ (1,139)	\$ (1,479)	Net (income) loss
Gains and losses on cash flow hedges	(1,871)	1,633	—	Interest on short-term borrowings (interest expense)
	393	(572)	—	Income tax expense/(benefit)
	\$ (1,478)	\$ 1,061	\$ —	Net (income) loss

Note 25: Summary of Quarterly Statements of Income (Unaudited)

The following is a summary of the unaudited quarterly results of operation for the years ended December 31, 2018, 2017 and 2016. In the opinion of management, the information reflects all adjustments that are necessary for the fair presentation of the results of operations for the periods presented.

(Dollars in thousands, except per share data)	2018				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Interest income	\$177,934	\$189,582	\$198,377	\$210,103	\$775,996
Interest expense	26,071	32,045	38,896	46,651	143,663
Net interest income	151,863	157,537	159,481	163,452	632,333
Provision for loan losses	6,256	9,572	6,028	8,894	30,750
Noninterest income	40,554	38,018	37,917	32,047	148,536
Operating expenses	101,610	104,561	109,661	108,366	424,198
Income before income taxes	84,551	81,422	81,709	78,239	325,921
Income tax expense	12,955	12,434	11,312	5,200	41,901
Net income	\$71,596	\$68,988	\$70,397	\$73,039	\$284,020
Net income per common share:					
Basic	\$1.01	\$0.97	\$0.99	\$1.02	\$3.98
Diluted	0.99	0.96	0.98	1.01	3.94
Cash dividends declared per common share	0.28	0.28	0.34	0.34	1.24

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

(Dollars in thousands, except per share data)	2017				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Interest income	\$142,896	\$155,133	\$164,944	\$169,162	\$632,135
Interest expense	12,799	17,185	21,316	23,257	74,557
Net interest income	130,097	137,948	143,628	145,905	557,578
Provision for loan losses	4,050	6,229	5,499	7,522	23,300
Noninterest income	38,010	41,568	32,122	32,319	144,019
Operating expenses	104,196	98,237	119,539	100,022	421,994
Income before income taxes	59,861	75,050	50,712	70,680	256,303
Income tax expense	12,257	23,036	10,253	61,234	106,780
Net income	\$47,604	\$52,014	\$40,459	\$9,446	\$149,523
Net income per common share:					
Basic	\$0.67	\$0.73	\$0.57	\$0.13	\$2.11
Diluted	0.67	0.73	0.56	0.13	2.08
Cash dividends declared per common share	0.27	0.27	0.28	0.28	1.10
(Dollars in thousands, except per share data)	2016				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Interest income	\$79,464	\$82,937	\$103,562	\$144,416	\$410,379
Interest expense	5,134	5,442	6,753	11,969	29,298
Net interest income	74,330	77,495	96,809	132,447	381,081
Provision for loan losses	1,500	3,000	4,103	6,272	14,875
Noninterest income	19,419	20,897	27,770	54,264	122,350
Operating expenses	58,887	59,085	106,144	114,302	338,418
Income before income taxes	33,362	36,307	14,332	66,137	150,138
Income tax expense	9,757	10,532	2,848	18,969	42,106
Net income	\$23,605	\$25,775	\$11,484	\$47,168	\$108,032
Net income per common share:					
Basic	\$0.61	\$0.67	\$0.23	\$0.67	\$2.21
Diluted	0.60	0.67	0.23	0.66	2.17
Cash dividends declared per common share	0.26	0.26	0.27	0.27	1.06

Chemical Financial Corporation
Notes to Consolidated Financial Statements
December 31, 2018

Note 26: Subsequent Events

On January 28, 2019, Chemical and TCF Financial Corporation ("TCF") jointly announced the signing of a definitive merger agreement (the "Merger Agreement") 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. Upon completion of the deal, TCF and Chemical shareholders will own 54% and 46% of the combined company, respectively, on a fully diluted basis.

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 the second half of 2019.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.
None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

The Corporation's management is responsible for establishing and maintaining effective disclosure controls and procedures, as defined under Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 (Exchange Act). 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 Corporation's disclosure controls and procedures as of the end of the period covered by this Annual 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 SECs rules and forms.

Changes in Internal Controls Over Financial Reporting

There were no changes to the Corporation's internal controls over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act) during the fourth quarter ended December 31, 2018 that materially affected, or are reasonably likely to materially affect, the Corporation's internal controls over financial reporting.

MANAGEMENT'S ASSESSMENT AS TO THE EFFECTIVENESS
OF INTERNAL CONTROL OVER FINANCIAL REPORTING

Management of the Corporation is responsible for establishing and maintaining effective internal control over financial reporting that is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. The system of internal control over financial reporting as it relates to the financial statements is evaluated for effectiveness by management and tested for reliability through a program of internal audits. Actions are taken to correct potential deficiencies as they are identified. Any system of internal control, no matter how well designed, has inherent limitations, including the possibility that a control can be circumvented or overridden and misstatements due to error or fraud may occur and not be detected. Also, because of changes in conditions, internal control effectiveness may vary over time. Accordingly, even an effective system of internal control will provide only reasonable assurance with respect to financial reporting and financial statement preparation.

Management assessed the Corporation's system of internal control over financial reporting as of December 31, 2018, as required by Section 404 of the Sarbanes-Oxley Act of 2002. Management's assessment is based on the criteria for effective internal control over financial reporting as described in "Internal Control — Integrated Framework (2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management has concluded that, as of December 31, 2018, its system of internal control over financial reporting was effective and meets the criteria of the "Internal Control — Integrated Framework (2013)." The Corporation's independent registered public accounting firm that audited the Consolidated Financial Statements included in this annual report has issued an attestation report on the Corporation's internal control over financial reporting as of December 31, 2018.

/s/ David T. Provost

David T. Provost

Chief Executive Officer and President

/s/ Dennis L. Klaeser

Dennis L. Klaeser

Executive Vice President and Chief Financial Officer

February 28, 2019

February 28, 2019

Report of Independent Registered Public Accounting Firm
The Shareholders and Board of Directors
Chemical Financial Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited Chemical Financial Corporation and subsidiaries' (the Corporation) internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the Corporation as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements), and our report dated February 28, 2019 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Assessment as to the Effectiveness of Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Corporation's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Detroit, Michigan
February 28, 2019

171

Item 9B. Other Information.

Given the timing of the following events, the following information is included in this Annual Report on Form 10-K pursuant to Item 5.02 of Form 8-K, “Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensation Arrangements of Certain Officers” in lieu of filing a Form 8-K.

On February 25, 2019, the Compensation and Pension Committee (the “Committee”) of our board of directors met to determine annual cash incentive plan awards for 2018 under the Chemical Financial Corporation Executive Annual Incentive Plan (the “Plan”). The Committee determined that each of David Provost, our President and Chief Executive Officer, and Gary Torgow, our Executive Chairman, were each eligible to receive a cash incentive payment of at least \$950,000 under the Plan in 2018, based on our corporate performance and their individual performance relative to the goals established by the Committee. However, the Committee had previously determined that, to more closely align the interests of Mr. Provost and Mr. Torgow with those of our shareholders through greater stock ownership tied to tenure with Chemical, it would exercise its discretion under the Plan not to award a cash incentive payment to either Mr. Provost or Mr. Torgow in 2018. Instead, the Committee awarded each of Mr. Provost and Mr. Torgow 20,364 shares of time-vesting restricted stock units (“TRSUs”) under the Chemical Financial Corporation Stock Incentive Plan of 2017 (the “Equity Plan”) with a grant date fair value equal to approximately \$950,000 (the target amount each officer would have been eligible to receive under the Plan). Under the restricted stock unit agreement, the TRSUs will vest in equal annual installments over a three-year-period, subject to each officer’s continued service through the vesting date, subject to certain exceptions (described below). The foregoing description of the TRSU agreement does not purport to be complete and is qualified in its entirety by reference to the form of TRSU agreement attached hereto as Exhibit 10.32 and incorporated by reference herein.

On February 25, 2019, the Committee approved a new form of award agreement for TRSUs and performance-based restricted stock units (“PRSUs”) and awarded annual long-term incentive awards to our named executive officers under these award agreements in accordance with the terms of the Equity Plan, consistent with our historical practice of providing long term equity compensation as a portion of overall executive compensation, as follows:

Executive Officer	Number of Time-Vested Restricted Stock Units	Number of Performance-Based Restricted Stock Units ⁽¹⁾
David Provost	16,292	27,117
Gary Torgow	16,292	27,117
Dennis Klaeser	5,145	8,563
Thomas Shafer	8,146	13,559
Robert Rathbun	965	1,606

Amount shown is the target amount of the award. The range of PRSUs actually earned can be in the range of 0% of (1) target for below threshold performance, to 50% of target for threshold performance, to 150% of target for maximum performance.

Under the terms of the TRSUs, the restricted stock units vest in equal annual installments over a five year period, based on the named executive officer’s continued employment. Under the terms of the PRSUs, the restricted stock units vest based on our achievement of performance targets determined by the Committee for the performance period at a threshold, target and maximum performance level, if the named executive officer remains employed through the restricted period.

Both the TRSU agreements and the PRSU agreements provide that, in the event of the executive’s termination without “cause” by us, or if the executive terminates his employment for “good reason” (each as defined in the agreement), or if the executive dies or is disabled, or if the executive provides one year written notice before his intended retirement after reaching age 55 with ten years of service, or, with respect to Mr. Provost and Mr. Torgow only, if the executive

terminates his employment on or after 18 months following the consummation of our merger with TCF, then (a) with respect to the TRSUs, all remaining restrictions will lapse and such award will 100% vest, and (b) with respect to the PRSUs, the award will vest at the target (100%) level.

In addition, under the TRSU agreements, if the executive is terminated without cause by us or the executive terminates his employment for good reason, in either case following a “change in control” (as defined in the agreement), all TRSUs granted to the executive, including TRSUs issued under prior agreements and plans, will 100% vest. Under the PRSU agreements, in the event of a “change in control” (as defined in the agreement), all PRSUs granted to the executive, including PRSUs issued under prior agreements and plans, for which performance results have not been measured will be measured as of the latest practicable date prior to the consummation of the change in control and the number of PRSUs will be fixed at the greater of the target (100%) performance level or actual performance (the “Earned Awards”), and such Earned Awards will vest and be subject to forfeiture

based on the executive's continued service through the performance period. If, however, the executive is terminated without cause by us or the executive terminates his employment for good reason, in either case following a change in control, such Earned PRSUs will 100% vest.

A copy of the Equity Plan is filed as Exhibit 10.1 to our Quarterly Report on Form 10-Q filed with the SEC on May 10, 2017. The foregoing description of the restricted stock unit agreements does not purport to be complete and is qualified in its entirety by reference to the form of TRSU and PRSU agreements for Mr. Provost and Mr. Torgow attached as Exhibits 10.32 and 10.30, respectively, and the other named executive officers attached as Exhibits 10.31 and 10.29, respectively, each incorporated by reference herein.

PART III.

Item 10. Directors, Executive Officers and Corporate Governance.

Information required by this item is set forth under the subheadings "Nominees for Election as Directors" and "Board Committees," and the headings "Executive Officers" and "Section 16(a) Beneficial Ownership Reporting Compliance" in our definitive Proxy Statement for our 2019 Annual Meeting of Shareholders to be filed with the SEC not later than 120 days after December 31, 2018 and is here incorporated by reference.

We have adopted a Code of Ethics for Senior Financial Officers and Members of Senior Leadership, which applies to the Chief Executive Officer and the Chief Financial Officer, as well as all other senior financial and accounting officers. The Code of Ethics is posted on our website at www.chemicalbank.com. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver of, a provision of the Code of Ethics by posting such information on our website at www.chemicalbank.com.

Item 11. Executive Compensation.

Information required by this item is set forth under the headings "Executive Compensation," "Director Compensation," "Compensation and Pension Committee Report" and under the subheading "Compensation Committee Interlocks and Insider Participation" in our definitive Proxy Statement for our 2019 Annual Meeting of Shareholders to be filed with the SEC not later than 120 days after December 31, 2018 and is here incorporated by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters. The information required by this item is set forth under the heading "Ownership of Chemical Financial Common Stock" in our definitive Proxy Statement for our 2019 Annual Meeting of Shareholders to be filed with the SEC not later than 120 days after December 31, 2018 and is here incorporated by reference.

The following table presents information about our equity compensation plans as of December 31, 2018:

Plan category	Equity Compensation Plan Information			Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (excluding Securities Reflected in Column (a)) (c)
	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (b)		
Equity compensation plans approved by security holders ⁽¹⁾	718,083	\$ 32.87		1,533,785 (3)
Equity compensation plans not approved by security holders ⁽²⁾	59,360	\$ 13.88		—
Total	777,443	\$ 31.42		1,533,785

Consists of the Chemical Financial Corporation Stock Incentive Plan of 2006 ("2006 Plan"), the Chemical Financial Corporation Stock Incentive Plan of 2012 ("2012 Plan"), the Chemical Financial Corporation Stock Incentive Plan of 2015 ("2015 Plan"), the Chemical Financial Corporation Stock Incentive Plan of 2017 ("2017 Plan") and the Chemical Financial Corporation Directors' Deferred Stock Plan. Stock options or other awards may no longer be granted under the 2006 Plan, the 2012 Plan, or the 2015 Plan.

At December 31, 2018, equity compensation plans not approved by shareholders consisted of the Talmer Bancorp, Inc. 2009 Equity Incentive Plan ("TLMR Equity Incentive Plan"), the Lake Michigan Financial Corporation Stock Incentive Plan of 2003 and the Lake Michigan Financial Corporation Stock Incentive Plan of 2012 (collectively referred to as the "LMFC Stock Incentive Plans"). The TLMR Equity Incentive Plan granted non-statutory stock options that were awarded at the fair value of Talmer Bancorp, Inc. common stock on the date of grant. Effective as of the Corporation's merger with Talmer Bancorp, Inc. on August 31, 2016, each option outstanding under the TLMR Equity Incentive Plan ceased to represent a stock option for TLMR common stock and was converted into a stock option for common stock of the Corporation. The LMFC Stock Incentive Plans granted non-statutory stock options that were awarded at the fair value of Lake Michigan Financial Corporation common stock on the date of grant. Effective as of the Corporation's acquisition of Lake Michigan Financial Corporation on May 31, 2015, each option outstanding under the LMFC Stock Incentive Plans ceased to represent a stock option for LMFC common stock and was converted into a stock option for common stock of the Corporation. Payment for the exercise of an option at the time of exercise may be made in the form of shares of the Corporation's common stock having a market value equal to the exercise price of the option at the time of exercise, or in cash. There are no further stock options or other awards available for grant under the TLMR Equity Incentive Plan or the LMFC Stock Incentive Plans. As of December 31, 2018, there were 43,132 options to purchase the Corporation's common stock under the TLMR Equity Incentive Plan with a weighted average exercise price of \$13.42 per share and 16,228 options to purchase the Corporation's common stock outstanding under the LMFC Stock Incentive Plans with a weighted average exercise price of \$15.10 per share.

(3) Represents 1,301,285 remaining available shares for future grant under the 2017 Plan and 232,500 remaining shares available for future issuance under the Directors' Deferred Stock Plan.

Each plan listed above contains customary anti-dilution provisions that are applicable in the event of a stock split or certain other changes in the capitalization of Chemical Financial Corporation.

Item 13. Certain Relationships and Related Transactions and Director Independence.

The information required by this item is set forth under the subheadings "Board Committees" and "Transactions with Related Persons" in our definitive Proxy Statement for our 2019 Annual Meeting of Shareholders to be filed with the SEC not later than 120 days after December 31, 2018 and is here incorporated by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this item is set forth under the heading "Independent Registered Public Accounting Firm" and subheading "Audit Committee" in our definitive Proxy Statement for our 2019 Annual Meeting of Shareholders to be filed with the SEC not later than 120 days after December 31, 2018 and is here incorporated by reference.

PART IV.

Item 15. Exhibits, Financial Statement Schedules.

(a) (1) Financial Statements. The following documents are filed as part of Item 8 of this Annual Report:

Report of Independent Registered Public Accounting Firm

Consolidated Statements of Financial Position as of December 31, 2018 and 2017

Consolidated Statements of Income for each of the three years in the period ended December 31, 2018

Consolidated Statements of Comprehensive Income for each of the three years in the period ended December 31, 2018

Consolidated Statements of Changes in Shareholders' Equity for each of the three years in the period ended December 31, 2018

Consolidated Statements of Cash Flows for each of the three years in the period ended December 31, 2018

Notes to Consolidated Financial Statements

Financial Statement Schedules. The schedules for the Corporation are omitted because of the absence of conditions (2) under which they are required, or because the information is set forth in the Consolidated Financial Statements or the Notes thereto.

(3) Exhibits. The following lists the Exhibits to the Annual Report on Form 10-K:

Number Exhibit

- 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 of Chemical Financial Corporation (incorporated by reference to Exhibit 3.1 of Chemical Financial Corporation's Current Report on Form 8-K filed with the SEC on January 28, 2019).
- 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.
- 4.3 Long-Term Debt. The registrant has outstanding long-term debt which at the time of this Annual Report does not exceed 10% of the registrant's total consolidated assets. The registrant agrees to furnish copies of the agreements defining the rights of holders of such long-term debt to the SEC upon request.
- 10.1 *† Amended and Restated Chemical Financial Corporation Stock Incentive Plan of 2006. Previously filed as Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011, filed with the SEC on August 3, 2011. Here incorporated by reference.
- 10.2 *† Chemical Financial Corporation Stock Incentive Plan of 2012. Previously filed as Appendix A to the registrant's definitive proxy statement for the registrant's 2012 Annual Meeting of Shareholders, filed with the SEC on March 1, 2012. Here incorporated by reference.
- 10.3 *† Chemical Financial Corporation Stock Incentive Plan of 2015. Previously filed as Appendix C to the registrant's definitive proxy statement for the registrant's 2015 Annual Meeting of Shareholders, filed with the SEC on March 6, 2015. Here incorporated by reference.
- 10.4 *† Chemical Financial Corporation Stock Incentive Plan of 2017. Previously filed as Exhibit 10.1 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.
- 10.5 *† Chemical Financial Corporation Supplemental Retirement Income Plan. Previously filed as Exhibit 10.5 to the registrant's Registration Statement on Form S-4, filed with the SEC on February 19, 2010. Here incorporated by reference.
- 10.6 *† Chemical Financial Corporation Deferred Compensation Plan for Directors. Previously filed as Exhibit 10.2 to the registrant's Annual Report on Form 10-K for the year ended December 31, 2011, filed with the SEC on February 24, 2012. Here incorporated by reference.
- 10.7 *† Chemical Financial Corporation Deferred Compensation Plan. Previously filed as Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013, filed with the SEC on April 30, 2013. Here incorporated by reference.
- 10.8 *† Chemical Financial Corporation Directors' Deferred Stock Plan. Previously filed as Exhibit 10.8 to the registrant's Annual Report on Form 10-K for the year ended December 31, 2013, filed with the SEC on

February 26, 2014. Here incorporated by reference.

10.9 *† Chemical Financial Corporation Executive Annual Incentive Plan. Previously filed as Exhibit 10.9 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.

10.10 *† Employment Agreement between David R. Ramaker and Chemical Financial Corporation, dated August 31, 2016. Previously filed as Exhibit 10.1 to the registrant's Current Report on Form 8-K dated August 31, 2016, filed with the SEC on August 31, 2016. Here incorporated by reference.

175

- 10.11 Employment Agreement between Dennis L. Klaeser, Chemical Financial Corporation and Chemical Bank, dated July 1, 2018. Previously filed as Exhibit 10.2 to the registrant's Current Report on Form 8-K filed with the SEC on July 3, 2018. Here incorporated by reference.
*†+
- 10.12 Employment Agreement between Robert S. Rathbun and Chemical Financial Corporation, dated August 31, 2016. Previously filed as Exhibit 10.12 to the registrant's Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on March 1, 2017. Here incorporated by reference.
*†#
- 10.13 Employment Agreement between Thomas C. Shafer, Chemical Financial Corporation and Chemical Bank, dated July 1, 2018. Previously filed as Exhibit 10.1 to the registrant's Current Report on Form 8-K filed with the SEC on July 3, 2018. Here incorporated by reference.
*†
- 10.14 Employment Agreement between Thomas C. Shafer and Chemical Financial Corporation, dated October 16, 2017. Previously filed as Exhibit 10.18 to the registrant's Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.15 General Release agreement between David B. Ramaker and Chemical Financial Corporation, dated August 9, 2017. Previously filed as Exhibit 10.5 to the registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, filed with the SEC on November 8, 2017. Here incorporated by reference.
*†
- 10.16 Employment Agreement between David T. Provost and Chemical Financial Corporation, dated August 9, 2017. Previously filed as Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, filed with the SEC on November 8, 2017. Here incorporated by reference.
*†^
- 10.17 Employment agreement between Gary Torgow and Chemical Financial Corporation, dated August 9, 2017. Previously filed as Exhibit 10.2 to the registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, filed with the SEC on November 8, 2017. Here incorporated by reference.
*†^
- 10.18 Offer Letter Agreement between Robert S. Rathbun and Chemical Financial Corporation, dated November 3, 2017. Previously filed as Exhibit 10.3 to the registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, filed with the SEC on November 8, 2017. Here incorporated by reference.
*†
- 10.19 Change in Control Agreement between Robert S. Rathbun and Chemical Financial Corporation, dated February 27, 2018. Previously filed as Exhibit 10.24 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.20 Employment Agreement between David T. Provost and Chemical Financial Corporation, dated February 27, 2018. Previously filed as Exhibit 10.25 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.21 Philanthropy Agreement between David T. Provost and Chemical Financial Corporation, dated February 27, 2018. Previously filed as Exhibit 10.26 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.22 Employment Agreement between Gary Torgow and Chemical Financial Corporation, dated February 27, 2018. Previously filed as Exhibit 10.27 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.23 Philanthropy Agreement between Gary Torgow and Chemical Financial Corporation, dated February 27, 2018. Previously filed as Exhibit 10.28 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.24 Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Performance-Based Restricted Stock. Previously filed as Exhibit 10.29 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.25 Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Time-Vested Restricted Stock. Previously filed as Exhibit 10.30 of the registrant's Annual Report on Form 10-K filed with the SEC on February 28, 2018. Here incorporated by reference.
*†
- 10.26 Employment Agreement between Thomas C. Shafer, Chemical Financial Corporation and Chemical Bank, dated July 1, 2018. Previously filed as Exhibit 10.1 to the registrant's Current Report on Form 8-K filed with the SEC on July 3, 2018. Here incorporated by reference.
*†
- 10.27 Employment Agreement between Dennis L. Klaeser, Chemical Financial Corporation and Chemical Bank, dated July 1, 2018. Previously filed as Exhibit 10.2 to the registrant's Current Report on Form 8-K filed with
*†

the SEC on July 3, 2018. Here incorporated by reference.

10.28† Employment Agreement between J. Brennan Ryan, Chemical Financial Corporation and Chemical Bank, dated July 9, 2018.

10.29† Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Performance-Based Restricted Stock awarded to Executive Leadership.

10.30† 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.

10.31† Form of Restricted Stock Unit Agreement pursuant to the Stock Incentive Plan of 2017 for Time-Vested Restricted Stock awarded to Executive Leadership.

- 10.32† 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.
- 21 Subsidiaries.
- 23.1 Consent of KPMG LLP.
- 23.2 Consent of Andrews Hooper Pavlik PLC.
- 24 Powers of Attorney.
- 31.1 Certification of Chief Executive Officer.
- 31.2 Certification of Chief Financial Officer.
- 32 Certification pursuant to 18 U.S.C. §1350.
- 99.1 Chemical Financial Corporation Directors' Deferred Stock Plan Audited Financial Statements and Notes.
- 101.1 Interactive Data File.

* Incorporated by reference. Copies of these Exhibits have been filed with the SEC. Exhibits that are not incorporated by reference are filed with this Annual Report.

† These agreements are management contracts or compensation plans or arrangements required to be filed as Exhibits to this Form 10-K.

Exhibit 10.12 was superseded and replaced with the Offer Letter Agreement dated November 3, 2017 here incorporated by reference as Exhibit 10.18, except for the covenant not to compete in Section 13 of Exhibit 10.12, which remains in force and effect, and was reduced to six months.

+ Exhibit 10.11 was superseded and replaced with the Employment Agreement dated July 1, 2018 herein incorporated by reference as Exhibits 10.27.

Exhibits 10.13 and 10.14 was superseded and replaced with the Employment Agreement dated July 1, 2018 herein incorporated by reference as Exhibits 10.26.

^ Exhibits 10.16 and 10.17 were superseded and replaced with the Employment Agreements dated February 28, 2018 here incorporated by reference as Exhibits 10.20 and 10.22, respectively.

The index of exhibits and any exhibits filed as part of the 2018 Form 10-K are accessible at no cost on our web site at www.chemicalbank.com in the "Investor Information" section, at www.edocumentview.com/chfc and through the United States Securities and Exchange Commission's web site at www.sec.gov. We will furnish a copy of any exhibit listed above to any shareholder at a cost of 30 cents per page upon written request to Investor Information, Chemical Financial Corporation, 333 West Fort Street, Suite 1800, Detroit, Michigan 48226-3154.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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, on February 28, 2019.
CHEMICAL FINANCIAL CORPORATION

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

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on February 28, 2019 by the following persons on behalf of the registrant and in the capacities indicated.
OFFICERS:

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

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

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

The following Directors of Chemical Financial Corporation executed a power of attorney appointing Dennis L. Klaeser their attorney-in-fact, empowering him to sign this report on their behalf.

James R. Fitterling
Ronald A. Klein
Richard M. Lievens
Barbara J. Mahone
Barbara L. McQuade
John E. Pelizzari
Thomas C. Shafer
Larry D. Stauffer
Jeffrey L. Tate
Gary Torgow
Arthur A. Weiss
Franklin C. Wheatlake

/s/ Dennis L. Klaeser
By Dennis L. Klaeser
Attorney-in-fact

