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, 2019

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from____________ to______________________

Commission file number 001-13695

Community BANK SYSTEM, INC.

(Exact name of registrant as specified in its charter)

Delaware	16-1213679
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
5790 Widewaters Parkway, DeWitt, New York	13214-1883
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (315) 445-2282

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $1.00 par value per share	CBU	New York Stock Exchange

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

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

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

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

The aggregate market value of the common stock, $1.00 par value per share, held by non-affiliates of the registrant computed by reference to the closing price as of the close of business on June 30, 2019 (the registrant's most recently completed second fiscal quarter): $3,341,455,914.

The number of shares of the common stock, $1.00 par value per share, outstanding as of the close of business on January 31, 2020: 51,914,175

DOCUMENTS INCORPORATED BY REFERENCE.

Portions of the Definitive Proxy Statement for the Annual Meeting of the Shareholders to be held on May 15, 2020 (the "Proxy Statement") is incorporated by reference in Part III of this Annual Report on Form 10-K.

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Part I

This Annual Report on Form 10-K contains certain forward-looking statements with respect to the financial condition, results of operations and business of Community Bank System, Inc. These forward-looking statements by their nature address matters that involve certain risks and uncertainties. Factors that may cause actual results to differ materially from those contemplated by such forward-looking statements are set forth herein under the caption "Forward-Looking Statements."

Item 1. Business

Community Bank System, Inc. (the "Company") was incorporated on April 15, 1983, under the Delaware General Corporation Law. Its principal office is located at 5790 Widewaters Parkway, DeWitt, New York 13214. The Company is a registered financial holding company which wholly-owns two significant subsidiaries: Community Bank, N.A. (the "Bank" or "CBNA"), and Benefit Plans Administrative Services, Inc. ("BPAS"). As of December 31, 2019, BPAS owns five subsidiaries: Benefit Plans Administrative Services, LLC ("BPA"), a provider of defined contribution plan administration services; Northeast Retirement Services, LLC ("NRS"), a provider of institutional transfer agency, master recordkeeping services, fund administration, trust and retirement plan services; BPAS Actuarial & Pension Services, LLC ("BPAS-APS"), a provider of actuarial and benefit consulting services; BPAS Trust Company of Puerto Rico, a Puerto Rican trust company; and Hand Benefits & Trust Company ("HB&T"), a provider of collective investment fund administration and institutional trust services. NRS owns one subsidiary, Global Trust Company, Inc. ("GTC"), a non-depository trust company which provides fiduciary services for collective investment trusts and other products. HB&T owns one subsidiary, Hand Securities, Inc. ("HSI"), an introducing broker-dealer. The Company also sponsors one unconsolidated subsidiary business trust formed for the purpose of issuing mandatorily-redeemable preferred securities which are considered Tier I capital under regulatory capital adequacy guidelines.

The Bank's business philosophy is to operate as a diversified financial services enterprise providing a broad array of banking and other financial services to retail, commercial and municipal customers. As of December 31, 2019, the Bank operates 231 full-service branches operating as Community Bank, N.A. throughout 40 counties of Upstate New York, six counties of Northeastern Pennsylvania, 12 counties of Vermont and one county of Western Massachusetts, offering a range of commercial and retail banking services. The Bank owns the following operating subsidiaries: The Carta Group, Inc. ("Carta Group"), CBNA Preferred Funding Corporation ("PFC"), CBNA Treasury Management Corporation ("TMC"), Community Investment Services, Inc. ("CISI"), NOTCH Investment Fund, LLC ("NOTCH"), Nottingham Advisors, Inc. ("Nottingham"), OneGroup NY, Inc. ("OneGroup"), and Oneida Preferred Funding II LLC ("OPFC II"). OneGroup is a full-service insurance agency offering personal and commercial property insurance and other risk management products and services. NOTCH, PFC and OPFC II primarily act as investors in residential and commercial real estate activities. TMC provides cash management, investment, and treasury services to the Bank. CISI and Carta Group provide broker-dealer and investment advisory services. Nottingham provides asset management services to individuals, corporations, corporate pension and profit sharing plans, and foundations.

The Company maintains a website at cbna.com. Annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports, are available on the Company's website free of charge as soon as reasonably practicable after such reports or amendments are electronically filed with or furnished to the Securities and Exchange Commission ("SEC"). The information posted on the website is not incorporated into or a part of this filing. Copies of all documents filed with the SEC can also be obtained by visiting the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549, by calling the SEC at 1-800-SEC-0330 or by accessing the SEC's website at https://www.sec.gov.

Acquisition History (2015-2019)

Steuben Trust Corporation - *Pending Acquisition*
On October 21, 2019, the Company announced that it had entered into a definitive agreement to acquire Steuben Trust Corporation ("Steuben"), parent company of Steuben Trust Company, a New York State chartered bank headquartered in Hornell, New York, for approximately $104.4 million in Company stock and cash. Steuben currently operates 14 branch locations in Western New York. The acquisition will extend the Company's footprint into two new counties in Western New York State and enhance the Company's presence in four Western New York State counties in which it currently operates. The acquisition is expected to close during the second quarter of 2020, pending both customary regulatory and Steuben shareholder approval. The Company expects to incur certain one-time, transaction-related costs in 2020 in connection with the Steuben acquisition.

Financial Services Practice – Syracuse, NY
On September 18, 2019, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of a practice engaged in the financial services business headquartered in Syracuse, New York. The Company paid $0.5 million in cash to acquire a customer list, and recorded a $0.5 million customer list intangible asset in conjunction with the acquisition.

Kinderhook Bank Corp.
On July 12, 2019, the Company completed its merger with Kinderhook Bank Corp. ("Kinderhook"), parent company of The National Union Bank of Kinderhook, headquartered in Kinderhook, New York, for $93.4 million in cash. The merger added 11 branch locations across a five county area in the Capital District of Upstate New York. The merger resulted in the acquisition of $642.8 million of assets, including $479.9 million of loans and $39.8 million of investment securities, as well as $568.2 million of deposits and $40.3 million in goodwill.

Wealth Resources Network, Inc.
On January 2, 2019, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of Wealth Resources Network, Inc. ("Wealth Resources"), a financial services business headquartered in Liverpool, New York. The Company paid $1.2 million in cash to acquire a customer list from Wealth Resources, and recorded a $1.2 million customer list intangible asset in conjunction with the acquisition.

HR Consultants, LLC
On April 2, 2018, the Company, through its subsidiary, BPAS, acquired certain assets of HR Consultants (SA), LLC ("HR Consultants"), a provider of actuarial and benefit consulting services headquartered in Puerto Rico. The Company paid $0.3 million in cash to acquire the assets of HR Consultants and recorded intangible assets of $0.3 million in conjunction with the acquisition.

Penna & Associates Agency, Inc.
On January 2, 2018, the Company, through its subsidiary, OneGroup, completed its acquisition of certain assets of Penna & Associates Agency, Inc. ("Penna"), an insurance agency headquartered in Johnson City, New York. The Company paid $0.8 million in cash to acquire the assets of Penna, and recorded goodwill in the amount of $0.3 million and a customer list intangible asset of $0.3 million in conjunction with the acquisition.

Styles Bridges Associates
On January 2, 2018, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of Styles Bridges Associates ("Styles Bridges"), a financial services business headquartered in Canton, New York. The Company paid $0.7 million in cash to acquire a customer list from Styles Bridges, and recorded a $0.7 million customer list intangible asset in conjunction with the acquisition.

Gordon B. Roberts Agency, Inc.
On December 4, 2017, the Company, through its subsidiary, OneGroup, completed its acquisition of Gordon B. Roberts Agency, Inc. ("GBR"), an insurance agency headquartered in Oneonta, New York for $3.7 million in Company stock and cash, comprised of $1.35 million in cash and the issuance of 0.04 million shares of common stock. The transaction resulted in the acquisition of $0.6 million of assets, $0.6 million of other liabilities, goodwill in the amount of $2.1 million and other intangible assets of $1.6 million.

Northeast Capital Management, Inc.
On November 17, 2017, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of Northeast Capital Management, Inc. ("NECM"), a financial services business headquartered in Wilkes-Barre, Pennsylvania. The Company paid $1.2 million in cash to acquire a customer list from NECM, and recorded a $1.2 million customer list intangible asset in conjunction with the acquisition.

Merchants Bancshares, Inc.
On May 12, 2017, the Company completed its acquisition of Merchants Bancshares, Inc. ("Merchants"), parent company of Merchants Bank headquartered in South Burlington, Vermont, for $345.2 million in Company stock and cash, comprised of $82.9 million in cash and the issuance of 4.68 million shares of common stock. The acquisition extended the Company's footprint into the Vermont and Western Massachusetts markets with the addition of 31 branch locations in Vermont and one location in Massachusetts. This transaction resulted in the acquisition of $2.0 billion of assets, including $1.49 billion of loans and $370.6 million of investment securities, as well as $1.45 billion of deposits and $189.0 million in goodwill.

Dryfoos Insurance Agency, Inc.
On March 1, 2017, the Company, through its subsidiary, OneGroup, completed its acquisition of certain assets of Dryfoos Insurance Agency, Inc. ("Dryfoos"), an insurance agency headquartered in Hazleton, Pennsylvania. The Company paid $3.0 million in cash to acquire the assets of Dryfoos, and recorded goodwill in the amount of $1.7 million and other intangible assets of $1.7 million in conjunction with the acquisition.

Northeast Retirement Services, Inc.
On February 3, 2017, the Company completed its acquisition of NRS and its subsidiary GTC, headquartered in Woburn, Massachusetts, for $148.6 million in Company stock and cash. NRS was a privately held corporation focused on providing institutional transfer agency, master recordkeeping services, custom target date fund administration, trust product administration and customized reporting services to institutional clients. Its wholly-owned subsidiary, GTC, is chartered in the State of Maine as a non-depository trust company and provides fiduciary services for collective investment trusts and other products. The acquisition of NRS and GTC, hereafter referred to collectively as NRS, strengthens and complements the Company's existing employee benefit services businesses. Upon the completion of the merger, NRS became a wholly-owned subsidiary of BPAS and operates as Northeast Retirement Services, LLC, a Delaware limited liability company. This transaction resulted in the acquisition of $36.1 million in net tangible assets, principally cash and certificates of deposit, $60.2 million in customer list intangibles that will be amortized over 10 years, the creation of a $23.0 million deferred tax liability associated with the customer list intangible and $75.3 million in goodwill.

Benefits Advisory Service, Inc.
On January 1, 2017, the Company, through its subsidiary, OneGroup, acquired certain assets of Benefits Advisory Service, Inc. ("BAS"), a benefits consulting group headquartered in Forest Hills, New York. The Company paid $1.2 million in cash to acquire the assets of BAS and recorded intangible assets of $1.2 million in conjunction with the acquisition.

WJL Agencies, Inc.
On January 4, 2016, the Company, through its subsidiary, CBNA Insurance Agency, Inc., completed its acquisition of WJL Agencies, Inc. doing business as The Clark Insurance Agencies ("WJL"), an insurance agency operating in Canton, New York. The Company paid $0.6 million in cash for the intangible assets of the company. Goodwill in the amount of $0.3 million and intangible assets in the amount of $0.3 million were recorded in conjunction with the acquisition. On August 19, 2016, the Company merged together its insurance subsidiaries and as of that date, CBNA Insurance Agency, Inc. was merged into OneGroup.

Oneida Financial Corp.
On December 4, 2015, the Company completed its acquisition of Oneida Financial Corp. ("Oneida"), parent company of Oneida Savings Bank, headquartered in Oneida, New York for $158.5 million in Company stock and cash, comprised of $56.3 million of cash and the issuance of 2.38 million common shares. Upon the completion of the merger, the Bank added 12 branch locations in Oneida and Madison counties and approximately $769.4 million of assets, including approximately $399.4 million of loans and $225.7 million of investment securities, along with $699.2 million of deposits. Through the acquisition of Oneida, the Company acquired OneGroup and Oneida Wealth Management, Inc. ("OWM") as wholly-owned subsidiaries primarily engaged in offering insurance and investment advisory services. These subsidiaries complement the Company's other non-banking financial services businesses. On April 22, 2016, the activities of OWM were merged into CISI.

Services

Banking
The Bank is a community bank committed to the philosophy of serving the financial needs of customers in local communities. The Bank's branches are generally located in smaller towns and cities within its geographic market areas of Upstate New York, Northeastern Pennsylvania, Vermont and Western Massachusetts. The Company believes that the local character of its business, knowledge of the customers and their needs, and its comprehensive retail and business products, together with responsive decision-making at the branch and regional levels, enable the Bank to compete effectively in its geographic market. The Bank is a member of the Federal Reserve System, the Federal Home Loan Bank of New York and the Federal Home Loan Bank of Boston (as a non-member bank) (collectively, referred to as "FHLB"), and its deposits are insured by the Federal Deposit Insurance Corporation ("FDIC") up to applicable limits.

Employee Benefit Services
Through BPAS and its subsidiaries, the Company operates a national practice that provides employee benefit trust, collective investment fund, retirement plan administration, fund administration, transfer agency, actuarial, VEBA/HRA and health and welfare consulting services to a diverse array of clients spanning the United States and Puerto Rico.

Wealth Management
Through the Bank, its trust department, CISI, Carta Group, and Nottingham, the Company provides wealth management, retirement planning, higher educational planning, fiduciary, risk management, trust services and personal financial planning services. The Company offers investment alternatives including stocks, bonds, mutual funds and advisory products.

Insurance Agency

Through OneGroup, the Company offers personal and commercial lines of insurance and other risk management products and services. In addition, OneGroup offers employee benefit related services. OneGroup represents many leading insurance companies.

Segment Information

The Company has identified three reportable operating business segments: Banking, Employee Benefit Services, and All Other. Included in the All Other segment are the smaller Wealth Management and Insurance operations. Information about the Company's reportable business segments is included in Note U of the "Notes to Consolidated Financial Statements" filed herewith in Part II.

Competition

The banking and financial services industry is highly competitive in the New York, Pennsylvania, Vermont and Massachusetts markets. The Company competes actively for loans, deposits, and financial services relationships with other national and state banks, thrift institutions, credit unions, retail brokerage firms, mortgage bankers, finance companies, insurance agencies, and other regulated and unregulated providers of financial services. In order to compete with other financial service providers, the Company stresses the community nature of its operations and the development of profitable customer relationships across all lines of business.

The Company's employee benefit trust and plan administration business competes on a national scale and provides geographic diversification for the Company. Certain lines of business are marketed primarily through unaffiliated financial advisors, while others are marketed directly to plan sponsors and fund companies. In order to compete with large national firms, the Company stresses its consultative approach to complex engagements.

The table below summarizes the Bank's deposits and market share by the fifty-four counties of New York, Pennsylvania, Vermont, and Massachusetts in which it had customer facilities as of June 30, 2019. Market share is based on deposits of all commercial banks, credit unions, savings and loan associations, and savings banks.

County	State	Deposits as of 6/30/2019[(1)] (000's omitted)	Market Share [(1)]	Number of Branches	Number of ATM's	Number of Towns/ Cities	Number of Towns Where Company Has 1st or 2nd Market Position
Grand Isle	VT	$38,229	100.00%	1	1	1	1
Lewis	NY	193,316	70.95%	4	4	3	3
Hamilton	NY	59,183	55.92%	2	2	2	2
Franklin	NY	351,577	55.63%	6	6	5	5
Madison	NY	399,052	47.14%	8	8	5	5
Allegany	NY	301,879	44.05%	9	10	8	8
Cattaraugus	NY	560,348	37.78%	10	11	7	6
Otsego	NY	343,793	29.45%	10	10	6	5
Seneca	NY	128,869	25.54%	4	3	4	3
Saint Lawrence	NY	458,019	24.42%	13	12	11	10
Schuyler	NY	53,512	22.95%	1	1	1	1
Yates	NY	96,230	22.53%	3	2	2	1
Wyoming	PA	146,007	21.37%	4	4	4	3
Clinton	NY	363,824	21.35%	4	7	2	2
Jefferson	NY	404,712	21.27%	7	9	6	5
Chautauqua	NY	397,076	19.54%	12	12	10	6
Livingston	NY	199,581	19.18%	5	6	5	4
Essex	NY	126,558	14.83%	5	5	4	3
Orange	VT	48,712	14.08%	2	2	2	2
Oswego	NY	195,433	12.56%	4	5	4	2
Wayne	NY	134,571	10.81%	3	4	2	2
Ontario	NY	241,373	9.92%	7	13	5	3
Caledonia	VT	64,197	9.70%	2	2	2	1
Bennington	VT	77,325	9.12%	2	4	2	0
Addison	VT	56,928	9.11%	2	2	2	1
Delaware	NY	128,095	8.65%	5	5	5	4
Tioga	NY	38,709	8.31%	2	2	2	1
Chittenden	VT	515,512	7.50%	9	10	6	4
Rutland	VT	106,041	7.32%	3	4	2	1
Franklin	VT	47,188	7.30%	2	2	2	1
Herkimer	NY	53,224	6.76%	1	1	1	1
Lackawanna	PA	394,431	6.54%	11	11	8	4
Luzerne	PA	449,879	6.54%	10	14	8	4
Susquehanna	PA	59,522	6.44%	2	1	2	1
Steuben	NY	190,635	6.04%	8	8	7	3
Chemung	NY	66,162	5.85%	2	2	1	0
Lamoille	VT	29,036	4.55%	1	1	1	1
Windham	VT	47,329	4.47%	2	3	2	1
Schoharie	NY	21,490	4.38%	1	1	1	0
Carbon	PA	42,891	4.30%	2	2	2	0
Oneida	NY	251,953	3.99%	6	8	5	3
Windsor	VT	53,160	3.83%	2	2	2	0
Cayuga	NY	44,746	3.79%	2	2	2	1
Washington	VT	87,015	3.37%	3	4	3	1
Bradford	PA	38,945	3.00%	2	2	2	1
Washington	NY	20,951	2.80%	1	0	1	1
Chenango	NY	23,990	2.29%	2	2	1	0
Onondaga	NY	278,350	2.13%	4	5	4	1
Warren	NY	36,971	1.78%	1	1	1	1
Ulster	NY	27,662	0.63%	1	1	1	1
Broome	NY	26,928	0.42%	1	1	1	0
Erie	NY	145,933	0.32%	4	4	3	2
Hampden	MA	31,703	0.25%	1	1	1	0
Tompkins	NY	5,387	0.17%	1	0	1	0
		$8,704,142	**5.49%**	**222**	**245**	**183**	**122**

(1) Deposits and Market Share data as of June 30, 2019, the most recent information available from SNL Financial LLC. Deposit amounts include $215.9 million of intercompany balances that are eliminated upon consolidation.

Employees

As of December 31, 2019, the Company employed 2,752 full-time employees and 286 part-time and temporary employees. None of the Company's employees are represented by a collective bargaining agreement. The Company offers a variety of employment benefits and considers its relationship with its employees to be good.

Supervision and Regulation

General

The banking industry is highly regulated with numerous statutory and regulatory requirements that are designed primarily for the protection of depositors and the financial system, and not for the purpose of protecting shareholders. Set forth below is a description of the material laws and regulations applicable to the Company and the Bank. This summary is not complete and the reader should refer to these laws and regulations for more detailed information. The Company's and the Bank's failure to comply with applicable laws and regulations could result in a range of sanctions and administrative actions imposed upon the Company and/or the Bank, including the imposition of civil money penalties, formal agreements and cease and desist orders. Changes in applicable law or regulations, and in their interpretation and application by regulatory agencies, cannot be predicted, and may have a material effect on the Company's business and results.

The Company and its subsidiaries are subject to the laws and regulations of the federal government and the states and jurisdictions in which they conduct business. The Company, as a bank holding company, is subject to extensive regulation, supervision and examination by the Board of Governors of the Federal Reserve System ("FRB") as its primary federal regulator. The Bank is a nationally-chartered bank and is subject to extensive regulation, supervision and examination by the Office of the Comptroller of the Currency ("OCC") as its primary federal regulator, and as to certain matters, the FRB, the Consumer Financial Protection Bureau ("CFPB"), and the Federal Deposit Insurance Corporation ("FDIC").

The Company is also subject to the jurisdiction of the SEC and is subject to disclosure and regulatory requirements under the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended. The Company's common stock is listed on the New York Stock Exchange ("NYSE") and it is subject to NYSE's rules for listed companies. Affiliated entities, including BPAS, GTC, HB&T, HSI, BPAS Trust Company of Puerto Rico, Nottingham, CISI, OneGroup, and Carta Group are subject to the jurisdiction of certain state and federal regulators and self-regulatory organizations including, but not limited to, the SEC, the Texas Department of Banking, the State of Maine Bureau of Financial Institutions, the Financial Industry Regulatory Authority ("FINRA"), Puerto Rico Office of the Commissioner of Financial Institutions, and state securities and insurance regulators.

Federal Bank Holding Company Regulation

The Company was a bank holding company under the Bank Holding Company Act of 1956, (the "BHC Act"), and became a financial holding company effective September 30, 2015. As a bank holding company that has elected to become a financial holding company, the Company can affiliate with securities firms and insurance companies and engage in other activities that are "financial in nature" or "incidental" or "complementary" to activities that are financial in nature, as long as it continues to meet the eligibility requirements for financial holding companies (including requirements that the financial holding company and its depository institution subsidiary maintain their status as "well capitalized" and "well managed").

Generally, FRB approval is not required for the Company to acquire a company (other than a bank holding company, bank or savings association) engaged in activities that are financial in nature or incidental to activities that are financial in nature, as determined by the FRB. Prior notice to the FRB may be required, however, if the company to be acquired has total consolidated assets of $10 billion or more. Prior FRB approval is required before the Company may acquire the beneficial ownership or control of more than 5% of the voting shares or substantially all of the assets of a bank holding company, bank or savings association.

Because the Company is a financial holding company, if the Bank were to receive a rating under the Community Reinvestment Act of 1977, as amended ("CRA"), of less than Satisfactory, the Company will be prohibited, until the rating is raised to Satisfactory or better, from engaging in new activities or acquiring companies other than bank holding companies, banks or savings associations, except that the Company could engage in new activities, or acquire companies engaged in activities, that are considered "closely related to banking" under the BHC Act. In addition, if the FRB determines that the Company or the Bank is not well capitalized or well managed, the Company would be required to enter into an agreement with the FRB to comply with all applicable capital and management requirements and may contain additional limitations or conditions. Until corrected, the Company could be prohibited from engaging in any new activity or acquiring companies engaged in activities that are not closely related to banking, absent prior FRB approval.

Federal Reserve System Regulation

Because the Company is a financial holding company, it is subject to regulatory capital requirements and required by the FRB to, among other things, maintain cash reserves against its deposits. The Bank is under similar capital requirements administered by the OCC as discussed below. FRB policy has historically required a financial holding company to act as a source of financial and managerial strength to its subsidiary banks. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act") codifies this historical policy as a statutory requirement. To the extent the Bank is in need of capital, the Company could be expected to provide additional capital, including borrowings from the FRB for such purpose. Both the Company and the Bank are subject to extensive supervision and regulation, which focus on, among other things, the protection of depositors' funds.

The FRB also regulates the national supply of bank credit in order to influence general economic conditions. These policies have a significant influence on overall growth and distribution of loans, investments and deposits, and affect the interest rates charged on loans or paid for deposits.

Fluctuations in interest rates, which may result from government fiscal policies and the monetary policies of the FRB, have a strong impact on the income derived from loans and securities, and interest paid on deposits and borrowings. While the Company and the Bank strive to model various interest rate changes and adjust our strategies for such changes, the level of earnings can be materially affected by economic circumstances beyond our control.

The Office of the Comptroller of the Currency Regulation

The Bank is supervised and regularly examined by the OCC. The various laws and regulations administered by the OCC affect the Company's practices such as payment of dividends, incurring debt, and acquisition of financial institutions and other companies. It also affects the Bank's business practices, such as payment of interest on deposits, the charging of interest on loans, types of business conducted and the location of its offices. The OCC generally prohibits a depository institution from making any capital distributions, including the payment of a dividend, or paying any management fee to its parent holding company if the depository institution would become undercapitalized due to the payment. Undercapitalized institutions are subject to growth limitations and are required to submit a capital restoration plan to the OCC. The Bank is well capitalized under regulatory standards administered by the OCC. For additional information on our capital requirements see "Management's Discussion and Analysis of Financial Condition and Results of Operations – Shareholders' Equity" and Note P to the Financial Statements.

Federal Home Loan Bank

The Bank is a member of the FHLB, which provides a central credit facility primarily for member institutions for home mortgage and neighborhood lending. The Bank is subject to the rules and requirements of the FHLB, including the purchase of shares of FHLB activity-based stock in the amount of 4.5% of the dollar amount of outstanding advances and FHLB capital stock in an amount equal to the greater of $1,000 or the sum of 0.15% of the mortgage-related assets held by the Bank based upon the previous year-end financial information. The Bank was in compliance with the rules and requirements of the FHLB at December 31, 2019.

Deposit Insurance

Deposits of the Bank are insured up to the applicable limits by the Deposit Insurance Fund ("DIF") and are subject to deposit insurance assessments to maintain the DIF. The Dodd-Frank Act permanently increased the maximum amount of deposit insurance to $250,000 per deposit category, per depositor, per institution. A depository institution's DIF assessment is calculated by multiplying its assessment rate by the assessment base, which is defined as the average consolidated total assets less the average tangible equity of the depository institution. The initial base assessment rate is based on its capital level and supervisory ratings (its "CAMELS ratings"), certain financial measures to assess an institution's ability to withstand asset related stress and funding related stress and, in some cases, additional discretionary adjustments by the FDIC to reflect additional risk factors. The Bank's adjusted average consolidated total assets for 4 consecutive quarters exceeded $10.0 billion in 2018, which resulted in a deposit insurance assessment based on a large institution classification, rather than the small institution classification for years prior to 2018.

For large insured depository institutions, generally defined as those with at least $10 billion in total assets, the FDIC has eliminated risk categories when calculating the initial base assessment rates and now combine CAMELS ratings and financial measures into two scorecards to calculate assessment rates, one for most large insured depository institutions and another for highly complex insured depository institutions (which are generally those with more than $50 billion in total assets that are controlled by a parent company with more than $500 billion in total assets). Each scorecard has two components - a performance score and loss severity score, which are combined and converted to an initial assessment rate. The FDIC has the ability to adjust a large or highly complex insured depository institution's total score by a maximum of 15 points, up or down, based upon significant risk factors that are not captured by the scorecard. Under the current assessment rate schedule, the initial base assessment rate for large and highly complex insured depository institutions ranges from three to 30 basis points, and the total base assessment rate, after applying the unsecured debt and brokered deposit adjustments, ranges from one and one-half to 40 basis points. The Bank's FDIC insurance for 2019 was based on an assessment rate of three basis points.

In October 2010, the FDIC adopted a DIF restoration plan to ensure that the fund reserve ratio reached 1.35% by September 30, 2020, as required by the Dodd-Frank Act. In September 2018, the DIF reserve ratio reached 1.36%, exceeding the required reserve ratio of 1.35% ahead of the September 30, 2020 deadline. Since the DIF reserve ratio remained above 1.35% in 2019, the Bank was permitted to offset its FDIC insurance assessments in 2019 with Small Bank Assessment Credits issued by the FDIC in January 2019. The Bank offset $1.5 million of FDIC insurance assessments in 2019 with Small Bank Assessment Credits. FDIC insurance expense net of Small Bank Assessment Credits in 2019 totaled $1.4 million, compared to $3.2 million in 2018 and $3.5 million in 2017.

Under the Federal Deposit Insurance Act, if the FDIC finds that an institution has engaged in unsafe and unsound practices, is in an unsafe or unsound condition to continue operations, or has violated any applicable law, regulation, rule, order or condition imposed by the FDIC, the FDIC may determine that such violation or unsafe or unsound practice or condition require the termination of deposit insurance.

Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010

On July 21, 2010, the Dodd-Frank Act was signed into law, which resulted in significant changes to the banking industry. As discussed further throughout this section, certain aspects of the Dodd-Frank Act are subject to implementing rules that have been taking effect over several years.

The Dodd-Frank Act contains numerous provisions that affect all banks and bank holding companies and impacts how the Company and the Bank handle their operations. The Dodd-Frank Act requires various federal agencies, including those that regulate the Company and the Bank, to promulgate new rules and regulations and to conduct various studies and reports for Congress. The federal agencies have either completed or are in the process of completing these rules and regulations and have been given significant discretion in drafting such rules and regulations. Several of the provisions of the Dodd-Frank Act may have the consequence of increasing the Bank’s expenses, decreasing its revenues, and changing the activities in which it chooses to engage. The specific impact of the Dodd-Frank Act on the Company’s current activities or new financial activities the Company may consider in the future, the Company’s financial performance, and the markets in which the Company operates depends on the manner in which the relevant agencies continue to develop and implement the required rules and regulations and the reaction of market participants to these regulatory developments.

Pursuant to FRB regulations mandated by the Dodd-Frank Act, interchange fees on debit card transactions are limited to a maximum of $0.21 per transaction plus 5 basis points of the transaction amount. A debit card issuer may recover an additional one cent per transaction for fraud prevention purposes if the issuer complies with certain fraud-related requirements prescribed by the FRB. The FRB also adopted requirements in the final rule that issuers include two unaffiliated networks for routing debit transactions that are applicable to the Company and the Bank. The Company became subject to the interchange fee cap mandated by the Dodd-Frank Act beginning on July 1, 2018. As such, the fees the Company received on and after July 1, 2018 for an electronic debit transaction were capped at the statutory limit. Prior to July 1, 2018, the Company was exempt from the interchange fee cap under the "small issuer" exemption, which applies to any debit card issuer with total worldwide assets (including those of its affiliates) of less than $10 billion as of the end of the previous calendar year.

The Dodd-Frank Act established the CFPB and empowered it to exercise broad rulemaking, supervision, and enforcement authority for a wide range of consumer protection laws. Since the Company’s total consolidated assets exceed $10 billion the Company is subject to the direct supervision of the CFPB. The CFPB has issued numerous regulations and amendments under which the Company and the Bank may continue to incur additional expense in connection with its ongoing compliance obligations. Significant recent CFPB developments that may affect operations and compliance costs include:

- positions taken by the CFPB on fair lending, including applying the disparate impact theory which could make it more difficult for lenders to charge different rates or to apply different terms to loans to different customers;
- the CFPB’s final rule amending Regulation C, which implements the Home Mortgage Disclosure Act, requiring most lenders to report expanded information in order for the CFPB to more effectively monitor fair lending concerns and other information shortcomings identified by the CFPB;
- positions taken by the CFPB regarding the Electronic Fund Transfer Act and Regulation E, which require companies to obtain customer authorizations before automatically debiting a consumer’s account for pre-authorized electronic funds transfers; and
- focused efforts on enforcing certain compliance obligations the CFPB deems a priority, such as automobile loan servicing, debt collection, mortgage origination and servicing, remittances, and fair lending, among others.

The final rules issued by the FRB, SEC, OCC, FDIC, and Commodity Futures Trading Commission implementing Section 619 of the Dodd-Frank Act (commonly known as the Volcker Rule) prohibit insured depository institutions and companies affiliated with insured depository institutions from engaging in short-term proprietary trading of certain securities, derivatives, commodity futures and options on these instruments, for their own account. The final rules also impose limits on banking entities’ investments in, and other relationships with, hedge funds or private equity funds.

As of October 2019, the five federal agencies identified above with rulemaking authority with respect to the Volcker Rule finalized amendments to the proprietary trading provisions of the Volcker Rule. These amendments tailor the Volcker Rule's compliance requirements to the amount of a firm's trading activity, revise the definition of trading account, clarify certain key provisions in the Volcker Rule, and modify the information companies are required to provide the federal agencies. These amendments to the Volcker Rule are not material to the Company's investing and trading activities.

On January 30, 2020, the five federal agencies proposed additional amendments to the Volcker Rule related to the restrictions on ownership interests and relationships with covered funds. The ultimate benefits or consequences of these amendments will depend on their final form, which the Company cannot predict.

In May of 2018, the Economic Growth, Regulatory Relief, and Consumer Protection Act ("Economic Growth Act") was enacted to amend the Dodd-Frank Act and modify certain post-crisis regulatory requirements, including a variety of provisions intended to promote economic growth, provide tailored regulatory relief for smaller and less complex financial institutions, and enhance consumer protections. Among other things, the law raised the asset size threshold for the filing of required company-run stress tests that the Dodd-Frank Act had applied to the Company and the Bank, from $10 billion to $250 billion in total assets. As implemented by the federal banking agencies, these changes became effective in 2018 for banking organizations with total assets of less than $100 billion, such as the Bank.

The ongoing effects of the Dodd-Frank Act, as well as the recent and possible future changes to the regulatory framework as a result of the Economic Growth Act and future proposals make it difficult to assess the overall financial impact of the Dodd-Frank Act and related regulatory developments on the Company and the banking industry. As a result, the Company cannot predict the ultimate impact of the Dodd-Frank Act on the Company or the Bank, including the extent to which it could increase costs or limit the Company's ability to pursue business opportunities in an efficient manner, or otherwise adversely affect its business, financial condition and results of operations. Nor can the Company predict the impact or substance of other future legislation or regulation. However, it is expected that future legislation or regulation at a minimum will increase the Company's and the Bank's operating and compliance costs. As rules and regulations continue to be implemented or issued, the Company may need to dedicate additional resources to ensure compliance, which may increase its costs of operations and adversely impact its earnings.

Capital Requirements

The Company and the Bank are required to comply with applicable capital adequacy standards established by the federal banking agencies. The risk-based capital standards that were applicable to the Company and the Bank through December 31, 2014 were based on the 1988 Capital Accord, known as Basel I ("Basel I"), of the Basel Committee on Banking Supervision (the "Basel Committee"). However, in July 2013, the FRB, the OCC and the FDIC approved final rules (the "Capital Rules") establishing a new comprehensive capital framework for U.S. banking organizations. These rules went into effect for the Company and the Bank on January 1, 2015, subject to phase-in periods for certain components.

The Capital Rules implement the Basel Committee's December 2010 capital framework (known as "Basel III") for strengthening international capital standards as well as certain provisions of the Dodd-Frank Act. The Capital Rules substantially revise the risk-based capital requirements applicable to bank holding companies and depository institutions, including the Company and the Bank, compared to the previous U.S. Basel I risk-based capital rules. The Capital Rules define the components of capital and address other issues in banking institutions regulatory capital ratios and replace the Basel I risk-weighting approach, with a more risk-sensitive one, based in part, on the standardized approach set forth in "Basel II". The Capital Rules also implement the requirements of Section 939A of the Dodd-Frank Act to remove references to credit ratings from the Federal banking agencies' rules.

The Capital Rules, among other things: (i) introduces as a capital measure "Common Equity Tier 1," ("CET1"), (ii) specify that Tier 1 capital consists of CET1 and "Additional Tier 1 capital" instruments meeting specified revised requirements, (iii) defines CET1 narrowly by requiring that most deductions/adjustments to regulatory capital measures be made to CET1 and not to the other components of capital, and (iv) expands the scope of the deductions from and adjustments to capital as compared to existing regulations. Under the Capital Rules, the most common form of Additional Tier 1 capital is non-cumulative perpetual preferred stock, and the most common form of Tier 2 capital is subordinated notes and a portion of the allowance for loan and lease losses, in each case, subject to the Capital Rules specific requirements.

Under the Capital Rules, the minimum capital ratios as of January 1, 2016 are as follows:

- 4.5% CET1 to total risk-weighted assets;
- 6.0% Tier 1 capital (CET1 plus Additional Tier 1 capital) to total risk-weighted assets;
- 8.0% Total capital (Tier 1 Capital plus Tier 2 capital) to total risk-weighted assets;
- 4.0% Tier 1 capital to total adjusted quarterly average assets (known as "leverage ratio")

Beginning in 2016, the Capital Rules required the Company and the Bank to maintain a “capital conservation buffer” composed entirely of CET1. When it was fully phased-in at the beginning of 2019, banking organizations were required to maintain a minimum capital conservation buffer of 2.5% (CET1 to Total risk-weighted assets), in addition to the minimum risk-based capital ratios. Therefore, to satisfy both the minimum risk-based capital ratios and the capital conservation buffer, a banking organization is required to maintain the following: (i) CET1 to total risk-weighted assets of at least 7%, (ii) Tier 1 capital to total risk-weighted assets of at least 8.5%, and (iii) Total capital (Tier 1 capital plus Tier 2 capital) to total risk-weighted assets of at least 10.5%. The capital conservation buffer is designed to absorb losses during periods of economic stress. Banking institutions that do not maintain a capital conservation buffer of 2.5% or more will face constraints on dividends, common share repurchases and incentive compensation based on the amount of the shortfall.

The Capital Rules provide for a number of deductions from and adjustments to CET1. These include, for example, the requirement that mortgage servicing rights, deferred tax assets dependent upon future taxable income and significant investments in non-consolidated financial entities be deducted from CET1 to the extent that any one such category exceeds 10% of CET1 or all such categories in the aggregate exceed 15% of CET1. Under the general Basel I risk-based capital rules, the effects of accumulated other comprehensive income or loss items included in shareholders' equity (for example, marks-to-market of securities held in the available for sale portfolio) were reversed for the purposes of determining regulatory capital. Under the Capital Rules, the effects of certain accumulated other comprehensive income or loss items are not excluded; however, banks not using the advanced approach, including the Company and the Bank, were permitted to, and in the case of the Company and the Bank they did, make a one-time permanent election to continue to exclude these items.

Consistent with Section 171 of the Dodd-Frank Act, the Capital Rules allow certain bank holding companies to include certain hybrid securities, such as trust preferred securities, in Tier 1 capital if they had less than $15 billion in assets as of December 31, 2009 and the securities were issued before May 19, 2010. Accordingly, the trust preferred securities on the Company’s balance sheet will be included as Tier 1 capital while they are outstanding, unless the Company completes an acquisition of a depository institution holding company that did not meet this criteria, or are acquired by such an organization, after January 1, 2014, at which time they would be subject to the stated phase-out requirements of the Capital Rules and would be included as Tier 2 capital.

Implementation of the deductions and other adjustments to CET1 began on January 1, 2015 and were phased-in over a 4-year period (beginning at 40% on January 1, 2015 and an additional 20% per year thereafter). The implementation of the capital conservation buffer began on January 1, 2016 at the 0.625% level and was phased in over a four-year period (increasing by that amount on each subsequent January 1, until it reached 2.5% on January 1, 2019).

With respect to the Bank, the Capital Rules also revise the prompt corrective action (“PCA”) regulations established pursuant to Section 38 of the Federal Deposit Insurance Act, by (i) introducing a CET1 ratio requirement for each capital category other than critically undercapitalized, with the required CET1 ratio being 6.5% for well-capitalized status; (ii) increasing the minimum Tier 1 capital ratio requirement for each capital category, with the minimum Tier 1 capital ratio for well-capitalized status being 8.0%; and (iii) eliminating the current provision that allows certain highly-rated banking organizations to maintain a 3.0% leverage ratio and still be adequately capitalized. The Capital Rules do not change the Total risk-based PCA capital requirement for any capital category.

The Capital Rules prescribe a standardized approach for risk weighted-assets that expands the risk-weight categories from the four Basel I-derived categories (0%, 20%, 50% and 100%) to a larger and more risk-sensitive number of categories, depending on the nature of the asset. The risk-weight categories generally range from 0% for U.S. government and agency securities, to 1,250% for certain securitized exposures, and result in higher risk weights for a variety of asset categories. The standardized approach requires financial institutions to transition assets that are 90 days or more past due or on nonaccrual from their original risk weight to 150 percent. Additionally, loans designated as high volatility commercial real estate (“HVCRE”) are assigned a risk-weighting of 150 percent.

Requirements to maintain higher levels of capital or to maintain higher levels of liquid assets could adversely impact the Company's net income and return on equity. The current requirements and the Company's actual capital levels are detailed in Note P of “Notes to Consolidated Financial Statements” filed in Part II, Item 8, “Financial Statements and Supplementary Data.”

Consumer Protection Laws

In connection with its banking activities, the Bank is subject to a number of federal and state laws designed to protect borrowers and promote lending to various sectors of the economy. These laws include but are not limited to the Equal Credit Opportunity Act, the Gramm-Leach-Bliley Act (“GLB Act”), the Fair Credit Reporting Act (“FCRA”), the Fair and Accurate Credit Transactions Act of 2003 (“FACT Act”), Electronic Funds Transfer Act, the Truth in Lending Act, the Home Mortgage Disclosure Act, the Dodd-Frank Act, the Real Estate Settlement Procedures Act, the Secure and Fair Enforcement for Mortgage Licensing Act (“SAFE”), the Servicemembers Civil Relief Act (“SCRA”), the Military Lending Act (“MLA”), and various state law counterparts.

The Dodd-Frank Act created the CFPB with broad powers to supervise and enforce consumer protection laws, including laws that apply to banks in order to prohibit unfair, deceptive or abusive acts or practices. The CFPB has examination authority over all banks and savings institutions with more than $10 billion in assets. The Dodd-Frank Act also weakens the federal preemption rules that are applicable to national banks and gives attorney generals for the states certain powers to enforce federal consumer protection laws. Further, under the Dodd-Frank Act, it is unlawful for any provider of consumer financial products or services to engage in any unfair, deceptive, or abusive acts or practices ("UDAAP"). A violation of the consumer protection and privacy laws, and in particular UDAAP, could have serious legal, financial, and reputational consequences.

In addition, the GLB Act requires all financial institutions to adopt privacy policies, restrict the sharing of nonpublic customer data with nonaffiliated parties and establishes procedures and practices to protect customer data from unauthorized access. In addition, the FCRA, as amended by the FACT Act, includes provisions affecting the Company, the Bank, and their affiliates, including provisions concerning obtaining consumer reports, furnishing information to consumer reporting agencies, maintaining a program to prevent identity theft, sharing of certain information among affiliated companies, and other provisions. The FACT Act requires persons subject to FCRA to notify their customers if they report negative information about them to a credit bureau or if they are granted credit on terms less favorable than those generally available. The FRB and the Federal Trade Commission have extensive rulemaking authority under the FACT Act, and the Company and the Bank are subject to the rules that have been created under the FACT Act, including rules regarding limitations on affiliate marketing and implementation of programs to identify, detect and mitigate certain identity theft red flags. The SCRA protects persons called to active military service and their dependents from undue hardship resulting from their military service, and the MLA extends specific protections if an accountholder, at the time of account opening, is a covered active duty member of the military or certain family members thereof. The SCRA applies to all debts incurred prior to the commencement of active duty and limits the amount of interest, including service and renewal charges and any other fees or charges (other than bona fide insurance) that are related to the obligation or liability. The MLA applies to certain consumer loans and extends specific protections if an accountholder, at the time of account opening, is a covered active duty member of the military or certain family members thereof. The Bank is also subject to data security standards and data breach notice requirements issued by the OCC and other regulatory agencies. The Bank has created policies and procedures to comply with these consumer protection requirements.

The CFPB issued the final rules implementing the ability-to-repay and qualified mortgage (QM) provisions of the Truth in Lending Act (the "QM Rule"). The ability-to-repay provision requires creditors to make reasonable, good faith determinations that borrowers are able to repay their mortgages before extending credit based on a number of factors and consideration of financial information about the borrower derived from reasonably reliable third-party documents. Under the Dodd-Frank Act and the QM Rule, loans meeting the definition of "qualified mortgage" are entitled to a presumption that the lender satisfied the ability-to-repay requirements. The presumption is a conclusive presumption/safe harbor for loans meeting the QM requirements, and a rebuttable presumption for higher-priced loans meeting the QM requirements. The definition of a "qualified mortgage" incorporates the statutory requirements, such as not allowing negative amortization or terms longer than 30 years. The QM Rule also adds an explicit maximum 43% debt-to-income ratio for borrowers if the loan is to meet the QM definition, though some mortgages that meet government-sponsored enterprises, Federal Housing Administration, and Veterans Administration underwriting guidelines may, for a period not to exceed seven years, meet the QM definition without being subject to the 43% debt-to-income limits. The Bank has created policies and procedures to comply with these consumer protection requirements.

USA Patriot Act

The Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 ("USA Patriot Act") imposes obligations on U.S. financial institutions, including banks and broker-dealer subsidiaries, to implement policies, procedures and controls which are reasonably designed to detect and report instances of money laundering and the financing of terrorism. In addition, provisions of the USA Patriot Act require the federal financial institution regulatory agencies to consider the effectiveness of a financial institution's anti-money laundering activities when reviewing bank mergers and bank holding company acquisitions. The USA Patriot Act also encourages information-sharing among financial institutions, regulators, and law enforcement authorities by providing an exemption from the privacy provisions of the GLB Act for financial institutions that comply with the provision of the Act. 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, financial and reputational consequences for the institution. The Company has approved policies and procedures that are designed to comply with the USA Patriot Act and its regulations.

Office of Foreign Assets Control Regulation

The United States has imposed economic sanctions that affect transactions with designated foreign countries, nationals and others administrated by the Treasury's Office of Foreign Assets Control ("OFAC"). The OFAC administered sanctions can take many different forms; however, they generally contain one or more of the following elements: (i) restrictions on trade with or investment in a sanctioned country, entity or individual, including prohibitions against direct or indirect imports and exports and prohibitions on "U.S. persons" engaging in financial transactions relating to making investments, or providing investment related advice or assistance; and (ii) a blocking of assets in which the government or specially designated nationals 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, financial, and reputational consequences.

Sarbanes-Oxley Act of 2002

The Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley Act") implemented a broad range of corporate governance, accounting and reporting reforms for companies that have securities registered under the Securities Exchange Act of 1934, as amended. In particular, the Sarbanes-Oxley Act established, among other things: (i) new requirements for audit and other key Board of Directors committees involving independence, expertise levels, and specified responsibilities; (ii) additional responsibilities regarding the oversight of financial statements by the Chief Executive Officer and Chief Financial Officer of the reporting company; (iii) the creation of an independent accounting oversight board for the accounting industry; (iv) new standards for auditors and the regulation of audits, including independence provisions which restrict non-audit services that accountants may provide to their audit clients; (v) increased disclosure and reporting obligations for the reporting company and its directors and executive officers including accelerated reporting of company stock transactions; (vi) a prohibition of personal loans to directors and officers, except certain loans made by insured financial institutions on non-preferential terms and in compliance with other bank regulator requirements; and (vii) a range of new and increased civil and criminal penalties for fraud and other violations of the securities laws.

Electronic Fund Transfer Act

Among other provisions, the federal banking rule under the Electronic Fund Transfer Act prohibits financial institutions from charging consumers fees for paying overdrafts on automated teller machines and one-time debit card transactions, unless a consumer consents, or opts in, to the overdraft service for those types of transactions. The rule does not govern overdraft fees on the payment of checks and certain other forms of bill payments.

Community Reinvestment Act of 1977

Under the CRA, the Bank is required to help meet the credit needs of its communities, including low- and moderate-income neighborhoods. Although the Bank must follow the requirements of CRA, it does not limit the Bank's discretion to develop products and services that are suitable for a particular community or establish lending requirements or programs. In addition, the Equal Credit Opportunity Act and the Fair Housing Act prohibits discrimination in lending practices. The Bank's failure to comply with the provisions of the CRA could, at a minimum, result in regulatory restrictions on its activities and the activities of the Company. The Bank's failure to comply with the Equal Credit Opportunity Act and the Fair Housing Act could result in enforcement actions against it by its regulators as well as other federal regulatory agencies and the Department of Justice. The Bank's latest CRA rating was "Satisfactory".

The Bank Secrecy Act

The Bank Secrecy Act ("BSA") requires all financial institutions, including banks and securities broker-dealers, to, among other things, establish a risk-based system of internal controls reasonably designed to prevent money laundering and the financing of terrorism. The BSA includes a variety of recordkeeping and reporting requirements (such as currency transaction and suspicious activity reporting), as well as due diligence/know-your-customer documentation requirements. The Company has established a bank secrecy act /anti-money laundering program and taken other appropriate measures in order to comply with BSA requirements.

Item 1A. Risk Factors

There are risks inherent in the Company's business. The material risks and uncertainties that management believes affect the Company are described below. Adverse experience with these could have a material impact on the Company's financial condition and results of operations.

Changes in interest rates affect our profitability, assets and liabilities.

The Company's income and cash flow depends to a great extent on the difference between the interest earned on loans and investment securities, and the interest paid on deposits and borrowings. Interest rates are highly sensitive to many factors that are beyond the Company's control, including general economic conditions and policies of various governmental and regulatory agencies and, in particular, the FRB. Changes in monetary policy, including changes in interest rates, could influence not only the interest the Company receives on loans and securities and the amount of interest it pays on deposits and borrowings, but such changes could also affect (1) its ability to originate loans and obtain deposits, which could reduce the amount of fee income generated, (2) the fair value of its financial assets and liabilities and (3) the average duration of the Company's various categories of earning assets. If the interest rates paid on deposits and other borrowings increase at a faster rate than the interest rates received on loans and other investments, the Company's net interest income could be adversely affected, which in turn could negatively affect its earnings. Earnings could also be adversely affected if the interest rates received on loans and other investments fall more quickly than the interest rates paid on deposits and other borrowings. Although management believes it has implemented effective asset and liability management strategies to reduce the potential effects of changes in interest rates on the results of operations, any substantial, unexpected, prolonged change in market interest rates could have a material adverse effect on the financial condition and results of operations.

Reforms to and uncertainty regarding the London Interbank Offered Rate ("LIBOR") may adversely affect LIBOR-based financial arrangements of the Company.

In 2017, the Chief Executive of the United Kingdom Financial Conduct Authority, which regulates LIBOR, announced that it intends to stop persuading or compelling banks to submit rates for the calibration of LIBOR to the administrator of LIBOR after 2021. The announcement indicates that the continuation of LIBOR on the current basis will not be guaranteed after 2021. At this time, no consensus exists as to what rate or rates may become acceptable alternatives to LIBOR and it is not currently possible to predict the effect of any such alternatives on the value of LIBOR-based financial arrangements. The Federal Reserve Board, in conjunction with the Alternative Reference Rates Committee, is considering replacing the U.S. dollar LIBOR with the Secured Overnight Financing Rate ("SOFR"), a broad measure of the cost of borrowing cash overnight collateralized by Treasury securities. Whether or not SOFR attains traction as a LIBOR replacement tool remains in question. Uncertainty as to the nature of alternative reference rates, and as to potential changes or other reforms to LIBOR, may adversely affect LIBOR rates and the value of LIBOR-based financial arrangements of the Company. The implementation of an alternative index or indices for the Company's financial arrangements may result in the Company incurring expenses in effecting the transition, may result in reduced loan balances if borrowers do not accept the substitute index or indices and may result in disputes or litigation with customers over the appropriateness or comparability of the alternative index to LIBOR, which could have an adverse effect on the Company's results of operations.

The Company operates in a highly regulated environment and may be adversely affected by changes in laws and regulations or the interpretation and examination of existing laws and regulations.

The Company and its subsidiaries are subject to extensive state and federal regulation, supervision and legislation that govern nearly every aspect of its operations. The Company, as a financial holding company, is subject to regulation by the FRB and its banking subsidiary is subject to regulation by the OCC. These regulations affect deposit and lending practices, capital levels and structure, investment practices, dividend policy and growth. In addition, the non-bank subsidiaries are engaged in providing services including, but not limited to, retirement plan administration, fiduciary services to collective investment funds, investment management and insurance brokerage services, which industries are also heavily regulated at both a state and federal level. Such regulators govern the activities in which the Company and its subsidiaries may engage. These regulatory authorities have extensive discretion in connection with their supervisory and enforcement activities, including the imposition of restrictions on the operation of a bank, the classification of assets by a bank and the adequacy of a bank's allowance for loan losses. Any change in such regulation and oversight, whether in the form of regulatory policy, regulations, legislation, interpretation or application, could have a material impact on the Company and its operations. Changes to the regulatory laws governing these businesses could affect the Company's ability to deliver or expand its services and adversely impact its operating and financial condition.

The Dodd-Frank Act, as amended by the Economic Growth Act, instituted major changes to the banking and financial institutions regulatory regimes based upon the performance of, and ultimate government intervention in, the financial services sector. The ongoing effects of the Dodd-Frank Act, as well as continued rule-making and possible future changes to the regulatory requirements make it difficult to assess the overall impact of the Dodd-Frank Act and related regulatory developments on the Company and the Bank. The implications of the Dodd-Frank Act for the Company's businesses continue to depend to a large extent on the implementation of the legislation by the FRB and other agencies as well as how market practices and structures change in response to the requirements of the Dodd-Frank Act. All of these changes in regulations could subject the Company, among other things, to additional costs and limit the types of financial services and products it can offer and/or increase the ability of non-banks to offer competing financial services and products.

The Company is also directly subject to the requirements of entities that set and interpret the accounting standards such as the Financial Accounting Standards Board, and indirectly subject to the actions and interpretations of the Public Company Accounting Oversight Board, which establishes auditing and related professional practice standards for registered public accounting firms and inspects registered firms to assess their compliance with certain laws, rules, and professional standards in public company audits. These regulations, along with the currently existing tax, accounting, securities, insurance, and monetary laws, regulations, rules, standards, policies and interpretations, control the methods by which financial institutions and their holding companies conduct business, engage in strategic and tax planning, implement strategic initiatives, and govern financial reporting.

The Company's failure to comply with laws, regulations or policies could result in civil or criminal sanctions, restrictions to its business model, and money penalties by state and federal agencies, and/or reputation damage, which could have a material adverse effect on the Company's business, financial condition and results of operations. See "Supervision and Regulation" for more information about the regulations to which the Company is subject.

The Company's total consolidated assets exceeded $10 billion and is therefore subject to additional regulation and increased supervision including the CFPB.

The Dodd-Frank Act imposes additional regulatory requirements on institutions with $10 billion or more in assets. The Company is now subject to the following: (1) supervision, examination and enforcement by the CFPB with respect to consumer financial protection laws, (2) a modified methodology for calculating FDIC insurance assessments and potentially higher assessment rates, (3) limitations on interchange fees for debit card transactions, (4) heightened compliance standards under the Volcker Rule, and (5) enhanced supervision as a larger financial institution. The imposition of these regulatory requirements and increased supervision may continue to require additional commitment of financial resources to regulatory compliance and may increase the Company's cost of operations.

Basel III capital rules generally require insured depository institutions and their holding companies to hold more capital, which could limit our ability to pay dividends, engage in share repurchases and pay discretionary bonuses.

The Federal Reserve, the FDIC and the OCC adopted final rules for the Basel III capital framework which substantially amended the regulatory risk-based capital rules applicable to the Company. The rules phased in over time and became fully effective in 2019. A capital conservation buffer was phased in over three years, ultimately resulting in a requirement of 2.5% on top of the common Tier 1, Tier 1 and total capital requirements, resulting in a required common Tier 1 equity ratio of 7%, a Tier 1 ratio of 8.5%, and a total capital ratio of 10.5%. Failure to satisfy any of these three capital requirements will result in limits on paying dividends, engaging in share repurchases and paying discretionary bonuses. These limitations will establish a maximum percentage of eligible retained income that could be utilized for such actions.

Regional economic factors may have an adverse impact on the Company's business.

The Company's main markets are located in the states of New York, Pennsylvania, Vermont and Massachusetts. Most of the Company's customers are individuals and small and medium-sized businesses which are dependent upon the regional economy. Accordingly, the local economic conditions in these areas have a significant impact on the demand for the Company's products and services as well as the ability of the Company's customers to repay loans, the value of the collateral securing loans and the stability of the Company's deposit funding sources. A prolonged economic downturn in these markets could negatively impact the Company.

The Company is subject to a variety of operational risks, including reputational risk, legal and compliance risk, the risk of fraud or theft by employees or outsiders, which may adversely affect the Company's business and results of operations.

The Company is exposed to many types of operational risks, including reputational risk, legal and compliance risk, the risk of fraud or theft by employees or outsiders, unauthorized transactions by employees, or operational errors, including clerical or record keeping errors or those resulting from faulty or disabled computer or telecommunications systems or disclosure of confidential proprietary information of its customers. Negative public opinion can result from actual or alleged conduct in any number of activities, including lending practices, sales practices, customer treatment, corporate governance and acquisitions and from actions taken by government regulators and community organizations in response to those activities. Negative public opinion can adversely affect the Company's ability to attract and keep customers and can expose the Company to litigation and regulatory action. Actual or alleged conduct by the Company can result in negative public opinion about its business.

If personal, nonpublic, confidential, or proprietary information of customers in the Company's possession were to be mishandled or misused, the Company could suffer significant regulatory consequences, reputational damage, and financial loss. Such mishandling or misuse could include, for example, if such information were erroneously provided to parties who are not permitted to have the information, either by fault of its systems, employees, or counterparties, or where such information is intercepted or otherwise inappropriately taken by third parties.

Because the nature of the financial services business involves a high volume of transactions, certain errors may be repeated or compounded before they are discovered and successfully rectified. The Company's necessary dependence upon automated systems to record and process transactions and the large transaction volumes may further increase the risk that technical flaws or employee tampering or manipulation of those systems will result in losses that are difficult to detect. The Company also may be subject to disruptions of its operating systems arising from events that are wholly or partially beyond its control (for example, computer viruses or electrical or telecommunications outages), which may give rise to disruption of service to customers and to financial loss or liability. The Company is further exposed to the risk that external vendors may be unable to fulfill their contractual obligations (or will be subject to the same risk of fraud or operational errors by their respective employees) and to the risk that business continuity and data security systems prove to be inadequate. The occurrence of any of these risks could result in a diminished ability to operate the Company's business, potential liability to clients, reputational damage, and regulatory intervention, which could adversely affect our business, financial condition, and results of operations, perhaps materially.

The Company's information systems may experience an interruption or security breach and expose the Company to additional operational compliance and legal risks.

The Company relies heavily on existing and emerging communications and information systems to conduct its business. The Company may be the subject of sophisticated and targeted attacks intended to obtain unauthorized access to assets or confidential information, destroy data, disable or degrade service, or sabotage systems, often through the introduction of computer viruses or malware, ransomware, cyber-attacks and other means. The methods used to obtain unauthorized access, disable or degrade service or sabotage systems are constantly evolving and may be difficult to anticipate or to detect for long periods of time. The constantly changing nature of the threats means that the Company may not be able to prevent all data security breaches or misuse of data. Any failure, interruption or breach in security of these systems could result in failures or disruptions in the Company's online banking system, its general ledger, and its deposit and loan servicing and origination systems or other systems. Furthermore, if personal, confidential or proprietary information of customers or clients in the Company's possession were to be mishandled or misused, the Company could suffer significant regulatory consequences, reputational damage and financial loss. Such mishandling or misuse could include circumstances where, for example, such information was erroneously provided to parties who are not permitted to have the information, either by fault of the Company's systems, employees, or counterparties, or where such information was intercepted or otherwise inappropriately taken by third parties. The Company has policies and procedures designed to prevent or limit the effect of the possible failure, interruption or security breach of its information systems; however, any such failure, interruption or security breach could adversely affect the Company's business and results of operations through loss of assets or by requiring it to expend significant resources to correct the defect, as well as exposing the Company to customer dissatisfaction and civil litigation, regulatory fines or penalties or losses not covered by insurance.

Evolving data security and privacy requirements could increase the Company's costs and expose it to additional operational, compliance, and legal risks.

The Company's business requires the secure processing and storage of sensitive information relating to its customers, employees, business partners, and others. However, like any financial institution operating in today's digital business environment, the Company is subject to threats to the security of its networks and data, as described above. These threats continue to increase as the frequency, intensity and sophistication of attempted attacks and intrusions increase around the world. In response to these threats there has been heightened legislative and regulatory focus on data privacy and cybersecurity in the U.S. and the European Union and as a result, the Company must comply with an evolving set of legal requirements in this area, including substantive cybersecurity standards as well as requirements for notifying regulators and affected individuals in the event of a data security incident. This regulatory environment is increasingly challenging and may present material obligations and risks to the Company's business, including significantly expanded compliance burdens, costs and enforcement risks.

The Company relies on third party vendors, which could expose the Company to additional cybersecurity risks.

Third party vendors provide key components of the Company's business infrastructure, including certain data processing and information services. On behalf of the Company, third parties may transmit confidential, propriety information. Although the Company requires third party providers to maintain certain levels of information security, such providers may remain vulnerable to breaches, unauthorized access, misuse, computer viruses, or other malicious attacks that could ultimately compromise sensitive information. While the Company may contractually limit liability in connection with attacks against third party providers, the Company remains exposed to the risk of loss associated with such vendors. In addition, a number of the Company's vendors are large national entities with dominant market presence in their respective fields. Their services could prove difficult to replace in a timely manner if a failure or other service interruption were to occur. Failures of certain vendors to provide contracted services could adversely affect the Company's ability to deliver products and services to customers and cause the Company to incur significant expense.

The financial services industry is highly competitive and creates competitive pressures that could adversely affect the Company's revenue and profitability.

The financial services industry in which the Company operates is highly competitive. The Company competes not only with commercial and other banks and thrifts, but also with insurance companies, mutual funds, hedge funds, securities brokerage firms and other companies offering financial services in the U.S., globally and over the Internet. The Company competes on the basis of several factors, including capital, access to capital, revenue generation, quality customer service, products, services, transaction execution, innovation, reputation and price. Over time, certain sectors of the financial services industry have become more concentrated, as institutions involved in a broad range of financial services have been acquired by or merged into other firms. These developments could result in the Company's competitors gaining greater capital and other resources, such as a broader range of products and services and geographic diversity. The Company may experience pricing pressures as a result of these factors and as some of its competitors seek to increase market share by reducing prices or paying higher rates of interest on deposits. Finally, technological change is influencing how individuals and firms conduct their financial affairs and changing the delivery channels for financial services, with the result that the Company may have to contend with a broader range of competitors including many that are not located within the geographic footprint of its banking office network.

Conditions in the insurance market could adversely affect the Company's earnings.

Revenue from insurance fees and commissions could be negatively affected by fluctuating premiums in the insurance markets or other factors beyond the Company's control. Other factors that affect insurance revenue are the profitability and growth of the Company's clients, the renewal rate of the current insurance policies, continued development of new product and services as well as access to new markets. The Company's insurance revenues and profitability may also be adversely affected by new laws and regulatory developments impacting the healthcare and insurance markets.

The allowance for loan losses may be insufficient.

The Company's business depends on the creditworthiness of its customers. The Company reviews the allowance for loan losses quarterly for adequacy considering economic conditions and trends, collateral values and credit quality indicators, including past charge-off experience and levels of past due loans and nonperforming assets. If the Company's assumptions prove to be incorrect, the Company's allowance for loan losses may not be sufficient to cover losses inherent in the Company's loan portfolio, resulting in additions to the allowance. Material additions to the allowance would materially decrease its net income. It is possible that over time the allowance for loan losses will be inadequate to cover credit losses in the portfolio because of unanticipated adverse changes in the economy, market conditions or events adversely affecting specific customers, industries or markets. On January 1, 2020, the Company adopted ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326)*, also referred to as CECL. Under this new standard, the Company's required allowance for credit losses may fluctuate more significantly from period to period due to changes in economic conditions, changes in the composition of the Company's loan portfolios, changes in historical loss rates and changes in other credit factors, including the level of delinquent loans.

Changes in the equity markets could materially affect the level of assets under management and the demand for other fee-based services.

Economic downturns could affect the volume of income from and demand for fee-based services. Revenue from the wealth management and employee benefit trust businesses depends in large part on the level of assets under management and administration. Market volatility and the potential to lead customers to liquidate investments, as well as lower asset values, can reduce the level of assets under management and administration and thereby decrease the Company's investment management and employee benefit trust revenues.

Mortgage banking income may experience significant volatility.

Mortgage banking income is highly influenced by the level and direction of mortgage interest rates, and real estate and refinancing activity. In lower interest rate environments, the demand for mortgage loans and refinancing activity will tend to increase. This has the effect of increasing fee income, but could adversely impact the estimated fair value of the Company's mortgage servicing rights as the rate of loan prepayments increase. In higher interest rate environments, the demand for mortgage loans and refinancing activity will generally be lower. This has the effect of decreasing fee income opportunities.

The Company depends on dividends from its banking subsidiary for cash revenues to support common dividend payments and other uses, but those dividends are subject to restrictions.

The ability of the Company to satisfy its obligations and pay cash dividends to its shareholders is primarily dependent on the earnings of and dividends from the subsidiary bank. However, payment of dividends by the bank subsidiary is limited by dividend restrictions and capital requirements imposed by bank regulations. The ability to pay dividends is also subject to the continued payment of interest that the Company owes on its subordinated junior debentures held with an unconsolidated subsidiary trust. As of December 31, 2019, the Company had $77.3 million of subordinated junior debentures held with an unconsolidated subsidiary trust outstanding. The Company has the right to defer payment of interest on the subordinated junior debentures held with an unconsolidated subsidiary trust for a period not exceeding 20 quarters, although the Company has not done so to date. If the Company defers interest payments on the subordinated junior debentures held with an unconsolidated subsidiary trust, it will be prohibited, subject to certain exceptions, from paying cash dividends on the common stock until all deferred interest has been paid and interest payments on the subordinated junior debentures resumes.

The risks presented by acquisitions could adversely affect the Company's financial condition and result of operations.

The business strategy of the Company includes growth through acquisition. Recently completed and future acquisitions will be accompanied by the risks commonly encountered in acquisitions. These risks include among other things: obtaining timely regulatory approval, the difficulty of integrating operations and personnel, the potential disruption of the Company's ongoing business, the inability of the Company's management to maximize its financial and strategic position, the inability to maintain uniform standards, controls, procedures and policies, and the impairment of relationships with employees and customers as a result of changes in ownership and management. Further, the asset quality or other financial characteristics of a company may deteriorate after the acquisition agreement is signed or after the acquisition closes.

A portion of the Company's loan portfolio was acquired primarily through whole-bank acquisitions and was not underwritten by the Company at origination.

At December 31, 2019, 21% of the loan portfolio was acquired and was not underwritten by the Company at origination, and therefore is not necessarily reflective of the Company's historical credit risk experience. The Company performed extensive credit due diligence prior to each acquisition and marked the loans to fair value upon acquisition, with such fair valuation considering expected credit losses that existed at the time of acquisition. However, there is a risk that credit losses could be larger than currently anticipated, thus adversely affecting earnings.

The Company may be required to record impairment charges related to goodwill, other intangible assets and the investment portfolio.

The Company may be required to record impairment charges in respect to goodwill, other intangible assets and the investment portfolio. Numerous factors, including lack of liquidity for resale of certain investment securities, absence of reliable pricing information for investment securities, the economic condition of state and local municipalities, adverse changes in the business climate, adverse actions by regulators, unanticipated changes in the competitive environment or a decision to change the operations or dispose of an operating unit could have a negative effect on the investment portfolio, goodwill or other intangible assets in future periods.

The Company's financial statements are based, in part, on assumptions and estimates, which, if conditions change, could cause unexpected losses in the future.

Pursuant to accounting principles generally accepted in the United States, the Company is required to use certain assumptions and estimates in preparing its financial statements, including in determining credit loss reserves, mortgage repurchase liability and reserves related to litigation, among other items. Certain of the Company's financial instruments, including available-for-sale securities and certain loans, among other items, require a determination of their fair value in order to prepare the Company's financial statements. Where quoted market prices are not available, the Company may make fair value determinations based on internally developed models or other means which ultimately rely to some degree on management judgment. Some of these and other assets and liabilities may have no direct observable price levels, making their valuation particularly subjective, as they are based on significant estimation and judgment. In addition, sudden illiquidity in markets or declines in prices of certain loans and securities may make it more difficult to value certain balance sheet items, which may lead to the possibility that such valuations will be subject to further change or adjustment. If assumptions or estimates underlying the Company's financial statements are incorrect, it may experience material losses.

Financial services companies depend on the accuracy and completeness of information about customers and counterparties.

In deciding whether to extend credit or enter into other transactions, the Company may rely on information furnished by or on behalf of customers and counterparties, including financial statements, credit reports and other financial information. The Company may also rely on representations of those customers, counterparties or other third parties, such as independent auditors, as to the accuracy and completeness of that information. Reliance on inaccurate or misleading financial statements, credit reports or other information could have a material adverse impact on business and, in turn, the Company's financial condition and results of operations.

The Company is exposed to fraud in many aspects of the services and products that it provides.

The Company offers a wide variety of products and services. When account credentials and other access tools are not adequately protected by its customers, risks and potential costs may increase. As (a) sales of these services and products expand, (b) those who are committing fraud become more sophisticated and more determined, and (c) banking services and product offerings expand, the Company's operational losses could increase.

The Company may be adversely affected by the soundness of other financial institutions.

Financial services institutions are interrelated as a result of trading, clearing, counterparty, or other relationships. The Company has exposure to many different industries and counterparties, and routinely executes transactions with counterparties in the financial services industry. Many of these transactions expose the Company to credit risk in the event of a default by a counterparty or client. In addition, credit risk may be exacerbated when the collateral held by the Company cannot be realized upon or is liquidated at prices not sufficient to recover the full amount of the credit or derivative exposure due to the Company. Any such losses could have a material adverse effect on the Company's financial condition and results of operations.

The Company is or may become involved in lawsuits, legal proceedings, information-gathering requests, investigations, and proceedings by governmental agencies or other parties that may lead to adverse consequences.

As a participant in the financial services industry, many aspects of the Company's business involve substantial risk of legal liability. The Company and its subsidiaries have been named or threatened to be named as defendants in various lawsuits arising from its or its subsidiaries' business activities (and in some cases from the activities of acquired companies). In addition, from time to time, the Company is, or may become, the subject of governmental and self-regulatory agency information-gathering requests, reviews, investigations and proceedings and other forms of regulatory inquiry, including by bank regulatory agencies, the SEC and law enforcement authorities. The results of such proceedings could lead to delays in or prohibition to acquire other companies, significant penalties, including monetary penalties, damages, adverse judgments, settlements, fines, injunctions, restrictions on the way in which the Company conducts its business, or reputational harm.

Although the Company establishes accruals for legal proceedings when information related to the loss contingencies represented by those matters indicates both that a loss is probable and that the amount of loss can be reasonably estimated, the Company does not have accruals for all legal proceedings where it faces a risk of loss. In addition, due to the inherent subjectivity of the assessments and unpredictability of the outcome of legal proceedings, amounts accrued may not represent the ultimate loss to the Company from the legal proceedings in question. Thus, the Company's ultimate losses may be higher than the amounts accrued for legal loss contingencies, which could adversely affect the Company's financial condition and results of operations.

The Company continually encounters technological change and the failure to understand and adapt to these changes could have a negative impact on the business.

The financial services industry is continually undergoing rapid technological change with frequent 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 reduce costs. The Company's future success depends, in part, upon its ability to address the needs of its customers by using technology to provide products and services that will satisfy customer demands, as well as to create additional efficiencies in the Company's operations. Many of the Company's competitors have substantially greater resources to invest in technological improvements. The Company may not be able to effectively implement new technology-driven products and services or be successful in marketing these products and services to its customers. Failure to successfully keep pace with technological changes affecting the financial services industry could have a material adverse impact on the Company's financial condition and results of operations.

Trading activity in the Company's common stock could result in material price fluctuations.

The market price of the Company's common stock may fluctuate significantly in response to a number of other factors including, but not limited to:

- Changes in securities analysts' expectations of financial performance;
- Volatility of stock market prices and volumes;
- Incorrect information or speculation;
- Changes in industry valuations;
- Variations in operating results from general expectations;
- Actions taken against the Company by various regulatory agencies;
- Changes in authoritative accounting guidance by the Financial Accounting Standards Board or other regulatory agencies;
- Changes in general domestic economic conditions such as inflation rates, tax rates, unemployment rates, oil prices, labor and healthcare cost trend rates, recessions, and changing government policies, laws and regulations; and
- Severe weather, natural disasters, acts of war or terrorism and other external events.

The Company's ability to attract and retain qualified employees is critical to the success of its business, and failure to do so may have a materially adverse effect on the Company's performance.

The Company's employees are its most important resource, and in many areas of the financial services industry, competition for qualified personnel is intense. The imposition on the Company or its employees of certain existing and proposed restrictions or taxes on executive compensation may adversely affect the Company's ability to attract and retain qualified senior management and employees. If the Company provides inadequate succession planning or is unable to continue to retain and attract qualified employees, the Company's performance, including its competitive position, could have a materially adverse effect.

The outbreak of the novel coronavirus ("COVID-19"), or an outbreak of other highly infectious or contagious diseases, could adversely impact certain industries in which the Company's customers operate and impair their ability to fulfill their obligations to the Company. Further, the spread of the outbreak could cause severe disruptions in the U.S. economy and may disrupt banking and other financial activity in the areas in which the Company operates and could potentially create widespread business continuity issues for the Company.

The Company's business is dependent upon the willingness and ability of its employees and customers to conduct banking and other financial transactions. The spread of highly infectious or contagious diseases could cause severe disruptions in the U.S. economy which could disrupt the Company's operations and if the global response to contain COVID-19 escalates or is unsuccessful, the Company could experience a material adverse effect on its business, financial condition, results of operations and cash flows. For example, the Company has certain customers that are engaged in international trade, travel and tourism and their businesses may be adversely affected by quarantines and travel restrictions in countries affected by COVID-19. The outbreak of COVID-19 or an outbreak of other highly infectious or contagious diseases may result in a decrease in business and cause such customers to be unable to fulfill their repayment obligations to the Company. Furthermore, the outbreak could negatively impact the ability of the Company's employees and customers to engage in banking and other financial transactions in the geographic areas in which the Company operates and could create widespread business continuity issues for the Company.

Item 1B. Unresolved Staff Comments

None

Item 2. Properties

The Company's primary headquarters are located at 5790 Widewaters Parkway, Dewitt, New York, which is leased. In addition, the Company has 273 properties, of which 165 are owned and 108 are under lease arrangements. With respect to the Banking segment, the Company operates 231 full-service branches and 11 facilities for back office banking operations. With respect to the Employee Benefit Services segment, the Company operates 11 customer service facilities, all of which are leased. With respect to the All Other segment, the Company operates 20 customer service facilities, all of which are leased. Some properties contain tenant leases or subleases.

Real property and related banking facilities owned by the Company at December 31, 2019 had a net book value of $83.9 million and none of the properties were subject to any material encumbrances. For the year ended December 31, 2019, the Company paid $8.8 million of rental fees for facilities leased for its operations. Effective January 1, 2019, the Company adopted new lease accounting guidance in accordance with Accounting Standards Update 2016-02, *Leases (Topic 842)* that requires recognition of a liability associated with future payments under lease agreements and a right-of-use asset representing the right to use the underlying assets. The adoption of this new guidance resulted in the recognition of a lease liability of $34.2 million and corresponding right-of-use asset of $34.2 million. As of December 31, 2019, the lease liability and corresponding right-of-use asset were $40.9 million and $39.9 million, respectively. See the *"New Accounting Pronouncements*" Section of Note A on page 74 of the Notes to the Consolidated Financial Statements for further information about this guidance. The Company believes that its facilities are suitable and adequate for the Company's current operations.

Item 3. Legal Proceedings

The Company and its subsidiaries are subject in the normal course of business to various pending and threatened legal proceedings in which claims for monetary damages are asserted. As of December 31, 2019, management, after consultation with legal counsel, does not anticipate that the aggregate ultimate liability arising out of litigation pending or threatened against the Company or its subsidiaries will be material to the Company's consolidated financial position. On at least a quarterly basis, the Company assesses its liabilities and contingencies in connection with such legal proceedings. For those matters where it is probable that the Company will incur losses and the amounts of the losses can be reasonably estimated, the Company records an expense and corresponding liability in its consolidated financial statements. To the extent the pending or threatened litigation could result in exposure in excess of that liability, the amount of such excess is not currently estimable. The range of reasonably possible losses for matters where an exposure is not currently estimable or considered probable, beyond the existing recorded liabilities, is believed to be between $0 and $1 million in the aggregate. Although the Company does not believe that the outcome of pending litigation will be material to the Company's consolidated financial position, it cannot rule out the possibility that such outcomes will be material to the consolidated results of operations for a particular reporting period in the future.

Item 4. Mine Safety Disclosures

Not Applicable

Item 4A. Information about our Executive Officers

The executive officers of the Company and the Bank who are elected by the Board of Directors are as follows:

Name	Age	Position
Mark E. Tryniski	59	Director, President and Chief Executive Officer. Mr. Tryniski assumed his current position in August 2006. He served as Executive Vice President and Chief Operating Officer from March 2004 to July 2006 and as the Treasurer and Chief Financial Officer from June 2003 to March 2004. He previously served as a partner in the Syracuse office of PricewaterhouseCoopers LLP.
Scott Kingsley	55	Executive Vice President and Chief Operating Officer. Mr. Kingsley assumed his current position in June 2018. He served as Executive Vice President and Chief Financial Officer from August 2004 to June 2018. He previously served as Vice President and Chief Financial Officer of Carlisle Engineered Products, Inc., a subsidiary of the Carlisle Companies, Inc., from 1997 until joining the Company.
George J. Getman	63	Executive Vice President and General Counsel. Mr. Getman assumed his current position in January 2008. Prior to joining the Company, he was a partner with Bond, Schoeneck & King, PLLC and served as corporate counsel to the Company.
Joseph E. Sutaris	52	Executive Vice President and Chief Financial Officer. Mr. Sutaris assumed his current position in June 2018. He served as Senior Vice President, Finance and Accounting from November 2017 to June 2018, as the Bank's Director of Municipal Banking from September 2016 to November 2017 and as the Senior Vice President of the Central Region of the Bank from April 2011 to September 2016. Mr. Sutaris joined the Company in April 2011 as part of the acquisition of Wilber National Bank where he served as the Executive Vice President, Chief Financial Officer, Treasurer and Secretary.
Joseph F. Serbun	59	Executive Vice President and Chief Credit Officer. Mr. Serbun assumed his current position in June 2018. He served as the Bank's Senior Vice President and Chief Credit Officer from June 2010 to June 2018 and as Vice President and Commercial Team Leader of the Bank from January 2008 until June 2010. Prior to joining the Company, he served as Vice President at JPMorgan Chase Bank, N.A.

Part II

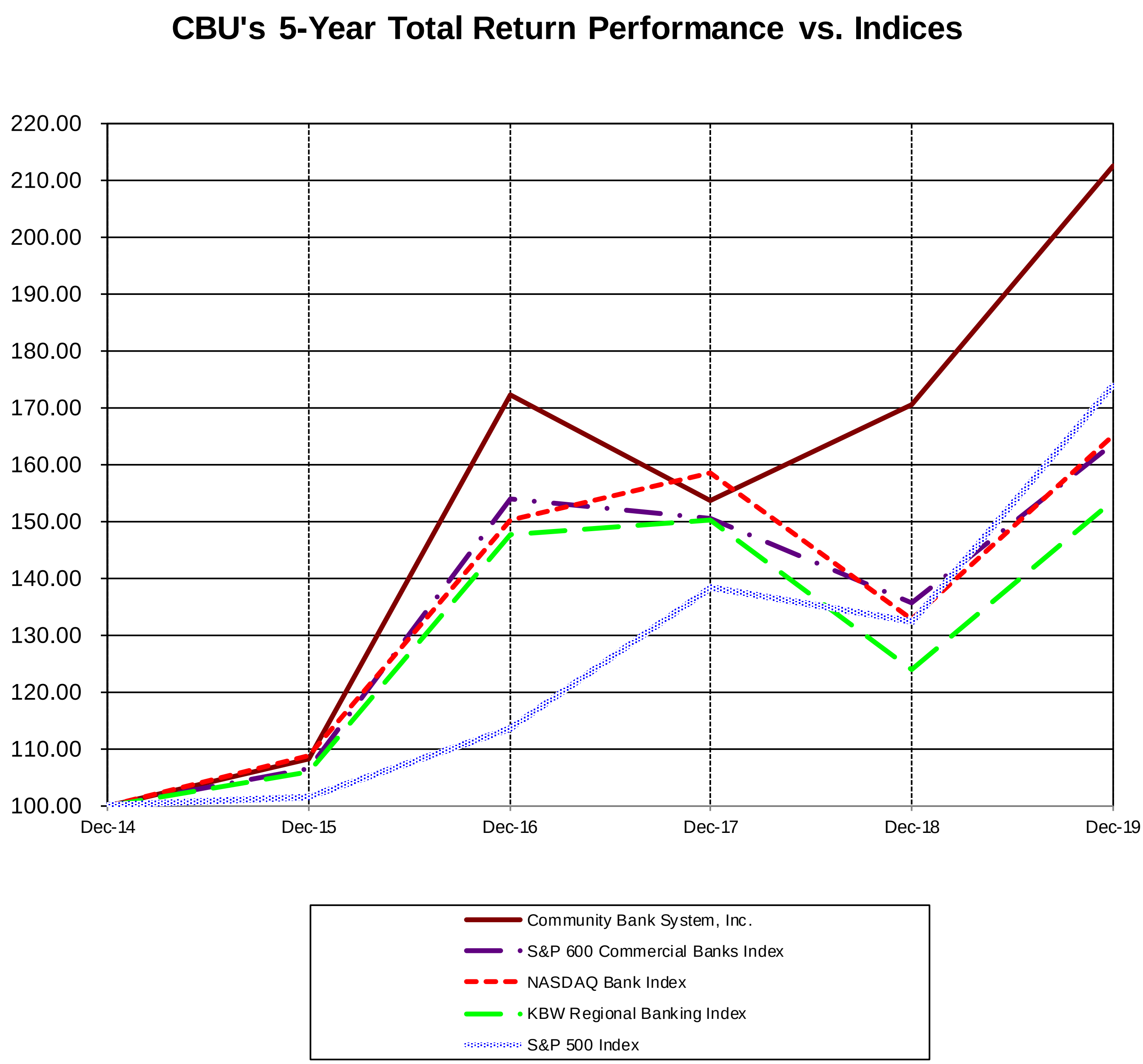
Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The Company's common stock has been trading on the New York Stock Exchange under the symbol "CBU" since December 31, 1997. Prior to that, the common stock traded over-the-counter on the NASDAQ National Market under the symbol "CBSI" beginning on September 16, 1986. There were 51,891,678 shares of common stock outstanding on January 31, 2020, held by approximately 3,766 registered shareholders of record. The following table sets forth the high and low closing prices for the common stock, and the cash dividends declared with respect thereto, for the periods indicated. The prices do not include retail mark-ups, mark-downs or commissions.

Year / Qtr	High Price	Low Price	Quarterly Dividend
2019			
4th	$71.07	$60.09	$0.41
3rd	$66.12	$59.51	$0.41
2nd	$67.47	$61.10	$0.38
1st	$64.92	$56.94	$0.38
2018			
4th	$65.66	$54.72	$0.38
3rd	$66.52	$60.04	$0.38
2nd	$61.98	$52.61	$0.34
1st	$57.00	$51.22	$0.34

The Company has historically paid regular quarterly cash dividends on its common stock, and declared a cash dividend of $0.41 per share for the first quarter of 2020. The Board of Directors of the Company presently intends to continue the payment of regular quarterly cash dividends on the common stock, as well as to make payment of regularly scheduled dividends on the trust preferred stock when due, subject to the Company's need for those funds. However, because the substantial majority of the funds available for the payment of dividends by the Company are derived from the subsidiary Bank, future dividends will depend largely upon the earnings of the Bank, its financial condition, its need for funds and applicable governmental policies and regulations.

The following graph compares cumulative total shareholders returns on the Company's common stock over the last five fiscal years to the S&P 600 Commercial Banks Index, the NASDAQ Bank Index, the S&P 500 Index, and the KBW Regional Banking Index. Total return values were calculated as of December 31 of each indicated year assuming a $100 investment on December 31, 2014 and reinvestment of dividends.



	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019
Community Bank System, Inc.	100.00	108.26	172.17	153.43	170.45	212.47
NASDAQ Bank Index	100.00	108.84	150.17	158.36	132.75	165.11
S&P 600 Commercial Banks Index	100.00	106.37	153.91	150.48	135.64	163.51
KBW Regional Banking Index	100.00	106.00	147.46	150.13	123.87	153.44
S&P 500 Index	100.00	101.37	113.49	138.26	132.19	173.80

Source: Bloomberg Finance L.P.

Equity Compensation Plan Information

The following table provides information as of December 31, 2019 with respect to shares of common stock that may be issued under the Company's existing equity compensation plans.

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights [1]	Weighted-average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available For Future Issuance Under Equity Compensation Plans (excluding securities reflected in the first column)
Equity compensation plans approved by security holders:			
2004 Long-term Incentive Plan	486,940	$30.98	52,900
2014 Long-term Incentive Plan	1,212,842	40.62	1,105,625
Equity compensation plans not approved by security holders	0	0	0
Total	1,699,782	$37.86	1,158,525

[1] The number of securities includes 196,788 shares of unvested restricted stock.

Stock Repurchase Program

At its December 2018 meeting, the Board approved a stock repurchase program authorizing the repurchase, at the discretion of senior management, of up to 2,500,000 shares of the Company's common stock, in accordance with securities laws and regulations, during a twelve-month period starting January 1, 2019. There were no treasury stock purchases made under this authorization in 2019. At its December 2019 meeting, the Board approved a new stock repurchase program authorizing the repurchase, at the discretion of senior management, of up to 2,600,000 shares of the Company's common stock, in accordance with securities laws and regulations, during a twelve-month period starting January 1, 2020. Any repurchased shares will be used for general corporate purposes, including those related to stock plan activities. The timing and extent of repurchases will depend on market conditions and other corporate considerations as determined at the Company's discretion.

The following table presents stock purchases made during the fourth quarter of 2019:

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares That May Yet be Purchased Under the Plans or Programs
October 1-31, 2019 [1]	1,187	$61.64	0	2,500,000
November 1-30, 2019	0	0.00	0	2,500,000
December 1-31, 2019	0	0.00	0	2,500,000
Total	1,187	$61.64		

[1] Included in the common shares repurchased were 1,187 shares acquired by the Company in connection with administration of a deferred compensation plan. These shares were not repurchased as part of the publicly announced repurchase plan described above.

Item 6. Selected Financial Data

The following table sets forth selected consolidated historical financial data of the Company as of and for each of the years in the five-year period ended December 31, 2019. The historical information set forth under the captions "Income Statement Data" and "Balance Sheet Data" is derived from the audited financial statements while the information under the captions "Capital and Related Ratios", "Selected Performance Ratios" and "Asset Quality Ratios" for all periods is unaudited. All financial information in this table should be read in conjunction with the information contained in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and with the Consolidated Financial Statements and the related notes thereto included elsewhere in this Annual Report on Form 10-K.

SELECTED CONSOLIDATED FINANCIAL INFORMATION

	Years Ended December 31,				
(In thousands except per share data and ratios)	2019	2018	2017	2016	2015
Income Statement Data:					
Loan interest income	$308,210	$286,165	$253,949	$211,467	$187,743
Investment interest income	77,517	76,568	75,506	73,720	71,879
Interest expense	26,552	17,678	13,780	11,291	11,202
Net interest income	359,175	345,055	315,675	273,896	248,420
Provision for loan losses	8,430	10,837	10,984	8,076	6,447
Noninterest income	225,718	223,720	202,421	155,625	123,303
Gain (loss) on investment securities & loss on debt extinguishment, net	4,901	339	2	0	(4)
Acquisition expenses and litigation settlement	8,608	(769)	25,986	1,706	7,037
Other noninterest expenses	363,418	346,058	321,163	265,142	226,018
Income before income taxes	209,338	212,988	159,965	154,597	132,217
Net income	169,063	168,641	150,717	103,812	91,230
Diluted earnings per share	3.23	3.24	3.03	2.32	2.19
Balance Sheet Data:					
Cash equivalents	$43,243	$29,083	$19,652	$24,243	$21,931
Investment securities	3,088,343	2,981,658	3,081,379	2,784,392	2,847,940
Loans	6,890,543	6,281,121	6,256,757	4,948,562	4,801,375
Allowance for loan losses	(49,911)	(49,284)	(47,583)	(47,233)	(45,401)
Intangible assets	836,923	807,349	825,088	480,844	484,146
Total assets	11,410,295	10,607,295	10,746,198	8,666,437	8,552,669
Deposits	8,994,967	8,322,371	8,444,420	7,075,954	6,873,474
Borrowings	344,873	413,682	485,896	248,370	403,446
Shareholders' equity	1,855,234	1,713,783	1,635,315	1,198,100	1,140,647
Capital and Related Ratios:					
Cash dividends declared per share	$1.58	$1.44	$1.32	$1.26	$1.22
Book value per share	35.82	33.43	32.26	26.96	26.06
Tangible book value per share (1)	20.52	18.59	16.94	17.12	15.90
Market capitalization (in millions)	3,674	2,988	2,725	2,746	1,748
Tier 1 leverage ratio	10.80%	11.08%	10.00%	10.55%	10.32%
Total risk-based capital to risk-adjusted assets	17.99%	19.06%	17.45%	19.10%	18.08%
Tangible equity to tangible assets (1)	10.01%	9.68%	8.61%	9.24%	8.59%
Dividend payout ratio	48.4%	43.8%	43.5%	53.7%	55.5%
Period end common shares outstanding	51,794	51,258	50,696	44,437	43,775
Diluted weighted-average shares outstanding	52,370	51,975	49,665	44,720	41,605
Selected Performance Ratios:					
Return on average assets	1.53%	1.58%	1.49%	1.20%	1.17%
Return on average equity	9.42%	10.20%	10.21%	8.57%	8.87%
Net interest margin	3.76%	3.73%	3.69%	3.71%	3.73%
Noninterest revenues/operating revenues (FTE) (2)	38.7%	39.6%	38.8%	35.5%	32.3%
Efficiency ratio (3)	59.6%	58.0%	58.3%	59.6%	58.2%
Asset Quality Ratios:					
Allowance for loan losses/total loans	0.72%	0.78%	0.76%	0.95%	0.95%
Nonperforming loans/total loans	0.35%	0.40%	0.44%	0.48%	0.50%
Allowance for loan losses/nonperforming loans	206%	197%	173%	199%	190%
Loan loss provision/net charge-offs	108%	119%	103%	129%	101%
Net charge-offs/average loans	0.12%	0.15%	0.18%	0.13%	0.15%

(1) The tangible book value per share and the tangible equity to tangible asset ratio excludes goodwill and identifiable intangible assets, adjusted for deferred tax liabilities generated from tax deductible goodwill and other intangible assets. The ratio is not a financial measurement required by accounting principles generally accepted in the United States of America. However, management believes such information is useful to analyze the relative strength of the Company's capital position and is useful to investors in evaluating Company performance (See Table 20 for Reconciliation of GAAP to Non-GAAP Measures).

(2) For purposes of this ratio, noninterest revenues excludes unrealized gain on equity securities, loss on debt extinguishment and insurance-related recoveries. Operating revenues, a non-GAAP measure, is defined as net interest income on a fully-tax equivalent basis, plus noninterest revenues, excluding unrealized gain on equity securities, loss on debt extinguishment, insurance-related recoveries and acquired non-impaired loan accretion (See Table 20 for Reconciliation of GAAP to Non-GAAP measures).

(3) Efficiency ratio provides a ratio of operating expenses to operating income. It excludes intangible amortization, acquisition expenses, and litigation settlement from expenses and acquired non-impaired loan accretion, insurance-related recoveries, gains and losses on investment securities, and loss on debt extinguishment from income while adding a fully-taxable equivalent adjustment. The efficiency ratio is not a financial measurement required by accounting principles generally accepted in the United States of America. However, the efficiency ratio is used by management in its assessment of financial performance specifically as it relates to noninterest expense control. Management also believes such information is useful to investors in evaluating Company performance (See Table 20 for Reconciliation of GAAP to Non-GAAP Measures).

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") primarily reviews the financial condition and results of operations of the Company for the past two years, although in some circumstances a period longer than two years is covered in order to comply with SEC disclosure requirements or to more fully explain long-term trends. The following discussion and analysis should be read in conjunction with the Selected Consolidated Financial Information beginning on page 26 and the Company's Consolidated Financial Statements and related notes that appear on pages 60 through 111. All references in the discussion to the financial condition and results of operations refer to the consolidated position and results of the Company and its subsidiaries taken as a whole.

Unless otherwise noted, all earnings per share ("EPS") figures disclosed in the MD&A refer to diluted EPS; interest income, net interest income, and net interest margin are presented on a fully tax-equivalent ("FTE") basis, which is a non-GAAP measure. The term "this year" and equivalent terms refer to results in calendar year 2019, "last year" and equivalent terms refer to calendar year 2018, and all references to income statement results correspond to full-year activity unless otherwise noted.

This MD&A contains certain forward-looking statements with respect to the financial condition, results of operations, and business of the Company. These forward-looking statements involve certain risks and uncertainties. Factors that may cause actual results to differ materially from those contemplated by such forward-looking statements are set herein under the caption "Forward-Looking Statements" on page 54.

Critical Accounting Policies

As a result of the complex and dynamic nature of the Company's business, management must exercise judgment in selecting and applying the most appropriate accounting policies for its various areas of operations. The policy decision process not only ensures compliance with the current accounting principles generally accepted in the United States of America ("GAAP"), but also reflects management's discretion with regard to choosing the most suitable methodology for reporting the Company's financial performance. It is management's opinion that the accounting estimates covering certain aspects of the business have more significance than others due to the relative importance of those areas to overall performance, or the level of subjectivity in the selection process. These estimates affect the reported amounts of assets and liabilities as well as disclosures of revenues and expenses during the reporting period. Actual results could differ from these estimates. Management believes that the critical accounting estimates include the allowance for loan losses, actuarial assumptions associated with the pension, post-retirement and other employee benefit plans, the provision for income taxes, investment valuation and other-than-temporary impairment, the carrying value of goodwill and other intangible assets, and acquired loan valuations. A summary of the accounting policies used by management is disclosed in Note A, "Summary of Significant Accounting Policies", starting on page 65.

Supplemental Reporting of Non-GAAP Results of Operations

The Company also provides supplemental reporting of its results on an "operating," "adjusted net" or "tangible" basis, from which it excludes the after-tax effect of amortization of core deposit and other intangible assets (and the related goodwill, core deposit intangible and other intangible asset balances, net of applicable deferred tax amounts), accretion on non-impaired purchased loans, acquisition expenses, the unrealized gain (loss) on equity securities, loss on debt extinguishment and the one-time benefit from the revaluation of net deferred tax liabilities. Although "adjusted net income" as defined by the Company is a non-GAAP measure, the Company's management believes this information helps investors understand the effect of acquisitions and other non-recurring activity in its reported results. Reconciliations of GAAP amounts with corresponding non-GAAP amounts are presented in Table 20.

Executive Summary

The Company's business philosophy is to operate as a diversified financial services enterprise providing a broad array of banking and other financial services to retail, commercial and municipal customers. The Company's banking subsidiary is Community Bank, N.A. (the "Bank" or "CBNA"). The Company also provides employee benefit and trust related services via its Benefit Plans Administrative Services, Inc. ("BPAS") subsidiary, and wealth management and insurance-related services.

The Company's core operating objectives are: (i) grow the branch network, primarily through a disciplined acquisition strategy, and certain selective de novo expansions, (ii) build profitable loan and deposit volume using both organic and acquisition strategies, (iii) manage an investment securities portfolio to complement the Company's loan and deposit strategies and optimize interest rate risk, yield and liquidity, (iv) increase the noninterest component of total revenues through development of banking-related fee income, growth in existing financial services business units, and the acquisition of additional financial services and banking businesses, and (v) utilize technology to deliver customer-responsive products and services and improve efficiencies.

Significant factors reviewed by management to evaluate achievement of the Company's operating objectives and its operating results and financial condition include, but are not limited to: net income and earnings per share; return on assets and equity; components of net interest margin; noninterest revenues; noninterest expenses; asset quality; loan and deposit growth; capital management; performance of individual banking and financial services units; performance of specific product lines and customers; liquidity and interest rate sensitivity; enhancements to customer products and services and their underlying performance characteristics; technology advancements; market share; peer comparisons; and the performance of recently acquired businesses.

On October 21, 2019, the Company announced that it had entered into a definitive agreement to acquire Steuben Trust Corporation ("Steuben"), parent company of Steuben Trust Company, a New York State chartered bank headquartered in Hornell, New York, for approximately $104.4 million in Company stock and cash. Steuben currently operates 14 branch locations in Western New York. The acquisition will extend the Company's footprint into two new counties in Western New York State and enhance the Company's presence in four Western New York State counties in which it currently operates. The acquisition is expected to close during the second quarter of 2020, pending both customary regulatory and Steuben shareholder approval. The Company expects to incur certain one-time, transaction-related costs in 2020 in connection with the Steuben acquisition.

On September 18, 2019, the Company, through its subsidiary, Community Investment Services, Inc. ("CISI"), completed its acquisition of certain assets of a practice engaged in the financial services business headquartered in Syracuse, New York. The Company paid $0.5 million in cash to acquire a customer list, and recorded a $0.5 million customer list intangible asset in conjunction with the acquisition.

On July 12, 2019, the Company completed its merger with Kinderhook Bank Corp. ("Kinderhook"), parent company of The National Union Bank of Kinderhook, headquartered in Kinderhook, New York, for $93.4 million in cash. The merger added 11 branch locations across a five county area in the Capital District of Upstate New York. The merger resulted in the acquisition of $642.8 million of assets, including $479.9 million of loans and $39.8 million of investment securities, as well as $568.2 million of deposits and $40.3 million in goodwill.

On January 2, 2019, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of Wealth Resources Network, Inc. ("Wealth Resources"), a financial services business headquartered in Liverpool, New York. The Company paid $1.2 million in cash to acquire a customer list from Wealth Resources, and recorded a $1.2 million customer list intangible asset in conjunction with the acquisition.

The Company reported net income of $169.1 million for the year ended December 31, 2019 that was 0.3% above the prior year, while earnings per share of $3.23 for the year was 0.3% below the prior year. The increase in net income was due in part to the expanded business activities from the Kinderhook acquisition completed in the third quarter of 2019. Contributing to the increase in net income was an increase in net interest income, a decrease in the provision for loan losses, an increase in gain on sales of investment securities, higher noninterest revenues and lower income taxes. Partially offsetting these items were an increase in acquisition expenses, an increase in noninterest expenses and an increase in weighted average diluted shares outstanding attributable to shares issued in connection with the administration of the Company's 401(k) plan and employee stock plan. Net income adjusted to exclude acquisition expenses, gain on sales of investment securities, unrealized gain on equity securities, loss on debt extinguishment, amortization of intangibles, and acquired non-impaired loan accretion ("Adjusted Net Income"), increased $4.1 million, or 2.3%, compared to the prior year. Earnings per share adjusted to exclude acquisition expenses, gain on sales of investment securities, unrealized gain on equity securities, loss on debt extinguishment, amortization of intangibles and acquired non-impaired loan accretion ("Adjusted Earnings Per Share"), of $3.44 increased $0.05, or 1.5%, compared to the prior year. See Table 20 for Reconciliation of GAAP to Non-GAAP Measures.

The Company experienced year-over-year growth in average interest-earning assets, primarily reflective of the Kinderhook acquisition completed in July 2019. Average deposits increased in 2019 as compared to 2018, reflective of organic growth and the impact of the Kinderhook acquisition. Average external borrowings in 2019 decreased from 2018 reflective of a decrease in securities sold under an agreement to repurchase ("customer repurchase agreements") as well as a decrease in overnight borrowings and a decrease in subordinated debt held by unconsolidated subsidiary trusts. The decrease in average subordinated debt held by unconsolidated subsidiary trusts is due to the redemption of trust preferred debt held by MBVT Statutory Trust I ("MBVT I") and the Kinderhook Capital Trust ("KCT") during the third quarter of 2019, partially offset by subordinated debt acquired with the Kinderhook transaction. Asset quality in 2019 remained stable and favorable in comparison to the end of 2018, with nonperforming loan ratios, the delinquency ratio and the full year net charge-off ratio at December 31, 2019 all improved from one year earlier.

Net Income and Profitability

Net income for 2019 was $169.1 million, an increase of $0.4 million, or 0.3%, from 2018's earnings. Earnings per share for 2019 was $3.23, down $0.01, or 0.3%, from 2018's results. Net income and earnings per share for 2019 were impacted by $8.6 million of acquisition expenses primarily related to the Kinderhook acquisition, while the Company recovered $0.8 million of vendor contract termination charges in 2018 that were initially recorded as an acquisition expense in the second quarter of 2017. Adjusted Net Income increased $4.1 million, or 2.3%, compared to the prior year. Adjusted Earnings per Share of $3.44 increased $0.05, or 1.5%, compared to the prior year. See Table 20 for Reconciliation of GAAP to Non-GAAP Measures.

Net income for 2018 was $168.6 million, an increase of $17.9 million, or 11.9%, from 2017's earnings, while earnings per share for 2018 was $3.24, up $0.21, or 6.9%. The 2018 results included the aforementioned $0.8 million recovery of vendor contract termination charges, while the 2017 results included $26.0 million, or $0.37 per share, of acquisition expenses primarily related to the Merchants and NRS acquisitions. Adjusted Earnings per Share of $3.39 in 2018 increased $0.59, or 21.1%, compared to the prior year. See Table 20 for Reconciliation of GAAP to Non-GAAP Measures.

Table 1: Condensed Income Statements

	Years Ended December 31,				
(000's omitted, except per share data)	2019	2018	2017	2016	2015
Net interest income	$359,175	$345,055	$315,675	$273,896	$248,420
Provision for loan losses	8,430	10,837	10,984	8,076	6,447
Gain/(Loss) on sales of investment securities, net	4,882	0	2	0	(4)
Unrealized gain on equity securities	19	657	0	0	0
Loss on debt extinguishment	0	(318)	0	0	0
Noninterest revenue	225,718	223,720	202,421	155,625	123,303
Acquisition expenses and litigation settlement	8,608	(769)	25,986	1,706	7,037
Other noninterest expenses	363,418	346,058	321,163	265,142	226,018
Income before taxes	209,338	212,988	159,965	154,597	132,217
Income taxes	40,275	44,347	9,248	50,785	40,987
Net income	$169,063	$168,641	$150,717	$103,812	$91,230
Diluted weighted average common shares outstanding	52,370	51,975	49,665	44,720	41,605
Diluted earnings per share	$3.23	$3.24	$3.03	$2.32	$2.19

The Company operates in three business segments: Banking, Employee Benefit Services and All Other. The banking segment provides a wide array of lending and depository-related products and services to individuals, businesses and municipal enterprises. In addition to these general intermediation services, the Banking segment provides treasury management solutions and payment processing services. Employee Benefit Services, consisting of BPAS and its subsidiaries, provides the following on a national basis: employee benefit trust services; collective investment fund; fund administration, transfer agency; retirement plan and VEBA/HRA and health savings account plan administration services; actuarial services; and healthcare consulting services. BPAS services more than 3,800 benefit plans with approximately 450,000 plan participants and holds more than $89.3 billion in employee benefit trust assets. In addition, BPAS employs 370 professionals located in 18 states, and occupies 11 offices located in Massachusetts, New York, New Jersey, Pennsylvania, Texas and Puerto Rico. The All Other segment is comprised of wealth management and insurance services. Wealth management activities include trust services provided by the personal trust unit of CBNA, investment products and services provided by CISI and The Carta Group, Inc. ("The Carta Group"), and asset advisory services provided by Nottingham Advisors, Inc. ("Nottingham"). The insurance services activities include the offerings of personal and commercial property insurance and other risk management products and services provided by OneGroup NY, Inc. ("OneGroup"). For additional financial information on the Company's segments, refer to Note U – Segment Information in the Notes to Consolidated Financial Statements.

The primary factors explaining 2019 earnings performance are discussed in the remaining sections of this document and are summarized by segment as follows:

BANKING

- Net interest income increased $13.8 million, or 4.0%. This was the result of a $295.4 million increase in average interest earning assets and an 11 basis point increase in the average yield on earning assets, partially offset by a $97.5 million increase in average interest-bearing liabilities and a 13 basis point increase in the average rate on interest-bearing liabilities. Average loans grew $278.9 million driven primarily by the Kinderhook acquisition, and the yield on loans increased 15 basis points from the prior year. Also contributing to the growth in interest income was a $16.6 million increase in the average book value of investments, including cash equivalents. The increase in the average book balance of investments was the net result of investment purchases of $810.1 million in investment purchases during the year and $39.8 million of investments acquired with the Kinderhook transaction, partially offset by $209.9 million in investment maturities, calls and principal payments, as well as the sale of $590.2 million of available-for-sale Treasury securities. The average yield on investments, including cash equivalents, was consistent with the prior year at 2.58%. Average interest-bearing deposits increased $178.5 million due primarily to the addition of deposits from the Kinderhook acquisition. Borrowing interest expense decreased year-over-year as a result of a decrease in average balances of $81.0 million, or 19.8%, partially offset by a blended rate that was 14 basis points higher than the prior year.

- The loan loss provision of $8.4 million decreased $2.4 million, or 22.2%, from the prior year level. Net charge-offs of $7.8 million were $1.3 million less than 2018. This resulted in an annual net charge-off ratio (net charge-offs / total average loans) of 0.12%, which was three basis points lower than the prior year. Year-end nonperforming loans as a percentage of total loans and nonperforming assets as a percentage of loans and other real estate owned both decreased five basis points compared to December 31, 2018 levels. Additional information on trends and policy related to asset quality is provided in the asset quality section on pages 44 through 48.

- Banking noninterest revenue for 2019, excluding unrealized gain on equity securities, loss on debt extinguishment and gain on sales of investment securities, of $70.5 million decreased by $4.9 million from 2018's level. The decrease in noninterest revenue included an $0.11 per diluted share impact on deposit service fees due to the debit interchange fee limitations established by the Durbin amendment of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Durbin amendment") that were effective for the Company beginning in the third quarter of 2018. This negative impact of the Durbin amendment was partially offset by an increase in the volume of deposit services fees related to deposit relationships acquired with the Kinderhook transaction.

- Total banking noninterest expenses, including acquisition expenses, increased $23.2 million, or 9.8%, in 2019 reflective of the $8.6 million in one-time acquisition expenses incurred in 2019, additional expenses associated with an expanded branch network from the Kinderhook acquisition, as well as continued investment in risk management initiatives, business development and marketing, technology and data processing costs. Excluding acquisition expenses, banking noninterest expenses increased $13.8 million, or 5.8%.

EMPLOYEE BENEFIT SERVICES

- Employee benefit services noninterest revenue for 2019 of $99.5 million increased $5.0 million, or 5.3%, from the prior year level, due to the organic growth and an increase in employee benefit trust assets.

- Employee benefit services noninterest expenses for 2019 totaled $66.2 million. This represented an increase from 2018 of $1.9 million, or 3.0%, and was attributable to an increase in personnel costs associated with the continued buildout of resources to support an expanding revenue base.

ALL OTHER (WEALTH MANAGEMENT AND INSURANCE SERVICES)

- Wealth management and insurance services noninterest revenue for 2019 was $59.1 million; an increase of $1.9 million from the prior year level. The increase was primarily due to organic growth in revenue from insurance products and services provided by OneGroup. Also contributing to the increase was modest growth in wealth management revenue from organic and acquired sources, including the expansion of operations resulting from the two wealth management related acquisitions completed in 2019.

- Wealth management and insurance services noninterest expenses of $48.6 million increased $1.6 million, or 3.5%, from 2018 primarily due to increased personnel and data processing costs associated with the aforementioned organic and acquired growth.

Selected Profitability and Other Measures

Return on average assets, return on average equity, dividend payout and equity to asset ratios for the years indicated are as follows:

Table 2: Selected Ratios

	2019	2018	2017
Return on average assets	1.53%	1.58%	1.49%
Return on average equity	9.42%	10.20%	10.21%
Dividend payout ratio	48.4%	43.8%	43.5%
Average equity to average assets	16.25%	15.50%	14.63%

As displayed in Table 2, the 2019 return on average assets ratio decreased five basis points and the return on average equity ratio decreased 78 basis points as compared to 2018. The decrease in return on average assets was primarily the result of an increase in average assets, primarily related to the Kinderhook acquisition, which outpaced the increase in net income that was impacted by $8.6 million in acquisition expenses incurred in 2019. The return on average equity ratio decreased in 2019 as the increase in average equity outpaced net income that was impacted by the aforementioned acquisition expenses. The return on average assets ratio in 2018 increased nine basis points, while the return on average equity ratio decreased one basis point as compared to 2017. The increase in return on average assets was primarily the result of an increase in net income, reflective of a full year of activities from the Merchants and NRS transactions, which outpaced the increase in average assets. The return on average equity ratio decreased slightly in 2018 as the increase in average equity due primarily to the impact of the shares issued for the Merchants and NRS acquisitions and earnings retention slightly outpaced the increase in net income. The return on average assets adjusted to exclude acquisition expenses, gain on sales of investment securities, unrealized gain on equity securities, loss on debt extinguishment, amortization of intangibles, and acquired non-impaired loan accretion decreased two basis points to 1.63% in 2019, as compared to 1.65% in 2018. The return on average equity adjusted to exclude acquisition expenses, gain on sales of investment securities, unrealized gain on equity securities, loss on debt extinguishment, amortization of intangibles, and acquired non-impaired loan accretion decreased 61 basis points to 10.03% in 2019, from 10.64% in 2018. See Table 20 for Reconciliation of GAAP to Non-GAAP Measures.

The dividend payout ratio for 2019 increased 4.6% from 2018 as the 10.7% increase in dividends declared from 2018 was higher than the 0.3% increase in net income. The increase in dividends declared in 2019 was a result of a 9.7% increase in the dividends declared per share and the issuance of shares in connection with the administration of the Company’s 401(k) plan and employee stock plan. The dividend payout ratio for 2018 increased 0.3% from 2017 as the 12.7% increase in dividends declared from 2017 was modestly higher than the 11.9% increase in net income. The increase in dividends declared in 2018 was a result of a 9.1% increase in the dividends declared per share and the issuance of shares in connection with the administration of the Company’s 401(k) plan and employee stock plan.

The average equity to average assets ratio continued to increase in 2019 as the growth in common shareholders’ equity outpaced the growth in assets. During 2019, average equity increased 8.5% while average assets increased at a rate of 3.5%. In 2018 average equity rose 12.0% and average assets grew 5.7% in comparison to 2017.

Net Interest Income

Net interest income is the amount by which interest and fees on earning assets (loans, investments and cash equivalents) exceeds the cost of funds, which consists primarily of interest paid to the Company's depositors and interest on borrowings. Net interest margin is the difference between the yield on interest earning assets and the cost of interest-bearing liabilities as a percentage of earning assets.

As disclosed in Table 3, net interest income (with nontaxable income converted to a fully tax-equivalent basis) totaled $363.2 million in 2019, an increase of $13.8 million, or 3.9%, from the prior year. The increase is a result of a $295.4 million, or 3.2%, increase in average interest-earning assets and an 11 basis point increase in the average yield on interest-earning assets, partially offset by a $97.5 million increase in average interest-bearing liabilities and a 13 basis point increase in the average rate on interest-bearing liabilities. As reflected in Table 4, the favorable impact of the increase in interest-earning assets ($11.8 million) and increase in the yield ($10.9 million) was partially offset by the unfavorable impact of the increase in interest-bearing liabilities ($0.3 million) and the higher rate on interest-bearing liabilities ($8.6 million).

The 2019 net interest margin increased three basis points to 3.76% from 3.73% reported in 2018. The increase was attributable to an 11 basis point increase in the earning-asset yield, offset by a 13 basis point increase in the cost of interest-bearing liabilities. The 4.73% yield on loans increased 15 basis points in 2019 as compared to 4.58% in 2018, including the impact of acquired loan accretion associated with the Kinderhook acquisition. The yield on investments, including cash equivalents, of 2.58% in 2019 was consistent with 2018. The yield on investments included the impact of the sale of $590.2 million of available-for-sale Treasury securities in the second quarter of 2019 with subsequent reinvestment of the proceeds occurring primarily in the fourth quarter. The proceeds from the sale of securities in the second quarter were held in interest-earning cash until more attractive reinvestment options became available in the fourth quarter. The cost of interest-bearing liabilities was 0.40% during 2019 as compared to 0.27% for 2018. The increased cost reflects the 10 basis point increase in the average rate paid on deposits and the 14 basis point higher average rate paid on borrowings in 2019.

The net interest margin in 2018 increased four basis points to 3.73% from 3.69% reported in 2017. The increase was attributable to an eight basis point increase in the earning-asset yield, offset by a five basis point increase in the cost of interest-bearing liabilities. The 4.58% yield on loans increased 19 basis points in 2018 as compared to 4.39% in 2017, including the impact of incremental acquired loan accretion on the Merchants portfolio. The yield on investments, including cash equivalents, decreased from 2.79% in 2017 to 2.58% in 2018. This lower yield on investments is reflective of maturing higher rate investments being replaced with lower-yielding securities and interest-earning cash, as well as the result of a lower fully tax-equivalent adjustment due to the lower federal tax rate associated with the Tax Cuts and Jobs Act. The cost of interest-bearing liabilities was 0.27% during 2018 as compared to 0.22% for 2017. The increased cost reflects the three basis point increase in the average rate paid on deposits and the 21 basis point higher average rate paid on borrowings in 2018.

As shown in Table 3, total FTE-basis interest income increased by $22.7 million, or 6.2%, in 2019 in comparison to 2018. Table 4 indicates that a higher average earning-asset balance created $11.8 million of incremental interest income and a higher yield on earning assets had a favorable impact of $10.9 million on interest income. Average loans increased $278.9 million, or 4.5%, in 2019. This increase was primarily due to acquired growth from the Kinderhook acquisition, which accounted for $217.6 million of the growth. FTE-basis loan interest income and fees increased $22.1 million, or 7.7%, in 2019 as compared to 2018, attributable to the higher average balances and a 15 basis point increase in the loan yield.

Investment interest income (FTE basis) in 2019 was $0.6 million, or 0.7%, higher than the prior year as a result of a $16.6 million increase in the average book basis balance of investments (including cash equivalents) and an average investment yield of 2.58% that was consistent with the prior year. The higher average investment book balance is inclusive of the $37.7 million of available-for-sale securities and $2.1 million of equity and other securities acquired with the Kinderhook transaction.

Total interest income in 2018 increased $28.2 million, or 8.3%, from 2017's level. As shown in table 4, the higher average earning-asset balance created $21.6 million of incremental interest income and a higher yield on earning assets had a favorable impact of $6.6 million on interest income. Average loans increased $445.5 million, or 7.7%, in 2018. This increase was primarily due to acquired growth from the Merchants acquisition, which accounted for $351.9 million of the growth. FTE-basis loan interest income and fees increased $31.8 million, or 12.5%, in 2018 as compared to 2017, attributable to the higher average balances and a 19 basis point increase in the loan yield. On a FTE basis, investment interest income, including interest on cash equivalents, totaled $80.0 million in 2018, $3.6 million, or 4.3%, lower than the prior year as a result of a 21 basis point decrease in the average investment yield from 2.79% in 2017 to 2.58% in 2018. This decrease in yield was partially offset by a $108.2 million, or 3.6%, higher average book basis balance (including cash equivalents) for 2018 versus the prior year. The lower average investment yield in 2018 was reflective of cash flows from higher rate maturing instruments in the investment portfolio being reinvested at lower interest rates or held in interest-earning cash.

Total interest expense increased by $8.9 million, or 50.2%, to $26.6 million in 2019. As shown in Table 4, higher interest rates on interest-bearing liabilities resulted in an increase in interest expense of $8.6 million, while higher deposit balances resulted in a $0.3 million increase in interest expense. Interest expense as a percentage of average earning assets for 2019 increased eight basis points to 0.27%. The rate on interest-bearing deposits of 0.32% was 15 basis points higher than 2018, primarily due to an increase in certain product rates in response to changes in market interest rates during 2018 and 2019. The rate on borrowings increased 14 basis points to 1.86% in 2019, primarily due to the increase in the average variable rate paid on subordinated debt held by unconsolidated subsidiary trusts and overnight borrowings. Total average funding balances (deposits and borrowings) in 2019 increased $196.1 million, or 2.2%. Average deposits increased $277.1 million, with $260.0 million of the increase from the Kinderhook acquisition. Average non-time ("core") deposit balances increased $184.9 million and accounted for 90.3% of total average deposits compared to 91.1% in 2018, due to the addition of $185.9 million in core deposit balances with the Kinderhook acquisition, partially offset by a $1.0 million decrease in legacy deposits. Average time deposits increased by $92.2 million year-over-year, including $74.1 million in average time deposits from the Kinderhook acquisition. Average time deposits represented 9.7% of total average deposits for 2019 compared to 8.9% in 2018. Average external borrowings decreased $81.0 million in 2019 as compared to 2018, due to a decrease in average customer repurchase agreements of $42.6 million, a decrease in subordinated debt held by unconsolidated subsidiary trusts of $20.1 million and a decrease in FHLB borrowings, partially offset by an increase in average subordinated notes payable of $6.5 million associated with subordinated notes acquired in the Kinderhook transaction. The decrease in average subordinated debt held by unconsolidated subsidiary trusts is due to the redemption of trust preferred debt held by MBVT I and the KCT during the third quarter of 2019 for a total of $22.7 million, offset by a partial year of subordinated debt acquired with the Kinderhook transaction.

Total interest expense increased by $3.9 million, or 28.3%, to $17.7 million in 2018. As shown in Table 4, higher interest rates on interest-bearing liabilities resulted in an increase in interest expense of $3.5 million, while higher deposit balances resulted in a $0.4 million increase in interest expense. Interest expense as a percentage of average earning assets for 2018 increased three basis points to 0.19%. The rate on interest-bearing deposits of 0.17% was four basis points higher than 2017, primarily due to an increase in certain product rates in response to the increase in market interest rates during 2018. The rate on borrowings increased 21 basis points to 1.72% in 2018, primarily due to the increase in the variable rate paid on subordinated debt held by unconsolidated subsidiary trusts and overnight borrowings. Total average funding balances (deposits and borrowings) in 2018 increased $433.4 million, or 5.1%. Average deposits increased $405.3 million, representing an increase of $428.6 million from the Merchants acquisition offset by a decrease of $23.3 million in legacy deposits. Average non-time ("core") deposit balances increased $420.1 million to 91.1% of total average deposits compared to 90.5% in 2017, while average time deposits decreased by $14.9 million year-over-year, representing 8.9% of total average deposits for 2018 compared to 9.5% in 2017. Average external borrowings increased $28.1 million in 2018 as compared to 2017, as a year-over-year increase in average customer repurchase agreements of $88.9 million was partially offset by a decrease in average FHLB borrowings of $57.9 million and a decrease in average subordinated debt held by unconsolidated subsidiary trusts of $2.9 million. The increase in average customer repurchase agreements is primarily related to a full year of customer activity from the Merchants acquisition, while the decrease in FHLB borrowings is due to cash flows from investment maturities being used to pay down overnight borrowings. The decrease in average subordinated debt held by unconsolidated subsidiary trusts is due to the redemption of trust preferred debt held by Community Statutory Trust III during the third quarter of 2018 for a total of $25.2 million, offset by a full year of subordinated debt acquired with the Merchants transaction.

The following table sets forth information related to average interest-earning assets and interest-bearing liabilities and their associated yields and rates for the years ended December 31, 2019, 2018 and 2017. Interest income and yields are on a fully tax-equivalent basis using marginal income tax rates of 24.0% in 2019, 24.4% in 2018 and 37.7% in 2017. Average balances are computed by totaling the daily ending balances in a period and dividing by the number of days in that period. Loan interest income and yields include loan fees and acquired loan accretion. Average loan balances include acquired loan purchase discounts and premiums, nonaccrual loans and loans held for sale.

Table 3: Average Balance Sheet

	Year Ended December 31, 2019			Year Ended December 31, 2018			Year Ended December 31, 2017		
(000's omitted except yields and rates)	Average Balance	Interest	Avg. Yield/Rate Paid	Average Balance	Interest	Avg. Yield/Rate Paid	Average Balance	Interest	Avg. Yield/Rate Paid
Interest-earning assets:									
Cash equivalents	$408,343	$8,473	2.07%	$78,888	$1,322	1.68%	$38,545	$385	1.00%
Taxable investment securities (1)	2,300,454	57,431	2.50%	2,577,695	62,182	2.41%	2,440,215	59,774	2.45%
Nontaxable investment securities (1)	412,121	14,684	3.56%	447,772	16,526	3.69%	517,408	23,499	4.54%
Loans (net of unearned discount)(2)	6,542,716	309,148	4.73%	6,263,843	287,048	4.58%	5,818,367	255,212	4.39%
Total interest-earning assets	9,663,634	389,736	4.03%	9,368,198	367,078	3.92%	8,814,535	338,870	3.84%
Noninterest-earning assets	1,379,539			1,297,011			1,274,680		
Total assets	$11,043,173			$10,665,209			$10,089,215		
Interest-bearing liabilities:									
Interest checking, savings and money market deposits	$5,489,307	10,456	0.19%	$5,403,013	6,292	0.12%	$5,237,282	4,854	0.09%
Time deposits	843,024	10,004	1.19%	750,814	4,366	0.58%	765,666	3,177	0.41%
Repurchase agreements	218,733	1,615	0.74%	261,358	1,597	0.61%	172,395	739	0.43%
FHLB borrowings	9,622	233	2.42%	34,374	746	2.17%	92,307	1,106	1.20%
Subordinated notes payable	6,467	346	5.35%	0	0	0.00%	0	0	0.00%
Subordinated debt held by unconsolidated subsidiary trusts	92,262	3,898	4.22%	112,322	4,677	4.16%	115,231	3,904	3.39%
Total interest-bearing liabilities	6,659,415	26,552	0.40%	6,561,881	17,678	0.27%	6,382,881	13,780	0.22%
Noninterest-bearing liabilities:									
Noninterest checking deposits	2,401,413			2,302,806			2,048,414		
Other liabilities	187,628			147,141			182,159		
Shareholders' equity	1,794,717			1,653,381			1,475,761		
Total liabilities and shareholders' equity	$11,043,173			$10,665,209			$10,089,215		
Net interest earnings		$363,184			$349,400			$325,090	
Net interest spread			3.63%			3.65%			3.62%
Net interest margin on interest-earning assets			3.76%			3.73%			3.69%
Fully tax-equivalent adjustment		$4,009			$4,345			$9,415	

(1) Averages for investment securities are based on historical cost and the yields do not give effect to changes in fair value that is reflected as a component of noninterest-earning assets, shareholders' equity and deferred taxes.

(2) Includes nonaccrual loans. The impact of interest and fees not recognized on nonaccrual loans was immaterial.

As discussed above, the change in net interest income (fully tax-equivalent basis) may be analyzed by segregating the volume and rate components of the changes in interest income and interest expense for each underlying category.

Table 4: Rate/Volume

	2019 Compared to 2018			2018 Compared to 2017		
	Increase (Decrease) Due to Change in [1]			Increase (Decrease) Due to Change in [1]		
(000's omitted)	Volume	Rate	Net Change	Volume	Rate	Net Change
Interest earned on:						
Cash equivalents	$6,765	$386	$7,151	$569	$368	$937
Taxable investment securities	(6,864)	2,113	(4,751)	3,327	(919)	2,408
Nontaxable investment securities	(1,284)	(558)	(1,842)	(2,915)	(4,058)	(6,973)
Loans (net of unearned discount)	13,013	9,087	22,100	20,092	11,744	31,836
Total interest-earning assets [2]	11,752	10,906	22,658	21,598	6,610	28,208
Interest paid on:						
Interest checking, savings and money market deposits	102	4,062	4,164	158	1,280	1,438
Time deposits	595	5,043	5,638	(63)	1,252	1,189
Repurchase agreements	(284)	302	18	676	182	858
FHLB borrowings	(591)	78	(513)	(940)	580	(360)
Subordinated notes payable	346	0	346	0	0	0
Subordinated debt held by unconsolidated subsidiary trusts	(847)	68	(779)	(101)	874	773
Total interest-bearing liabilities [2]	266	8,608	8,874	396	3,502	3,898
Net interest earnings [2]	$11,087	$2,697	$13,784	$20,614	$3,696	$24,310

[1] The change in interest due to both rate and volume has been allocated to volume and rate changes in proportion to the relationship of the absolute dollar amounts of such change in each component.

[2] Changes due to volume and rate are computed from the respective changes in average balances and rates of the totals; they are not a summation of the changes of the components.

Noninterest Revenues

The Company's sources of noninterest revenues are of four primary types: 1) general banking services related to loans, deposits and other core customer activities typically provided through the branch network and electronic banking channels (performed by CBNA); 2) employee benefit trust and benefit plan administration services (performed by BPAS and its subsidiaries); 3) wealth management services, comprised of personal trust services (performed by the trust unit within CBNA), investment products and services (performed by CISI and The Carta Group) and asset management services (performed by Nottingham); and 4) insurance products and services (performed by OneGroup). Additionally, the Company has other transactions, including unrealized gains or losses on equity securities, realized gains or losses from the sale of investment securities and loss on debt extinguishment.

Table 5: Noninterest Revenues

	Years Ended December 31,		
(000's omitted except ratios)	2019	2018	2017
Employee benefit services	$97,167	$92,279	$80,830
Deposit service charges and fees	36,978	38,445	33,729
Debit interchange and ATM fees	21,750	26,748	29,722
Insurance services	32,199	30,317	26,150
Wealth management services	25,869	25,772	22,079
Other banking revenues	11,755	10,159	9,911
Subtotal	225,718	223,720	202,421
Unrealized gain on equity securities	19	657	0
Loss on debt extinguishment	0	(318)	0
Gain on sales of investment securities, net	4,882	0	2
Total noninterest revenues	$230,619	$224,059	$202,423
Noninterest revenues/operating revenues (FTE basis) (1)	38.7%	39.6%	38.8%

(1) For purposes of this ratio noninterest revenues excludes unrealized gain on equity securities, loss on debt extinguishment and gain on sales of investment securities. Operating revenues, a non-GAAP measure, is defined as net interest income on a fully-tax equivalent basis, plus noninterest revenues, excluding unrealized gain on equity securities, loss on debt extinguishment, gain on sales of investment securities and acquired non-impaired loan accretion. See Table 20 for Reconciliation of GAAP to Non-GAAP measures.

As displayed in Table 5, total noninterest revenues, excluding unrealized gain on equity securities, gain on the sale of investment securities and loss on debt extinguishment, increased $2.0 million, or 0.9%, to $225.7 million in 2019 as compared to 2018. The increase was comprised of growth in revenue from the Company's employee benefit services businesses, an increase in wealth management and insurance services revenue and an increase in other banking revenues, partially offset by a decrease in debit card-related revenue related to Durbin amendment mandated debit interchange price restrictions. Noninterest revenues, excluding unrealized gain on equity securities, loss on debt extinguishment and gain on the sale of investment securities, increased by $21.3 million, or 10.5%, to $223.7 million in 2018 as compared to 2017. The increase was comprised of growth in revenue from the Company's employee benefit services businesses, primarily from a full year of activity associated with the NRS acquisition and organic growth, an increase in wealth management and insurance services revenue and an increase in other banking revenues, partially offset by a decrease in debit card-related revenue related to Durbin amendment mandated debit interchange price restrictions.

Noninterest revenues as a percent of operating revenues (FTE basis) were 38.7% in 2019, down 0.9% from the prior year. The current year decrease was due to the 4.6% increase in adjusted net interest income (FTE basis), while noninterest revenues increased by the 0.9% mentioned above. The 0.8% increase in this ratio from 2017 to 2018 was driven by a 10.5% increase in noninterest revenues mentioned above, while net interest income increased 7.0%.

A significant portion of the Company's recurring noninterest revenue is comprised of the wide variety of fees earned from general banking services provided through the branch network, electronic banking channels and other banking revenues, which totaled $70.5 million in 2019, a decrease of $4.9 million, or 6.4%, from the prior year. The decrease was primarily driven by a decrease in debit card-related revenue due to the impact of Durbin amendment mandated debit interchange price restrictions that were effective beginning in the third quarter of 2018, partially offset by the addition of new deposit relationships from the Kinderhook acquisition. Fees from general banking services were $75.4 million in 2018, an increase of $2.0 million, or 2.7%, from 2017. The increase was primarily driven by the addition of new deposit relationships from the Merchants acquisition, offset by a decrease of approximately $7.1 million in debit card-related revenue due to the impact of Durbin amendment mandated debit interchange price restrictions that were effective beginning in the third quarter of 2018.

As disclosed in Table 5, noninterest revenue from financial services (revenues from employee benefit services, wealth management services and insurance services) increased $6.9 million, or 4.6%, in 2019 to $155.2 million. In 2019, financial services revenue accounted for 67% of total noninterest revenues, as compared to 66% in 2018. Employee benefit services generated revenue of $97.2 million in 2019 that reflected growth of $4.9 million, or 5.3%, primarily due to organic increases in the number of supported plans and related participant levels. Employee benefit services revenue in 2018 of $92.3 million reflected growth of $11.4 million, or 14.2%, driven primarily by a full year of activity from NRS.

Wealth management and insurance services revenues increased $2.0 million, or 3.3%, in 2019 due primarily to an increase in OneGroup revenue. Wealth management and insurance services revenue increased $7.9 million, or 16.3%, in 2018 due to revenue growth from OneGroup, which represented $4.2 million of the increase, an increase in revenue from CISI of $2.2 million and an increase in personal trust revenue of $1.5 million.

Employee benefit trust assets increased $14.9 billion to $89.3 billion for the employee benefit services segment in 2019 as compared to 2018 due primarily to organic growth in the collective investment trust business. Assets under management increased $793.8 million to $6.6 billion for the wealth management businesses at year end 2019 as compared to one year earlier due to organic growth. Trust assets within the Company's employee benefit services segment increased $11.5 billion to $74.4 billion at the end of 2018 as compared to 2017 due primarily to organic growth in the collective investment trust business. Assets under management with the Company's wealth management services segment decreased $667.9 million to $5.8 billion at the end of 2018 as compared to year-end 2017 due in part to a general decline in overall market valuations late in 2018.

Noninterest Expenses

As shown in Table 6, noninterest expenses of $372.0 million in 2019 were $26.7 million, or 7.7%, higher than 2018, primarily reflective of the $8.6 million in one-time expenses incurred in 2019 related to the Kinderhook acquisition and the additional expenses associated with operating an expanded branch network subsequent to the Kinderhook transaction. Noninterest expenses in 2018 decreased $1.9 million, or 0.5%, from 2017 to $345.3 million, primarily reflective of the $26.0 million in one-time expenses incurred in 2017 related to the Merchants and NRS acquisitions, offset by the expenses associated with operating an expanded branch network and other business activities acquired with the Merchants and NRS transactions for a full year.

Operating expenses (excluding acquisition expenses and amortization of intangible assets) as a percent of average assets for 2019 was 3.15%, an increase of eight basis points from 3.07% in 2018 and 13 basis points higher than the 3.02% in 2017. The increase in this ratio for 2019 was due to a 6.0% increase in operating expenses, primarily a result of expanded operations from the Kinderhook acquisition, while average assets grew by 3.5% due primarily to net assets and intangibles from the Kinderhook acquisition and organic growth. The increase in this ratio for 2018 was due to a 7.8% increase in operating expenses, primarily a result of a full year of expanded operations from the Merchants and NRS acquisitions, while average assets grew by 5.7% due primarily to a full year of acquired net assets and intangibles from the Merchants and NRS transactions.

The efficiency ratio, a performance measurement tool widely used by banks, is defined by the Company as operating expenses (excluding acquisition expenses and intangible amortization) divided by operating revenue (fully tax-equivalent net interest income plus noninterest revenue, excluding acquired non-impaired loan accretion, unrealized gain on equity securities, and insurance-related recoveries). Lower ratios are correlate to higher operating efficiency. In 2019, the efficiency ratio was 1.6% higher than 2018 as the 6.0% increase in operating expenses grew at a faster pace than the 3.1% increase in operating revenue, comprised of a 4.6% increase in adjusted net interest income and a 0.9% increase in adjusted noninterest revenue, as defined above. The ratio for 2018 was 0.3% below 2017 as the 8.4% increase in operating revenue, comprised of a 7.0% increase in adjusted net interest income and a 10.5% increase in noninterest revenue, as defined above, grew at a faster pace than the 7.8% increase in operating expenses. See Table 20 for Reconciliation of GAAP to Non-GAAP Measures.

Table 6: Noninterest Expenses

(000's omitted)	Years Ended December 31, 2019	2018	2017
Salaries and employee benefits[1]	$219,916	$207,363	$186,903
Occupancy and equipment	39,850	39,948	35,561
Data processing and communications	41,407	39,094	37,579
Amortization of intangible assets	15,956	18,155	16,941
Legal and professional fees	10,783	10,644	11,576
Business development and marketing	11,416	9,383	9,994
Acquisition expenses	8,608	(769)	25,986
Other	24,090	21,471	22,609
Total noninterest expenses	$372,026	$345,289	$347,149
Operating expenses[2] /average assets	3.15%	3.07%	3.02%
Efficiency ratio[3]	59.6%	58.0%	58.3%

[1]In accordance with ASU No. 2017-07, *Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*, $6.9 million of income from components of net periodic benefit income other than service cost was reclassified from Salaries and employee benefits to Other noninterest expenses for the year ended December 31, 2017.

[2]Operating expenses are total noninterest expenses excluding acquisition expenses and amortization of intangible assets. See Table 20 for Reconciliation of GAAP to Non-GAAP Measures.

[3]Efficiency ratio, a non-GAAP measure, is calculated as operating expenses as defined in footnote [2] above divided by net interest income on a fully tax-equivalent basis excluding acquired non-impaired loan accretion plus noninterest revenues excluding unrealized gain on equity securities, loss on debt extinguishment, and gain on sales of investment securities. See Table 20 for Reconciliation of GAAP to Non-GAAP Measures.

Total salaries and employee benefits increased $12.6 million, or 6.1%, in 2019, due to the impact of annual merit increases, a partial year expanded operations associated with the Kinderhook acquisition, higher incentive compensation, and an increase in medical expenses. Salaries and employee benefits increased $20.5 million, or 10.9%, in 2018, due to the impact of annual merit increases, a full year of expenses related to the employees from the Merchants acquisition in May 2017, a full year of expenses related to the employees from the NRS acquisition in February 2017, higher incentive compensation, an increase in retirement plan costs and higher severance expense. Total full-time equivalent staff at the end of 2019 was 2,763 compared to 2,675 at December 31, 2018 and 2,617 at the end of 2017. The increase in retirement plan expense in 2019 and 2018 is primarily due to the increase in service cost associated with an increase in the number of employees participating in the plan combined with an increase in eligible compensation associated with merit increases and increases in incentive compensation. See Note K to the financial statements for further information about the pension plan.

Total non-personnel, noninterest expenses, excluding one-time acquisition expenses, increased $4.8 million, or 3.5%, in 2019, mostly reflective of a partial year of the additional costs associated with the acquired Kinderhook business activities. Increases in data processing and communications, legal and professional fees, business development and marketing and other expenses were partially offset by a decrease in occupancy and equipment and amortization of intangible assets. Total non-personnel noninterest expenses, excluding one-time acquisition expenses, increased $4.4 million, or 3.3%, in 2018, mostly reflective of a full year of the additional costs associated with the acquired Merchants and NRS business activities. Increases in occupancy and equipment, data processing and communications, and amortization of intangible assets, all primarily a result of the additional costs associated with a full year of expanded business activities from the Merchants and NRS acquisitions, were partially offset by a decrease in legal and professional fees, business development and marketing and other expenses.

Acquisition expenses for 2019 totaled $8.6 million, including $8.0 million associated with the Kinderhook acquisition and $0.6 million associated with the Steuben acquisition. During 2018, the Company recovered $0.8 million of vendor contract termination charges associated with the Merchants acquisition, which were recorded as an acquisition expense during the second quarter of 2017. Acquisition expenses for 2017 totaled $26.0 million, including $24.6 million associated with the Merchants acquisition, $1.2 million associated with the NRS acquisition and $0.2 related to all other acquisitions.

Income Taxes

The Company estimates its income tax expense based on the amount it expects to owe the respective taxing authorities, plus the impact of deferred tax items. Taxes are discussed in more detail in Note I of the Consolidated Financial Statements beginning on page 90. Accrued taxes represent the net estimated amount due or to be received from taxing authorities. In estimating accrued taxes, management assesses the relative merits and risks of the appropriate tax treatment of transactions, taking into account statutory, judicial and regulatory guidance in the context of the Company's tax position. If the final resolution of taxes payable differs from its estimates due to regulatory determination or legislative or judicial actions, adjustments to tax expense may be required.

On December 22, 2017, H.R.1, referred to as the "Tax Cuts and Jobs Act," was signed into law. Among other things, the Tax Cuts and Jobs Act permanently lowered the corporate tax rate to 21% from a maximum rate of 35%, effective for tax years including or commencing January 1, 2018. ASC 740, *Income Taxes*, requires deferred tax assets and liabilities to be measured at the enacted tax rate expected to be applied when the temporary differences are to be realized or settled. Thus, as of the December 22, 2017 date of enactment, deferred taxes were re-measured based upon the new 21% tax rate. Prior to the change in tax rate in 2017, the Company had recorded net deferred tax liabilities based on a marginal tax rate of 37.70%. The change in tax rate resulted in a decrease in the marginal tax rate to 24.29% and a deferred tax benefit of $38.0 million from the write-down of the net deferred tax liabilities in the fourth quarter of 2017. The effect of this change in tax law was recorded as a component of the income tax provision including those deferred assets and liabilities that were established through a financial statement component other than continuing operations.

The effective tax rate for 2019 was 19.2%, compared to 20.8% in 2018 and 5.8% in 2017. The effective tax rate of 5.8% for 2017 included the impact of the $38.0 million one-time gain from the revaluation of net deferred tax liabilities related to the enactment of the Tax Cuts and Jobs Act passed in the fourth quarter of 2017. The adjusted effective tax rate for 2017, excluding the one-time gain from revaluation of net deferred tax liabilities, was 29.5%. The decline in the effective rate for 2019, compared to the effective tax rate for 2018, is primarily attributable to an increase in windfall tax benefit associated with stock-based compensation activity and a reduction in certain activity-based state income tax expenses.

Shareholders' Equity

Shareholders' equity ended 2019 at $1.86 billion, up $141.5 million, or 8.3%, from the end of 2018. This increase reflects net income of $169.1 million, $6.9 million from the issuance of shares through the employee stock plans, $6.9 million for treasury stock issued to the Company's 401(k) plan, $5.3 million from stock-based compensation and a $35.1 million increase in accumulated other comprehensive income. These increases were partially offset by common stock dividends declared of $81.8 million. The change in accumulated other comprehensive income was comprised of a $37.1 million increase due to changes in the unrealized gains and losses in the Company's available-for-sale investment portfolio, partially offset by a $2.0 million adjustment in the overfunded status of the Company's employee retirement plans. Excluding accumulated other comprehensive income in both 2019 and 2018, shareholders' equity increased by $106.4 million, or 6.0%. Shares outstanding increased by 0.5 million during the year due to share issuances under the employee stock plan, deferred compensation arrangements and to the Company's 401(k) plan.

Shareholders' equity ended 2018 at $1.71 billion, up $78.5 million, or 4.8%, from the end of 2017. This increase reflects net income of $168.6 million, $6.4 million from the issuance of shares through the employee stock plan, $12.6 million for treasury stock issued to the Company's 401(k) plan and $6.1 million from stock-based compensation. These increases were partially offset by common stock dividends declared of $73.8 million and a $41.4 million decrease in accumulated other comprehensive income. The change in accumulated other comprehensive income was comprised of a $30.2 million decrease due to changes in the unrealized gains and losses in the Company's available-for-sale investment portfolio and an $11.2 million net decline in the overfunded status of the Company's employee retirement plans. Excluding accumulated other comprehensive income in both 2018 and 2017, shareholders' equity rose by $120.1 million, or 7.3%. Shares outstanding increased by 0.6 million during the year due to share issuances under the employee stock plan, deferred compensation arrangements and to the Company's 401(k) plan.

The Company's ratio of ending tier 1 capital to adjusted quarterly average assets (or tier 1 leverage ratio), the primary measure for which regulators have established a 5% minimum for an institution to be considered "well-capitalized," decreased 0.28% from the prior year to end the year at 10.80%. This was the result of an increase of 7.8% in average adjusted net assets (excludes investment market value adjustment, and a portion of intangible assets net of related deferred tax liabilities), while tier 1 capital increased by 5.0% from the prior year. For additional financial information on the Company's regulatory capital, refer to Note P – Regulatory Matters in the Notes to Consolidated Financial Statements. The tangible equity-to-tangible assets ratio (a non-GAAP measure) was 10.01% at the end of 2019 versus 9.68% one year earlier (See Table 20 for Reconciliation of GAAP to Non-GAAP Measures). The increase was due to tangible common shareholders' equity increasing by 11.6% from the prior year, while tangible assets increased at a lesser 7.8% from the prior year. The Company manages organic and acquired growth in a manner that enables it to continue to maintain and grow its capital base and maintain its ability to take advantage of future strategic growth opportunities.

Cash dividends declared on common stock in 2019 of $81.8 million represented an increase of 10.7% over the prior year. This growth was a result of the increase in outstanding shares as noted above and a $0.14 increase in dividends per share for the year. Dividends per share for 2019 of $1.58 represents a 9.7% increase from $1.44 in 2018, a result of quarterly dividends per share increasing from $0.34 to $0.38, or 11.8%, during the third quarter of 2018 and from $0.38 to $0.41, or 7.9%, in the third quarter of 2019. The 2019 increase in quarterly dividends marked the 27th consecutive year of dividend increases for the Company. The dividend payout ratio for this year was 48.4% compared to 43.8% in 2018, and 43.5% in 2017. The dividend payout ratio increased during 2019 because dividends declared increased 10.7% while net income increased 0.3% from 2018. The payout ratio increased during 2018 because dividends declared increased 12.7% while net income increased 11.9% from 2017.

Liquidity

Liquidity risk is a measure of the Company's ability to raise cash when needed at a reasonable cost and minimize any loss. The Company maintains appropriate liquidity levels in both normal operating environments as well as stressed environments. The Company must be capable of meeting all obligations to its customers at any time and, therefore, the active management of its liquidity position remains an important management objective. The Bank has appointed the Asset Liability Committee ("ALCO") to manage liquidity risk using policy guidelines and limits on indicators of potential liquidity risk. The indicators are monitored using a scorecard with three risk level limits. These risk indicators measure core liquidity and funding needs, capital at risk and change in available funding sources. The risk indicators are monitored using such statistics as the core basic surplus ratio, unencumbered securities to average assets, free loan collateral to average assets, loans to deposits, deposits to total funding and borrowings to total funding ratios.

Given the uncertain nature of the Company's customers' demands, as well as the Company's desire to take advantage of earnings enhancement opportunities, the Company must have adequate sources of on and off-balance sheet funds available that can be utilized in time of need. Accordingly, in addition to the liquidity provided by balance sheet cash flows, liquidity must be supplemented with additional sources such as credit lines from correspondent banks and borrowings from the FHLB and the Federal Reserve Bank of New York ("Federal Reserve"). Other funding alternatives may also be appropriate from time to time, including wholesale and retail repurchase agreements, large certificates of deposit and the brokered CD market. The primary source of non-deposit funds is FHLB overnight advances, of which there were $8.3 million at December 31, 2019.

The Company's primary sources of liquidity are its liquid assets, as well as unencumbered loans and securities that can be used to collateralize additional funding. At December 31, 2019, the Bank had $205.0 million of cash and cash equivalents of which $43.2 million are interest-earning deposits held at the Federal Reserve, FHLB and other correspondent banks. The Company also had $1.8 billion in unused FHLB borrowing capacity based on the Company's quarter-end collateral levels. Additionally, the Company has $1.7 billion of unencumbered securities that could be pledged at the FHLB or Federal Reserve to obtain additional funding. There is $25.0 million available in unsecured lines of credit with other correspondent banks.

The Company's primary approach to measuring short-term liquidity is known as the Basic Surplus/Deficit model. It is used to calculate liquidity over two time periods: first, the amount of cash that could be made available within 30 days (calculated as liquid assets less short-term liabilities as a percentage of average assets); and second, a projection of subsequent cash availability over an additional 60 days. As of December 31, 2019, this ratio was 13.9% for 30-days and 13.9% for 90-days, excluding the Company's capacity to borrow additional funds from the Federal Home Loan Bank of New York ("FHLB") and other sources. This is considered to be a sufficient amount of liquidity based on the Company's internal policy requirement of 7.5%.

A sources and uses statement is used by the Company to measure intermediate liquidity risk over the next twelve months. As of December 31, 2019, there is more than enough liquidity available during the next year to cover projected cash outflows. In addition, stress tests on the cash flows are performed in various scenarios ranging from high probability events with a low impact on the liquidity position to low probability events with a high impact on the liquidity position. The results of the stress tests as of December 31, 2019 indicate the Company has sufficient sources of funds for the next year in all simulated stressed scenarios.

To measure longer-term liquidity, a baseline projection of loan and deposit growth for five years is made to reflect how liquidity levels could change over time. This five-year measure reflects ample liquidity for loan and other asset growth over the next five years.

Though remote, the possibility of a funding crisis exists at all financial institutions. Accordingly, management has addressed this issue by formulating a Liquidity Contingency Plan, which has been reviewed and approved by both the Company's Board of Directors (the "Board") and the Company's ALCO. The plan addresses the actions that the Company would take in response to both a short-term and long-term funding crisis.

A short-term funding crisis would most likely result from a shock to the financial system, either internal or external, which disrupts orderly short-term funding operations. Such a crisis would likely be temporary in nature and would not involve a change in credit ratings. A long-term funding crisis would most likely be the result of drastic credit deterioration at the Company. Management believes that both potential circumstances have been fully addressed through detailed action plans and the establishment of trigger points for monitoring such events.

Intangible Assets

The changes in intangible assets by reporting segment for the year ended December 31, 2019 are summarized as follows:

Table 7: Intangible Assets

(000's omitted)	Balance at December 31, 2018	Additions / Adjustments	Amortization	Impairment	Balance at December 31, 2019
Banking Segment					
Goodwill	$629,916	$40,307	$0	$0	$670,223
Core deposit intangibles	18,596	3,573	5,751	0	16,418
Total Banking Segment	648,512	43,880	5,751	0	686,641
Employee Benefit Services Segment					
Goodwill	83,275	0	0	0	83,275
Other intangibles	44,545	0	6,770	0	37,775
Total Employee Benefit Services Segment	127,820	0	6,770	0	121,050
All Other Segment					
Goodwill	20,312	0	0	0	20,312
Other intangibles	10,705	1,650	3,435	0	8,920
Total All Other Segment	31,017	1,650	3,435	0	29,232
Total	$807,349	$45,530	$15,956	$0	$836,923

Intangible assets at the end of 2019 totaled $836.9 million, an increase of $29.6 million from the prior year due to the addition of $40.3 million of goodwill, $3.6 million of core deposit intangibles and $1.7 million of other intangibles arising from acquisition activity, partially offset by $16.0 million of amortization during the year. The additional goodwill and core deposit intangibles recorded in 2019 resulted from the Kinderhook acquisition, and the other intangibles recorded resulted from the two financial services acquisitions completed by CISI in 2019. Goodwill represents the excess cost of an acquisition over the fair value of the net assets acquired. Goodwill at December 31, 2019 totaled $773.8 million, comprised of $670.2 million related to banking acquisitions and $103.6 million arising from the acquisition of financial services businesses. Goodwill is subject to periodic impairment analysis to determine whether the carrying value of the identified businesses exceeds their fair value, which would necessitate a write-down of goodwill. The Company completed its goodwill impairment analyses during the first quarters of 2019 and 2018 and no adjustments were necessary for the banking or financial services businesses. The impairment analyses were based upon discounted cash flow modeling techniques that require management to make estimates regarding the amount and timing of expected future cash flows. It also requires the selection of discount rates that reflect the current return characteristics of the market in relation to present risk-free interest rates, estimated equity market premiums and company-specific performance and risk indicators. Management believes that there is a low probability of future impairment with regard to the goodwill associated with its whole-bank, branch and financial services business acquisitions.

Core deposit intangibles represent the value of acquired non-time deposits in excess of funding that could have been obtained in the capital markets. Core deposit intangibles are amortized on either an accelerated or straight-line basis over periods ranging from seven to twenty years. The recognition of customer relationship intangibles was determined based on a methodology that calculates the present value of the projected future net income derived from the acquired customer base. These customer relationship intangibles are being amortized on an accelerated basis over periods ranging from eight to twelve years.

Loans

The Company's loans outstanding, by type, as of December 31 are as follows:

Table 8: Loans Outstanding

(000's omitted)	2019	2018	2017	2016	2015
Business lending	$2,775,876	$2,396,977	$2,424,223	$1,490,076	$1,497,271
Consumer mortgage	2,430,902	2,235,408	2,220,298	1,819,701	1,769,754
Consumer indirect	1,113,062	1,083,207	1,011,978	1,044,972	935,760
Consumer direct	184,378	178,820	179,929	191,815	195,076
Home equity	386,325	386,709	420,329	401,998	403,514
Gross loans	6,890,543	6,281,121	6,256,757	4,948,562	4,801,375
Allowance for loan losses	(49,911)	(49,284)	(47,583)	(47,233)	(45,401)
Loans, net of allowance for loan losses	$6,840,632	$6,231,837	$6,209,174	$4,901,329	$4,755,974
Daily average of total gross loans	$6,542,716	$6,263,843	$5,818,367	$4,881,905	$4,288,091

As disclosed in Table 8 above, gross loans outstanding of $6.89 billion as of December 31, 2019 increased $609.4 million, or 9.7%, compared to December 31, 2018, reflecting growth in the business lending, consumer mortgage, consumer indirect and consumer direct portfolios, partially offset by a slight decrease in the home equity portfolio. The growth in the loan portfolio was primarily attributable to the Kinderhook acquisition combined with organic growth. Excluding loans acquired from Kinderhook, loans increased $159.7 million, or 2.5%. Gross loans outstanding of $6.28 billion as of December 31, 2018 increased $24.4 million, or 0.4%, compared to December 31, 2017, reflecting growth in the consumer mortgage and consumer indirect portfolios, partially offset by decreases in the business lending, home equity and consumer direct portfolios.

The compounded annual growth rate ("CAGR") for the Company's total loan portfolio between 2014 and 2019 was 10.2%, with approximately 11% of the total growth for the period attributable to organic growth and 89% attributable to acquired balances. The greatest overall expansion occurred in business loans, which grew at a 17.1% CAGR driven mostly by acquisitions during the five year period. The consumer mortgage portfolio grew at a compounded annual growth rate of 8.5% from 2014 to 2019. The consumer installment segment, including indirect and direct loans, grew at a CAGR of 5.0%. The home equity lending segment grew at a compounded annual growth rate of 2.4% from 2014 to 2019, including the impact from acquisitions.

The weighting of the components of the Company's loan portfolio enables it to be highly diversified. Approximately 60% of loans outstanding at the end of 2019 were made to consumers borrowing on an installment, line of credit or residential mortgage loan basis. The business lending portfolio is also broadly diversified by industry type as demonstrated by the following distributions at year-end 2019: commercial real estate (41%), restaurant & lodging (10%), general services (8%), retail trade (8%), healthcare (6%), manufacturing (6%), construction (4%), agriculture (3%), wholesale trade (3%) and motor vehicle and parts dealers (3%). A variety of other industries with less than a 3% share of the total portfolio comprise the remaining 8%.

The combined total of general-purpose business lending to commercial, industrial, non-profit and municipal customers, mortgages on commercial property and dealer floor plan financing is characterized as the Company's business lending activity. The business lending portfolio increased $378.9 million, or 15.8%, in 2019 due to loans acquired in the Kinderhook transaction and organic growth. Excluding loans from the Kinderhook acquisition, the portfolio increased $67.7 million, or 2.8%. The portfolio decreased $27.2 million, or 1.1%, in 2018 as contractual and unscheduled principal reductions outpaced organic loan originations. Highly competitive conditions continue to prevail in the small and middle market commercial segments in which the Company primarily operates. The Company strives to generate growth in its business portfolio in a manner that adheres to its goals of maintaining strong asset quality and producing profitable margins. The Company continues to invest in additional personnel, technology, and business development resources to further strengthen its capabilities in this important product category.

The following table shows the maturities and type of interest rates for business and construction loans as of December 31, 2019:

Table 9: Maturity Distribution of Business and Construction Loans [(1)]

(000's omitted)	Maturing in One Year or Less	Maturing After One but Within Five Years	Maturing After Five Years	Total
Commercial, financial and agricultural	$277,442	$618,034	$1,739,646	$2,635,122
Real estate – construction	63,155	37,526	43,923	144,604
Total	$340,597	$655,560	$1,783,569	$2,779,726
Fixed interest rates	$84,106	$381,253	$734,660	$1,200,019
Floating or adjustable interest rates	256,491	274,307	1,048,909	1,579,707
Total	$340,597	$655,560	$1,783,569	$2,779,726

[(1)] Scheduled repayments are reported in the maturity category in which the payment is due.

The consumer mortgage loans include no exposure to high-risk mortgage products and are comprised of fixed (98%) and adjustable rate (2%) residential lending. Consumer mortgages increased $195.5 million, or 8.7%, in 2019, including $115.2 million of loans acquired with the Kinderhook acquisition. In 2018, consumer mortgages increased $15.1 million, or 0.7%. The Company's solid performance is a reflection of the attractiveness of its product offerings and its ability to successfully meet customer needs. Market interest rates, expected duration, and the Company's overall interest rate sensitivity profile continue to be the most significant factors in determining whether the Company chooses to retain versus sell and service portions of its new consumer mortgage generation. The Company is currently holding primarily all of its new consumer mortgage production due to current market conditions. Home equity loans decreased $0.4 million, or 0.1%, from the end of 2018, including $16.1 million of home equity loans acquired with the Kinderhook transaction. The Company continues to experience a low level of utilization of home equity loans.

Consumer installment loans, both those originated directly in the branches (referred to as "consumer direct") and indirectly in automobile, marine, and recreational vehicle dealerships (referred to as "consumer indirect"), increased $35.4 million, or 2.8%, from one year ago. Excluding the $7.3 million in consumer direct loans from the Kinderhook acquisition, the portfolio increased $28.1 million, or 2.2% in 2019. Although the consumer indirect loan market is highly competitive, the Company is focused on maintaining the solid profitability produced by its in-market and contiguous market indirect portfolio, while continuing to pursue its disciplined, long-term approach to expanding its dealer network.

Asset Quality

The following table presents information regarding nonperforming assets as of December 31:

Table 10: Nonperforming Assets

(000's omitted)	2019	2018	2017	2016	2015
Nonaccrual loans					
Business lending	$4,410	$8,370	$8,272	$5,063	$6,567
Consumer mortgage	12,517	12,262	13,788	13,684	12,790
Consumer indirect	0	0	0	0	0
Consumer direct	52	0	0	0	15
Home equity	1,856	1,912	2,680	1,872	2,356
Total nonaccrual loans	18,835	22,544	24,740	20,619	21,728
Accruing loans 90+ days delinquent					
Business lending	2,299	179	571	145	126
Consumer mortgage	2,329	1,625	1,526	1,385	1,805
Consumer indirect	156	292	303	169	102
Consumer direct	76	52	48	58	51
Home equity	566	307	264	1,319	111
Total accruing loans 90+ days delinquent	5,426	2,455	2,712	3,076	2,195
Nonperforming loans					
Business lending	6,709	8,549	8,843	5,208	6,693
Consumer mortgage	14,846	13,887	15,314	15,069	14,595
Consumer indirect	156	292	303	169	102
Consumer direct	128	52	48	58	66
Home equity	2,422	2,219	2,944	3,191	2,467
Total nonperforming loans	24,261	24,999	27,452	23,695	23,923
Other real estate (OREO)	1,270	1,320	1,915	1,966	2,088
Total nonperforming assets	$25,531	$26,319	$29,367	$25,661	$26,011
Nonperforming loans / total loans	0.35%	0.40%	0.44%	0.48%	0.50%
Legacy nonperforming loans / legacy total loans (1)	0.33%	0.36%	0.40%	0.42%	0.49%
Nonperforming assets / total loans and other real estate	0.37%	0.42%	0.47%	0.52%	0.54%
Delinquent loans (30 days old to nonaccruing) to total loans	0.94%	1.00%	1.10%	1.19%	1.16%
Loan loss provision to net charge-offs	108%	119%	103%	129%	101%
Legacy loan loss provision to net charge-offs (1)	109%	125%	96%	130%	86%

(1)Legacy loans exclude loans acquired after January 1, 2009.

The Company places a loan on nonaccrual status when the loan becomes 90 days past due, or sooner if management concludes collection of interest is doubtful, except when, in the opinion of management, it is well-collateralized and in the process of collection. As shown in Table 10 above, nonperforming loans, defined as nonaccruing loans and accruing loans 90 days or more past due, ended 2019 at $24.3 million. This represents a decrease of $0.7 million from the $25.0 million in nonperforming loans at the end of 2018. The ratio of nonperforming loans to total loans at December 31, 2019 decreased five basis points from the prior year to 0.35%. Excluding acquired loans, the ratio of nonperforming loans to total loans at the end of 2019 was down three basis points from the prior year to 0.33%. The ratio of nonperforming assets (which includes other real estate owned, or "OREO", in addition to nonperforming loans) to total loans plus OREO decreased to 0.37% at year-end 2019, down five basis points from one year earlier. The Company's success at keeping these ratios at favorable levels throughout varying economic conditions is the result of continued focus on maintaining strict underwriting standards, early problem recognition, and effective collection and recovery efforts. At December 31, 2019, OREO consisted of 16 residential properties with a total value of $1.0 million and two commercial real estate properties with a total value of $0.3 million. This compares to 18 residential properties with a total value of $1.3 million at December 31, 2018.

Approximately 61% of nonperforming loans at December 31, 2019 are related to the consumer mortgage portfolio. Collateral values of residential properties within the Company's market area have generally increased over the past several years. Additionally, economic conditions, including lower unemployment levels, have positively impacted consumers and resulted in more favorable nonperforming mortgage ratios in 2018 and 2019. Approximately 28% of the nonperforming loans at December 31, 2019 are related to the business lending portfolio, which is comprised of business loans broadly diversified by industry type. The level of nonperforming business loans decreased from the prior year due primarily to the payoff of one nonperforming commercial credit during the fourth quarter of 2019. The remaining 11% percent of nonperforming loans relate to consumer installment and home equity loans. The allowance for loan losses to nonperforming loans ratio, a general measure of coverage adequacy, was 206% at the end of 2019 compared to 197% at year-end 2018 and 173% at December 31, 2017. Excluding acquired loans, the ratio of allowance for legacy loans to nonperforming legacy loans was 262% at the end of 2019, compared to 256% at year-end 2018 and 244% at December 31, 2017.

The Company's senior management, special asset officers and lenders review all delinquent and nonaccrual loans and OREO regularly in order to identify deteriorating situations, monitor known problem credits and discuss any needed changes to collection efforts, if warranted. Based on the group's consensus, a relationship may be assigned a special assets officer or other senior lending officer to review the loan, meet with the borrowers, assess the collateral and recommend an action plan. This plan could include foreclosure, restructuring loans, issuing demand letters or other actions. The Company's larger criticized credits are also reviewed on a quarterly basis by senior credit administration management, special assets officers and commercial lending management to monitor their status and discuss relationship management plans. Commercial lending management reviews the criticized loan portfolio on a monthly basis.

Total delinquencies, defined as loans 30 days or more past due or in nonaccrual status, finished the current year at 0.94% of total loans outstanding, compared to 1.00% at the end of 2018. As of year-end 2019, delinquency ratios for business lending, consumer installment loans, consumer mortgages and home equity loans were 0.69%, 1.12%, 1.10%, and 1.21%, respectively. These ratios compare to the year-end 2018 delinquency rates for business lending, consumer installment loans, consumer mortgages and home equity loans of 0.62%, 1.34%, 1.22%, and 1.21%, respectively. Delinquency levels, particularly in the 30 to 89 days category, tend to be somewhat volatile due to their measurement at a point in time, and therefore management believes that it is useful to evaluate this ratio over a longer time period. The average quarter-end delinquency ratio for total loans in 2019 was 0.89%, as compared to an average of 0.96% in 2018, and 1.02% in 2017, reflective of management's continued focus on maintaining strict underwriting standards, as well as the effective utilization of its collection capabilities.

Loans are considered modified in a troubled debt restructuring ("TDR") when, due to a borrower's financial difficulties, the Company makes one or more concessions to the borrower that it would not otherwise consider. These modifications primarily include, among others, an extension of the term of the loan or granting a period with reduced or no principal and/or interest payments, which can be recaptured through payments made over the remaining term of the loan or at maturity. Historically, the Company has created very few TDRs. Regulatory guidance by the OCC requires certain loans that have been discharged in Chapter 7 bankruptcy to be reported as TDRs. In accordance with this guidance, loans that have been discharged in Chapter 7 bankruptcy but not reaffirmed by the borrower are classified as TDRs, irrespective of payment history or delinquency status, even if the repayment terms for the loan have not been otherwise modified and the Company's lien position against the underlying collateral remains unchanged. Pursuant to that guidance, the Company records a charge-off equal to any portion of the carrying value that exceeds the net realizable value of the collateral. As of December 31, 2019, the Company had 80 loans totaling $3.6 million considered to be nonaccruing TDRs and 168 loans totaling $3.4 million considered to be accruing TDRs. This compares to 62 loans totaling $2.4 million considered to be nonaccruing TDRs and 156 loans totaling $3.1 million considered to be accruing TDRs at December 31, 2018.

The changes in the allowance for loan losses for the last five years are as follows:

Table 11: Allowance for Loan Losses Activity

	Years Ended December 31,				
(000's omitted except for ratios)	2019	2018	2017	2016	2015
Allowance for loan losses at beginning of period	$49,284	$47,583	$47,233	$45,401	$45,341
Charge-offs:					
Business lending	2,334	3,947	5,229	1,969	2,249
Consumer mortgage	1,372	836	707	647	1,374
Consumer indirect	7,631	8,382	8,456	7,643	6,714
Consumer direct	1,945	1,777	2,081	1,706	1,490
Home equity	445	544	284	218	244
Total charge-offs	13,727	15,486	16,757	12,183	12,071
Recoveries:					
Business lending	826	485	656	616	877
Consumer mortgage	60	136	50	115	80
Consumer indirect	4,180	4,874	4,516	4,168	3,943
Consumer direct	710	807	849	901	722
Home equity	148	48	52	139	62
Total recoveries	5,924	6,350	6,123	5,939	5,684
Net charge-offs	7,803	9,136	10,634	6,244	6,387
Provision for loan losses	8,300	10,570	10,675	8,039	6,349
Provision for acquired impaired loans	130	267	309	37	98
Allowance for loan losses at end of period	$49,911	$49,284	$47,583	$47,233	$45,401
Allowance for loan losses / total loans	0.72%	0.78%	0.76%	0.95%	0.95%
Allowance for legacy loan losses / total legacy loans (1)	0.87%	0.93%	0.98%	1.02%	1.05%
Allowance for loan losses / nonperforming loans	206%	197%	173%	199%	190%
Allowance for legacy loans / nonperforming legacy loans (1)	262%	256%	244%	245%	212%
Net charge-offs to average loans outstanding:					
Business lending	0.06%	0.14%	0.22%	0.09%	0.11%
Consumer mortgage	0.06%	0.03%	0.03%	0.03%	0.08%
Consumer indirect	0.32%	0.33%	0.38%	0.35%	0.33%
Consumer direct	0.66%	0.52%	0.65%	0.40%	0.41%
Home equity	0.08%	0.12%	0.06%	0.02%	0.05%
Total loans	0.12%	0.15%	0.18%	0.13%	0.15%

(1)Legacy loans exclude loans acquired after January 1, 2009.

As displayed in Table 11 above, total net charge-offs in 2019 were $7.8 million, $1.3 million less than the prior year due to a decrease in net charge-offs in the business lending, consumer indirect and home equity portfolios, partially offset by an increase in net charge-offs in the consumer mortgage and consumer direct portfolios. Net charge-offs in 2018 were $1.5 million less than 2017 due to a decrease in net charge-offs in the business lending, consumer indirect and consumer direct portfolios, partially offset by an increase in net charge-offs in the home equity and consumer mortgage portfolios.

Due to the significant increases in average loan balances over time as a result of acquisitions and organic growth, management believes that net charge-offs as a percent of average loans ("net charge-off ratio") offers the most meaningful representation of charge-off trends. The total net charge-off ratio of 0.12% for 2019 was three basis points lower than the 0.15% ratio from 2018, and six basis points lower than the 0.18% ratio from 2017. Gross charge-offs as a percentage of average loans was 0.21% in 2019, as compared to 0.25% in 2018, and 0.29% in 2017, evidence of management's continued focus on maintaining strict underwriting standards. Recoveries were $5.9 million in 2019, representing 41% of average gross charge-offs for the latest two years, compared to 39% in 2018 and 42% in 2017.

Business loan net charge-offs decreased in 2019, totaling $1.5 million, or 0.06% of average business loans outstanding, compared to $3.5 million, or 0.14% of the average outstanding balance in 2018. Consumer installment loan net charge-offs increased to $4.7 million this year from $4.5 million in 2018, with a net charge-off ratio of 0.37% in 2019 and 0.36% in 2018. The dollar amount of consumer mortgage net charge-offs increased to $1.3 million in 2019 compared to $0.7 million in 2018, with a net charge-off ratio of 0.06% in 2019 compared to 0.03% in 2018. Home equity net charge-offs decreased $0.2 million in 2019 and the net charge-off ratio decreased four basis points to 0.08%.

Management continually evaluates the credit quality of the Company's loan portfolio and conducts a formal review of the adequacy of the allowance for loan losses on a quarterly basis. The two primary components of the loan review process that are used to determine proper allowance levels are specific and general loan loss allocations. Measurement of specific loan loss allocations is typically based on expected future cash flows, collateral values and other factors that may impact the borrower's ability to repay. Impaired loans with outstanding balances that are greater than $0.5 million are evaluated for specific loan loss allocations. Consumer mortgages, consumer installment and home equity loans are considered smaller balance homogeneous loans and are evaluated collectively. The Company considers a loan to be impaired when, based on current information and events, it is probable that the Company will be unable to collect all principal and interest according to the contractual terms of the loan agreement or the loan is delinquent 90 days or more.

The second component of the allowance establishment process, general loan loss allocations, is composed of two calculations that are computed on the five main loan segments: business lending, consumer mortgage, consumer indirect, consumer direct, and home equity. The first calculation determines an allowance level based on the latest 36 months of historical net charge-off data for each loan category (business loans exclude balances with specific loan loss allocations). The second calculation is qualitative and takes into consideration eight qualitative environmental factors: levels and trends in delinquencies and impaired loans; levels of and trends in charge-offs and recoveries; trends in volume and terms of loans; effects of any changes in risk selection and underwriting standards, and other changes in lending policies, procedure, and practices; experience, ability, and depth of lending management and other relevant staff; national and local economic trends and conditions; industry conditions; and effects of changes in credit concentrations. The allowance levels computed from the specific and general loan loss allocation methods are combined with unallocated allowances, if any, to derive the required allowance for loan losses to be reflected on the Consolidated Statement of Condition. This allowance methodology was replaced with a new approach beginning with the Company's adoption of ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326)* on January 1, 2020. This new accounting guidance replaces the incurred loss methodology under existing guidance with a current expected credit loss methodology, also known as CECL.

The loan loss provision is calculated by subtracting the previous period allowance for loan losses, net of the interim period net charge-offs, from the current required allowance level. This provision is then recorded in the income statement for that period. Members of senior management and the Audit and Compliance Committee of the Board of Directors ("Audit Committee") review the adequacy of the allowance for loan losses quarterly. Management is committed to continually improving the credit assessment and risk management capabilities of the Company and has dedicated the resources necessary to ensure advancement in this critical area of operations.

Acquired loans are recorded at their acquisition date fair values and, therefore, are excluded from the calculation of loan loss reserves as of the acquisition date. To the extent there is a decrease in the present value of cash flows from the acquired impaired loans after the date of acquisition, the Company records a provision for potential losses. During the years ended December 31, 2019 and 2018, an additional provision for loan losses related to acquired impaired loans of $0.1 million and $0.3 million was recorded, respectively.

For acquired loans that are not deemed impaired at acquisition, a fair value adjustment is recorded that includes both credit and interest rate considerations. Subsequent to the purchase date, the methods utilized to estimate the required allowance for loan losses for these loans is similar to originated loans, however, the Company records a provision for loan losses only when the required allowance exceeds any remaining purchased discounts. During 2019, the Company recorded a provision for loan losses on acquired non-impaired loans of $0.9 million. For 2018, the Company recorded a provision for loan losses on acquired non-impaired loans of $1.9 million, of which $1.1 million related to the partial charge-off of a single commercial relationship. During 2017, the Company recorded a provision for loan losses on acquired non-impaired loans of $4.5 million, with approximately $3.1 million related to the partial charge-off of a single commercial relationship in the fourth quarter.

The allowance for loan losses increased to $49.9 million at the end of 2019 from $49.3 million as of year-end 2018. The $0.6 million increase was primarily due to changes in asset quality metrics and the composition of the loan portfolio. The allowance for legacy loan losses increased $0.6 million, while the allowance for acquired loan losses was consistent with the prior year. The ratio of the allowance for loan losses to total loans of 0.72% for year-end 2019 decreased six basis points from the 0.78% ratio for 2018 and was down four basis points from the 0.76% ratio for 2017, due in part to acquired growth in the loan portfolio. The ratio of allowance for legacy loan losses to total legacy loans decreased six basis points to 0.87% for 2019 as compared 2018. Management believes the year-end 2019 allowance for loan losses to be adequate in light of the probable losses inherent in the Company's loan portfolio.

The loan loss provision for legacy loans of $7.4 million in 2019, was $1.3 million lower than the prior year, and reflects management's assessment of the probable losses in the loan portfolio, as discussed above. The loan loss provision as a percentage of average loans was 0.13% in 2019 as compared to 0.17% in 2018 and 0.19% in 2017. The loan loss provision was 108% of net charge-offs this year versus 119% in 2018 and 103% in 2017, reflective of the assessed risk in the overall portfolio.

The following table sets forth the allocation of the allowance for loan losses by loan category as of the end of the years indicated, as well as the proportional share each category is to total loans. This allocation is based on management's assessment, as of a given point in time, of the risk characteristics of each of the component parts of the total loan portfolio and is subject to changes when the risk factors of each component part change. The allocation is not indicative of either the specific amounts of the loan categories in which future charge-offs may be taken, nor should it be taken as an indicator of future loss trends. The allocation of the allowance to each category does not restrict the use of the allowance to absorb losses in any category.

Table 12: Allowance for Loan Losses by Loan Type

	2019		2018		2017		2016		2015	
(000's omitted except for ratios)	Allowance	Loan Mix	Allowance	Loan Mix	Allowance	Loan Mix	Allowance	Loan Mix	Allowance	Loan Mix
Business lending	$19,426	40.1%	$18,522	38.1%	$17,257	38.5%	$17,220	30.0%	$15,749	31.0%
Consumer mortgage	10,269	35.3%	10,124	35.6%	10,465	35.5%	10,094	36.8%	10,198	36.8%
Consumer indirect	13,712	16.1%	14,366	17.2%	13,468	16.2%	13,782	21.1%	12,422	19.5%
Consumer direct	3,255	2.7%	3,095	2.8%	3,039	2.9%	2,979	3.9%	2,997	4.1%
Home equity	2,129	5.6%	2,144	6.2%	2,107	6.7%	2,399	8.1%	2,666	8.4%
Acquired impaired loans	163	0.2%	33	0.1%	147	0.2%	108	0.1%	168	0.2%
Unallocated	957		1,000		1,100		651		1,201	
Total	$49,911	100.0%	$49,284	100.0%	$47,583	100.0%	$47,233	100.0%	$45,401	100.0%

As demonstrated in Table 12 above and discussed previously, business lending and consumer installment by their nature carry higher credit risk than residential real estate, and as a result these loans carry allowance for loan losses that cover a higher percentage of their total portfolio balances. The unallocated allowance is maintained for inherent losses in the portfolio that are not reflected in the historical loss ratios, model imprecision, and for acquired loan portfolios in the process of being fully integrated at year-end. The unallocated allowance of $1.0 million at year-end 2019 was consistent with December 31, 2018. The changes in year-over-year allowance allocations reflect management's continued refinement of its loss estimation techniques. However, given the inherent imprecision in the many estimates used in the determination of the allocated portion of the allowance, management remained conservative in establishing the overall allowance for loan losses. Management considers the allocated and unallocated portions of the allowance for loan losses to be prudent and reasonable. Furthermore, the Company's allowance for loan losses is general in nature and is available to absorb losses from any loan category.

Funding Sources

The Company utilizes a variety of funding sources to support the earning-asset base as well as to achieve targeted growth objectives. Overall funding is comprised of three primary sources that possess a variety of maturity, stability, and price characteristics; deposits of individuals, partnerships and corporations (nonpublic deposits), municipal deposits that are collateralized for amounts not covered by FDIC insurance (public funds), and external borrowings. The average daily amount of deposits and the average rate paid on each of the following deposit categories are summarized below for the years indicated:

Table 13: Average Deposits

	2019		2018		2017	
(000's omitted, except rates)	Average Balance	Average Rate Paid	Average Balance	Average Rate Paid	Average Balance	Average Rate Paid
Noninterest checking deposits	$2,401,413	0.00%	$2,302,806	0.00%	$2,048,414	0.00%
Interest checking deposits	2,048,142	0.18%	1,898,118	0.09%	1,782,668	0.06%
Savings deposits	1,507,728	0.06%	1,458,676	0.06%	1,385,386	0.06%
Money market deposits	1,933,437	0.30%	2,046,219	0.18%	2,069,228	0.14%
Time deposits	843,024	1.19%	750,814	0.58%	765,666	0.41%
Total deposits	$8,733,744	0.23%	$8,456,633	0.13%	$8,051,362	0.10%

As displayed in Table 13, average total deposits in 2019 increased $277.1 million, or 3.3%, from the prior year comprised of a $184.9 million, or 2.4%, increase in non-time ("core") deposits, and a $92.2 million, or 12.3%, increase in time deposits. Excluding the impact of the Kinderhook acquisition, average total deposits increased $17.1 million, or 0.2%, as compared to 2018. Average core deposit balances, excluding deposits acquired in the Kinderhook acquisition, decreased $1.0 million as compared to 2018, and time deposits, excluding the impact of Kinderhook acquired balances, increased $18.1 million, or 2.4%. The cost of deposits, including the impact of non-interest checking deposits, increased 10 basis points from 0.13% in 2018 to 0.23% in 2019.

Total average deposits for 2018 equaled $8.46 billion, up $405.3 million, or 5.0%, from 2017 comprised of a $420.1 million, or 5.8%, increase in core deposits, and a $14.8 million, or 1.9%, decrease in time deposits. Excluding the impact of the Merchants acquisition, average total deposits decreased $23.3 million, or 0.3%, as compared to 2017. Average core deposit balances, excluding deposits acquired in the Merchants acquisition, grew $27.8 million, or 0.4%, as compared to 2017, while time deposits, excluding the impact of Merchants acquired balances, declined $51.1 million, or 7.8%. The cost of deposits, including the impact of non-interest checking deposits, increased three basis points from 0.10% in 2017 to 0.13% in 2018.

Nonpublic, core deposits are frequently considered to be a bank's most attractive source of funding because they are generally stable, do not need to be collateralized, carry a relatively low rate, generate solid fee income, and provide a strong customer base for which a variety of loan, deposit and other financial service-related products can be cross-sold. The Company's funding composition continues to benefit from a high level of nonpublic deposits, which reached an all-time high in 2019 with an average balance of $7.74 billion, an increase of $313.0 million, or 4.2%, over the comparable 2018 period. Excluding the impact of the Kinderhook acquisition, average nonpublic deposits increased $73.1 million during 2019.

Full-year average public fund deposits decreased $35.9 million, or 3.5%, during 2019 to $995.0 million. Excluding the impact of the Kinderhook acquisition, average public fund deposits decreased $56.1 million, or 5.4%, during 2019. Public fund deposit balances tend to be more volatile than nonpublic deposits because they are heavily impacted by the seasonality of tax collection and fiscal spending patterns, as well as the longer-term financial position of the local government entities, which can change from year to year. However, the Company has many strong, long-standing relationships with municipal entities throughout its markets and the diversified core deposits held by these customers have provided an attractive and comparatively stable funding source over an extended time period. The Company is required to collateralize local government deposits in excess of FDIC coverage with marketable securities from its investment portfolio. Due to this stipulation, as well as the competitive bidding nature of municipal time deposits, management considers this funding source to share some of the attributes of borrowings.

The mix of average deposits is largely consistent with the prior year. Core deposits (noninterest checking, interest checking, savings and money markets) represent approximately 90% of the Company's deposit funding base, while non-core time deposits represent approximately 10% of total average deposits. The cost of interest-bearing deposits of 0.32% in 2019 was 15 basis points higher than the 0.17% cost of interest-bearing deposits in 2018. The total cost of deposit funding, which includes noninterest-bearing deposits, was 0.23% in 2019, a 10 basis point increase from the prior year.

The remaining maturities of time deposits in amounts of $250,000 or more outstanding as of December 31 are as follows:

Table 14: Maturity of Time Deposits $250,000 or More

(000's omitted)	2019	2018
Less than three months	$30,306	$9,621
Three months to six months	25,028	15,032
Six months to one year	18,559	16,307
Over one year	56,624	28,660
Total	$130,517	$69,620

Borrowing sources for the Company include the FHLB, Federal Reserve, and other correspondent banks, as well as access to the brokered CD and repurchase markets through established relationships with primary market security dealers. The Company also had $77.3 million in floating-rate subordinated debt that is held by unconsolidated subsidiary trusts and $13.8 million in fixed-rate subordinated notes acquired with the Kinderhook acquisition outstanding at the end of 2019.

As shown in Table 15, year-end 2019 borrowings totaled $344.9 million, a decrease of $68.8 million from the $413.7 million outstanding at the end of 2018 primarily due to the redemption of the trust preferred subordinated debt held by MBVT I, an unconsolidated subsidiary trust, during 2019, a decrease in securities sold under an agreement to repurchase ("customer repurchase agreements") and a decrease in FHLB overnight borrowings, partially offset by subordinated notes and other FHLB borrowings acquired in the Kinderhook transaction. Borrowings averaged $327.1 million, or 3.6% of total funding sources for 2019, as compared to $408.1 million, or 4.6% of total funding sources for 2018. As shown in Table 16, at the end of 2019 the Company had $264.1 million, or 60% of borrowings, that had remaining terms of one year or less as compared to 76% of borrowings maturing within one year at December 31, 2018.

As displayed in Table 3 on page 34, the percentage of funding from deposits in 2019 was slightly higher than the level in 2018 due in part to the redemption of subordinated debt, a decrease in average customer repurchase agreements and a decrease in overnight borrowings. The percentage of average funding derived from deposits was 96.4% in 2019 as compared to 95.4% in 2018 and 95.5% in 2017. During 2019, average deposits increased 3.3%, while average borrowings decreased 19.8%.

The following table summarizes the outstanding balance of borrowings of the Company as of December 31:

Table 15: Borrowings

(000's omitted, except rates)	2019	2018	2017
FHLB overnight advance	$8,300	$54,400	$24,000
Securities sold under agreement to repurchase, short term	241,708	259,367	337,011
Other Federal Home Loan Bank borrowings	3,750	1,976	2,071
Subordinated notes payable (1)	13,795	0	0
Subordinated debt held by unconsolidated subsidiary trusts	77,320	97,939	122,814
Balance at end of period	$344,873	$413,682	$485,896
Daily average during the year	$327,084	$408,054	$379,933
Maximum month-end balance	$351,863	$457,469	$576,791
Weighted-average rate during the year	1.86%	1.72%	1.51%
Weighted-average year-end rate	1.65%	1.84%	1.34%

(1)Subordinated notes payable for 2019 includes $13.0 million in principal and $0.8 million related to a purchase accounting fair value adjustment.

The following table shows the contractual maturities of various obligations as of December 31, 2019:

Table 16: Maturities of Contractual Obligations

(000's omitted)	Maturing Within One Year or Less	Maturing After One Year but Within Three Years	Maturing After Three Years but Within Five Years	Maturing After Five Years	Total
FHLB overnight advance	$8,300	$0	$0	$0	$8,300
Securities sold under agreement to repurchase, short term	241,708	0	0	0	241,708
Other Federal Home Loan Bank borrowings	1,000	675	1,194	881	3,750
Subordinated notes payable	0	0	0	13,000	13,000
Subordinated debt held by unconsolidated subsidiary trusts	0	0	0	77,320	77,320
Interest on borrowings	3,651	7,290	7,264	34,042	52,247
Operating leases	9,396	14,616	10,260	11,150	45,422
Total	$264,055	$22,581	$18,718	$136,393	$441,747

Financial Instruments with Off-Balance Sheet Risk

The Company is a party to financial instruments with off-balance-sheet risk in the normal course of business to meet the financing needs of its customers. These financial instruments consist primarily of commitments to extend credit and standby letters of credit. Commitments to extend credit are agreements to lend to customers, generally having fixed expiration dates or other termination clauses that may require payment of a fee. These commitments consist principally of unused commercial and consumer credit lines. Standby letters of credit generally are contingent upon the failure of the customer to perform according to the terms of an underlying contract with a third party. The credit risks associated with commitments to extend credit and standby letters of credit are essentially the same as that involved with extending loans to customers and are subject to normal credit policies. Collateral may be required based on management's assessment of the customer's creditworthiness. The fair value of these commitments is considered immaterial for disclosure purposes.

The contractual amounts of these off-balance sheet financial instruments as of December 31 were as follows:

Table 17: Off-Balance Sheet Financial Instruments

(000's omitted)	2019	2018
Commitments to extend credit	$1,143,780	$1,134,576
Standby letters of credit	37,872	33,169
Total	$1,181,652	$1,167,745

Investments

The objective of the Company's investment portfolio is to hold low-risk, high-quality earning assets that provide favorable returns and provide another effective tool to actively manage its earning asset/funding liability position in order to maximize future net interest income opportunities. This must be accomplished within the following constraints: (a) implementing certain interest rate risk management strategies which achieve a relatively stable level of net interest income; (b) providing both the regulatory and operational liquidity necessary to conduct day-to-day business activities; (c) considering investment risk-weights as determined by the regulatory risk-based capital guidelines; and (d) generating a favorable return without undue compromise of the other requirements.

The carrying value of the Company's investment portfolio ended 2019 at $3.09 billion, an increase of $106.7 million, or 3.6%, from the end of 2018. The book value (excluding unrealized gains and losses) of the portfolio increased $57.6 million from December 31, 2018. The unrealized gain on the portfolio was $33.8 million as of December 31, 2019. During 2019, the Company purchased $98.6 million of government agency mortgage-backed securities with an average yield of 2.93%, $111.3 million of obligations of state and political subdivisions with an average fully tax-equivalent yield of 3.31%, $542.2 million in U.S. Treasury securities with an average yield of 1.98% and $58.0 million in U.S. agency securities with an average yield of 2.40%. The Company also acquired $37.7 million of available-for-sale securities and $2.1 million of equity and other securities as part of the Kinderhook transaction. These additions were offset by $209.9 million of investment maturities, calls, and principal payments in 2019, and the sale of $590.2 million of available-for-sale Treasury securities with a remaining maturity of less than five years and a 2.09% yield to maturity. The sale of investment securities in the second quarter of 2019 resulted in a $4.9 million net realized gain. The effective duration of the securities portfolio was 4.3 years at the end of 2019, as compared to 2.7 years at year end 2018.

The carrying value of the Company's investment portfolio decreased $99.7 million during 2018 to end the year at $2.98 billion. The book value of available-for-sale investments decreased $60.5 million from December 31, 2017, and the unrealized loss on the portfolio was $15.3 million as of December 31, 2018. During 2018, the Company purchased $78.1 million of government agency mortgage-backed securities at an average yield of 3.64%. Offsetting these purchases were $140.8 million of maturities, calls and paydowns of available for sale securities and $5.9 million of maturities and redemptions of other securities.

The investment portfolio has limited credit risk due to the composition continuing to heavily favor U.S. Treasury debentures, U.S. Agency mortgage-backed pass-throughs, U.S. Agency CMOs and municipal bonds. The U.S. Treasury debentures, U.S. Agency mortgage-backed pass-throughs and U.S. Agency CMOs are all rated AAA (highest possible rating) by Moody's and AA+ by Standard and Poor's. The majority of the municipal bonds are rated A or higher. The portfolio does not include any private label mortgage-backed securities (MBS) or private label collateralized mortgage obligations. The overall mix of securities within the portfolio over the last year has changed modestly, with a decrease in the proportion of U.S. Treasury and agency securities and collateralized mortgage obligations, while the proportion of obligations of state and political subdivisions and government agency mortgage-backed securities increased.

The net pre-tax unrealized market value gain on the investment portfolio as of December 31, 2019 was $33.8 million, as compared to an unrealized loss of $15.3 million one year earlier. This increase is indicative of interest rate movements over the period and modest changes in the composition of the portfolio.

The following table sets forth the amortized cost and market value for the Company's investment securities portfolio:

Table 18: Investment Securities

	2019		2018		2017	
(000's omitted)	Amortized Cost/Book Value	Fair Value	Amortized Cost/Book Value	Fair Value	Amortized Cost/Book Value	Fair Value
Available-for-Sale Portfolio:						
U.S. Treasury and agency securities	$2,030,060	$2,043,759	$2,036,474	$2,023,753	$2,043,023	$2,054,071
Obligations of state and political subdivisions	497,852	512,208	453,640	459,154	514,949	528,956
Government agency mortgage-backed securities	428,491	432,862	390,234	382,477	358,180	357,538
Corporate debt securities	2,527	2,528	2,588	2,546	2,648	2,623
Government agency collateralized mortgage obligations	52,621	53,071	69,342	68,119	88,097	87,374
Marketable equity securities	0	0	0	0	251	526
Total available-for-sale portfolio	3,011,551	3,044,428	2,952,278	2,936,049	3,007,148	3,031,088
Equity and other Securities:						
Equity securities, at fair value	251	451	251	432	0	0
Federal Home Loan Bank common stock	7,246	7,246	8,768	8,768	9,896	9,896
Federal Reserve Bank common stock	30,922	30,922	30,690	30,690	30,690	30,690
Certificates of deposit	0	0	0	0	3,865	3,865
Other equity securities, at adjusted cost	4,546	5,296	4,969	5,719	5,840	5,840
Total equity and other securities	42,965	43,915	44,678	45,609	50,291	50,291
Total investments	$3,054,516	$3,088,343	$2,996,956	$2,981,658	$3,057,439	$3,081,379

The following table sets forth as of December 31, 2019, the maturities of investment debt securities and the weighted-average yields of such securities, which have been calculated on the cost basis, weighted for scheduled maturity of each security:

Table 19: Maturities of Investment Debt Securities

(000's omitted, except rates)	Maturing Within One Year or Less	Maturing After One Year But Within Five Years	Maturing After Five Years But Within Ten Years	Maturing After Ten Years	Total Amortized Cost/Book Value
Available-for-Sale Portfolio:					
U.S. Treasury and agency securities	$637,729	$780,808	$330,484	$281,039	$2,030,060
Obligations of state and political subdivisions	36,913	124,723	122,836	213,380	497,852
Government agency mortgage-backed securities [(2)]	27	11,651	26,569	390,244	428,491
Corporate debt securities	2,527	0	0	0	2,527
Government agency collateralized mortgage obligations [(2)]	0	73	3,056	49,492	52,621
Available-for-sale portfolio	$677,196	$917,255	$482,945	$934,155	$3,011,551
Weighted-average yield [(1)]	2.21%	2.46%	2.05%	2.73%	2.42%

[(1)] Weighted-average yields are an arithmetic computation of income (not fully tax-equivalent adjusted) divided by book balance; they may differ from the yield to maturity, which considers the time value of money.

[(2)] Mortgage-backed securities and collateralized mortgage obligations are listed based on the contractual maturity. Actual maturities will differ from contractual maturities because borrowers may have the right to call or prepay certain obligations with or without penalties.

Impact of Inflation and Changing Prices

The Company's financial statements have been prepared in terms of historical dollars, without considering changes in the relative purchasing power of money over time due to inflation. Unlike most industrial companies, virtually all of the assets and liabilities of a financial institution are monetary in nature. As a result, interest rates have a more significant impact on a financial institution's performance than the effect of general levels of inflation. Interest rates do not necessarily move in the same direction or in the same magnitude as the prices of goods and services. Notwithstanding this, inflation can directly affect the value of loan collateral, real estate in particular.

New Accounting Pronouncements

See "*New Accounting Pronouncements*" Section of Note A of the notes to the consolidated financial statements on page 74 for recently issued accounting pronouncements applicable to the Company that have not yet been adopted.

Forward-Looking Statements

This report, including management's discussion and analysis of financial condition and results of operations, contains comments or information that constitute forward-looking statements (within the meaning of the Private Securities Litigation Reform Act of 1995), which involve significant risks and uncertainties. Forward-looking statements often use words such as "anticipate," "could," "target," "expect," "estimate," "intend," "plan," "goal," "forecast, " "believe," or other words of similar meaning. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions which are difficult to predict; therefore, actual results may differ materially from the results discussed in the forward-looking statements. Moreover, the Company's plans, objectives and intentions are subject to change based on various factors (some of which are beyond the Company's control).

Factors that could cause actual results to differ from those discussed in the forward-looking statements include: (1) risks related to credit quality, interest rate sensitivity and liquidity; (2) the strength of the U.S. economy in general and the strength of the local economies where the Company conducts its business; (3) the effect of, and changes in, monetary and fiscal policies and laws, including interest rate policies of the Board of Governors of the Federal Reserve System; (4) inflation, interest rate, market and monetary fluctuations; (5) the timely development of new products and services and customer perception of the overall value thereof (including features, pricing and quality) compared to competing products and services; (6) changes in consumer spending, borrowing and savings habits; (7) technological changes and implementation and financial risks associated with transitioning to new technology-based systems involving large multi-year contracts; (8) the ability of the Company to maintain the security of its financial, accounting, technology, data processing and other operating systems and facilities; (9) effectiveness of the Company's risk management processes and procedures, reliance on models which may be inaccurate or misinterpreted, the Company's ability to manage its credit or interest rate risk, the sufficiency of its allowance for loan losses and the accuracy of the assumptions or estimates used in preparing the Company's financial statements and disclosures; (10) failure of third parties to provide various services that are important to the Company's operations; (11) any acquisitions or mergers that might be considered or consummated by the Company and the costs and factors associated therewith, including differences in the actual financial results of the acquisition or merger compared to expectations and the realization of anticipated cost savings and revenue enhancements; (12) the ability to maintain and increase market share and control expenses; (13) the nature, timing and effect of changes in banking regulations or other regulatory or legislative requirements affecting the respective businesses of the Company and its subsidiaries, including changes in laws and regulations concerning taxes, accounting, banking, risk management, securities and other aspects of the financial services industry, specifically the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010; (14) changes in the Company's organization, compensation and benefit plans and in the availability of, and compensation levels for, employees in its geographic markets; (15) the outcome of pending or future litigation and government proceedings; (16) other risk factors outlined in the Company's filings with the SEC from time to time; and (17) the success of the Company at managing the risks of the foregoing.

The foregoing list of important factors is not all-inclusive. Such forward-looking statements speak only as of the date on which they are made and the Company does not undertake any obligation to update any forward-looking statement, whether written or oral, to reflect events or circumstances after the date on which such statement is made. If the Company does update or correct one or more forward-looking statements, investors and others should not conclude that the Company will make additional updates or corrections with respect thereto or with respect to other forward-looking statements.

Reconciliation of GAAP to Non-GAAP Measures

Table 20: GAAP to Non-GAAP Reconciliations

(000's omitted)	2019	2018	2017	2016	2015
Income statement data					
Net income					
Net income (GAAP)	$169,063	$168,641	$150,717	$103,812	$91,230
Acquisition expenses	8,608	(769)	25,986	1,706	7,037
Tax effect of acquisition expenses	(1,656)	160	(7,677)	(560)	(2,182)
Tax Cuts and Jobs Act deferred impact	0	0	(38,010)	0	0
Subtotal (non-GAAP)	176,015	168,032	131,016	104,958	96,085
(Gain)/loss on sales of investment securities, net	(4,882)	0	(2)	0	4
Tax effect of (gain)/loss on sales of investment securities, net	939	0	1	0	(1)
Subtotal (non-GAAP)	172,072	168,032	131,015	104,958	96,088
Unrealized gain on equity securities	(19)	(657)	0	0	0
Tax effect of unrealized gain on equity securities	4	137	0	0	0
Subtotal (non-GAAP)	172,057	167,512	131,015	104,958	96,088
Loss on debt extinguishment	0	318	0	0	0
Tax effect of loss on debt extinguishment	0	(66)	0	0	0
Operating net income (non-GAAP)	172,057	167,764	131,015	104,958	96,088
Amortization of intangibles	15,956	18,155	16,941	5,479	3,663
Tax effect of amortization of intangibles	(3,070)	(3,780)	(5,005)	(1,800)	(1,135)
Subtotal (non-GAAP)	184,943	182,139	142,951	108,637	98,616
Acquired non-impaired loan accretion	(6,167)	(7,921)	(5,888)	(2,868)	(2,256)
Tax effect of acquired non-impaired loan accretion	1,186	1,649	1,739	942	700
Adjusted net income (non-GAAP)	$179,962	$175,867	$138,802	$106,711	$97,060
Return on average assets					
Adjusted net income (non-GAAP)	$179,962	$175,867	$138,802	$106,711	$97,060
Average total assets	11,043,173	10,665,209	10,089,215	8,660,067	7,814,564
Adjusted return on average assets (non-GAAP)	1.63%	1.65%	1.38%	1.23%	1.24%
Return on average equity					
Adjusted net income (non-GAAP)	$179,962	$175,867	$138,802	$106,711	$97,060
Average total equity	1,794,717	1,653,381	1,475,761	1,211,520	1,028,038
Adjusted return on average equity (non-GAAP)	10.03%	10.64%	9.41%	8.81%	9.44%

(000's omitted)	2019	2018	2017	2016	2015
Income statement data (continued)					
Earnings per common share					
Diluted earnings per share (GAAP)	$3.23	$3.24	$3.03	$2.32	$2.19
Acquisition expenses	0.16	(0.01)	0.52	0.04	0.17
Tax effect of acquisition expenses	(0.03)	0.00	(0.15)	(0.01)	(0.05)
Tax Cuts and Jobs Act deferred impact	0.00	0.00	(0.76)	0.00	0.00
Subtotal (non-GAAP)	3.36	3.23	2.64	2.35	2.31
(Gain)/loss on sales of investment securities, net	(0.09)	0.00	0.00	0.00	0.00
Tax effect of (gain)/loss on sales of investment securities, net	0.02	0.00	0.00	0.00	0.00
Subtotal (non-GAAP)	3.29	3.23	2.64	2.35	2.31
Unrealized gain on equity securities	0.00	(0.01)	0.00	0.00	0.00
Tax effect of unrealized gain on equity securities	0.00	0.00	0.00	0.00	0.00
Subtotal (non-GAAP)	3.29	3.22	2.64	2.35	2.31
Loss on debt extinguishment	0.00	0.01	0.00	0.00	0.00
Tax effect of loss on debt extinguishment	0.00	0.00	0.00	0.00	0.00
Operating earnings per share (non-GAAP)	3.29	3.23	2.64	2.35	2.31
Amortization of intangibles	0.31	0.35	0.34	0.12	0.09
Tax effect of amortization of intangibles	(0.06)	(0.07)	(0.10)	(0.04)	(0.03)
Subtotal (non-GAAP)	3.54	3.51	2.88	2.43	2.37
Acquired non-impaired loan accretion	(0.12)	(0.15)	(0.12)	(0.06)	(0.05)
Tax effect of acquired non-impaired loan accretion	0.02	0.03	0.04	0.02	0.01
Diluted adjusted net earnings per share (non-GAAP)	$3.44	$3.39	$2.80	$2.39	$2.33
Noninterest operating expenses					
Noninterest expenses (GAAP)	$372,026	$345,289	$347,149	$266,848	$233,055
Amortization of intangibles	(15,956)	(18,155)	(16,941)	(5,479)	(3,663)
Acquisition expenses	(8,608)	769	(25,986)	(1,706)	(7,037)
Total operating expenses (non-GAAP)	$347,462	$327,903	$304,222	$259,663	$222,355
Efficiency ratio					
Operating expenses (non-GAAP) - numerator	$347,462	$327,903	$304,222	$259,663	$222,355
Fully tax-equivalent net interest income	$363,184	$349,400	$325,090	$283,857	$260,824
Noninterest revenues	230,619	224,059	202,423	155,625	123,299
Acquired non-impaired loan accretion	(6,167)	(7,921)	(5,888)	(2,868)	(2,256)
Insurance-related recovery	0	0	0	(950)	0
(Gain)/loss on sales of investment securities, net	(4,882)	0	(2)	0	4
Unrealized gain on equity securities	(19)	(657)	0	0	0
Loss on debt extinguishment	0	318	0	0	0
Operating revenues (non-GAAP) - denominator	$582,735	$565,199	$521,623	$435,664	$381,871
Efficiency ratio (non-GAAP)	59.6%	58.0%	58.3%	59.6%	58.2%

(000's omitted)	2019	2018	2017	2016	2015
Balance sheet data					
Total assets					
Total assets (GAAP)	$11,410,295	$10,607,295	$10,746,198	$8,666,437	$8,552,669
Intangible assets	(836,923)	(807,349)	(825,088)	(480,844)	(484,146)
Deferred taxes on intangible assets	44,742	46,370	48,419	43,504	39,724
Total tangible assets (non-GAAP)	$10,618,114	$9,846,316	$9,969,529	$8,229,097	$8,108,247
Total common equity					
Shareholders' Equity (GAAP)	$1,855,234	$1,713,783	$1,635,315	$1,198,100	$1,140,647
Intangible assets	(836,923)	(807,349)	(825,088)	(480,844)	(484,146)
Deferred taxes on intangible assets	44,742	46,370	48,419	43,504	39,724
Total tangible common equity (non-GAAP)	$1,063,053	$952,804	$858,646	$760,760	$696,225
Net tangible equity-to-assets ratio					
Total tangible common equity (non-GAAP) - numerator	$1,063,053	$952,804	$858,646	$760,760	$696,225
Total tangible assets (non-GAAP) - denominator	$10,618,114	$9,846,316	$9,969,529	$8,229,097	$8,108,247
Net tangible equity-to-assets ratio (non-GAAP)	10.01%	9.68%	8.61%	9.24%	8.59%

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Market risk is the risk of loss in a financial instrument arising from adverse changes in market rates, prices or credit risk. Credit risk associated with the Company’s loan portfolio has been previously discussed in the asset quality section of the MD&A. Management believes that the tax risk of the Company’s municipal investments associated with potential future changes in statutory, judicial and regulatory actions is minimal. Treasury, agency, mortgage-backed and CMO securities issued by government agencies comprise 82% of the total portfolio and are currently rated AAA by Moody’s Investor Services and AA+ by Standard & Poor’s. Municipal and corporate bonds account for 17% of the total portfolio, of which, 98% carry a minimum rating of A-. The remaining 1% of the portfolio is comprised of other investment grade securities. The Company does not have material foreign currency exchange rate risk exposure. Therefore, almost all the market risk in the investment portfolio is related to interest rates.

The ongoing monitoring and management of both interest rate risk and liquidity, in the short and long term time horizons is an important component of the Company's asset/liability management process, which is governed by limits established in the policies reviewed and approved annually by the Company’s Board. The Board delegates responsibility for carrying out the policies to the ALCO, which meets each month. The committee is made up of the Company's senior management as well as regional and line-of-business managers who oversee specific earning asset classes and various funding sources. As the Company does not believe it is possible to reliably predict future interest rate movements, it has maintained an appropriate process and set of measurement tools, which enables it to identify and quantify sources of interest rate risk in varying rate environments. The primary tool used by the Company in managing interest rate risk is income simulation.

While a wide variety of strategic balance sheet and treasury yield curve scenarios are tested on an ongoing basis, the following reflects the Company's estimated net interest income sensitivity over the subsequent twelve months based on:

- Asset and liability levels using December 31, 2019 as a starting point.
- There are assumed to be conservative levels of balance sheet growth, low-to-mid single digit growth in loans and deposits, while using the cash flows from investment contractual maturities and prepayments to repay short-term capital market borrowings or reinvest into securities or cash equivalents.
- The prime rate and federal funds rates are assumed to move over a 12-month period while moving the long end of the treasury curve to spreads over the three month treasury that are more consistent with historical norms based on the last three years (normalized yield curve). Deposit rates are assumed to move in a manner that reflects the historical relationship between deposit rate movement and changes in the federal funds rate.
- Cash flows are based on contractual maturity, optionality, and amortization schedules along with applicable prepayments derived from internal historical data and external sources.

Net Interest Income Sensitivity Model

Change in interest rates	Calculated annualized increase (decrease) in projected net interest income at December 31, 2019 (000's omitted)
+200 basis points	$4,811
+100 basis points	$3,257
-100 basis points	($4,232)
-150 basis points	($8,009)

The short term modeled net interest income (NII) increases in the rising rate environments largely due to assumed higher rates on new loans, including variable and adjustable rate loans. These increases are partially offset by anticipated higher deposit costs. Over the longer time period, the growth in NII continues to improve in both rising rate environments as lower yielding assets mature and are replaced at higher rates.

In the falling rate environments, the Bank shows interest rate risk exposure to lower short term rates. During the first twelve months, net interest income declines largely due to lower assumed rates on new loans, including adjustable and variable rate assets. Modestly lower funding costs associated with deposits and borrowings only partially offset the decrease in interest income.

The analysis does not represent a Company forecast and should not be relied upon as being indicative of expected operating results. These hypothetical estimates are based upon numerous assumptions: the nature and timing of interest rate levels (including yield curve shape), prepayments on loans and securities, deposit decay rates, pricing decisions on loans and deposits, reinvestment/replacement of asset and liability cash flows, and other factors. While the assumptions are developed based upon reasonable economic and local market conditions, the Company cannot make any assurances as to the predictive nature of these assumptions, including how customer preferences or competitor influences might change. Furthermore, the sensitivity analysis does not reflect actions that the ALCO might take in responding to or anticipating changes in interest rates.

Item 8. Financial Statements and Supplementary Data

The following consolidated financial statements and independent registered public accounting firm's report of Community Bank System, Inc. are contained on pages 60 through 111 of this item.

- Consolidated Statements of Condition,
  December 31, 2019 and 2018
- Consolidated Statements of Income,
  Years ended December 31, 2019, 2018, and 2017
- Consolidated Statements of Comprehensive Income,
  Years ended December 31, 2019, 2018, and 2017
- Consolidated Statements of Changes in Shareholders' Equity,
  Years ended December 31, 2019, 2018, and 2017
- Consolidated Statements of Cash Flows,
  Years ended December 31, 2019, 2018, and 2017
- Notes to Consolidated Financial Statements,
  December 31, 2019
- Management's Report on Internal Control Over Financial Reporting
- Report of Independent Registered Public Accounting Firm

Selected Quarterly Data (Unaudited) for 2019 and 2018 are contained on page 115.

COMMUNITY BANK SYSTEM, INC.
CONSOLIDATED STATEMENTS OF CONDITION
(In Thousands, Except Share Data)

	December 31,	
	2019	2018
Assets:		
Cash and cash equivalents	$205,030	$211,834
Available-for-sale investment securities (cost of $3,011,551 and $2,952,278, respectively)	3,044,428	2,936,049
Equity and other securities (cost of $42,965 and $44,678, respectively)	43,915	45,609
Loans held for sale, at fair value	0	83
Loans	6,890,543	6,281,121
Allowance for loan losses	(49,911)	(49,284)
Net loans	6,840,632	6,231,837
Goodwill, net	773,810	733,503
Core deposit intangibles, net	16,418	18,596
Other intangibles, net	46,695	55,250
Intangible assets, net	836,923	807,349
Premises and equipment, net	164,638	119,988
Accrued interest and fees receivable	31,647	31,048
Other assets	243,082	223,498
Total assets	$11,410,295	$10,607,295
Liabilities:		
Noninterest-bearing deposits	$2,465,902	$2,312,816
Interest-bearing deposits	6,529,065	6,009,555
Total deposits	8,994,967	8,322,371
Overnight Federal Home Loan Bank borrowings	8,300	54,400
Securities sold under agreement to repurchase, short-term	241,708	259,367
Other Federal Home Loan Bank borrowings	3,750	1,976
Subordinated notes payable	13,795	0
Subordinated debt held by unconsolidated subsidiary trusts	77,320	97,939
Accrued interest and other liabilities	215,221	157,459
Total liabilities	9,555,061	8,893,512
Commitments and contingencies (See Note N)		
Shareholders' equity:		
Preferred stock, $1.00 par value, 500,000 shares authorized, 0 shares issued	0	0
Common stock, $1.00 par value, 75,000,000 shares authorized; 51,974,726 and 51,576,839 shares issued, respectively	51,975	51,577
Additional paid-in capital	927,337	911,748
Retained earnings	882,851	795,563
Accumulated other comprehensive (loss)	(10,226)	(45,305)
Treasury stock, at cost (180,803 shares including 179,548 shares held by deferred compensation arrangements at December 31, 2019, and 319,015 shares including 207,403 shares held by deferred compensation arrangements at December 31, 2018)	(6,823)	(11,528)
Deferred compensation arrangements (179,548 shares at December 31, 2019 and 207,403 shares at December 31, 2018)	10,120	11,728
Total shareholders' equity	1,855,234	1,713,783
Total liabilities and shareholders' equity	$11,410,295	$10,607,295

The accompanying notes are an integral part of the consolidated financial statements.

COMMUNITY BANK SYSTEM, INC.
CONSOLIDATED STATEMENTS OF INCOME
(In Thousands, Except Per-Share Data)

	Years Ended December 31,		
	2019	2018	2017
Interest income:			
Interest and fees on loans	$308,210	$286,165	$253,949
Interest and dividends on taxable investments	65,904	63,504	60,159
Interest and dividends on nontaxable investments	11,613	13,064	15,347
Total interest income	385,727	362,733	329,455
Interest expense:			
Interest on deposits	20,460	10,658	8,031
Interest on borrowings	1,848	2,343	1,845
Interest on subordinated notes payable	346	0	0
Interest on subordinated debt held by unconsolidated subsidiary trusts	3,898	4,677	3,904
Total interest expense	26,552	17,678	13,780
Net interest income	359,175	345,055	315,675
Provision for loan losses	8,430	10,837	10,984
Net interest income after provision for loan losses	350,745	334,218	304,691
Noninterest revenues:			
Deposit service fees	65,602	70,384	67,896
Other banking services	4,881	4,968	5,466
Employee benefit services	97,167	92,279	80,830
Insurance services	32,199	30,317	26,150
Wealth management services	25,869	25,772	22,079
Unrealized gain on equity securities	19	657	0
Loss on debt extinguishment	0	(318)	0
Gain on sales of investment securities, net	4,882	0	2
Total noninterest revenues	230,619	224,059	202,423
Noninterest expenses:			
Salaries and employee benefits	219,916	207,363	186,903
Occupancy and equipment	39,850	39,948	35,561
Data processing and communications	41,407	39,094	37,579
Amortization of intangible assets	15,956	18,155	16,941
Legal and professional fees	10,783	10,644	11,576
Business development and marketing	11,416	9,383	9,994
Acquisition expenses	8,608	(769)	25,986
Other expenses	24,090	21,471	22,609
Total noninterest expenses	372,026	345,289	347,149
Income before income taxes	209,338	212,988	159,965
Income taxes	40,275	44,347	9,248
Net income	$169,063	$168,641	$150,717
Basic earnings per share	$3.26	$3.28	$3.07
Diluted earnings per share	$3.23	$3.24	$3.03

The accompanying notes are an integral part of the consolidated financial statements.

COMMUNITY BANK SYSTEM, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands)

	Years Ended December 31,		
	2019	2018	2017
Pension and other post retirement obligations:			
Amortization of actuarial losses included in net periodic pension cost, gross	($2,563)	($12,647)	($707)
Tax effect	605	3,087	263
Amortization of actuarial losses included in net periodic pension cost, net	(1,958)	(9,560)	(444)
Amortization of prior service cost included in net periodic pension cost, gross	(115)	(1,398)	(859)
Tax effect	28	340	324
Amortization of prior service cost included in net periodic pension cost, net	(87)	(1,058)	(535)
Initial projected benefit obligation recognized upon plan adoption, gross	0	(775)	0
Tax effect	0	189	0
Initial projected benefit obligation recognized upon plan adoption, net	0	(586)	0
Unamortized actuarial gain due to plan merger, gross	0	0	1,858
Tax effect	0	0	(711)
Unamortized actuarial gain due to plan merger, net	0	0	1,147
Other comprehensive (loss)/income related to pension and other post retirement obligations, net of taxes	(2,045)	(11,204)	168
Unrealized gains/(losses) on available-for-sale securities:			
Net unrealized holding gains (losses) arising during period, gross	53,988	(39,894)	(17,851)
Tax effect	(13,176)	9,700	6,787
Net unrealized holding gains (losses) arising during period, net	40,812	(30,194)	(11,064)
Reclassification of other comprehensive income due to change in accounting principle – equity securities	0	(208)	0
Reclassification adjustment for net (gains) included in net income, gross	(4,882)	0	(2)
Tax effect	1,194	0	1
Reclassification adjustment for net (gains) included in net income, net	(3,688)	0	(1)
Other comprehensive gain (loss) related to unrealized gains/(losses) on available-for-sale securities, net of taxes	37,124	(30,402)	(11,065)
Other comprehensive income (loss), net of tax	35,079	(41,606)	(10,897)
Net income	169,063	168,641	150,717
Comprehensive income	$204,142	$127,035	$139,820

	As of December 31,		
	2019	2018	2017
Accumulated Other Comprehensive Income/(Loss) By Component:			
Unrealized (loss) for pension and other postretirement obligations	($46,175)	($43,497)	($28,677)
Tax effect	11,293	10,660	7,044
Net unrealized (loss) for pension and other postretirement obligations	(34,882)	(32,837)	(21,633)
Unrealized gain (loss) on available-for-sale securities	32,877	(16,229)	23,940
Tax effect	(8,221)	3,761	(6,006)
Net unrealized gain (loss) on available-for-sale securities	24,656	(12,468)	17,934
Accumulated other comprehensive (loss)	($10,226)	($45,305)	($3,699)

The accompanying notes are an integral part of the consolidated financial statements.

COMMUNITY BANK SYSTEM, INC.
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
Years ended December 31, 2017, 2018 and 2019
(In Thousands, Except Share Data)

	Common Stock				Accumulated Other Comprehensive Income/(Loss)		Deferred Compensation Arrangements	
	Shares Outstanding	Amount Issued	Additional Paid-in Capital	Retained Earnings		Treasury Stock		Total
Balance at December 31, 2016	44,437,415	$44,950	$545,775	$614,692	$7,843	$(15,160)	$0	$1,198,100
Net income				150,717				150,717
Other comprehensive loss, net of tax					(10,897)			(10,897)
Reclassification related to tax effect of Tax Cuts and Jobs Act				645	(645)			0
Dividends declared: Common, $1.32 per share				(65,497)				(65,497)
Common stock issued under employee stock plans	264,640	265	4,298					4,563
Stock-based compensation			5,137					5,137
Stock issued for acquisitions	6,048,849	6,049	337,083					343,132
Deferred compensation arrangements acquired	(179,003)					(10,022)	10,022	0
Treasury stock purchased	(58,491)					(3,306)	3,306	0
Treasury stock issued to benefit plan	182,667		2,586			7,474		10,060
Balance at December 31, 2017	50,696,077	51,264	894,879	700,557	(3,699)	(21,014)	13,328	1,635,315
Net income				168,641				168,641
Other comprehensive loss, net of tax					(41,398)			(41,398)
Cumulative effect of change in accounting principle – equity securities				208	(208)			0
Dividends declared: Common, $1.44 per share				(73,843)				(73,843)
Common stock issued under employee stock plans	312,998	313	6,130					6,443
Stock-based compensation			6,064					6,064
Distribution of stock under deferred compensation arrangements	35,233					1,898	(1,898)	0
Treasury stock purchased	(5,142)					(298)	298	0
Treasury stock issued to benefit plan	218,658		4,675			7,886		12,561
Balance at December 31, 2018	51,257,824	51,577	911,748	795,563	(45,305)	(11,528)	11,728	1,713,783
Net income				169,063				169,063
Other comprehensive income, net of tax					35,079			35,079
Dividends declared: Common, $1.58 per share				(81,775)				(81,775)
Common stock issued under employee stock plans	397,887	398	6,517					6,915
Stock-based compensation			5,285					5,285
Distribution of stock under deferred compensation arrangements	32,431		1,064			830	(1,894)	0
Treasury stock purchased	(4,576)					(286)	286	0
Treasury stock issued to benefit plan	110,357		2,723			4,161		6,884
Balance at December 31, 2019	51,793,923	$51,975	$927,337	$882,851	($10,226)	($6,823)	$10,120	$1,855,234

The accompanying notes are an integral part of the consolidated financial statements.

COMMUNITY BANK SYSTEM, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands of Dollars)

	Years Ended December 31,		
	2019	2018	2017
Operating activities:			
Net income	$169,063	$168,641	$150,717
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	15,891	15,749	16,024
Amortization of intangible assets	15,956	18,155	16,941
Net accretion on securities, loans and borrowings	(6,176)	(9,404)	(6,619)
Stock-based compensation	5,285	6,064	5,137
Provision for loan losses	8,430	10,837	10,984
(Benefit)/provision for deferred income taxes	(2,302)	2,663	(28,692)
Amortization of mortgage servicing rights	378	449	499
Unrealized gain on equity securities	(19)	(657)	0
Loss on debt extinguishment	0	318	0
Income from bank-owned life insurance policies	(1,678)	(1,579)	(1,586)
Gain on sales of investment securities, net	(4,882)	0	(2)
Net loss/(gain) on sale of loans and other assets	11	(80)	181
Change in other assets and liabilities	2,545	10,252	26,090
Net cash provided by operating activities	202,502	221,408	189,674
Investing activities:			
Proceeds from sales of available-for-sale investment securities	590,179	0	0
Proceeds from maturities, calls and paydowns of available-for-sale investment securities	209,857	140,784	157,278
Proceeds from maturities and redemptions of other investment securities	3,995	5,867	30,116
Purchases of available-for-sale investment securities	(810,122)	(78,131)	(90,380)
Purchases of equity and other securities	(202)	(31)	(13,302)
Net (increase) decrease in loans	(140,382)	(35,414)	164,846
Cash paid for acquisition, net of cash acquired of $90,381, $16, and $52,132, respectively	(4,653)	(1,737)	(107,414)
Settlement of bank owned life insurance policies	1,597	0	1,779
Purchases of premises and equipment, net	(5,686)	(12,646)	(10,819)
Real estate limited partnership investments	(1,637)	(1,197)	(733)
Net cash (used in)/provided by investing activities	(157,054)	17,495	131,371
Financing activities:			
Net increase (decrease) in deposits	104,435	(122,049)	(79,940)
Net decrease in borrowings, net of payments of $646, $95, and $81,544	(64,405)	(47,339)	(144,809)
Payments on subordinated debt held by unconsolidated subsidiary trusts	(22,681)	(25,207)	0
Issuance of common stock	6,915	6,443	4,563
Purchase of treasury stock	(286)	(298)	(3,306)
Sale of treasury stock	6,884	12,561	10,060
Increase in deferred compensation agreements	286	298	3,306
Cash dividends paid	(80,241)	(71,495)	(62,305)
Withholding taxes paid on share-based compensation	(3,159)	(1,021)	(1,433)
Net cash used in financing activities	(52,252)	(248,107)	(273,864)
Change in cash and cash equivalents	(6,804)	(9,204)	47,181
Cash and cash equivalents at beginning of year	211,834	221,038	173,857
Cash and cash equivalents at end of year	$205,030	$211,834	$221,038
Supplemental disclosures of cash flow information:			
Cash paid for interest	$25,425	$17,926	$13,705
Cash paid for income taxes	46,457	30,266	41,231
Supplemental disclosures of noncash financing and investing activities:			
Dividends declared and unpaid	21,342	19,808	17,460
Transfers from loans to other real estate	2,522	3,299	3,518
Acquisitions:			
Common stock issued	0	0	343,132
Fair value of assets acquired, excluding acquired cash and intangibles	548,856	115	1,961,246
Fair value of liabilities assumed	589,733	31	1,870,449

The accompanying notes are an integral part of the consolidated financial statements.

NOTE A: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations
Community Bank System, Inc. (the "Company") is a registered financial holding company which wholly-owns two significant consolidated subsidiaries: Community Bank, N.A. (the "Bank" or "CBNA"), and Benefit Plans Administrative Services, Inc. ("BPAS"). As of December 31, 2019, BPAS owns five subsidiaries: Benefit Plans Administrative Services, LLC ("BPA"), a provider of defined benefit contribution plan administration services; Northeast Retirement Services, LLC ("NRS"), a provider of institutional transfer agency, master recordkeeping services, fund administration, trust and retirement plan services; BPAS Actuarial & Pension Services, LLC ("BPAS-APS"), a provider of actuarial and benefit consulting services; BPAS Trust Company of Puerto Rico, a Puerto Rican trust company; and Hand Benefits & Trust Company ("HB&T"), a provider of collective investment fund administration and institutional trust services. NRS owns one subsidiary, Global Trust Company, Inc. ("GTC"), a non-depository trust company which provides fiduciary services for collective investment trusts and other products. HB&T owns one subsidiary, Hand Securities Inc. ("HSI"), an introducing broker-dealer. The Company also wholly-owns one unconsolidated subsidiary business trust formed for the purpose of issuing mandatorily-redeemable preferred securities which are considered Tier I capital under regulatory capital adequacy guidelines (see Note P).

As of December 31, 2019, the Bank operated 231 full service branches operating as Community Bank, N.A. throughout 40 counties of Upstate New York, six counties of Northeastern Pennsylvania, 12 counties of Vermont and one county of Western Massachusetts, offering a range of commercial and retail banking services. The Bank owns the following operating subsidiaries: The Carta Group, Inc. ("Carta Group"), CBNA Preferred Funding Corporation ("PFC"), CBNA Treasury Management Corporation ("TMC"), Community Investment Services, Inc. ("CISI"), NOTCH Investment Fund, LLC ("NOTCH"), Nottingham Advisors, Inc. ("Nottingham"), OneGroup NY, Inc. ("OneGroup"), and Oneida Preferred Funding II LLC ("OPFC II"). OneGroup is a full-service insurance agency offering personal and commercial lines of insurance and other risk management products and services. NOTCH, PFC and OPFC II primarily act as investors in residential and commercial real estate activities. TMC provides cash management, investment, and treasury services to the Bank. CISI and Carta Group provide broker-dealer and investment advisory services. Nottingham provides asset management services to individuals, corporations, corporate pension and profit sharing plans, and foundations.

Principles of Consolidation
The consolidated financial statements include the accounts of the Company and its subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Variable Interest Entities ("VIE") are legal entities in which equity investors do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the legal entities to finance its activities without additional subordinated financial support. VIEs may be required to be consolidated by a company if it is determined the company is the primary beneficiary of a VIE. The primary beneficiary of a VIE is the enterprise that has: (1) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance, and (2) the obligation to absorb losses of the VIE that could potentially be significant to the VIE or the right to receive benefits of the VIE that could potentially be significant to the VIE. The Company's VIE's are described in more detail in Note T to the consolidated financial statements.

Critical Accounting Estimates in the Preparation of Financial Statements
The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Critical accounting estimates include the allowance for loan losses, actuarial assumptions associated with the pension, post-retirement and other employee benefit plans, the provision for income taxes, investment valuation and other-than-temporary impairment, the carrying value of goodwill and other intangible assets, and acquired loan valuations.

Risk and Uncertainties
In the normal course of its business, the Company encounters economic and regulatory risks. There are three main components of economic risk: interest rate risk, credit risk and market risk. The Company is subject to interest rate risk to the degree that its interest-bearing liabilities mature or reprice at different speeds, or on different basis, from its interest-earning assets. The Company's primary credit risk is the risk of default on the Company's loan portfolio that results from the borrowers' inability or unwillingness to make contractually required payments. Market risk reflects potential changes in the value of collateral underlying loans, the fair value of investment securities, and loans held for sale.

The Company is subject to regulations of various governmental agencies. These regulations can change significantly from period to period. The Company also undergoes periodic examinations by the regulatory agencies which may subject it to further changes with respect to asset valuations, amounts of required loan loss allowances, and operating restrictions resulting from the regulators' judgments based on information available to them at the time of their examinations.

Revenue Recognition
On January 1, 2018, the Company adopted ASU No. 2014-09 *Revenue from Contracts with Customers (Topic 606)* and all subsequent ASUs that modified Topic 606. The implementation of the new standard did not have a material impact on the measurement or recognition of revenue; as such, a cumulative effect adjustment to opening retained earnings was not deemed necessary. Results for reporting periods beginning after January 1, 2018 are presented under Topic 606, while prior period amounts were not adjusted and continue to be reported in accordance with our historic accounting under Topic 605.

Topic 606 does not apply to revenue associated with financial instruments, including revenue from loans and securities. In addition, certain noninterest income streams such as fees associated with mortgage servicing rights, financial guarantees, derivatives, and certain credit card fees are also not in scope of the newly adopted guidance. Topic 606 is applicable to the Company's noninterest revenue streams including its deposit related fees, electronic payment interchange fees, merchant income, trust, asset management and other wealth management revenues, insurance commissions and benefit plan services income. However, the recognition of these revenue streams did not change significantly upon adoption of Topic 606. Noninterest revenue streams in-scope of Topic 606 are discussed below.

Deposit Service Fees
Deposit service fees consist of account activity fees, monthly service fees, check orders, debit and credit card income, ATM fees, Merchant services income and other revenues from processing wire transfers, bill pay service, cashier's checks and foreign exchange. Debit and credit card income is primarily comprised of interchange fees earned at the time the Company's debit and credit cards are processed through card payment networks such as Visa. ATM fees are primarily generated when a Company cardholder uses a non-Company ATM or a non-Company cardholder uses a Company ATM. Merchant services income mainly represents fees charged to merchants to process their debit and credit card transactions, in addition to account management fees. The Company's performance obligation for deposit service fees is generally satisfied, and the related revenue recognized, when the services are rendered or the transaction has been completed. Payment for deposit service fees is typically received at the time it is assessed through a direct charge to customers' accounts or on a monthly basis. Deposit service fees revenue primarily relates to the Company's Banking operating segment.

Other Banking Services
Other banking services consists of other recurring revenue streams such as commissions from sales of credit life insurance, safe deposit box rental fees, mortgage banking income, bank owned life insurance income and other miscellaneous revenue streams. Commissions from the sale of credit life insurance are recognized at the time of sale of the policies. Safe deposit box rental fees are charged to the customer on an annual basis and recognized upon receipt of payment. The Company determined that since rentals and renewals occur fairly consistently over time, revenue is recognized on a basis consistent with the duration of the performance obligation. Mortgage banking income and bank owned life insurance income are not within the scope of Topic 606. Other banking services revenue primarily relates to the Company's Banking operating segment.

Employee Benefit Services
Employee benefit services income consists of revenue received from retirement plan services, collective investment fund services, fund administration, transfer agency, consulting and actuarial services. The Company's performance obligation that relates to plan services are satisfied over time and the resulting fees are recognized monthly or quarterly, based upon the market value of the assets under management and the applicable fee rate or on a time expended basis. Payment is generally received a few days after month end or quarter end. The Company does not earn performance-based incentives. Transactional services such as consulting services, mailings, or other ad hoc services are provided to existing trust and asset management customers. The Company's performance obligation for these transactional-based services is generally satisfied, and related revenue recognized, at a point in time (i.e., as incurred). Payment is received shortly after services are rendered. Employee benefit services revenue primarily relates to the Company's Employee Benefit Services operating segment.

Insurance Services
Insurance services primarily consists of commissions received on insurance product sales and consulting services. The Company acts in the capacity of a broker or agent between the Company's customer and the insurance carrier. The Company's performance obligation related to insurance sales for both property and casualty insurance and employee benefit plans is generally satisfied upon the later of the issuance or effective date of the policy. The Company's performance obligation related to consulting services is considered transactional in nature and is generally satisfied when the services have been completed and related revenue recognized at a point in time. Payment is received at the time services are rendered. The Company earns performance based incentives, commonly known as contingency payments, which usually are based on certain criteria established by the insurance carrier such as premium volume, growth and insured loss ratios. Contingent payments are accrued for based upon management's expectations for the year. Commission expense associated with sales of insurance products is expensed as incurred. Insurance services revenue primarily relates to the Company's All Other operating segment.

Wealth Management Services
Wealth management services income is primarily comprised of fees earned from the management and administration of trusts and other customer assets. The Company generally has two types of performance obligations related to these services. The Company's performance obligation that relates to advisory and administration services are satisfied over time and the resulting fees are recognized monthly, based upon the market value of the assets under management and the applicable fee rate. Payment is generally received soon after month end or quarter end through a direct charge to customers' accounts. The Company does not earn performance-based incentives. Transactional services such as tax return preparation services, purchases and sales of investments and insurance products are also available to existing trust and asset management customers. The Company's performance obligation for these transactional-based services is generally satisfied, and related revenue recognized, at a point in time (i.e. as incurred). Payment is generally received on a monthly basis. Wealth management services revenue primarily relates to the Company's All Other operating segment.

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 Company's noninterest revenue 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 often received immediately or shortly after the Company satisfies its performance obligation and revenue is recognized. The Company does not typically enter into long-term revenue contracts with customers, and therefore, does not experience significant contract balances. As of December 31, 2019, $26.8 million of accounts receivable, including $7.5 million of unbilled fee revenue, and $1.8 million of unearned revenue was recorded in the Consolidated Statements of Condition. As of December 31, 2018, $26.4 million of accounts receivable, including $7.8 million of unbilled fee revenue, and $2.2 million of unearned revenue was recorded in the Consolidated Statements of Condition.

Contract Acquisition Costs
In connection with the adoption of Topic 606, an entity is required to capitalize, and subsequently amortize into expense, certain incremental costs of obtaining a contract with a customer if these costs are expected to be recovered. The incremental costs of obtaining a contract are those costs that an entity incurs to obtain a contract with a customer that it would not have incurred if the contract had not been obtained (for example, sales commission). The Company utilizes the practical expedient method which allows entities to immediately expense contract acquisition costs when the asset that would have resulted from capitalizing these costs would have been amortized in one year or less. Upon adoption of Topic 606, the Company did not capitalize any contract acquisition costs.

Cash and Cash Equivalents
For purposes of reporting cash flows, cash and cash equivalents include cash on hand, amounts due from banks, and highly liquid investments with original maturities of less than 90 days. The carrying amounts reported in the Consolidated Statements of Condition for cash and cash equivalents approximate those assets' fair values. As of December 31, 2019 and 2018, cash and cash equivalents reported in the consolidated statements of condition included cash due from banks of $10.4 million and $15.0 million, respectively.

Investment Securities

The Company can classify its investments in debt securities as held-to-maturity, available-for-sale, or trading. Held-to-maturity securities are those for which the Company has the positive intent and ability to hold until maturity, and are reported at cost, which is adjusted for amortization of premiums and accretion of discounts. The Company did not use the held-to-maturity classification in 2018 or 2019. Available-for-sale debt securities are reported at fair value with net unrealized gains and losses reflected as a separate component of shareholders' equity, net of applicable income taxes. None of the Company's investment securities have been classified as trading securities at December 31, 2019. Equity securities with a readily determinable fair value are reported at fair value with net unrealized gains and losses recognized in the Consolidated Statement of Income. Certain equity securities that do not have a readily determinable fair value are stated at cost, less impairment, adjusted for observable price changes in orderly transactions for identical or similar investments of the same issuer. These securities include restricted stock of the Federal Reserve Bank of New York ("Federal Reserve") and the Federal Home Loan Bank of New York and the Federal Home Loan Bank of Boston (collectively referred to as "FHLB"), as well as other equity securities.

Fair values for investment securities are based upon quoted market prices, where available. If quoted market prices are not available, fair values are based upon quoted market prices of comparable instruments, or a discounted cash flow model using market estimates of interest rates and volatility.

The Company conducts an assessment of all securities in an unrealized loss position to determine if other-than-temporary impairment ("OTTI") exists on a quarterly basis. An unrealized loss exists when the current fair value of an individual security is less than its amortized cost basis. The OTTI assessment considers the security structure, recent security collateral performance metrics, if applicable, external credit ratings, failure of the issuer to make scheduled interest or principal payments, judgment about and expectations of future performance, and relevant independent industry research, analysis, and forecasts. The severity of the impairment and the length of time the security has been impaired is also considered in the assessment. The assessment of whether an OTTI decline exists is performed on each security, regardless of the classification of the security as available-for-sale or held-to-maturity, and involves a high degree of subjectivity and judgment that is based on the information available to management at a point in time.

An OTTI loss must be recognized for a debt security in an unrealized loss position if there is intent to sell the security or it is more likely than not the Company will be required to sell the security prior to recovery of its amortized cost basis. In this situation, the amount of loss recognized in income is equal to the difference between the fair value and the amortized cost basis of the security. Even if management does not have the intent, and it is not more likely than not that the Company will be required to sell the securities, an evaluation of the expected cash flows to be received is performed to determine if a credit loss has occurred. For debt securities, a critical component of the evaluation for OTTI is the identification of credit-impaired securities, where the Company does not expect to receive cash flows sufficient to recover the entire amortized cost basis of the security. In the event of a credit loss, only the amount of impairment associated with the credit loss would be recognized in income. The portion of the unrealized loss relating to other factors, such as liquidity conditions in the market or changes in market interest rates, is recorded in accumulated other comprehensive loss.

The specific identification method is used in determining the realized gains and losses on sales of investment securities and OTTI charges. Premiums and discounts on securities are amortized and accreted, respectively, on the interest method basis over the period to maturity or estimated life of the related security. Purchases and sales of securities are recognized on a trade date basis.

Loans

Loans are stated at unpaid principal balances, net of unearned income. Mortgage loans held for sale are carried at fair value and are included in loans held for sale on the consolidated statements of condition. Fair values for variable rate loans that reprice frequently are based on carrying values. Fair values for fixed rate loans are estimated using discounted cash flows and interest rates currently being offered for loans with similar terms to borrowers of similar credit quality. The carrying amount of accrued interest approximates its fair value.

Interest on loans is accrued and credited to operations based upon the principal amount outstanding. Nonrefundable loan fees and related direct costs are deferred and included in the loan balances where they are amortized over the life of the loan as an adjustment to loan yield using the effective yield method. Premiums and discounts on purchased loans are amortized using the effective yield method over the life of the loans.

Acquired loans

Acquired loans are initially recorded at their acquisition date fair values. The carryover of allowance for loan losses is prohibited as any credit losses in the loans are included in the determination of the fair value of the loans at the acquisition date. Fair values for acquired loans are based on a discounted cash flow methodology that involves assumptions and judgments as to credit risk, prepayment risk, liquidity risk, default rates, loss severity, payment speeds, collateral values and discount rate.

Acquired impaired loans

Acquired loans that have evidence of deterioration in credit quality since origination and for which it is probable, at acquisition, that the Company will be unable to collect all contractually required payments are accounted for as impaired loans under ASC 310-30. The excess of undiscounted cash flows expected at acquisition over the estimated fair value is referred to as the accretable discount and is recognized into interest income over the remaining life of the loans using the interest method. The difference between contractually required payments at acquisition and the undiscounted cash flows expected to be collected at acquisition is referred to as the non-accretable discount. The non-accretable discount represents estimated future credit losses and other contractually required payments that the Company does not expect to collect. Subsequent decreases in expected cash flows are recognized as impairments through a charge to the provision for loan losses resulting in an increase in the allowance for loan losses. Subsequent improvements in expected cash flows result in a recovery of previously recorded allowance for loan losses or a reversal of a corresponding amount of the non-accretable discount, which the Company then reclassifies as an accretable discount that is recognized into interest income over the remaining life of the loans using the interest method.

Acquired loans that met the criteria for non-accrual of interest prior to acquisition may be considered performing upon acquisition, regardless of whether the customer is contractually delinquent, if the Company can reasonably estimate the timing and amount of the expected cash flows on such loans and if the Company expects to fully collect the new carrying value of the loans. As such, the Company may no longer consider the loan to be non-accrual or non-performing and may accrue interest on these loans, including the impact of any accretable discount.

Acquired non-impaired loans

Acquired loans that do not meet the requirements under ASC 310-30 are considered acquired non-impaired loans. The difference between the acquisition date fair value and the outstanding balance represents the fair value adjustment for a loan and includes both credit and interest rate considerations. Fair value adjustments may be discounts (or premiums) to a loan's cost basis and are accreted (or amortized) to net interest income (or expense) over the loan's remaining life in accordance with ASC 310-20. Fair value adjustments for revolving loans are accreted (or amortized) using a straight line method. Term loans are accreted (or amortized) using the constant effective yield method.

Subsequent to the purchase date, the methods used to estimate the allowance for loan losses for the acquired non-impaired loans is consistent with the policy described below. However, the Company compares the net realizable value of the loans to the carrying value, for loans collectively evaluated for impairment. The carrying value represents the net of the loan's unpaid principal balance and the remaining purchase discount (or premium) that has yet to be accreted (or amortized) into interest income (or interest expense). When the carrying value exceeds the net realizable value, an allowance for loan losses is recognized.

Impaired and Other Nonaccrual Loans

The Company places a loan on nonaccrual status when the loan becomes 90 days past due (or sooner, if management concludes collection is doubtful), except when, in the opinion of management, it is well-collateralized and in the process of collection. A loan may be placed on nonaccrual status earlier than 90 days past due if there is deterioration in the financial position of the borrower or if other conditions of the loan so warrant. When a loan is placed on nonaccrual status, uncollected accrued interest is reversed against interest income and the amortization of nonrefundable loan fees and related direct costs is discontinued. Interest income during the period the loan is on nonaccrual status is recorded on a cash basis after recovery of principal is reasonably assured. Nonaccrual loans are returned to accrual status when management determines that the borrower's performance has improved and that both principal and interest are collectible. This generally requires a sustained period of timely principal and interest payments and a well-documented credit evaluation of the borrower's financial condition.

A loan is considered modified in a troubled debt restructuring ("TDR") when, due to a borrower's financial difficulties, the Company makes a concession(s) to the borrower that it would not otherwise consider. These modifications may include, among others, an extension for the term of the loan, or granting a period when interest–only payments can be made with the principal payments and interest caught up over the remaining term of the loan or at maturity. Generally, a nonaccrual loan that has been modified in a TDR remains on nonaccrual status for a period of 12 months to demonstrate that the borrower is able to meet the terms of the modified loan. If the borrower's ability to meet the revised payment schedule is uncertain, the loan remains on nonaccrual status.

Regulatory guidance issued by the OCC requires certain loans that have been discharged in Chapter 7 bankruptcy to be reported as TDRs. In accordance with this guidance, loans that have been discharged in Chapter 7 bankruptcy but not reaffirmed by the borrower are classified as TDRs, irrespective of payment history or delinquency status, even if the repayment terms for the loan have not been otherwise modified and the Company's lien position against the underlying collateral remains unchanged. Pursuant to that guidance, the Company records a charge-off equal to any portion of the carrying value that exceeds the net realizable value of the collateral.

Commercial loans greater than $0.5 million are evaluated individually for impairment. A loan is considered impaired, based on current information and events, if it is probable that the Company will be unable to collect the scheduled payments of principal or interest when due according to the contractual terms of the loan agreement. The measurement of impaired loans is generally based upon the present value of expected future cash flows or the fair value of the collateral, if the loan is collateral-dependent.

The Company's charge-off policy by loan type is as follows:

- Business lending loans are generally charged-off to the extent outstanding principal exceeds the fair value of estimated proceeds from collection efforts, including liquidation of collateral. The charge-off is recognized when the loss becomes reasonably quantifiable.
- Consumer installment loans are generally charged-off to the extent outstanding principal exceeds the fair value of collateral, and are recognized by the end of the month in which the loan becomes 90 days past due.
- Consumer mortgage and home equity loans are generally charged-off to the extent outstanding principal exceeds the fair value of the property, less estimated costs to sell, and are recognized when the loan becomes 180 days past due.

Allowance for Loan Losses

Management continually evaluates the credit quality of the Company's loan portfolio, and performs a formal review of the adequacy of the allowance for loan losses on a quarterly basis. The allowance reflects management's best estimate of probable losses inherent in the loan portfolio. Determination of the allowance is subjective in nature and requires significant estimates. The Company's allowance methodology consists of two broad components - general and specific loan loss allocations.

The general loan loss allocation is composed of two calculations that are computed on five main loan segments: business lending, consumer direct, consumer indirect, home equity and consumer mortgage. The first calculation is quantitative and determines an allowance level based on the latest 36 months of historical net charge-off data for each loan class (commercial loans exclude balances with specific loan loss allocations). The second calculation is qualitative and takes into consideration eight qualitative environmental factors: levels and trends in delinquencies and impaired loans; levels of and trends in charge-offs and recoveries; trends in volume and terms of loans; effects of any changes in risk selection and underwriting standards, and other changes in lending policies, procedures, and practices; experience, ability, and depth of lending management and other relevant staff; national and local economic trends and conditions; industry conditions; and effects of changes in credit concentrations. A component of the qualitative calculation is the unallocated allowance for loan loss. The qualitative and quantitative calculations are added together to determine the general loan loss allocation. The specific loan loss allocation relates to individual commercial loans that are both greater than $0.5 million and in a nonaccruing status with respect to interest. Specific loan losses are based on discounted estimated cash flows, including any cash flows resulting from the conversion of collateral or collateral shortfalls. The allowance levels computed from the specific and general loan loss allocation methods are combined with unallocated allowances and allowances needed for acquired loans to derive the total required allowance for loan losses to be reflected on the Consolidated Statement of Condition.

Loan losses are charged off against the allowance, while recoveries of amounts previously charged off are credited to the allowance. A provision for loan losses is charged to operations based on management's periodic evaluation of factors previously mentioned.

Intangible Assets

Intangible assets include core deposit intangibles, customer relationship intangibles and goodwill arising from acquisitions. Core deposit intangibles and customer relationship intangibles are amortized on either an accelerated or straight-line basis over periods ranging from seven to 20 years. The initial and ongoing carrying value of goodwill and other intangible assets is based upon discounted cash flow modeling techniques that require management to make estimates regarding the amount and timing of expected future cash flows. It also requires use of a discount rate that reflects the current return requirements of the market in relation to present risk-free interest rates, required equity market premiums, peer volatility indicators, and company-specific risk indicators.

The Company evaluates goodwill for impairment on an annual basis, or more often if events or circumstances indicate there may be impairment. The implied fair value of a reporting unit's goodwill is compared to its carrying amount and the impairment loss is measured by the excess of the carrying value over fair value. The fair value of each reporting unit is compared to the carrying amount of that reporting unit in order to determine if impairment is indicated.

Premises and Equipment
Premises and equipment are stated at cost less accumulated depreciation. Computer software costs that are capitalized include only external direct costs of obtaining and installing the software. The Company has not developed any internal use software. Depreciation is calculated using the straight-line method over the estimated useful lives of the assets. Useful lives range from two to 20 years for equipment; three to seven years for software and hardware; and 10 to 40 years for building and building improvements. Land improvements are depreciated over 20 years and leasehold improvements are amortized over the shorter of the term of the respective lease plus any optional renewal periods that are reasonably assured or life of the asset. Maintenance and repairs are charged to expense as incurred.

Leases
The Company occupies certain offices and uses certain equipment under non-cancelable operating lease agreements. The Company determines if an arrangement is a lease at inception. The right-of-use assets associated with operating leases are recorded in premises and equipment in the Company's consolidated statements of condition. The lease liabilities associated with operating leases are included in accrued interest and other liabilities in the Company's consolidated statements of condition.

Right-of-use assets represent the Company's right to use the underlying assets for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the associated leases. Operating lease right-of-use assets and liabilities are recognized at the commencement date of the lease based on the present value of lease payments over the lease term. The Company uses interest rates on advances from the FHLB available at the time of commencement to determine the present value of lease payments. The operating lease right-of-use assets include any lease payments made at the time of commencement and exclude lease incentives. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that the option will be exercised. Lease expense is recognized on a straight-line basis over the lease term and is included in occupancy and equipment expense in the Company's consolidated statements of income.

The Company elected to account for lease and non-lease components separately, applies a portfolio approach to account for the lease right-of-use assets and liabilities for certain equipment leases and elected to exclude leases with a term of 12 months or less from the recognition and measurement policies described above.

Other Real Estate
Other real estate owned is comprised of properties acquired through foreclosure, or by deed in lieu of foreclosure. These assets are carried at fair value less estimated costs of disposal. At foreclosure, if the fair value, less estimated costs to sell, of the real estate acquired is less than the Company's recorded investment in the related loan, a write-down is recognized through a charge to the allowance for loan losses. Any subsequent reduction in value is recognized by a charge to income. Operating costs associated with the properties are charged to expense as incurred. At December 31, 2019 and 2018, other real estate totaled $1.3 million and $1.3 million, respectively, and is included in other assets.

Mortgage Servicing Rights
Originated mortgage servicing rights are recorded at their fair value at the time of sale of the underlying loan, and are amortized in proportion to and over the period of estimated net servicing income or loss. The Company uses a valuation model that calculates the present value of future cash flows to determine the fair value of servicing rights. In using this valuation method, the Company incorporates assumptions that market participants would use in estimating future net servicing income, which includes estimates of the servicing cost per loan, the discount rate, and prepayment speeds. The carrying value of the originated mortgage servicing rights is included in other assets and is evaluated quarterly for impairment using these same market assumptions. The amount of impairment recognized is the amount by which the carrying value of the capitalized servicing rights for a stratum exceeds estimated fair value. Impairment is recognized through a valuation allowance.

Treasury Stock
Repurchases of shares of the Company's common stock are recorded at cost as a reduction of shareholders' equity. Reissuance of shares of treasury stock is recorded at average cost.

Income Taxes
The Company and its subsidiaries file a consolidated federal income tax return. Provisions for income taxes are based on taxes currently payable or refundable as well as deferred taxes that are based on temporary differences between the tax basis of assets and liabilities and their reported amounts in the consolidated financial statements. Deferred tax assets and liabilities are reported in the consolidated financial statements at currently enacted income tax rates applicable to the period in which the deferred tax assets and liabilities are expected to be realized or settled.

Benefits from tax positions should be recognized in the financial statements only when it is more likely than not that the tax position will be sustained upon examination by the appropriate taxing authority having full knowledge of all relevant information. A tax position meeting the more-likely-than-not recognition threshold should be measured at the largest amount of benefit for which the likelihood of realization upon ultimate settlement exceeds 50 percent. Should tax laws change or the taxing authorities determine that management's assumptions were inappropriate, an adjustment may be required which could have a material effect on the Company's results of operations.

Investments in Real Estate Limited Partnerships

The Company has investments in various real estate limited partnerships that acquire, develop, own and operate low and moderate-income housing. The Company's ownership interest in these limited partnerships ranges from 5.00% to 99.99% as of December 31, 2019. These investments are made directly in Low Income Housing Tax Credit, or LIHTC, partnerships formed by third parties. As a limited partner in these operating partnerships, the Company receives tax credits and tax deductions for losses incurred by the underlying properties.

The Company accounts for its ownership interest in LIHTC partnerships in accordance with Accounting Standards Update ("ASU") 2014-01, *Investments – Equity Method and Joint Ventures (Topic 323): Accounting for Investments in Qualified Affordable Housing Projects*. The standard permits an entity to amortize the initial cost of the investment in proportion to the amount of the tax credits and other tax benefits received and recognize the net investment performance in the income statement as a component of income tax expense. The Company has unfunded commitments of $0.4 million at year-end related to qualified affordable housing project investments, which will be funded in 2020. There were no impairment losses during the year resulting from the forfeiture or ineligibility of tax credits related to qualified affordable housing project investments.

Repurchase Agreements

The Company sells certain securities under agreements to repurchase. These agreements are treated as collateralized financing transactions. These secured borrowings are reflected as liabilities in the accompanying consolidated statements of condition and are recorded at the amount of cash received in connection with the transaction. Short-term securities sold under agreements to repurchase generally mature within one day from the transaction date. Securities, generally U.S. government and federal agency securities, pledged as collateral under these financing arrangements can be repledged by the secured party. Additional collateral may be required based on the fair value of the underlying securities.

Retirement Benefits

The Company provides defined benefit pension benefits to eligible employees and post-retirement health and life insurance benefits to certain eligible retirees. The Company also provides deferred compensation and supplemental executive retirement plans for selected current and former employees, officers, and directors. Expense under these plans is charged to current operations and consists of several components of net periodic benefit cost based on various actuarial assumptions regarding future experience under the plans, including discount rate, rate of future compensation increases and expected return on plan assets.

Derivative Financial Instruments and Hedging Activities

The Company accounts for derivative financial instruments at fair value. If certain conditions are met, a derivative may be specifically designated as (1) a hedge of the exposure to changes in the fair value of a recognized asset or liability or an unrecognized firm commitment ("fair value hedge"), (2) a hedge of the exposure to variable cash flows of a forecasted transaction or the variability of cash flows to be received or paid related to a recognized asset or liability ("cash flow hedge"), or (3) an instrument with no hedging designation ("stand-alone derivative"). For a fair value hedge, the gain or loss on the derivative, as well as the offsetting loss or gain on the hedged item, are recognized in current earnings as fair values change. For a cash flow hedge, the gain or loss on the derivative is reported in other comprehensive income and is reclassified into earnings in the same periods during which the hedged transaction affects earnings. Changes in the fair value of derivatives that do not qualify for hedge accounting are reported currently in earnings, as noninterest revenues.

Net cash settlements on derivatives that qualify for hedge accounting are recorded in interest income or interest expense, based on the item being hedged. Net cash settlements on derivatives that do not qualify for hedge accounting are reported in noninterest revenues. Cash flows on hedges are classified in the consolidated statement of cash flow statement the same as the cash flows of the items being hedged.

The Company formally documents the relationship between derivatives and hedged items, as well as the risk-management objective and strategy for undertaking hedge transactions at the inception of the hedging relationship. This documentation includes linking the fair value or cash flow hedges to specific assets and liabilities on the statement of condition or to specific commitments or forecasted transactions.

When hedge accounting is discontinued, subsequent changes in fair value of the derivative are recorded in noninterest revenues. When a fair value hedge is discontinued, the hedged asset or liability is no longer adjusted for changes in fair value and the existing basis adjustment is amortized or accreted over the remaining life of the asset or liability. When a cash flow hedge is discontinued, but the hedged cash flows or forecasted transactions are still expected to occur, gains or losses that were accumulated in other comprehensive income are amortized into earnings over the same periods which the hedged transactions will affect earnings.

Assets Under Management or Administration
Assets held in fiduciary or agency capacities for customers are not included in the accompanying consolidated statements of condition as they are not assets of the Company. All fees associated with providing asset management services are recorded on an accrual basis of accounting and are included in noninterest income.

Advertising
Advertising costs amounting to approximately $7.1 million, $5.1 million and $5.7 million for the years ending December 31, 2019, 2018 and 2017, respectively, are nondirect response in nature and expensed as incurred.

Bank Owned Life Insurance
The Company owns life insurance policies on certain current and former employees and directors where the Bank is the beneficiary. Bank owned life insurance is recorded at the amount that can be realized under the insurance contract at the balance sheet date, which is the cash surrender value ("CSV") adjusted for other charges or other amounts due that are probable at settlement. Increases in the CSV of the policies, as well as the death benefits received, net of any CSV, are recorded in noninterest income, and are not subject to income taxes.

Earnings Per Share
Using the two-class method, basic earnings per common share is computed based upon net income available to common shareholders divided by the weighted average number of common shares outstanding during each period, which excludes the outstanding unvested restricted stock. Diluted earnings per share is computed using the weighted average number of common shares determined for the basic earnings per common share computation plus the dilutive effect of stock options using the treasury stock method. Stock options where the exercise price is greater than the average market price of common shares were not included in the computation of earnings per diluted share as they would have been anti-dilutive. Shares held in rabbi trusts related to deferred compensation plans are considered outstanding for purposes of computing earnings per share.

Stock-based Compensation
Companies are required to measure and record compensation expense for stock options and other share-based payments on the instruments' fair value on the date of grant. Stock-based compensation expense is recognized ratably over the requisite service period for all awards (see Note L).

Fair Values of Financial Instruments
The Company determines fair values based on quoted market values where available or on estimates using present values or other valuation techniques. Those techniques are significantly affected by the assumptions used, including the discount rate and estimates of future cash flows. In that regard, the derived fair value estimates cannot be substantiated by comparison to independent markets and, in many cases, could not be realized in immediate settlement of the instrument. Certain financial instruments and all nonfinancial instruments are excluded from this disclosure requirement. Accordingly, the aggregate fair value amounts presented do not represent the underlying value of the Company. The fair values of investment securities, loans, deposits, and borrowings have been disclosed in Note R.

Reclassifications
Certain reclassifications have been made to prior years' balances to conform to the current year presentation.

Recently Adopted Accounting Pronouncements
In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. This new guidance supersedes the lease requirements in *Topic 840, Leases* and is based on the principle that a lessee should recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. The accounting applied by a lessor is largely unchanged from that applied under the previous guidance. In addition, the guidance requires an entity to separate the lease components from the nonlease components in a contract. The ASU requires disclosures about the amount, timing, and judgments related to a reporting entity's accounting for leases and related cash flows. The standard is required to be applied to all leases in existence as of the date of adoption using a modified retrospective transition approach, with certain practical expedients available. The Company adopted this guidance on January 1, 2019 using the cumulative-effect adjustment method. The cumulative-effect adjustment was not material. The Company elected several practical expedients available under the standard. The Company elected to not reassess whether any expired or existing contracts are or contain leases, to not reassess the classification (operating or capital) of any expired or existing contracts, to not reassess initial direct costs for existing leases, and to use hindsight in determining the lease term. The Company has implemented processes and a lease accounting system to ensure adequate internal controls were in place to assess its contracts and enable proper accounting and reporting of financial information upon adoption. The increase in total assets and total liabilities was $34.2 million. The impact on the Company's results of operations and cash flows was not material.

In August 2017, the FASB issued ASU No. 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities.* This new guidance amends current guidance to better align hedge accounting with risk management activities and reduce the complexity involved in applying hedge accounting. Under this new guidance, the concept of hedge ineffectiveness will be eliminated. Ineffective income generated by cash flow and net investment hedges will be recognized in the same financial reporting period and income statement line item as effective income, so as to reflect the full cost of hedging at one time and in one place. Ineffective income generated by fair value hedges will continue to be reflected in current period earnings; however, it will be recognized in the same income statement line item as effective income. The guidance will also allow any contractually specified variable rate to be designated as the hedged risk in a cash flow hedge. With respect to fair value hedges of interest rate risk, the guidance will allow changes in the fair value of the hedged item to be calculated solely using changes in the benchmark interest rate component of the instrument's total contractual coupon cash flows. The Company adopted this guidance on January 1, 2019 on a modified retrospective basis. The adoption of this ASU did not have a material impact on the Company's consolidated financial statements.

New Accounting Pronouncements
In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326)* ("ASU No. 2016-13"). This new guidance significantly changes how entities will measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. This ASU will replace the incurred loss methodology under existing guidance with a current expected credit loss ("CECL") methodology for instruments measured at amortized cost, and require entities to record allowances for available-for-sale debt securities rather than reduce the carrying amount, as they do today under the other-than-temporary impairment model. CECL simplifies the accounting model for purchased credit-impaired debt securities and loans and requires adoption through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is adopted. This new guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years.

The Company has developed, refined and validated its CECL models that were run in parallel to its incurred loss model for the third and fourth quarters of 2019. The Company's CECL models utilizes historical data, as well as current and expected economic conditions and forecasts. The development of these models required the evaluation of data requirements, a determination of loan segments, the determination of the model construct for each loan segment and the development of a qualitative framework. In addition, the Company evaluated its CECL models' sensitivity to various model inputs and identified the key controls around model development and quarterly model operation. Management is currently in the process of finalizing the evaluation of key controls around the quarterly and annual financial statement disclosures of its CECL models.

The Company adopted ASU No. 2016-13 on January 1, 2020 using a modified retrospective approach, and recorded a net cumulative-effect adjustment that increased retained earnings by $0.5 million. This adjustment was a result of a $0.7 million decrease in the allowance for loan losses and a $1.0 million adjustment to loans, partially offset by a $1.2 million increase in other liabilities related to the allowance for off-balance-sheet credit exposures. The adoption of ASU No. 2016-13 did not result in a material allowance for credit losses on the Company's available-for-sale debt securities or its other instruments carried at amortized cost. The Company's regulators will permit financial institutions to "phase-in" the impact of CECL on its regulatory capital ratios over 3 years with transitional relief of incremental capital requirements. The Company will not utilize the phased-in approach and will record the entire cumulative-effect adjustment against its regulatory capital at the time of adoption.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles-Goodwill and Other (Topic 350)*. The amendments simplify how an entity is required to test goodwill for impairment by eliminating the requirement to measure a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. Instead, an entity will perform its goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount, and recognize an impairment charge for the amount by which the carrying amount of the reporting unit exceeds its fair value. Impairment loss recognized under this new guidance will be limited to the goodwill allocated to the reporting unit. This ASU is effective prospectively for the Company for annual or interim goodwill impairment tests in fiscal years beginning after December 15, 2019. The Company adopted this guidance on January 1, 2020 and determined the adoption of this guidance will not have a material impact on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurements (Topic 820)*. The updated guidance removed the requirement to disclose the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, the policy for timing of transfers between levels of the fair value hierarchy, and the valuation processes for Level 3 fair value measurements. The updated guidance clarifies that the measurement uncertainty disclosure is to communicate information about the uncertainty in measurements as of the reporting date. Further, the updated guidance requires disclosure of changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements held at the end of the reporting period and how the weighted average of significant unobservable inputs used to develop Level 3 fair value measurements was calculated. This new guidance is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. The Company adopted this guidance on January 1, 2020 and determined the adoption of this guidance will not have a material impact on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-14, *Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans (Subtopic 715-20)*. The updated guidance removed the requirements to identify amounts that are expected to be reclassified out of accumulated other comprehensive income and recognized as components of net periodic benefit cost in the next fiscal year, as well as the effects of a one-percentage-point change in assumed health care cost trend rates on service and interest cost and on the postretirement benefit obligation. The updated guidance added disclosure requirements for the weighted-average interest crediting rates for cash balance plans and other plans with interest crediting rates, and explanations for significant gains and losses related to changes in the benefit obligation for the period. This new guidance is effective retrospectively for fiscal years beginning after December 15, 2020 with early adoption permitted. The Company is currently evaluating the impacts the adoption of this guidance will have on the Company's consolidated financial statements.

In December 2019, the FASB issued ASU No. 2019-12, *Simplifying the Accounting for Income Taxes (Topic 740)*. The updated guidance simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740, and clarifying and amending existing guidance to improve consistent application. This new guidance is effective for fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. Early adoption is permitted in any interim periods for which financial statements have not been issued. The Company is currently evaluating the impact the adoption of this guidance will have on the Company's consolidated financial statements.

NOTE B: ACQUISITIONS

Pending Acquisition – Steuben Trust Corporation
On October 21, 2019, the Company announced that it had entered into a definitive agreement to acquire Steuben Trust Corporation ("Steuben"), parent company of Steuben Trust Company, a New York State chartered bank headquartered in Hornell, New York, for approximately $104.4 million in Company stock and cash. Steuben currently operates 14 branch locations in Western New York. The acquisition will extend the Company's footprint into two new counties in Western New York State and enhance the Company's presence in four Western New York State counties in which it currently operates. The acquisition is expected to close during the second quarter of 2020, pending both customary regulatory and Steuben shareholder approval. The Company expects to incur certain one-time, transaction-related costs in 2020 in connection with the Steuben acquisition.

On September 18, 2019, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of a practice engaged in the financial services business headquartered in Syracuse, New York. The Company paid $0.5 million in cash to acquire a customer list, and recorded a $0.5 million customer list intangible asset in conjunction with the acquisition. The effects of the acquired assets have been included in the consolidated financial statements since that date.

On July 12, 2019, the Company completed its merger with Kinderhook Bank Corp. ("Kinderhook"), parent company of The National Union Bank of Kinderhook, headquartered in Kinderhook, New York, for $93.4 million in cash. The merger added 11 branch locations across a five county area in the Capital District of Upstate New York. The merger resulted in the acquisition of $642.8 million of assets, including $479.9 million of loans and $39.8 million of investment securities, as well as $568.2 million of deposits and $40.3 million in goodwill. The effects of the acquired assets and liabilities have been included in the consolidated financial statements since that date. Revenues, excluding interest income on acquired investments, of approximately $10.6 million, and direct expenses, which may not include certain shared expenses, of approximately $4.7 million from Kinderhook were included in the consolidated income statement for the year ended December 31, 2019.

On January 2, 2019, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of Wealth Resources Network, Inc. ("Wealth Resources"), a financial services business headquartered in Liverpool, New York. The Company paid $1.2 million in cash to acquire a customer list from Wealth Resources, and recorded a $1.2 million customer list intangible asset in conjunction with the acquisition. The effects of the acquired assets have been included in the consolidated financial statements since that date.

On April 2, 2018, the Company, through its subsidiary, BPAS, acquired certain assets of HR Consultants (SA), LLC ("HR Consultants"), a provider of actuarial and benefit consulting services headquartered in Puerto Rico. The Company paid $0.3 million in cash to acquire the assets of HR Consultants and recorded intangible assets of $0.3 million in conjunction with the acquisition. The effects of the acquired assets have been included in the consolidated financial statements since that date.

On January 2, 2018, the Company, through its subsidiary, OneGroup, completed its acquisition of certain assets of Penna & Associates Agency, Inc. ("Penna"), an insurance agency headquartered in Johnson City, New York. The Company paid $0.8 million in cash to acquire the assets of Penna, and recorded goodwill in the amount of $0.3 million and a customer list intangible asset of $0.3 million in conjunction with the acquisition. The effects of the acquired assets have been included in the consolidated financial statements since that date.

On January 2, 2018, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of Styles Bridges Associates ("Styles Bridges"), a financial services business headquartered in Canton, New York. The Company paid $0.7 million in cash to acquire a customer list from Styles Bridges, and recorded a $0.7 million customer list intangible asset in conjunction with the acquisition. The effects of the acquired assets have been included in the consolidated financial statements since that date.

On December 4, 2017, the Company, through its subsidiary, OneGroup, completed its acquisition of Gordon B. Roberts Agency, Inc. ("GBR"), an insurance agency headquartered in Oneonta, New York for $3.7 million in Company stock and cash, comprised of $1.35 million in cash and the issuance of 0.04 million shares of common stock. The transaction resulted in the acquisition of $0.6 million of assets, $0.6 million of other liabilities, goodwill in the amount of $2.1 million and other intangible assets of $1.6 million. The effects of the acquired assets and liabilities have been included in the consolidated financial statements since that date.

On November 17, 2017, the Company, through its subsidiary, CISI, completed its acquisition of certain assets of Northeast Capital Management, Inc. ("NECM"), a financial services business headquartered in Wilkes-Barre, Pennsylvania. The Company paid $1.2 million in cash to acquire a customer list from NECM, and recorded a $1.2 million customer list intangible asset in conjunction with the acquisition. The effects of the acquired assets have been included in the consolidated financial statements since that date.

On May 12, 2017, the Company completed its acquisition of Merchants Bancshares, Inc. ("Merchants"), parent company of Merchants Bank, headquartered in South Burlington, Vermont, for $345.2 million in Company stock and cash, comprised of $82.9 million in cash and the issuance of 4.68 million shares of common stock. The acquisition extended the Company's footprint into the Vermont and Western Massachusetts markets with the addition of 31 branch locations in Vermont and one location in Massachusetts. This transaction resulted in the acquisition of $2.0 billion of assets, including $1.49 billion of loans and $370.6 million of investment securities, as well as $1.45 billion of deposits and $189.0 million in goodwill. The effects of the acquired assets and liabilities have been included in the consolidated financial statements since that date. Revenues of approximately $55.8 million and direct expenses, which may not include certain shared expenses, of approximately $29.4 million from Merchants were included in the consolidated income statement for the year ended December 31, 2019. Revenues of approximately $61.2 million and direct expenses, which may not include certain shared expenses, of approximately $30.8 million from Merchants were included in the consolidated income statement for the year ended December 31, 2018.

On March 1, 2017, the Company, through its subsidiary, OneGroup, completed its acquisition of certain assets of Dryfoos Insurance Agency, Inc. ("Dryfoos"), an insurance agency headquartered in Hazleton, Pennsylvania. The Company paid $3.0 million in cash to acquire the assets of Dryfoos, and recorded goodwill in the amount of $1.7 million and other intangible assets of $1.7 million in conjunction with the acquisition. The effects of the acquired assets and liabilities have been included in the consolidated financial statements since that date.

On February 3, 2017, the Company completed its acquisition of NRS and its subsidiary GTC, headquartered in Woburn, Massachusetts, for $148.6 million in Company stock and cash. NRS was a privately held corporation focused on providing institutional transfer agency, master recordkeeping services, custom target date fund administration, trust product administration and customized reporting services to institutional clients. Its wholly-owned subsidiary, GTC, is chartered in the State of Maine as a non-depository trust company and provides fiduciary services for collective investment trusts and other products. The acquisition of NRS and GTC, hereafter referred to collectively as NRS, strengthens and complements the Company's existing employee benefit services businesses. Upon the completion of the merger, NRS became a wholly-owned subsidiary of BPAS and operates as Northeast Retirement Services, LLC, a Delaware limited liability company. This transaction resulted in the acquisition of $36.1 million in net tangible assets, principally cash and certificates of deposit, $60.2 million in customer list intangibles that will be amortized using the 150% declining balance method over 10 years, a $23.0 million deferred tax liability associated with the customer list intangible, and $75.3 million in goodwill. The effects of the acquired assets and liabilities have been included in the consolidated financial statements since that date. Revenues of $44.0 million and expenses of $23.9 million from NRS were included in the consolidated statement of income for the year ended December 31, 2019. Revenues of $40.6 million and expenses of $24.6 million from NRS were included in the consolidated statement of income for the year ended December 31, 2018.

On January 1, 2017, the Company, through its subsidiary, OneGroup, acquired certain assets of Benefits Advisory Service, Inc. ("BAS"), a benefits consulting group headquartered in Forest Hills, New York. The Company paid $1.2 million in cash to acquire the assets of BAS and recorded intangible assets of $1.2 million in conjunction with the acquisition. The effects of the acquired assets and liabilities have been included in the consolidated financial statements since that date.

The assets and liabilities assumed in the acquisitions were recorded at their estimated fair values based on management's best estimates using information available at the dates of the acquisition, and were subject to adjustment based on updated information not available at the time of acquisition. During the first quarter of 2018, the carrying amount of other liabilities associated with the NRS acquisition decreased by $1.2 million as a result of an adjustment to deferred taxes. Goodwill associated with the NRS acquisition decreased $1.2 million as a result of this adjustment. During the second quarter of 2018, the carrying amount of other liabilities associated with the GBR acquisition decreased by $0.09 million as a result of updated information not available at the time of acquisition. Goodwill associated with the GBR acquisition decreased $0.09 million as a result of this adjustment. During the fourth quarter of 2018, the carrying amount of other liabilities associated with the GBR acquisition increased $0.02 million as a result of updated information not available at the time of acquisition. Goodwill associated with the GBR acquisition increased $0.02 million as a result of this adjustment. During the fourth quarter of 2019, associated with the Kinderhook acquisition, the carrying amount of deposits increased by $0.08 million, loans decreased by $0.05 million, other liabilities increased by $0.04 million, other assets decreased by $0.04 million, and accrued interest and fees receivable increased by $0.01 million as a result of updated information not available at the time of acquisition. Goodwill associated with the Kinderhook acquisition increased by $0.2 million as a result of these adjustments.

The above referenced acquisitions generally expanded the Company's geographical presence in New York, Pennsylvania, Vermont, and Western Massachusetts and management expects that the Company will benefit from greater geographic diversity and the advantages of other synergistic business development opportunities.

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed after considering the measurement period adjustments described above:

	2019			2018	2017			
(000s omitted)	Kinderhook	Other [(1)]	Total	Other [(2)]	NRS	Merchants	Other [(3)]	Total
Consideration paid :								
Cash	$93,384	$1,650	$95,034	$1,753	$70,073	$82,898	$6,775	$159,746
Community Bank System, Inc. common stock	0	0	0	0	78,483	262,254	2,395	343,132
Total net consideration paid	93,384	1,650	95,034	1,753	148,556	345,152	9,170	502,878
Recognized amounts of identifiable assets acquired and liabilities assumed:								
Cash and cash equivalents	90,381	0	90,381	16	11,063	40,730	339	52,132
Investment securities	39,770	0	39,770	0	20,294	370,648	0	390,942
Loans	479,877	0	479,877	0	0	1,488,157	0	1,488,157
Premises and equipment	13,970	0	13,970	10	411	16,608	27	17,046
Accrued interest and fees receivable	1,130	0	1,130	0	72	4,773	0	4,845
Other assets	14,109	0	14,109	105	8,088	51,585	583	60,256
Core deposit intangibles	3,573	0	3,573	0	0	23,214	0	23,214
Other intangibles	0	1,650	1,650	1,343	60,200	2,857	5,626	68,683
Deposits	(568,161)	0	(568,161)	0	0	(1,448,406)	0	(1,448,406)
Other liabilities	(3,259)	0	(3,259)	(31)	(26,828)	(11,750)	(1,155)	(39,733)
Short-term advances	0	0	0	0	0	(80,000)	0	(80,000)
Securities sold under agreement to repurchase, short-term	0	0	0	0	0	(278,076)	0	(278,076)
Other Federal Home Loan Bank borrowings	(2,420)	0	(2,420)	0	0	(3,615)	0	(3,615)
Subordinated notes payable	(13,831)	0	(13,831)	0	0	0	0	0
Subordinated debt held by unconsolidated subsidiary trusts	(2,062)	0	(2,062)	0	0	(20,619)	0	(20,619)
Total identifiable assets, net	53,077	1,650	54,727	1,443	73,300	156,106	5,420	234,826
Goodwill	$40,307	$0	$40,307	$310	$75,256	$189,046	$3,750	$268,052

(1) Includes amounts related to both acquisitions completed by CISI in 2019.

(2) Includes amounts related to the Penna, Styles Bridges and HR Consultants acquisitions.

(3) Includes amounts related to the BAS, Dryfoos, NECM and GBR acquisitions.

Acquired loans that have evidence of deterioration in credit quality since origination and for which it is probable, at acquisition, that the Company will be unable to collect all contractually required payments were aggregated by comparable characteristics and recorded at fair value without a carryover of the related allowance for loan losses. Cash flows for each loan were determined using an estimate of credit losses and rate of prepayments. Projected monthly cash flows were then discounted to present value using a market-based discount rate. The excess of the undiscounted expected cash flows over the estimated fair value is referred to as the "accretable yield" and is recognized into interest income over the remaining lives of the acquired loans.

The following is a summary of the loans acquired from Kinderhook at the date of acquisition:

(000s omitted)	Acquired Impaired Loans	Acquired Non-impaired Loans	Total Acquired Loans
Contractually required principal and interest at acquisition	$13,350	$636,384	$649,734
Contractual cash flows not expected to be collected	(4,176)	(5,472)	(9,648)
Expected cash flows at acquisition	9,174	630,912	640,086
Interest component of expected cash flows	(551)	(159,658)	(160,209)
Fair value of acquired loans	$8,623	$471,254	$479,877

The following is a summary of the loans acquired from Merchants at the date of acquisition:

(000s omitted)	Acquired Impaired Loans	Acquired Non-impaired Loans	Total Acquired Loans
Contractually required principal and interest at acquisition	$15,454	$1,872,574	$1,888,028
Contractual cash flows not expected to be collected	(5,385)	(14,753)	(20,138)
Expected cash flows at acquisition	10,069	1,857,821	1,867,890
Interest component of expected cash flows	(793)	(378,940)	(379,733)
Fair value of acquired loans	$9,276	$1,478,881	$1,488,157

The fair value of checking, savings and money market deposit accounts acquired were assumed to approximate the carrying value as these accounts have no stated maturity and are payable on demand. Certificate of deposit accounts were valued at the present value of the certificates' expected contractual payments discounted at market rates for similar certificates. The fair value of subordinated notes payable was estimated using discounted cash flows and interest rates being offered on similar securities. Subordinated notes payable assumed with the Kinderhook acquisition included $3.0 million of subordinated notes with a fixed interest rate of 6.0% maturing in February 2028 and $10.0 million of subordinated notes with a fixed interest rate of 6.375% maturing in November 2025.

The core deposit intangibles and other intangibles related to both acquisitions completed by CISI in 2019, Kinderhook, Penna, Styles Bridges, HR Consultants, Merchants, Dryfoos, BAS, NECM, and GBR acquisitions are being amortized using an accelerated method over their estimated useful life of eight years. The goodwill, which is not amortized for book purposes, was assigned to the Banking segment for the Kinderhook and Merchants acquisitions, the Employee Benefit Services segment for NRS, and All Other segments for the Penna, Dryfoos, BAS, and GBR acquisitions. Goodwill arising from the Kinderhook, Merchants, NRS, and GBR acquisitions is not deductible for tax purposes. Goodwill arising from the Penna, Dryfoos, BAS, and GBR acquisitions is deductible for tax purposes.

Direct costs related to the acquisitions were expensed as incurred. Merger and acquisition integration-related expenses (recoveries) amount to $8.6 million, $(0.8) million and $26.0 million during 2019, 2018 and 2017, respectively, and have been separately stated in the consolidated statements of income.

Supplemental Pro Forma Financial Information (Unaudited)
The following unaudited condensed pro forma information assumes the Kinderhook acquisition had been completed as of January 1, 2018 for the year ended December 31, 2019 and December 31, 2018 and the Merchants and NRS acquisitions had been completed as of January 1, 2016 for the year ended December 31, 2017 and December 31, 2016. The pro forma information does not include amounts related to the two acquisitions completed by CISI in 2019, Penna, Styles Bridges, HR Consultants, BAS, Dryfoos, NECM and GBR as the amounts were immaterial. The table below has been prepared for comparative purposes only and is not necessarily indicative of the actual results that would have been attained had the acquisitions occurred as of the beginning of the year presented, nor is it indicative of the Company's future results. Furthermore, the unaudited pro forma information does not reflect management's estimate of any revenue-enhancing opportunities nor anticipated cost savings that may have occurred as a result of the integration and consolidation of the acquisitions.

The pro forma information set forth below reflects the historical results of Kinderhook, Merchants, and NRS combined with the Company's consolidated statement of income with adjustments related to (a) certain purchase accounting fair value adjustments and (b) amortization of customer lists and core deposit intangibles. Acquisition expenses related to the Kinderhook transaction totaling $8.0 million for the year ended December 31, 2019 were included in the pro forma information as if they were incurred in 2018. Acquisition expenses related to the Merchants and NRS transactions totaling $25.7 million for the year ended December 31, 2017 were included in the pro forma information as if they were incurred in 2016.

	Pro Forma (Unaudited) Year Ended December 31,			
(000's omitted)	2019	2018	2017	2016
Total revenue, net of interest expense	$602,817	$594,174	$546,977	$536,183
Net income	178,427	167,914	176,257	109,186

NOTE C: INVESTMENT SECURITIES

The amortized cost and estimated fair value of investment securities as of December 31 are as follows:

	2019				2018			
(000's omitted)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Available-for-Sale Portfolio:								
U.S. Treasury and agency securities	$2,030,060	$21,674	$7,975	$2,043,759	$2,036,474	$2,190	$14,911	$2,023,753
Obligations of state and political subdivisions	497,852	14,382	26	512,208	453,640	6,563	1,049	459,154
Government agency mortgage-backed securities	428,491	5,478	1,107	432,862	390,234	1,526	9,283	382,477
Corporate debt securities	2,527	1	0	2,528	2,588	0	42	2,546
Government agency collateralized mortgage obligations	52,621	482	32	53,071	69,342	60	1,283	68,119
Total available-for-sale portfolio	$3,011,551	$42,017	$9,140	$3,044,428	$2,952,278	$10,339	$26,568	$2,936,049
Equity and other Securities:								
Equity securities, at fair value	$251	$200	$0	$451	$251	$200	$19	$432
Federal Home Loan Bank common stock	7,246	0	0	7,246	8,768	0	0	8,768
Federal Reserve Bank common stock	30,922	0	0	30,922	30,690	0	0	30,690
Other equity securities, at adjusted cost	4,546	750	0	5,296	4,969	750	0	5,719
Total equity and other securities	$42,965	$950	$0	$43,915	$44,678	$950	$19	$45,609

A summary of investment securities that have been in a continuous unrealized loss position for less than or greater than twelve months is as follows:

As of December 31, 2019

	Less than 12 Months			12 Months or Longer			Total		
(000's omitted)	#	Fair Value	Gross Unrealized Losses	#	Fair Value	Gross Unrealized Losses	#	Fair Value	Gross Unrealized Losses
Available-for-Sale Portfolio:									
U.S. Treasury and agency securities	12	$592,678	$7,970	5	$25,998	$5	17	$618,676	$7,975
Obligations of state and political subdivisions	21	22,716	26	0	0	0	21	22,716	26
Government agency mortgage-backed securities	50	89,237	341	52	52,975	766	102	142,212	1,107
Government agency collateralized mortgage obligations	5	5,971	14	5	4,405	18	10	10,376	32
Total available-for-sale investment portfolio	88	$710,602	$8,351	62	$83,378	$789	150	$793,980	$9,140

As of December 31, 2018

(000's omitted)	Less than 12 Months #	Less than 12 Months Fair Value	Less than 12 Months Gross Unrealized Losses	12 Months or Longer #	12 Months or Longer Fair Value	12 Months or Longer Gross Unrealized Losses	Total #	Total Fair Value	Total Gross Unrealized Losses
Available-for-Sale Portfolio:									
U.S. Treasury and agency securities	7	$473,082	$682	64	$1,213,276	$14,229	71	$1,686,358	$14,911
Obligations of state and political subdivisions	118	55,671	216	97	51,753	833	215	107,424	1,049
Government agency mortgage-backed securities	43	47,708	258	181	253,931	9,025	224	301,639	9,283
Corporate debt securities	0	0	0	1	2,546	42	1	2,546	42
Government agency collateralized mortgage obligations	1	66	0	41	63,112	1,283	42	63,178	1,283
Total available-for-sale investment portfolio	169	$576,527	$1,156	384	$1,584,618	$25,412	553	$2,161,145	$26,568
Equity and other Securities:									
Equity securities, at fair value	1	$82	$19	0	$0	$0	1	$82	$19
Total equity and other securities	1	$82	$19	0	$0	$0	1	$82	$19

The unrealized losses reported pertaining to securities issued by the U.S. government and its sponsored entities, include treasuries, agencies, and mortgage-backed securities issued by Ginnie Mae, Fannie Mae, and Freddie Mac which are currently rated AAA by Moody’s Investor Services, AA+ by Standard & Poor’s and are guaranteed by the U.S. government. The majority of the obligations of state and political subdivisions and corporations carry a credit rating of A or better. Additionally, a majority of the obligations of state and political subdivisions carry a secondary level of credit enhancement. The Company does not intend to sell these securities, nor is it more likely than not that the Company will be required to sell these securities prior to recovery of the amortized cost. The unrealized losses in the portfolios are primarily attributable to changes in interest rates. As such, management does not believe any individual unrealized loss as of December 31, 2019 represents OTTI.

The amortized cost and estimated fair value of debt securities at December 31, 2019, by contractual maturity, are shown below. Expected maturities will differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties. Securities not due at a single maturity date are shown separately.

(000's omitted)	Available-for-Sale Amortized Cost	Available-for-Sale Fair Value
Due in one year or less	$677,169	$680,805
Due after one through five years	905,531	925,987
Due after five years through ten years	453,320	456,833
Due after ten years	494,419	494,870
Subtotal	2,530,439	2,558,495
Government agency mortgage-backed securities	428,491	432,862
Government agency collateralized mortgage obligations	52,621	53,071
Total	$3,011,551	$3,044,428

Investment securities with a carrying value of $1.471 billion and $1.447 billion at December 31, 2019 and 2018, respectively, were pledged to collateralize certain deposits and borrowings. Securities pledged to collateralize certain deposits and borrowings included $502.8 million and $492.4 million of U.S. Treasury securities that were pledged as collateral for securities sold under agreement to repurchase at December 31, 2019, and 2018, respectively. All securities sold under agreement to repurchase as of December 31, 2019 and 2018 have an overnight and continuous maturity.

During 2019, the Company sold $590.2 million of U.S. Treasury and agency securities, recognizing $5.0 million of gross realized gains and $0.1 million of gross realized losses. The proceeds from these sales were reinvested primarily in U.S. Treasury and agency securities at higher net yields as of December 31, 2019.

NOTE D: LOANS

The segments of the Company's loan portfolio are disaggregated into the following classes that allow management to monitor risk and performance:

- Consumer mortgages consist primarily of fixed rate residential instruments, typically 10 – 30 years in contractual term, secured by first liens on real property.
- Business lending is comprised of general purpose commercial and industrial loans including, but not limited to agricultural-related and dealer floor plans, as well as mortgages on commercial property.
- Consumer indirect consists primarily of installment loans originated through selected dealerships and are secured by automobiles, marine and other recreational vehicles.
- Consumer direct consists of all other loans to consumers such as personal installment loans and lines of credit.
- Home equity products are consumer purpose installment loans or lines of credit most often secured by a first or second lien position on residential real estate with terms up to 30 years.

The balances of these classes at December 31 are summarized as follows:

(000's omitted)	2019	2018
Business lending	$2,775,876	$2,396,977
Consumer mortgage	2,430,902	2,235,408
Consumer indirect	1,113,062	1,083,207
Consumer direct	184,378	178,820
Home equity	386,325	386,709
Gross loans, including deferred origination costs	6,890,543	6,281,121
Allowance for loan losses	(49,911)	(49,284)
Loans, net of allowance for loan losses	$6,840,632	$6,231,837

The Company had approximately $32.3 million and $28.4 million of net deferred loan origination costs included in gross loans as of December 31, 2019 and 2018, respectively.

Certain directors and executive officers of the Company, as well as associates of such persons, are loan customers. Loans to these individuals were made in the ordinary course of business under normal credit terms and do not have more than a normal risk of collection. Following is a summary of the aggregate amount of such loans during 2019 and 2018.

(000's omitted)	2019	2018
Balance at beginning of year	$20,661	$22,344
New loans	5,720	2,600
Payments	(8,895)	(4,283)
Balance at end of year	$17,486	$20,661

Acquired loans

Acquired loans are recorded at fair value as of the date of purchase with no allowance for loan loss. The outstanding principal balance and the related carrying amount of acquired loans included in the Consolidated Statement of Condition at December 31 are as follows:

(000's omitted)	2019	2018
Credit impaired acquired loans:		
Outstanding principal balance	$16,200	$6,936
Carrying amount	11,797	5,446
Non-impaired acquired loans:		
Outstanding principal balance	1,448,046	1,271,584
Carrying amount	1,428,154	1,247,691
Total acquired loans:		
Outstanding principal balance	1,464,246	1,278,520
Carrying amount	1,439,951	1,253,137

The outstanding balance related to credit impaired acquired loans was $17.1 million and $7.4 million at December 31, 2019 and 2018, respectively. The changes in the accretable discount related to the credit impaired acquired loans are as follows:

(000's omitted)	2019	2018
Balance at beginning of year	$437	$976
Kinderhook acquisition	551	0
Accretion recognized	(493)	(783)
Net reclassification from non-accretable to accretable	138	244
Balance at end of year	$633	$437

Credit Quality

Management monitors the credit quality of its loan portfolio on an ongoing basis. Measurement of delinquency and past due status are based on the contractual terms of each loan. Past due loans are reviewed on a monthly basis to identify loans for non-accrual status. The following is an aged analysis of the Company's past due loans by class as of December 31, 2019:

Legacy Loans (excludes loans acquired after January 1, 2009)

(000's omitted)	Past Due 30 - 89 days	90+ Days Past Due and Still Accruing	Nonaccrual	Total Past Due	Current	Total Loans
Business lending	$3,936	$126	$3,840	$7,902	$1,848,683	$1,856,585
Consumer mortgage	10,990	2,052	10,131	23,173	1,973,543	1,996,716
Consumer indirect	12,673	125	0	12,798	1,094,510	1,107,308
Consumer direct	1,455	76	0	1,531	174,445	175,976
Home equity	1,508	328	1,444	3,280	310,727	314,007
Total	$30,562	$2,707	$15,415	$48,684	$5,401,908	$5,450,592

Acquired Loans (includes loans acquired after January 1, 2009)

(000's omitted)	Past Due 30 - 89 days	90+ Days Past Due and Still Accruing	Nonaccrual	Total Past Due	Acquired Impaired[1]	Current	Total Loans
Business lending	$8,518	$2,173	$570	$11,261	$11,797	$896,233	$919,291
Consumer mortgage	890	277	2,386	3,553	0	430,633	434,186
Consumer indirect	79	31	0	110	0	5,644	5,754
Consumer direct	59	0	52	111	0	8,291	8,402
Home equity	744	238	412	1,394	0	70,924	72,318
Total	$10,290	$2,719	$3,420	$16,429	$11,797	$1,411,725	$1,439,951

[1] Acquired impaired loans were not classified as nonperforming assets as the loans are considered to be performing under ASC 310-30. As a result interest income, through the accretion of the difference between the carrying amount of the loans and the expected cashflows, is being recognized on all acquired impaired loans.

The following is an aged analysis of the Company's past due loans by class as of December 31, 2018:

Legacy Loans (excludes loans acquired after January 1, 2009)

(000's omitted)	Past Due 30 - 89 days	90+ Days Past Due and Still Accruing	Nonaccrual	Total Past Due	Current	Total Loans
Business lending	$5,261	$179	$4,872	$10,312	$1,608,515	$1,618,827
Consumer mortgage	12,468	1,393	9,872	23,733	1,824,717	1,848,450
Consumer indirect	14,609	258	0	14,867	1,057,525	1,072,392
Consumer direct	1,778	48	0	1,826	173,948	175,774
Home equity	983	228	1,438	2,649	309,892	312,541
Total	$35,099	$2,106	$16,182	$53,387	$4,974,597	$5,027,984

Acquired Loans (includes loans acquired after January 1, 2009)

(000's omitted)	Past Due 30 - 89 days	90+ Days Past Due and Still Accruing	Nonaccrual	Total Past Due	Acquired Impaired[(1)]	Current	Total Loans
Business lending	$974	$0	$3,498	$4,472	$5,446	$768,232	$778,150
Consumer mortgage	841	232	2,390	3,463	0	383,495	386,958
Consumer indirect	78	34	0	112	0	10,703	10,815
Consumer direct	115	4	0	119	0	2,927	3,046
Home equity	613	79	474	1,166	0	73,002	74,168
Total	$2,621	$349	$6,362	$9,332	$5,446	$1,238,359	$1,253,137

(1) Acquired impaired loans were not classified as nonperforming assets as the loans are considered to be performing under ASC 310-30. As a result interest income, through the accretion of the difference between the carrying amount of the loans and the expected cashflows, is being recognized on all acquired impaired loans.

The Company uses several credit quality indicators to assess credit risk in an ongoing manner. The Company's primary credit quality indicator for its business lending portfolio is an internal credit risk rating system that categorizes loans as "pass", "special mention", "classified", or "doubtful". Credit risk ratings are applied individually to those classes of loans that have significant or unique credit characteristics that benefit from a case-by-case evaluation. In general, the following are the definitions of the Company's credit quality indicators:

Pass	The condition of the borrower and the performance of the loans are satisfactory or better.
Special Mention	The condition of the borrower has deteriorated although the loan performs as agreed.
Classified	The condition of the borrower has significantly deteriorated and the performance of the loan could further deteriorate if deficiencies are not corrected.
Doubtful	The condition of the borrower has deteriorated to the point that collection of the balance is improbable based on current facts and conditions.

The following table shows the amount of business lending loans by credit quality category:

	December 31, 2019			December 31, 2018		
(000's omitted)	Legacy	Acquired	Total	Legacy	Acquired	Total
Pass	$1,655,280	$832,693	$2,487,973	$1,439,337	$702,493	$2,141,830
Special mention	98,953	45,324	144,277	105,065	40,107	145,172
Classified	102,352	29,477	131,829	74,425	28,525	102,950
Doubtful	0	0	0	0	1,579	1,579
Acquired impaired	0	11,797	11,797	0	5,446	5,446
Total	$1,856,585	$919,291	$2,775,876	$1,618,827	$778,150	$2,396,977

All other loans are underwritten and structured using standardized criteria and characteristics, primarily payment performance, and are normally risk rated and monitored collectively on a monthly basis. These are typically loans to individuals in the consumer categories and are delineated as either performing or nonperforming. Performing loans include current, 30 – 89 days past due and acquired impaired loans. Nonperforming loans include 90+ days past due and still accruing and nonaccrual loans. The following tables detail the balances in all loan categories except for business lending at December 31, 2019:

Legacy loans (excludes loans acquired after January 1, 2009)

(000's omitted)	Consumer Mortgage	Consumer Indirect	Consumer Direct	Home Equity	Total
Performing	$1,984,533	$1,107,183	$175,900	$312,235	$3,579,851
Nonperforming	12,183	125	76	1,772	14,156
Total	$1,996,716	$1,107,308	$175,976	$314,007	$3,594,007

Acquired loans (includes loans acquired after January 1, 2009)

(000's omitted)	Consumer Mortgage	Consumer Indirect	Consumer Direct	Home Equity	Total
Performing	$431,523	$5,723	$8,350	$71,668	$517,264
Nonperforming	2,663	31	52	650	3,396
Total	$434,186	$5,754	$8,402	$72,318	$520,660

The following table details the balances in all other loan categories at December 31, 2018:

Legacy loans (excludes loans acquired after January 1, 2009)

(000's omitted)	Consumer Mortgage	Consumer Indirect	Consumer Direct	Home Equity	Total
Performing	$1,837,185	$1,072,134	$175,726	$310,875	$3,395,920
Nonperforming	11,265	258	48	1,666	13,237
Total	$1,848,450	$1,072,392	$175,774	$312,541	$3,409,157

Acquired loans (includes loans acquired after January 1, 2009)

(000's omitted)	Consumer Mortgage	Consumer Indirect	Consumer Direct	Home Equity	Total
Performing	$384,336	$10,781	$3,042	$73,615	$471,774
Nonperforming	2,622	34	4	553	3,213
Total	$386,958	$10,815	$3,046	$74,168	$474,987

All loan classes are collectively evaluated for impairment except business lending, as described in Note A. A summary of individually evaluated impaired loans as of December 31, 2019 and 2018 is as follows:

(000's omitted)	2019	2018
Loans with allowance allocation	$0	$3,956
Loans without allowance allocation	1,414	2,230
Carrying balance	1,414	6,186
Contractual balance	2,944	12,078
Specifically allocated allowance	0	956
Average impaired loans	5,078	7,618
Interest income recognized	0	0

In the course of working with borrowers, the Company may choose to restructure the contractual terms of certain loans. In this scenario, the Company attempts to work-out an alternative payment schedule with the borrower in order to optimize collectability of the loan. Any loans that are modified are reviewed by the Company to identify if a TDR has occurred, which is when, for economic or legal reasons related to a borrower's financial difficulties, the Company grants a concession to the borrower that it would not otherwise consider. Terms may be modified to fit the ability of the borrower to repay in line with its current financial standing and the restructuring of the loan may include the transfer of assets from the borrower to satisfy the debt, a modification of loan terms, or a combination of the two. With regard to determination of the amount of the allowance for loan losses, troubled debt restructured loans are considered to be impaired. As a result, the determination of the amount of allowance for loan losses related to impaired loans for each portfolio segment within TDRs is the same as detailed previously.

In accordance with clarified guidance issued by the OCC, loans that have been discharged in Chapter 7 bankruptcy but not reaffirmed by the borrower, are classified as TDRs, irrespective of payment history or delinquency status, even if the repayment terms for the loan have not been otherwise modified. The Company's lien position against the underlying collateral remains unchanged. Pursuant to that guidance, the Company records a charge-off equal to any portion of the carrying value that exceeds the net realizable value of the collateral. The amount of loss incurred in 2019, 2018 and 2017 was immaterial.

TDRs less than $0.5 million are collectively included in the general loan loss allocation and the qualitative review, if necessary. Commercial loans greater than $0.5 million are individually evaluated for impairment, and if necessary, a specific allocation of the allowance for loan losses is provided.

Information regarding TDRs as of December 31, 2019 and December 31, 2018 is as follows:

	December 31, 2019						December 31, 2018					
(000's omitted)	Nonaccrual		Accruing		Total		Nonaccrual		Accruing		Total	
	#	Amount	#	Amount	#	Amount	#	Amount	#	Amount	#	Amount
Business lending	8	$681	3	$201	11	$882	4	$162	2	$165	6	$327
Consumer mortgage	59	2,638	47	1,892	106	4,530	46	1,986	46	1,769	92	3,755
Consumer indirect	0	0	84	941	84	941	0	0	77	857	77	857
Consumer direct	0	0	23	101	23	101	0	0	22	71	22	71
Home equity	13	290	11	238	24	528	12	240	9	275	21	515
Total	80	$3,609	168	$3,373	248	$6,982	62	$2,388	156	$3,137	218	$5,525

The following table presents information related to loans modified in a TDR during the years ended December 31, 2019 and 2018. Of the loans noted in the table below, all consumer mortgage loans for the years ended December 31, 2019 and December 31, 2018, were modified due to a Chapter 7 bankruptcy as described previously. The financial effects of these restructurings were immaterial.

	December 31, 2019		December 31, 2018	
(000's omitted)	#	Amount	#	Amount
Business lending	6	$685	2	$103
Consumer mortgage	22	1,519	9	470
Consumer indirect	33	364	32	320
Consumer direct	6	49	6	24
Home equity	6	181	3	118
Total	73	$2,798	52	$1,035

Allowance for Loan Losses

The allowance for loan losses is general in nature and is available to absorb losses from any loan type despite the analysis below. The following presents by class the activity in the allowance for loan losses:

(000's omitted)	Business Lending	Consumer Mortgage	Consumer Indirect	Consumer Direct	Home Equity	Unallocated	Acquired Impaired	Total
Balance at December 31, 2016	17,220	10,094	13,782	2,979	2,399	651	108	47,233
Charge-offs	(4,959)	(707)	(8,456)	(2,081)	(284)	0	(270)	(16,757)
Recoveries	656	50	4,516	849	52	0	0	6,123
Provision	4,340	1,028	3,626	1,292	(60)	449	309	10,984
Balance at December 31, 2017	17,257	10,465	13,468	3,039	2,107	1,100	147	47,583
Charge-offs	(3,566)	(836)	(8,382)	(1,777)	(544)	0	(381)	(15,486)
Recoveries	485	136	4,874	807	48	0	0	6,350
Provision	4,346	359	4,406	1,026	533	(100)	267	10,837
Balance at December 31, 2018	18,522	10,124	14,366	3,095	2,144	1,000	33	49,284
Charge-offs	(2,334)	(1,372)	(7,631)	(1,945)	(445)	0	0	(13,727)
Recoveries	826	60	4,180	710	148	0	0	5,924
Provision	2,412	1,457	2,797	1,395	282	(43)	130	8,430
Balance at December 31, 2019	$19,426	$10,269	$13,712	$3,255	$2,129	$957	$163	$49,911

NOTE E: PREMISES AND EQUIPMENT

Premises and equipment consist of the following at December 31:

(000's omitted)	2019	2018
Land and land improvements	$26,301	$24,340
Bank premises	141,905	133,259
Equipment and construction in progress	89,819	89,950
Operating lease right-of-use assets	39,895	0
Premises and equipment, gross	297,920	247,549
Accumulated depreciation	(133,282)	(127,561)
Premises and equipment, net	$164,638	$119,988

NOTE F: GOODWILL AND IDENTIFIABLE INTANGIBLE ASSETS

The gross carrying amount and accumulated amortization for each type of identifiable intangible asset are as follows:

	December 31, 2019			December 31, 2018		
(000's omitted)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Amortizing intangible assets:						
Core deposit intangibles	$66,475	($50,057)	$16,418	$62,902	($44,306)	$18,596
Other intangibles	89,266	(42,571)	46,695	87,616	(32,366)	55,250
Total amortizing intangibles	$155,741	($92,628)	$63,113	$150,518	($76,672)	$73,846

The estimated aggregate amortization expense for each of the five succeeding fiscal years ended December 31 is as follows:

2020	$13,800
2021	11,786
2022	10,105
2023	8,457
2024	7,041
Thereafter	11,924
Total	$63,113

Shown below are the components of the Company’s goodwill at December 31, 2019, 2018, and 2017:

(000’s omitted)	Year Ended December 31, 2017	Activity	Year Ended December 31, 2018	Activity	Year Ended December 31, 2019
Goodwill	$739,254	($927)	$738,327	$40,307	$778,634
Accumulated impairment	(4,824)	0	(4,824)	0	(4,824)
Goodwill, net	$734,430	($927)	$733,503	$40,307	$773,810

During the first quarter of 2019, the Company performed its annual internal valuation of goodwill and impairment analysis by comparing the fair value of each reporting unit to its carrying value. Results of the valuations indicate there was no goodwill impairment.

Mortgage Servicing Rights

Under certain circumstances, the Company sells consumer residential mortgage loans in the secondary market and typically retains the right to service the loans sold. Generally, the Company’s residential mortgage loans sold to third parties are sold on a non-recourse basis. Upon sale, a mortgage servicing right (“MSR”) is established, which represents the current fair value of future net cash flows expected to be realized for performing the servicing activities. The Company stratifies these assets based on predominant risk characteristics, namely expected term of the underlying financial instruments, and uses a valuation model that calculates the present value of future cash flows to determine the fair value of servicing rights. MSRs are recorded in other assets at the lower of the initial capitalized amount, net of accumulated amortization or fair value. Mortgage loans serviced for others are not included in the accompanying consolidated statements of condition.

The following table summarizes the changes in carrying value of MSRs and the associated valuation allowance:

(000's omitted)	2019	2018
Carrying value before valuation allowance at beginning of period	$1,137	$1,358
Additions	17	228
Kinderhook acquisition	196	0
Amortization	(378)	(449)
Carrying value before valuation allowance at end of period	972	1,137
Valuation allowance balance at beginning of period	0	0
Impairment charges	(326)	0
Impairment recoveries	28	0
Valuation allowance balance at end of period	(298)	0
Net carrying value at end of period	$674	$1,137
Fair value of MSRs at end of period	$1,362	$2,397
Principal balance of loans sold during the year	$2,204	$18,228
Principal balance of loans serviced for others	$294,093	$333,862
Custodial escrow balances maintained in connection with loans serviced for others	$4,596	$4,982

The following table summarizes the key economic assumptions used to estimate the value of the MSRs at December 31:

	2019	2018
Weighted-average contractual life (in years)	20.9	21.4
Weighted-average constant prepayment rate (CPR)	18.7%	9.3%
Weighted-average discount rate	3.0%	3.6%

NOTE G: DEPOSITS

Deposits recorded in the consolidated statements of condition consist of the following at December 31:

(000's omitted)	2019	2018
Noninterest checking	$2,465,902	$2,312,816
Interest checking	2,138,348	1,920,545
Savings	1,538,203	1,448,208
Money market	1,916,385	1,901,262
Time	936,129	739,540
Total deposits	$8,994,967	$8,322,371

Interest on deposits recorded in the consolidated statements of income consists of the following at December 31:

(000's omitted)	2019	2018	2017
Interest on interest checking	$3,678	$1,796	$1,032
Interest on savings	942	858	841
Interest on money market	5,836	3,638	2,981
Interest on time	10,004	4,366	3,177
Total interest on deposits	$20,460	$10,658	$8,031

The approximate maturities of time deposits at December 31, 2019 are as follows:

(000's omitted)	All Accounts	Accounts $250,000 or Greater
2020	$505,008	$73,893
2021	162,729	23,356
2022	84,028	7,297
2023	87,907	5,719
2024	96,439	20,252
Thereafter	18	0
Total	$936,129	$130,517

NOTE H: BORROWINGS

Outstanding borrowings at December 31 are as follows:

(000's omitted)	2019	2018
Overnight FHLB borrowings	$8,300	$54,400
Subordinated notes payable, net of premium of $795 and $0, respectively	13,795	0
Subordinated debt held by unconsolidated subsidiary trusts	77,320	97,939
Securities sold under agreement to repurchase, short term	241,708	259,367
Other FHLB borrowings	3,750	1,976
Total borrowings	$344,873	$413,682

FHLB advances are collateralized by a blanket lien on the Company's residential real estate loan portfolio and various investment securities.

Borrowings at December 31, 2019 have contractual maturity dates as follows:

(000's omitted, except rate)	Carrying Value	Weighted-average Rate at December 31, 2019
January 2, 2020	$250,008	0.82%
June 15, 2020	1,000	1.75%
February 8, 2021	675	1.45%
February 8, 2023	190	1.79%
July 3, 2023	549	2.25%
October 23, 2023	455	1.50%
October 1, 2025	302	1.50%
November 18, 2025	10,467	6.38%
February 28, 2028	3,328	6.00%
March 1, 2029	579	2.50%
December 15, 2036	77,320	3.54%
Total	$344,873	1.65%

The weighted-average interest rate on borrowings for the years ended December 31, 2019 and 2018 was 1.86% and 1.72%, respectively.

As of December 31, 2019, the Company sponsors one business trust, Community Capital Trust IV ("CCT IV"), of which 100% of the common stock is owned by the Company. The Company previously sponsored MBVT Statutory Trust I ("MBVT I") and Kinderhook Capital Trust ("KCT") until September 16, 2019 when the Company exercised its right to redeem all of the MBVT I and KCT debentures and associated preferred securities for a total of $20.6 million and $2.1 million, respectively. The common stock of MBVT I was acquired in the Merchants Bancshares, Inc. ("Merchants") acquisition and the common stock of KCT was acquired in the Kinderhook Bank Corp. ("Kinderhook") acquisition. The Company previously sponsored Community Statutory Trust III ("CST III") until July 31, 2018 when the Company exercised its right to redeem all of the CST III debentures and associated preferred securities for a total of $25.2 million. The trusts were formed for the purpose of issuing company-obligated mandatorily redeemable preferred securities to third-party investors and investing the proceeds from the sale of such preferred securities solely in junior subordinated debt securities of the Company. The debentures held by each trust are the sole assets of such trust. Distributions on the preferred securities issued by each trust are payable quarterly at a rate per annum equal to the interest rate being earned by the trust on the debentures held by that trust and are recorded as interest expense in the consolidated financial statements. The preferred securities are subject to mandatory redemption, in whole or in part, upon repayment of the debentures. The Company has entered into agreements which, taken collectively, fully and unconditionally guarantee the preferred securities subject to the terms of each of the guarantees. As of December 31, 2019, the terms of the preferred securities of CCT IV are as follows:

Trust	Issuance Date	Par Amount	Interest Rate	Maturity Date	Call Price
CCT IV	12/8/2006	$75.0 million	3 month LIBOR plus 1.65% (3.54%)	12/15/2036	Par

NOTE I: INCOME TAXES

The provision for income taxes for the years ended December 31 is as follows:

(000's omitted)	2019	2018	2017
Current:			
Federal	$34,804	$32,504	$31,152
State and other	7,773	9,180	6,788
Deferred:			
Federal	(699)	2,122	(28,146)
State and other	(1,603)	541	(546)
Provision for income taxes	$40,275	$44,347	$9,248

Components of the net deferred tax liability, included in other liabilities, as of December 31 are as follows:

(000's omitted)	2019	2018
Allowance for loan losses	$12,059	$12,131
Employee benefits	5,393	4,479
Operating lease liabilities	9,801	0
Other, net	837	541
Deferred tax asset	28,090	17,151
Investment securities	21,547	14,451
Goodwill and intangibles	39,189	39,540
Operating lease right-of-use assets	9,566	0
Loan origination costs	7,639	6,851
Depreciation	2,736	3,098
Mortgage servicing rights	162	277
Pension	13,769	11,078
Deferred tax liability	94,608	75,295
Net deferred tax liability	($66,518)	($58,144)

The Company has determined that no valuation allowance is necessary as it is more likely than not that the gross deferred tax assets will be realized through future reversals of existing temporary differences and through future taxable income.

A reconciliation of the differences between the federal statutory income tax rate and the effective tax rate for the years ended December 31 is shown in the following table:

	2019	2018	2017
Federal statutory income tax rate	21.0%	21.0%	35.0%
Increase (reduction) in taxes resulting from:			
Tax-exempt interest	(1.5)	(1.6)	(3.8)
State income taxes, net of federal benefit	2.5	3.4	2.5
Stock-based compensation	(1.6)	(0.9)	(2.0)
Federal deferred tax revaluation adjustment	0	0	(23.7)
Federal tax credits	(1.3)	(1.4)	(1.5)
Other, net	0.1	0.3	(0.7)
Effective income tax rate	19.2%	20.8%	5.8%

A reconciliation of the unrecognized tax benefits for the years ended December 31 is shown in the following table:

(000's omitted)	2019	2018	2017
Unrecognized tax benefits at beginning of year	$0	$24	$92
Changes related to:			
Lapse of statutes of limitations	0	(24)	(68)
Unrecognized tax benefits at end of year	$0	$0	$24

As of December 31, 2019, there was no amount of material unrecognized tax benefits that would impact the Company's effective tax rate if recognized. It is reasonably possible that the amount of unrecognized tax benefits could change in the next twelve months as a result of various examinations and expiration of statutes of limitations on prior tax returns.

The Company's policy is to recognize interest and penalties related to unrecognized tax benefits as part of income taxes in the consolidated statement of income. The accrued interest related to tax positions was immaterial.

The Company's federal and state income tax returns are routinely subject to examination from various governmental taxing authorities. Such examinations may result in challenges to the tax return treatment applied by the Company to specific transactions. Management believes that the assumptions and judgment used to record tax-related assets or liabilities have been appropriate. Future examinations by taxing authorities of the Company's federal or state tax returns could have a material impact on the Company's results of operations. The Company's federal income tax returns for years after 2015 may still be examined by the Internal Revenue Service. New York State income tax returns for years after 2015 may still be examined by the New York Department of Taxation and Finance. The Company is currently under examination by the New York Department of Taxation and Finance in connection with tax years 2015 to 2017, and has not received any notices of proposed adjustments. It is not possible to estimate, if and when those examinations may be completed.

On December 22, 2017, H.R.1, referred to as the "Tax Cuts and Jobs Act," was signed into law. Among other things, the Tax Cuts and Jobs Act lowered the corporate tax rate to 21% from the existing maximum rate of 35%, effective for tax years including or commencing January 1, 2018. ASC 740, *Income Taxes*, requires existing deferred tax assets and liabilities to be measured at the enacted tax rate expected to be applied when the temporary differences are to be realized or settled. Thus, as of the date of enactment, deferred taxes were re-measured based upon the new 21% tax rate. Prior to the change in tax rate, the Company had recorded net deferred tax liabilities based on a marginal tax rate of 37.70%. The change in tax rate resulted in a decrease in the marginal tax rate to 24.29% and a deferred tax benefit of $38.0 million from the write-down of the net deferred tax liabilities. The effect of this change in tax law was recorded as a component of the income tax provision including those deferred assets and liabilities that were established through a financial statement component other than continuing operations.

NOTE J: LIMITS ON DIVIDENDS AND OTHER REVENUE SOURCES

The Company's ability to pay dividends to its shareholders is largely dependent on the Bank's ability to pay dividends to the Company. In addition to the capital requirements discussed below, the circumstances under which the Bank may pay dividends are limited by federal statutes, regulations, and policies. For example, as a national bank, the Bank must obtain the approval of the Office of the Comptroller of the Currency ("OCC") for payments of dividends if the total of all dividends declared in any calendar year would exceed the total of the Bank's net profits, as defined by applicable regulations, for that year, combined with its retained net profits for the preceding two years. Furthermore, the Bank may not pay a dividend in an amount greater than its undivided profits then on hand after deducting its losses and bad debts, as defined by applicable regulations. At December 31, 2019, the Bank had approximately $119.3 million in undivided profits legally available for the payment of dividends.

In addition, the Board of Governors of the Federal Reserve System ("FRB") and the OCC are authorized to determine under certain circumstances that the payment of dividends would be an unsafe or unsound practice and to prohibit payment of such dividends. The FRB has indicated that banking organizations should generally pay dividends only out of current operating earnings.

There are also statutory limits on the transfer of funds to the Company by its banking subsidiary, whether in the form of loans or other extensions of credit, investments or assets purchases. Such transfer by the Bank to the Company generally is limited in amount to 10% of the Bank's capital and surplus, or 20% in the aggregate. Furthermore, such loans and extensions of credit are required to be collateralized in specific amounts.

NOTE K: BENEFIT PLANS

Pension and post-retirement plans
The Company provides a qualified defined benefit pension to eligible employees and retirees, other post-retirement health and life insurance benefits to certain retirees, an unfunded supplemental pension plan for certain key executives, and an unfunded stock balance plan for certain of its nonemployee directors. Using a measurement date of December 31, the following table shows the funded status of the Company's plans reconciled with amounts reported in the Company's consolidated statements of condition:

	Pension Benefits		Post-retirement Benefits	
(000's omitted)	2019	2018	2019	2018
Change in benefit obligation:				
Benefit obligation at the beginning of year	$144,211	$147,450	$1,657	$1,785
Service cost	5,081	4,561	0	0
Interest cost	6,264	5,676	70	69
Plan amendment / acquisition	0	883	0	0
Participant contributions	0	0	35	479
Deferred actuarial (gain)/loss	16,292	(4,177)	87	191
Benefits paid	(9,764)	(10,182)	(172)	(867)
Benefit obligation at end of year	162,084	144,211	1,677	1,657
Change in plan assets:				
Fair value of plan assets at beginning of year	203,672	217,107	0	0
Actual return of plan assets	25,522	(3,858)	0	0
Participant contributions	0	0	35	479
Employer contributions	7,893	605	137	388
Plan acquisition	0	0	0	0
Benefits paid	(9,764)	(10,182)	(172)	(867)
Fair value of plan assets at end of year	227,323	203,672	0	0
Over/(Under) funded status at year end	$65,239	$59,461	($1,677)	($1,657)
Amounts recognized in the consolidated statement of condition were:				
Other assets	$81,930	$72,659	$0	$0
Other liabilities	(16,691)	(13,198)	(1,677)	(1,657)
Amounts recognized in accumulated other comprehensive loss/(income) ("AOCI") were:				
Net loss	$41,924	$39,410	$641	$592
Net prior service cost (credit)	4,875	4,939	(1,265)	(1,444)
Pre-tax AOCI	46,799	44,349	(624)	(852)
Taxes	(11,448)	(10,870)	155	210
AOCI at year end	$35,351	$33,479	($469)	($642)

The benefit obligation for the defined benefit pension plan was $145.4 million and $131.0 million as of December 31, 2019 and 2018, respectively, and the fair value of plan assets as of December 31, 2019 and 2018 was $227.3 million and $203.7 million, respectively. The defined benefit pension plan was amended effective December 31, 2018 to transfer certain obligations from the Company's non-qualified supplemental pension plan and Restoration Plan (as defined below) into the qualified defined benefit pension plan.

The Company has unfunded supplemental pension plans for certain key active and retired executives. The projected benefit obligation for the unfunded supplemental pension plan for certain key executives was $16.4 million and $13.2 million for 2019 and 2018, respectively. The Company also has an unfunded stock balance plan for certain of its nonemployee directors. The projected benefit obligation for the unfunded stock balance plan was $0.1 million for 2019 and 2018. The plan was frozen effective December 31, 2009.

Effective June 1, 2018, the Company adopted the Community Bank System, Inc. Restoration Plan ("Restoration Plan"). The Restoration Plan is a non-qualified deferred compensation plan for certain employees whose benefits under tax-qualified retirement plans are restricted by the Internal Revenue Code Section 401(a)(17) limitation on compensation. Adoption of the plan resulted in an unfunded initial projected benefit obligation of approximately $0.8 million. The Restoration Plan was amended effective December 31, 2018 to transfer certain obligations into the Company's qualified defined benefit pension plan. The projected benefit obligation for the unfunded Restoration Plan was $0.3 million for 2019 and $0.1 million for 2018, respectively.

Effective December 31, 2009, the Company terminated its post-retirement medical program for current and future employees. Remaining plan participants will include only existing retirees as of December 31, 2010. This change was accounted for as a negative plan amendment and a $3.5 million, net of income taxes, benefit for prior service was recognized in AOCI in 2009. This negative plan amendment is being amortized over the expected benefit utilization period of remaining plan participants.

Amounts recognized in accumulated other comprehensive income, net of tax, for the year ended December 31, are as follows:

	Pension Benefits		Post-retirement Benefits	
(000's omitted)	2019	2018	2019	2018
Prior service cost/(credit)	($49)	$1,509	$136	$135
Net (gain) loss	1,920	9,431	38	129
Total	$1,871	$10,940	$174	$264

The estimated costs, net of tax, that will be amortized from accumulated other comprehensive (income) loss into net periodic (income) cost over the next fiscal year are as follows:

(000's omitted)	Pension Benefits	Post-retirement Benefits
Prior service credit	$241	($179)
Net loss	3,212	40
Total	$3,453	($139)

The weighted-average assumptions used to determine the benefit obligations as of December 31 are as follows:

	Pension Benefits		Post-retirement Benefits	
	2019	2018	2019	2018
Discount rate	3.50%	4.50%	3.60%	4.45%
Expected return on plan assets	7.00%	7.00%	N/A	N/A
Rate of compensation increase	3.50%	3.50%	N/A	N/A

The net periodic benefit cost as of December 31 is as follows:

	Pension Benefits			Post-retirement Benefits		
(000's omitted)	2019	2018	2017	2019	2018	2017
Service cost	$5,081	$4,561	$4,181	$0	$0	$0
Interest cost	6,264	5,676	5,717	70	69	76
Expected return on plan assets	(14,311)	(14,820)	(13,354)	0	0	0
Plan amendment	0	13	0	0	0	0
Amortization of unrecognized net loss/(gain)	2,568	1,193	767	38	21	8
Amortization of prior service cost	64	(293)	55	(179)	(179)	(179)
Net periodic (benefit)	($334)	($3,670)	($2,634)	($71)	($89)	($95)

Prior service costs in which all or almost all of the plan's participants are fully eligible for benefits under the plan are amortized on a straight-line basis over the expected future working years of all active plan participants. Unrecognized gains or losses are amortized using the "corridor approach", which is the minimum amortization required. Under the corridor approach, the net gain or loss in excess of 10 percent of the greater of the projected benefit obligation or the market-related value of the assets is amortized on a straight-line basis over the expected future working years of all active plan participants.

The weighted-average assumptions used to determine the net periodic pension cost for the years ended December 31 are as follows:

	Pension Benefits			Post-retirement Benefits		
	2019	2018	2017	2019	2018	2017
Discount rate	4.50%	4.00%	4.40%	4.45%	4.00%	4.40%
Expected return on plan assets	7.00%	7.00%	7.00%	N/A	N/A	N/A
Rate of compensation increase	3.50%	3.50%	3.50%	N/A	N/A	N/A

The amount of benefit payments that are expected to be paid over the next ten years are as follows:

(000's omitted)	Pension Benefits	Post-retirement Benefits
2020	$9,947	$179
2021	10,713	135
2022	10,913	132
2023	11,455	129
2024	11,762	126
2025-2029	59,503	572

The payments reflect future service and are based on various assumptions including retirement age and form of payment (lump-sum versus annuity). Actual results may differ from these estimates.

The assumed discount rate is used to reflect the time value of future benefit obligations. The discount rate was determined based upon the yield on high-quality fixed income investments expected to be available during the period to maturity of the pension benefits. This rate is sensitive to changes in interest rates. A decrease in the discount rate would increase the Company’s obligation and future expense while an increase would have the opposite effect. The expected long-term rate of return was estimated by taking into consideration asset allocation, reviewing historical returns on the type of assets held and current economic factors. Based on the Company’s anticipation of future experience under the defined benefit pension plan, the mortality tables used to determine future benefit obligations under the plan were updated as of December 31, 2019 to the RP-2014 Mortality Table for employees and healthy annuitants, adjusted backward to 2006 with Scale MP-2014, and then adjusted for mortality improvements with the Scale MP-2018 mortality improvement scale on a generational basis. The appropriateness of the assumptions are reviewed annually.

Plan Assets

The investment objective for the defined benefit pension plan is to achieve an average annual total return over a five-year period equal to the assumed rate of return used in the actuarial calculations. At a minimum performance level, the portfolio should earn the return obtainable on high quality intermediate-term bonds. The Company’s perspective regarding portfolio assets combines both preservation of capital and moderate risk-taking. Asset allocation favors fixed income securities, with a target allocation of approximately 60% equity securities and 40% fixed income securities and money market funds. Due to the volatility in the market, the target allocation is not always desirable and asset allocations will fluctuate between acceptable ranges. Prohibited transactions include purchase of securities on margin, uncovered call options, and short sale transactions.

The fair values of the Company's defined benefit pension plan assets at December 31, 2019 by asset category are as follows:

Asset category (000's omitted)	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Observable Inputs Level 2	Significant Unobservable Inputs Level 3	Total
Cash equivalents	$3,983	$0	$0	$3,983
Equity securities:				
U.S. large-cap	50,301	0	0	50,301
U.S mid/small cap	10,408	0	0	10,408
CBU stock	6,522	0	0	6,522
International	37,990	0	0	37,990
	105,221	0	0	105,221
Fixed income securities:				
Government securities	73,698	8,341	0	82,039
Investment grade bonds	12,884	0	0	12,884
High yield[(a)]	6,770	0	0	6,770
	93,352	8,341	0	101,693
Other investments [(b)]	15,856	82	0	15,938
Total [(c)]	$218,412	$8,423	$0	$226,835

The fair values of the Company's defined benefit pension plan assets at December 31, 2018 by asset category are as follows:

Asset category (000's omitted)	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Observable Inputs Level 2	Significant Unobservable Inputs Level 3	Total
Cash equivalents	$4,856	$0	$0	$4,856
Equity securities:				
U.S. large-cap	39,122	0	0	39,122
U.S mid/small cap	9,881	0	0	9,881
CBU stock	7,692	0	0	7,692
International	32,506	0	0	32,506
	89,201	0	0	89,201
Fixed income securities:				
Government securities	64,417	11,370	0	75,787
Investment grade bonds	12,054	0	0	12,054
High yield[(a)]	6,712	0	0	6,712
	83,183	11,370	0	94,553
Other investments [(b)]	14,267	66	0	14,333
Total [(c)]	$191,507	$11,436	$0	$202,943

(a) This category is exchange-traded funds representing a diversified index of high yield corporate bonds.

(b) This category is comprised of exchange-traded funds and mutual funds holding non-traditional investment classes including private equity funds and alternative exchange funds.

(c) Excludes dividends and interest receivable totaling $0.5 million and $0.7 million at December 31, 2019 and 2018, respectively.

The valuation techniques used to measure fair value for the items in the table above are as follows:

- Money market funds - Managed portfolios, including commercial paper and other fixed income securities issued by U.S. and foreign corporations, asset-backed commercial paper, U.S. government securities, obligations of foreign governments and U.S. and foreign banks, which are valued at the closing price reported on the market on which the underlying securities are traded.
- Equity securities and other investments – Mutual funds, equity securities and common stock of the Company which are valued at the quoted market price of shares held at year-end.
- Fixed income securities - U.S. Treasuries, municipal bonds and notes, government sponsored entities, and corporate debt valued at the closing price reported on the active market on which the individual securities are traded or for municipal bonds and notes based on quoted prices for similar assets in the active market.

The Company makes contributions to its funded qualified pension plan as required by government regulation or as deemed appropriate by management after considering the fair value of plan assets, expected return on such assets, and the value of the accumulated benefit obligation. The Company made a $7.3 million contribution to its defined benefit pension plan in 2019. The Company funds the payment of benefit obligations for the supplemental pension and post-retirement plans because such plans do not hold assets for investment.

401(k) Employee Stock Ownership Plan

The Company has a 401(k) Employee Stock Ownership Plan in which employees can contribute from 1% to 90% of eligible compensation, with the first 3% being eligible for a 100% matching contribution in the form of Company common stock and the next 3% being eligible for a 50% matching contributions in the form of Company common stock. The expense recognized under this plan for the years ended December 31, 2019, 2018 and 2017 was $6.1 million, $5.9 million, and $5.3 million, respectively. Effective January 1, 2010, the defined benefit pension plan was modified to a new plan design that includes an interest credit contribution to be made to the 401(k) plan. The expense recognized for this interest credit contribution for the years ended December 31, 2019, 2018, and 2017 was $1.1 million, $0.9 million, and $0.8 million, respectively.

The Company acquired The Merchants Bank 401(k) ESOP Plan with the Merchants acquisition and The Gordon B. Roberts 401(k) Plan with the GBR acquisition. Effective January 1, 2018, The Merchants Bank 401(k) ESOP Plan and The Gordon B. Roberts 401(k) Plan were merged into and became part of the Community Bank System, Inc. 401(k) Employee Stock Ownership Plan.

Other Deferred Compensation Arrangements

In addition to the supplemental pension plans for certain executives, the Company has nonqualified deferred compensation arrangements for several former directors, officers and key employees. All benefits provided under these plans are unfunded and payments to plan participants are made by the Company. At December 31, 2019 and 2018, the Company has recorded a liability of $2.6 million and $2.8 million, respectively. The expense recognized under these plans for the years ended December 31, 2019, 2018, and 2017 was approximately $0.2 million, $0.08 million, and $0.3 million, respectively.

Deferred Compensation Plans for Directors

Directors of the Company may defer all or a portion of their director fees under the Deferred Compensation Plan for Directors. Under this plan, there is a separate account for each participating director which is credited with the amount of shares that could have been purchased with the director’s fees as well as any dividends on such shares. On the distribution date, the director will receive common stock equal to the accumulated share balance in their account. As of December 31, 2019 and 2018, there were 151,519 and 151,977 shares credited to the participants’ accounts, for which a liability of $4.9 million and $4.6 million was accrued, respectively. The expense recognized under the plan for the years ended December 31, 2019, 2018 and 2017, was $0.2 million, $0.2 million, and $0.2 million, respectively.

The Company acquired deferred compensation plans for certain non-employee directors and trustees of Merchants. Under the terms of these acquired deferred compensation plans, participating directors could elect to have all, or a specified percentage, of their Merchants director’s fees for a given year paid in the form of cash or deferred in the form of restricted shares of Merchants’ common stock. Directors who elected to have their compensation deferred were credited with a number of shares of Merchants’ common stock equal in value to the amount of fees deferred. These shares were converted to shares of Company stock in connection with the acquisition and are held in a rabbi trust. The shares held in the rabbi trust are considered outstanding for purposes of computing earnings per share. The participating director may not sell, transfer or otherwise dispose of these shares prior to distribution. With respect to shares of common stock issued or otherwise transferred to a participating director, the participating director has the right to receive dividends or other distributions thereon.

NOTE L: STOCK-BASED COMPENSATION PLANS

The Company has a long-term incentive program for directors, officers and employees. Under this program, the Company initially authorized four million shares of Company common stock for the grant of incentive stock options, nonqualified stock options, restricted stock awards, and retroactive stock appreciation rights. The long-term incentive program was amended effective May 25, 2011, May 14, 2014 and May 17, 2017 to authorize an additional 900,000 shares, 1,000,000 shares and 1,000,000 shares of Company common stock, respectively, for the grant of incentive stock options, nonqualified stock options, restricted stock awards, and retroactive stock appreciation rights. As of December 31, 2019, the Company has authorization to grant up to approximately 1.2 million additional shares of Company common stock for these instruments. The nonqualified (offset) stock options in its Director's Stock Balance Plan vest and become exercisable immediately and expire one year after the date the director retires or two years in the event of death. The remaining options have a ten-year term, and vest and become exercisable on a grant-by-grant basis, ranging from immediate vesting to ratably over a five-year period.

Activity in this long-term incentive program is as follows:

	Stock Options	
	Outstanding	Weighted-average Exercise Price of Shares
Outstanding at December 31, 2017	1,708,296	$34.57
Granted	213,504	55.92
Exercised	(268,004)	27.94
Forfeited	(9,435)	45.54
Outstanding at December 31, 2018	1,644,361	38.36
Granted	199,110	59.41
Exercised	(331,315)	30.42
Forfeited	(9,162)	51.29
Outstanding at December 31, 2019	1,502,994	42.82
Exercisable at December 31, 2019	929,120	$36.73

The following table summarizes the information about stock options outstanding under the Company's stock option plan at December 31, 2019:

	Options outstanding			Options exercisable	
Range of Exercise Price	Shares	Weighted-average Exercise Price	Weighted-average Remaining Life (years)	Shares	Weighted-average Exercise Price
$0.00 – $28.00	96,324	$79.25	3.36	96,324	$24.26
$28.001 – $29.00	97,492	28.78	2.22	97,492	28.78
$29.001 – $30.00	141,501	29.79	3.21	141,501	29.79
$30.001 – $40.00	594,156	37.09	5.38	453,418	37.05
$40.001 – $60.00	573,521	57.47	8.24	140,385	56.76
TOTAL	1,502,994	$42.82	5.93	929,120	$36.73

The weighted-average remaining contractual term of outstanding and exercisable stock options at December 31, 2019 is 5.93 years and 4.77 years, respectively. The aggregate intrinsic value of outstanding and exercisable stock options at December 31, 2019 is $42.3 million and $31.8 million, respectively.

The Company recognized stock-based compensation expense related to non-qualified stock options of $2.2 million, $2.6 million and $2.2 million for the years ended December 31, 2019, 2018 and 2017, respectively. A related income tax benefit was recognized of $0.5 million, $0.6 million and $0.8 million for the 2019, 2018 and 2017 years, respectively. Compensation expense related to restricted stock vesting recognized in the income statement for 2019, 2018 and 2017 was approximately $2.8 million, $3.2 million and $2.7 million, respectively.

Management estimated the fair value of options granted using the Black-Scholes option-pricing model. This model was originally developed to estimate the fair value of exchange-traded equity options, which (unlike employee stock options) have no vesting period or transferability restrictions. As a result, the Black-Scholes model is not necessarily a precise indicator of the value of an option, but it is commonly used for this purpose. The Black-Scholes model requires several assumptions, which management developed based on historical trends and current market observations.

	2019	2018	2017
Weighted-average Fair Value of Options Granted	$14.16	$13.44	$12.78
Assumptions:			
Weighted-average expected life (in years)	6.50	6.50	6.50
Future dividend yield	2.73%	2.91%	3.19%
Share price volatility	29.31%	29.44%	29.71%
Weighted-average risk-free interest rate	2.44%	2.82%	2.31%

Unrecognized stock-based compensation expense related to non-vested stock options totaled $5.1 million at December 31, 2019. The weighted-average period over which this unrecognized expense would be recognized is 3.3 years. The total fair value of stock options vested during 2019, 2018, and 2017 were $2.4 million, $2.3 million and $2.2 million, respectively.

During the 12 months ended December 31, 2019 and 2018, proceeds from stock option exercises totaled $11.3 million and $9.4 million, respectively, and the related tax benefits from exercise were approximately $2.3 million and $1.6 million, respectively. During the twelve months ended December 31, 2019 and 2018, approximately 0.3 million shares were issued in connection with stock option exercises each year. The total intrinsic value of options exercised during 2019, 2018 and 2017 were $11.6 million, $8.4 million and $7.6 million, respectively.

A summary of the status of the Company's unvested restricted stock awards as of December 31, 2019, and changes during the twelve months ended December 31, 2019 and 2018, is presented below:

	Restricted Shares	Weighted-average grant date fair value
Unvested at December 31, 2017	230,873	$34.06
Awards	50,133	55.92
Forfeitures	(3,429)	34.95
Vestings	(56,514)	39.40
Unvested at December 31, 2018	221,063	37.72
Awards	108,556	42.53
Forfeitures	(2,365)	52.47
Vestings	(130,466)	29.71
Unvested at December 31, 2019	196,788	$45.58

Unrecognized stock-based compensation expense related to unvested restricted stock totaled $6.6 million at December 31, 2019, which will be recognized as expense over the next five years. The weighted-average period over which this unrecognized expense would be recognized is 4.7 years. The total fair value of restricted stock vested during 2019, 2018, and 2017 were $3.8 million, $2.3 million and $2.2 million, respectively.

NOTE M: EARNINGS PER SHARE

The two class method is used in the calculations 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 and participation rights in undistributed earnings. The Company has determined that all of its outstanding non-vested stock awards are participating securities as of December 31, 2019.

Basic earnings per share are computed based on the weighted-average of the common shares outstanding for the period. Diluted earnings per share are based on the weighted-average of the shares outstanding and the assumed exercise of stock options during the year. The dilutive effect of options is calculated using the treasury stock method of accounting. The treasury stock method determines the number of common shares that would be outstanding if all the dilutive options were exercised and the proceeds were used to repurchase common shares in the open market at the average market price for the applicable time period. There were approximately 0.5 million, 0.4 million and 0.2 million weighted-average anti-dilutive stock options outstanding at December 31, 2019, 2018 and 2017, respectively, which were not included in the computation below.

The following is a reconciliation of basic to diluted earnings per share for the years ended December 31, 2019, 2018 and 2017.

(000's omitted, except per share data)	2019	2018	2017
Net income	$169,063	$168,641	$150,717
Income attributable to unvested stock-based compensation awards	(400)	(744)	(597)
Income available to common shareholders	$168,663	$167,897	$150,120
Weighted-average common shares outstanding - basic	51,732	51,165	48,843
Basic earnings per share	$3.26	$3.28	$3.07
Net income	$169,063	$168,641	$150,717
Income attributable to unvested stock-based compensation awards	(400)	(744)	(597)
Income available to common shareholders	$168,663	$167,897	$150,120
Weighted-average common shares outstanding	51,732	51,165	48,843
Assumed exercise of stock options	516	583	627
Weighted-average common shares outstanding – diluted	52,248	51,748	49,470
Diluted earnings per share	$3.23	$3.24	$3.03
Cash dividends declared per share	$1.58	$1.44	$1.32

Stock Repurchase Program

At its December 2018 meeting, the Company's Board of Directors (the "Board") approved a stock repurchase program authorizing the repurchase of up to 2.5 million shares of the Company's common stock in accordance with securities laws and regulations, through December 31, 2019. At its December 2019 meeting, the Board approved a similar program for 2020, authorizing the repurchase of up to 2.6 million shares of the Company's common stock through December 31, 2020. Any repurchased shares will be used for general corporate purposes, including those related to stock plan activities. The timing and extent of repurchases will depend on market conditions and other corporate considerations as determined at the Company's discretion. There were no stock repurchases pursuant to the announced plans in 2019 or 2018.

NOTE N: COMMITMENTS, CONTINGENT LIABILITIES AND RESTRICTIONS

The Company is a party to financial instruments with off-balance-sheet risk in the normal course of business to meet the financing needs of its customers. These financial instruments consist primarily of commitments to extend credit and standby letters of credit. Commitments to extend credit are agreements to lend to customers, generally having fixed expiration dates or other termination clauses that may require payment of a fee. These commitments consist principally of unused commercial and consumer credit lines. Standby letters of credit generally are contingent upon the failure of the customer to perform according to the terms of an underlying contract with a third party. The credit risks associated with commitments to extend credit and standby letters of credit are essentially the same as that involved with extending loans to customers and are subject to the Company's normal credit policies. Collateral may be obtained based on management's assessment of the customer's creditworthiness. The fair value of the standby letters of credit is immaterial for disclosure.

The contract amounts of commitments and contingencies are as follows at December 31:

(000's omitted)	2019	2018
Commitments to extend credit	$1,143,780	$1,134,576
Standby letters of credit	37,872	33,169
Total	$1,181,652	$1,167,745

The Bank has unused lines of credit of $25.0 million at December 31, 2019. The Bank has unused borrowing capacity of approximately $1.80 billion through collateralized transactions with the FHLB and $25.1 million through collateralized transactions with the Federal Reserve.

The Company is required to maintain a reserve balance, as established by the FRB. The required average total reserve for the 14-day maintenance period of December 19, 2019 through January 1, 2020 was $100.3 million, with $77.2 million represented by cash on hand and the remaining $23.1 million was required to be on deposit with the Federal Reserve.

The Company and its subsidiaries are subject in the normal course of business to various pending and threatened legal proceedings in which claims for monetary damages are asserted. As of December 31, 2019, management, after consultation with legal counsel, does not anticipate that the aggregate ultimate liability arising out of litigation pending or threatened against the Company or its subsidiaries will be material to the Company's consolidated financial position. On at least a quarterly basis the Company assesses its liabilities and contingencies in connection with such legal proceedings. For those matters where it is probable that the Company will incur losses and the amounts of the losses can be reasonably estimated, the Company records an expense and corresponding liability in its consolidated financial statements. To the extent the pending or threatened litigation could result in exposure in excess of that liability, the amount of such excess is not currently estimable. The range of reasonably possible losses for matters where an exposure is not currently estimable or considered probable, beyond the existing recorded liabilities, is believed to be between $0 and $1 million in the aggregate. Although the Company does not believe that the outcome of pending litigation will be material to the Company's consolidated financial position, it cannot rule out the possibility that such outcomes will be material to the consolidated results of operations for a particular reporting period in the future.

NOTE O: LEASES

The Company has operating leases for certain offices and certain equipment. These leases have remaining terms that range from less than one year to 15 years. Options to extend the leases range from a single extension option of one year to multiple extension options for up to 40 years. Certain agreements include an option to terminate the lease within one year.

The components of lease expense are as follows:

(000's omitted)	2019
Operating lease cost	$8,724
Variable lease cost	18
Short-term lease cost (1)	240
Total lease cost	$8,982

(1) Short-term lease cost includes the cost of leases with terms of twelve months or less, excluding leases with terms of one month or less.

Supplemental cash flow information related to leases is as follows:

(000's omitted)	2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash outflows for operating leases	$7,938
Right-of-use assets obtained in exchange for lease obligations:	
Operating leases	14,145

Supplemental balance sheet information related to leases is as follows:

(000's omitted, except lease term and discount rate)	2019
Operating leases	
Operating lease right-of-use assets	$39,895
Operating lease liabilities	40,913
Weighted average remaining lease term	
Operating leases	6.6 years
Weighted average discount rate	
Operating leases	2.95%

Maturities of lease liabilities as of December 31, 2019 are as follows:

(000's omitted)	Operating Leases
2020	$9,396
2021	7,952
2022	6,664
2023	5,695
2024	4,565
Thereafter	11,150
Total lease payments	45,422
Less imputed interest	(4,509)
Total	$40,913

Included in the Company's operating leases are related party leases where BPAS APS and OneGroup, subsidiaries of the Company, lease office space from 706 North Clinton, LLC. ("706 North Clinton"), an entity the Company holds a 50% membership interest in through its subsidiary OPFC II. As of December 31, 2019, the operating lease right-of-use assets and operating lease liabilities associated with these related party leases total $4.9 million and $4.9 million, respectively. As of December 31, 2019, the weighted average remaining lease term and weighted average discount rate for the Company's related party leases are 10.0 years and 3.67%, respectively. The maturities of the Company's related party lease liabilities as of December 31, 2019 are as follows:

(000's omitted)	706 North Clinton, LLC
2020	$591
2021	591
2022	591
2023	591
2024	591
Thereafter	2,946
Total lease payments	5,901
Less imputed interest	(964)
Total	$4,937

As of December 31, 2019, the Company has one additional operating lease for office space that has not yet commenced with a lease term of 5 years. The Company anticipates that the operating lease will commence during the second quarter of 2020. Upon commencement, lease right-of-use assets and lease liabilities of approximately $0.6 million will be recorded in the consolidated statements of condition.

Rental expense included in operating expenses amounted to $9.0 million and $7.3 million in 2018 and 2017, respectively. The future minimum rental commitments as of December 31, 2018 for all non-cancelable operating leases are as follows:

2019	$8,452
2020	7,262
2021	5,673
2022	4,411
2023	2,621
Thereafter	10,390
Total	$38,809

NOTE P: REGULATORY MATTERS

The Company and the Bank are subject to various regulatory capital requirements administered by federal banking agencies. 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 Company's financial statements. Under capital adequacy guidelines and the regulatory framework for prompt corrective action, the Company and the Bank must meet specific capital guidelines that involve quantitative measures of the Company's and the Bank's assets, liabilities, and certain off-balance sheet items as calculated under regulatory accounting practices. The Company's and the Bank's capital amounts and classification are also subject to qualitative judgments by the regulators about components, risk weightings, and other factors. Management believes, as of December 31, 2019, that the Company and Bank meet all applicable capital adequacy requirements.

Basel III Transitional rules became effective for the Company on January 1, 2015 with all of the requirements being phased in over a multi-year schedule, and fully phased in by January 1, 2019. Beginning in 2016, the Company and the Bank are required to maintain a "capital conservation buffer," composed entirely of common equity Tier 1 capital, in addition to minimum risk-based capital ratios. The required capital conservation buffer is 2.50% for 2019 and 1.875% for 2018. Therefore, to satisfy both the minimum risk-based capital ratios and the capital conservation buffer in 2019, the Company and the Bank must maintain: (i) Common equity Tier 1 capital to total risk-weighted assets of at least 7.0%, (ii) Tier 1 capital to total risk-weighted assets of at least 8.5%, and (iii) Total capital (Tier 1 capital plus Tier 2 capital) to total risk-weighted assets of at least 10.5%. To satisfy both the minimum risk-based capital ratios and the capital conservation buffer in 2018, the Company and the Bank must maintain: (i) Common equity Tier 1 capital to total risk-weighted assets of at least 6.375%, (ii) Tier 1 capital to total risk-weighted assets of at least 7.875%, and (iii) Total capital (Tier 1 capital plus Tier 2 capital) to total risk-weighted assets of at least 9.875%. As of December 31, 2019 and 2018, the amounts, ratios and requirements for the Company are presented below calculated under the Basel III Standardized Transitional Approach. As of December 31, 2019, the OCC categorized the Company and Bank as "well capitalized" under the regulatory framework for prompt corrective action.

	Actual		**For capital adequacy purposes**		**For capital adequacy purposes plus Capital Conservation Buffer**		**To be well-capitalized under prompt corrective action**	
(000's omitted)	**Amount**	**Ratio**	**Amount**	**Ratio**	**Amount**	**Ratio**	**Amount**	**Ratio**
Community Bank System, Inc.:								
2019								
Tier 1 Leverage ratio	$1,148,336	10.80%	$425,431	4.00%			$531,788	5.00%
Tier 1 risk-based capital	1,148,336	17.23%	399,834	6.00%	$566,432	8.50%	533,112	8.00%
Total risk-based capital	1,198,724	17.99%	533,112	8.00%	699,710	10.50%	666,390	10.00%
Common equity tier 1 capital	1,073,281	16.11%	299,876	4.50%	466,473	7.00%	433,154	6.50%
2018								
Tier 1 Leverage ratio	$1,093,166	11.08%	$394,700	4.00%			$493,375	5.00%
Tier 1 risk-based capital	1,093,166	18.23%	359,747	6.00%	$472,168	7.875%	479,662	8.00%
Total risk-based capital	1,142,927	19.06%	479,662	8.00%	592,083	9.875%	599,578	10.00%
Common equity tier 1 capital	998,111	16.65%	269,810	4.50%	382,231	6.375%	389,726	6.50%
Community Bank, N.A.:								
2019								
Tier 1 Leverage ratio	$910,364	8.61%	$422,882	4.00%			$528,603	5.00%
Tier 1 risk-based capital	910,364	13.79%	396,064	6.00%	$561,091	8.50%	528,086	8.00%
Total risk-based capital	960,752	14.55%	528,086	8.00%	693,113	10.50%	660,107	10.00%
Common equity tier 1 capital	910,309	13.79%	297,048	4.50%	462,075	7.00%	429,070	6.50%
2018								
Tier 1 Leverage ratio	$912,995	9.32%	$391,953	4.00%			$489,941	5.00%
Tier 1 risk-based capital	912,995	15.35%	356,973	6.00%	$468,527	7.875%	475,964	8.00%
Total risk-based capital	962,756	16.18%	475,964	8.00%	587,518	9.875%	594,955	10.00%
Common equity tier 1 capital	912,940	15.35%	267,730	4.50%	379,284	6.375%	386,721	6.50%

NOTE Q: PARENT COMPANY STATEMENTS

The condensed statements of condition of the parent company, Community Bank System, Inc., at December 31 are as follows:

(000's omitted)	2019	2018
Assets:		
Cash and cash equivalents	$180,663	$116,133
Investment securities	2,853	3,452
Investment in and advances to:		
Bank subsidiary	1,594,790	1,522,109
Non-bank subsidiaries	180,487	182,617
Other assets	12,406	8,957
Total assets	$1,971,199	$1,833,268
Liabilities and shareholders' equity:		
Accrued interest and other liabilities	$24,850	$21,546
Borrowings	91,115	97,939
Shareholders' equity	1,855,234	1,713,783
Total liabilities and shareholders' equity	$1,971,199	$1,833,268

The condensed statements of income of the parent company for the years ended December 31 is as follows:

(000's omitted)	2019	2018	2017
Revenues:			
Dividends from subsidiaries:			
Bank subsidiary	$115,000	$98,000	$91,000
Non-bank subsidiaries	27,600	9,250	35,500
Interest and dividends on investments	134	161	133
Total revenues	142,734	107,411	126,633
Expenses:			
Interest on borrowings	4,244	4,677	3,904
Acquisition expenses	1,248	0	91
Loss on debt prepayment	0	318	0
Other expenses	477	131	26
Total expenses	5,969	5,126	4,021
Income before tax benefit and equity in undistributed net income of subsidiaries	136,765	102,285	122,612
Income tax benefit	4,545	1,330	1,930
Income before equity in undistributed net income of subsidiaries	141,310	103,615	124,542
Equity in undistributed net income of subsidiaries	27,753	65,026	26,175
Net income	$169,063	$168,641	$150,717
Other comprehensive income/(loss), net of tax:			
Changes in other comprehensive (loss)/income related to pension and other post retirement obligations	(2,045)	(11,204)	168
Changes in other comprehensive income/(loss) related to unrealized losses on available-for-sale securities	37,124	(30,402)	(11,065)
Other comprehensive income/(loss)	35,079	(41,606)	(10,897)
Comprehensive income	$204,142	$127,035	$139,820

The statements of cash flows of the parent company for the years ended December 31 is as follows:

(000's omitted)	2019	2018	2017
Operating activities:			
Net income	$169,063	$168,641	$150,717
Adjustments to reconcile net income to net cash provided by operating activities			
Equity in undistributed net income of subsidiaries	(27,753)	(65,026)	(26,175)
Net change in other assets and other liabilities	86	(1,084)	1,870
Net cash provided by operating activities	141,396	102,531	126,412
Investing activities:			
Proceeds from redemption of investment securities	0	776	0
Cash paid for acquisitions, net of cash acquired of $1,328, $0, and $150,534, respectively	(92,056)	0	(139,471)
Return of capital from/(capital contributions to)	100,680	0	(11,063)
Net cash provided by/(used in) investing activities	8,624	776	(150,534)
Financing activities:			
Repayment of advances from subsidiaries	(1,652)	0	0
Repayment of borrowings	(22,681)	(25,207)	0
Issuance of common stock	12,200	12,507	9,700
Purchase of treasury stock	(286)	(298)	(3,306)
Sale of treasury stock	6,884	12,561	10,060
Increase in deferred compensation arrangements	286	298	3,306
Cash dividends paid	(80,241)	(71,495)	(62,305)
Net cash used in financing activities	(85,490)	(71,634)	(42,545)
Change in cash and cash equivalents	64,530	31,673	(66,667)
Cash and cash equivalents at beginning of year	116,133	84,460	151,127
Cash and cash equivalents at end of year	$180,663	$116,133	$84,460
Supplemental disclosures of cash flow information:			
Cash paid for interest	$4,306	$4,857	$3,826
Supplemental disclosures of noncash financing activities			
Dividends declared and unpaid	$21,342	$19,808	$17,460
Advances from subsidiaries	1,691	0	0
Capital contributions to subsidiaries	0	0	513,769
Common stock issued for acquisition	0	0	343,132

NOTE R: FAIR VALUE

Accounting standards allow entities an irrevocable option to measure certain financial assets and financial liabilities at fair value. Unrealized gains and losses on items for which the fair value option has been elected are reported in earnings. The Company has elected to value mortgage loans held for sale at fair value in order to more closely match the gains and losses associated with loans held for sale with the gains and losses on forward sales contracts. Accordingly, the impact on the valuation will be recognized in the Company's consolidated statement of income. All mortgage loans held for sale are current and in performing status.

Accounting standards establish a framework for measuring fair value and require certain disclosures about such fair value instruments. It defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (i.e. exit price). Inputs used to measure fair value are classified into the following hierarchy:

- Level 1 – Quoted prices in active markets for identical assets or liabilities.
- Level 2 – Quoted prices in active markets for similar assets or liabilities, or quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable for the asset or liability.
- Level 3 – Significant valuation assumptions not readily observable in a market.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The following tables set forth the Company's financial assets and liabilities that were accounted for at fair value on a recurring basis. There were no transfers between any of the levels for the periods presented.

	December 31, 2019			
(000's omitted)	Level 1	Level 2	Level 3	Total Fair Value
Available-for-sale investment securities:				
U.S. Treasury and agency securities	$1,878,705	$165,054	$0	$2,043,759
Obligations of state and political subdivisions	0	512,208	0	512,208
Government agency mortgage-backed securities	0	432,862	0	432,862
Corporate debt securities	0	2,528	0	2,528
Government agency collateralized mortgage obligations	0	53,071	0	53,071
Total available-for-sale investment securities	1,878,705	1,165,723	0	3,044,428
Equity securities	451	0	0	451
Interest rate swap agreements asset	0	851	0	851
Interest rate swap agreements liability	0	(586)	0	(586)
Total	$1,879,156	$1,165,988	$0	$3,045,144

	December 31, 2018			
(000's omitted)	Level 1	Level 2	Level 3	Total Fair Value
Available-for-sale investment securities:				
U.S. Treasury and agency securities	$1,896,931	$126,822	$0	$2,023,753
Obligations of state and political subdivisions	0	459,154	0	459,154
Government agency mortgage-backed securities	0	382,477	0	382,477
Corporate debt securities	0	2,546	0	2,546
Government agency collateralized mortgage obligations	0	68,119	0	68,119
Total available-for-sale investment securities	1,896,931	1,039,118	0	2,936,049
Equity securities	432	0	0	432
Mortgage loans held for sale	0	83	0	83
Interest rate swap agreements asset	0	793	0	793
Interest rate swap agreements liability	0	(742)	0	(742)
Total	$1,897,363	$1,039,252	$0	$2,936,615

The valuation techniques used to measure fair value for the items in the table above are as follows:

- Available for sale investment securities – The fair value of available-for-sale investment securities is based upon quoted prices, if available. If quoted prices are not available, fair values are measured using quoted market prices for similar securities or model-based valuation techniques. Level 1 securities include U.S. Treasury obligations and marketable equity securities that are traded by dealers or brokers in active over-the-counter markets. Level 2 securities include U.S. agency securities, mortgage-backed securities issued by government-sponsored entities, municipal securities and corporate debt securities that are valued by reference to prices for similar securities or through model-based techniques in which all significant inputs, such as reported trades, trade execution data, LIBOR swap yield curve, market prepayment speeds, credit information, market spreads, and security's terms and conditions, are observable. See Note C for further disclosure of the fair value of investment securities.
- Mortgage loans held for sale – Mortgage loans held for sale are carried at fair value, which is determined using quoted secondary-market prices of loans with similar characteristics and, as such, have been classified as a Level 2 valuation. There were no mortgage loans held for sale at December 31, 2019. The unrealized gain on mortgage loans was recognized in other banking services revenues in the Consolidated Statement of Income for the year ended December 31, 2019 and was immaterial.

- Forward sales commitments – The Company enters into forward sales commitments to sell certain residential real estate loans. Such commitments are considered to be derivative financial instruments and, therefore, are carried at estimated fair value in the other asset or other liability section of the consolidated statement of condition. The fair value of these forward sales commitments is primarily measured by obtaining pricing from certain government-sponsored entities and reflects the underlying price the entity would pay the Company for an immediate sale on these mortgages. As such, these instruments are classified as Level 2 in the fair value hierarchy.
- Commitments to originate real estate loans for sale – The Company enters into various commitments to originate residential real estate loans for sale. Such commitments are considered to be derivative financial instruments and, therefore, are carried at estimated fair value in the other asset or other liability section of the consolidated statement of condition. The estimated fair value of these commitments is determined using quoted secondary market prices obtained from certain government-sponsored entities. Additionally, accounting guidance requires the expected net future cash flows related to the associated servicing of the loan to be included in the fair value measurement of the derivative. The expected net future cash flows are based on a valuation model that calculates the present value of estimated net servicing income. The valuation model incorporates assumptions that market participants would use in estimating future net servicing income. Such assumptions include estimates of the cost of servicing loans, appropriate discount rate and prepayment speeds. The determination of expected net cash flows is considered a significant unobservable input contributing to the Level 3 classification of commitments to originate real estate loans for sale.
- Interest rate swap agreements – The interest rate swaps are reported at their fair value utilizing Level 2 inputs from third parties. The fair value of our interest rate swaps are determined using prices obtained from a third party advisor. The fair value measurement of the interest rate swap is determined by netting the discounted future fixed cash payments and the discounted expected variable cash receipts. The variable cash receipts are based on the expectation of future interest rates derived from observed market interest rate curves.

The changes in Level 3 assets measured at fair value on a recurring basis are immaterial.

Assets and liabilities measured on a non-recurring basis:

	December 31, 2019				**December 31, 2018**			
(000's omitted)	Level 1	Level 2	Level 3	Total Fair Value	Level 1	Level 2	Level 3	Total Fair Value
Impaired loans	$0	$0	$848	$848	$0	$0	$1,102	$1,102
Other real estate owned	0	0	1,270	1,270	0	0	1,320	1,320
Mortgage servicing rights	0	0	56	56	0	0	0	0
Total	$0	$0	$2,174	$2,174	$0	$0	$2,422	$2,422

Loans are generally not recorded at fair value on a recurring basis. Periodically, the Company records nonrecurring adjustments to the carrying value of loans based on fair value measurements for partial charge-offs of the uncollectible portions of those loans. Nonrecurring adjustments also include certain impairment amounts for collateral-dependent loans calculated when establishing the allowance for credit losses. Such amounts are generally based on the fair value of the underlying collateral supporting the loan and, as a result, the carrying value of the loan less the calculated valuation amount does not necessarily represent the fair value of the loan. Real estate collateral is typically valued using independent appraisals or other indications of value based on recent comparable sales of similar properties or assumptions generally observable in the marketplace, adjusted for non-observable inputs. Thus, the resulting nonrecurring fair value measurements are generally classified as Level 3. Estimates of fair value used for other collateral supporting commercial loans generally are based on assumptions not observable in the marketplace and, therefore, such valuations classify as Level 3.

Other real estate owned ("OREO") is valued at the time the loan is foreclosed upon and the asset is transferred to OREO. The value is based primarily on third party appraisals, less estimated costs to sell. The appraisals are sometimes further discounted based on management's historical knowledge, changes in market conditions from the time of valuation, and/or management's expertise and knowledge of the customer and customer's business. Such discounts are significant, ranging from 9% to 86% at December 31, 2019, and result in a Level 3 classification of the inputs for determining fair value. OREO is reviewed and evaluated on at least a quarterly basis for additional impairment and adjusted accordingly, based on the same factors identified above. The Company recovers the carrying value of OREO through the sale of the property. The ability to affect future sales prices is subject to market conditions and factors beyond the Company's control and may impact the estimated fair value of a property.

Originated mortgage servicing rights are recorded at their fair value at the time of sale of the underlying loan, and are amortized in proportion to and over the estimated period of net servicing income. The fair value of mortgage servicing rights is based on a valuation model incorporating inputs that market participants would use in estimating future net servicing income. Such inputs include estimates of the cost of servicing loans, appropriate discount rate, and prepayment speeds and are considered to be unobservable and contribute to the Level 3 classification of mortgage servicing rights. In accordance with GAAP, the Company must record impairment charges, on a nonrecurring basis, when the carrying value of a stratum exceeds its estimated fair value. Impairment is recognized through a valuation allowance. There is a valuation allowance of approximately $0.3 million at December 31, 2019.

The Company evaluates goodwill for impairment on an annual basis, or more often if events or circumstances indicate there may be impairment. The fair value of each reporting unit is compared to the carrying amount of that reporting unit in order to determine if impairment is indicated. If so, the implied fair value of the reporting unit's goodwill is compared to its carrying amount and the impairment loss is measured by the excess of the carrying value of the goodwill over fair value of the goodwill. In such situations, the Company performs a discounted cash flow modeling technique that requires management to make estimates regarding the amount and timing of expected future cash flows of the assets and liabilities of the reporting unit that enable the Company to calculate the implied fair value of the goodwill. It also requires use of a discount rate that reflects the current return expectation of the market in relation to present risk-free interest rates, expected equity market premiums, peer volatility indicators and company-specific risk indicators. The Company did not recognize an impairment charge during 2019 or 2018.

The significant unobservable inputs used in the determination of fair value of assets classified as Level 3 on a recurring or non-recurring basis as of December 31, 2019 are as follows:

(000's omitted)	Fair Value	Valuation Technique	Significant Unobservable Inputs	Significant Unobservable Input Range (Weighted Average)
Impaired loans	$848	Fair value of collateral	Estimated cost of disposal/market adjustment	9.0% - 35.0% (27.9%)
Other real estate owned	1,270	Fair value of collateral	Estimated cost of disposal/market adjustment	9.0% - 85.7% (37.1%)
Mortgage servicing rights	56	Discounted cash flow	Weighted average constant prepayment rate	52.8%
			Weighted average discount rate	3.00%
			Adequate compensation	$7/loan

The significant unobservable inputs used in the determination of fair value of assets classified as Level 3 on a recurring or non-recurring basis as of December 31, 2018 are as follows:

(000's omitted)	Fair Value	Valuation Technique	Significant Unobservable Inputs	Significant Unobservable Input Range (Weighted Average)
Impaired loans	$1,102	Fair value of collateral	Estimated cost of disposal/market adjustment	9.0% - 35.4% (28.8%)
Other real estate owned	1,320	Fair value of collateral	Estimated cost of disposal/market adjustment	9.0% - 69.3% (23.8%)

The Company determines fair values based on quoted market values, where available, estimates of present values, or other valuation techniques. Those techniques are significantly affected by the assumptions used, including, but not limited to, the discount rate and estimates of future cash flows. In that regard, the derived fair value estimates cannot be substantiated by comparison to independent markets and, in many cases, may not be realized in immediate settlement of the instrument. Certain financial instruments and all nonfinancial instruments are excluded from fair value disclosure requirements. Accordingly, the aggregate fair value amounts presented do not represent the underlying value of the Company.

The carrying amounts and estimated fair values of the Company's other financial instruments that are not accounted for at fair value at December 31, 2019 and 2018 are as follows:

	December 31, 2019		December 31, 2018	
(000's omitted)	Carrying Value	Fair Value	Carrying Value	Fair Value
Financial assets:				
Net loans	$6,840,632	$7,028,663	$6,231,837	$6,247,939
Financial liabilities:				
Deposits	8,994,967	8,997,551	8,322,371	8,308,765
Overnight Federal Home Loan Bank borrowings	8,300	8,300	54,400	54,400
Securities sold under agreement to repurchase, short-term	241,708	241,708	259,367	259,367
Other Federal Home Loan Bank borrowings	3,750	3,755	1,976	1,921
Subordinated notes payable	13,795	13,795	0	0
Subordinated debt held by unconsolidated subsidiary trusts	77,320	77,320	97,939	97,939

The following is a further description of the principal valuation methods used by the Company to estimate the fair values of its financial instruments.

Loans have been classified as a Level 3 valuation. Fair values for variable rate loans that reprice frequently are based on carrying values. Fair values for fixed rate loans are estimated using discounted cash flows and interest rates currently being offered for loans with similar terms to borrowers of similar credit quality.

Deposits have been classified as a Level 2 valuation. The fair value of demand deposits, interest-bearing checking deposits, savings accounts and money market deposits is the amount payable on demand at the reporting date. The fair value of time deposit obligations are based on current market rates for similar products.

Borrowings and subordinated debt held by unconsolidated subsidiary trusts have been classified as a Level 2 valuation. The fair value of FHLB overnight advances and securities sold under agreement to repurchase, short-term, is the amount payable on demand at the reporting date. Fair values for long-term borrowings and subordinated debt held by unconsolidated subsidiary trusts are estimated using discounted cash flows and interest rates currently being offered on similar securities. The difference between the carrying values of long-term borrowings and subordinated debt held by unconsolidated subsidiary trusts, and their fair values, are not material as of the reporting dates.

Other financial assets and liabilities – Cash and cash equivalents have been classified as a Level 1 valuation, while accrued interest receivable and accrued interest payable have been classified as a Level 2 valuation. The fair values of each approximate the respective carrying values because the instruments are payable on demand or have short-term maturities and present relatively low credit risk and interest rate risk.

NOTE S: DERIVATIVE INSTRUMENTS

The Company is party to derivative financial instruments in the normal course of its business to meet the financing needs of its customers and to manage its own exposure to fluctuations in interest rates. These financial instruments have been limited to interest rate swap agreements, commitments to originate real estate loans held for sale and forward sales commitments. The Company does not hold or issue derivative financial instruments for trading or other speculative purposes.

The Company enters into forward sales commitments for the future delivery of residential mortgage loans, and interest rate lock commitments to fund loans at a specified interest rate. The forward sales commitments are utilized to reduce interest rate risk associated with interest rate lock commitments and loans held for sale. Changes in the estimated fair value of the forward sales commitments and interest rate lock commitments subsequent to inception are based on changes in the fair value of the underlying loan resulting from the fulfillment of the commitment and changes in the probability that the loan will fund within the terms of the commitment, which is affected primarily by changes in interest rates and the passage of time. At inception and during the life of the interest rate lock commitment, the Company includes the expected net future cash flows related to the associated servicing of the loan as part of the fair value measurement of the interest rate lock commitments. These derivatives are recorded at fair value, which were immaterial at December 31, 2019 and December 31, 2018. The effect of the changes to these derivatives for the years then ended was also immaterial.

The Company acquired interest rate swaps in 2017 with notional amounts with certain commercial customers which totaled $16.4 million at December 31, 2019 and $37.0 million at December 31, 2018. In order to minimize the Company's risk, these customer derivatives (pay floating/receive fixed swaps) have been offset with essentially matching interest rate swaps (pay fixed/receive floating swaps) with the Company's counterparty totaling $16.4 million at December 31, 2019 and $37.0 million at December 31, 2018. At December 31, 2019, the weighted average receive rate of these interest rate swaps was 3.72%, the weighted average pay rate was 4.39% and the weighted average maturity was 6.1 years. At December 31, 2018, the weighted average receive rate of these interest rate swaps was 4.34%, the weighted average pay rate was 3.84% and the weighted average maturity was 5.5 years. Hedge accounting has not been applied for these derivatives. Since the terms of the swaps with the customer and the other financial institution offset each other, with the only difference being counterparty credit risk, changes in the fair value of the underlying derivative contracts are not materially different and do not significantly impact our results of operations.

The Company also acquired interest rate swaps in 2017 with notional amounts totaling $6.2 million at December 31, 2019 and $6.6 million at December 31, 2018 that were designated as fair value hedges of certain fixed rate loans with municipalities which are recorded in loans in the consolidated statements of condition. At December 31, 2019, the weighted average receive rate of these interest rate swaps was 2.47%, the weighted average pay rate was 3.11% and the weighted average maturity was 13.5 years. At December 31, 2018, the weighted average receive rate of these interest rate swaps was 2.92%, the weighted average pay rate was 3.11% and the weighted average maturity was 14.5 years. The Company includes the gain or loss on the hedged items in interest and fees on loans, the same line item as the offsetting gain or loss on the related interest rate swaps. The effects of fair value accounting in the consolidated statements of income for the year ended December 31, 2019 is immaterial.

As of December 31, 2019, the following amounts were recorded in the consolidated statement of condition related to cumulative basis adjustments for fair value hedges:

(000's omitted) Line Item in the Consolidated Statement of Condition in Which the Hedged Item Is Included	Carrying Amount of the Hedged Assets December 31, 2019	Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Assets December 31, 2019
Loans	$6,390	($265)

Fair values of derivative instruments as of December 31, 2019 are as follows:

(000's omitted)	December 31, 2019			
	Derivative Assets		Derivative Liabilities	
	Consolidated Statement of Condition Location	Fair Value	Consolidated Statement of Condition Location	Fair Value
Derivatives designated as hedging instruments under Subtopic 815-20				
Interest rate swaps	Other assets	$265		
Derivatives not designated as hedging instruments under Subtopic 815-20				
Interest rate swaps	Other assets	586	Accrued interest and other liabilities	$586
Total derivatives		$851		$586

The Company assessed its counterparty risk at December 31, 2019 and determined any credit risk inherent in our derivative contracts was not material. Information about the fair value of derivative financial instruments can be found in Note R to these consolidated financial statements.

NOTE T: VARIABLE INTEREST ENTITIES

The Company's wholly-owned subsidiary CCT IV is a VIE for which the Company is not the primary beneficiary. Accordingly, the accounts of this entity are not included in the Company's consolidated financial statements. See further information regarding CCT IV in Note H: Borrowings.

In connection with the Company's acquisition of Oneida Financial Corp, the Company acquired OPFC II which holds a 50% membership interest in 706 North Clinton, an entity formed for the purpose of acquiring and rehabilitating real property. The real property held by 706 North Clinton is principally occupied by subsidiaries of the Company. The Company analyzed the operating agreement and capital structure of 706 North Clinton and determined that it was the primary beneficiary and therefore should consolidate 706 North Clinton in its financial statements. This conclusion was based on the determination that the Company has a de facto agency relationship because of the financing arrangement between the other member of 706 North Clinton and the Bank which provides OPFC II with both the power to direct the activities of 706 North Clinton and the obligation to absorb any losses of 706 North Clinton.

The carrying amount of the assets and liabilities of 706 North Clinton and the classification of these assets and liabilities in the Company's consolidated statements of condition at December 31 is as follows:

(000's omitted)	2019	2018
Cash and cash equivalents	$138	$104
Premises and equipment, net	5,945	6,109
Other assets	42	33
Total assets	$6,125	$6,246
Accrued interest and other liabilities / Total liabilities	$1	$0

In addition to the assets and liabilities of 706 North Clinton, the minority interest in 706 North Clinton of $3.1 million at December 31, 2019 is included in the Company's consolidated statement of condition. The creditors of 706 North Clinton do not have a claim on the general assets of the Company. The Company's maximum loss exposure net of minority interest in 706 North Clinton is approximately $4.5 million as of December 31, 2019, including a $1.4 million loss exposure related to the financing agreement between the other member of 706 North Clinton and the Bank.

NOTE U: SEGMENT INFORMATION

Operating segments are components of an enterprise, which are evaluated regularly by the "chief operating decision maker" in deciding how to allocate resources and assess performance. The Company's chief operating decision maker is the President and Chief Executive Officer of the Company. The Company has identified Banking, Employee Benefit Services and All Other as its reportable operating business segments. CBNA operates the Banking segment that provides full-service banking to consumers, businesses, and governmental units in Upstate New York as well as Northeastern Pennsylvania, Vermont and Western Massachusetts. Employee Benefit Services, which includes operating subsidiaries of BPAS, BPAS-APS, BPAS Trust Company of Puerto Rico, NRS and HB&T, provides employee benefit trust, collective investment fund, retirement plan administration, fund administration, transfer agency, actuarial, VEBA/HRA, and health and welfare consulting services. The All Other segment is comprised of: (a) wealth management services including trust services provided by the personal trust unit within the Bank, broker-dealer and investment advisory services provided by CISI and The Carta Group, and asset management provided by Nottingham; and (b) full-service insurance, risk management and employee benefit services provided by OneGroup. The accounting policies used in the disclosure of business segments are the same as those described in the summary of significant accounting policies (See Note A).

Information about reportable segments and reconciliation of the information to the consolidated financial statements follows:

(000's omitted)	Banking	Employee Benefit Services	All Other	Eliminations	Consolidated Total
2019					
Net interest income	$358,334	$665	$176	$0	$359,175
Provision for loan losses	8,430	0	0	0	8,430
Noninterest revenue	75,067	99,483	59,075	(3,006)	230,619
Amortization of intangible assets	5,751	6,770	3,435	0	15,956
Acquisition expenses	8,608	0	0	0	8,608
Other operating expenses	245,870	59,428	45,170	(3,006)	347,462
Income before income taxes	$164,742	$33,950	$10,646	$0	$209,338
Assets	$11,225,509	$209,690	$76,351	($101,255)	$11,410,295
Goodwill	$670,223	$83,275	$20,312	$0	$773,810
Core deposit intangibles & Other intangibles	$16,418	$37,775	$8,920	$0	$63,113
2018					
Net interest income	$344,551	$376	$128	$0	$345,055
Provision for loan losses	10,837	0	0	0	10,837
Noninterest revenue	75,399	94,449	57,204	(2,993)	224,059
Amortization of intangible assets	6,429	8,015	3,711	0	18,155
Acquisition expenses	(782)	7	6	0	(769)
Other operating expenses	231,362	56,275	43,259	(2,993)	327,903
Income before income taxes	$172,104	$30,528	$10,356	$0	$212,988
Assets	$10,397,623	$207,460	$68,288	($66,076)	$10,607,295
Goodwill	$629,916	$83,275	$20,312	$0	$733,503
Core deposit intangibles & Other intangibles	$18,596	$44,545	$10,705	$0	$73,846
2017					
Net interest income	$315,025	$396	$254	$0	$315,675
Provision for loan losses	10,984	0	0	0	10,984
Noninterest revenue	73,337	82,743	49,201	(2,858)	202,423
Amortization of intangible assets	5,296	8,578	3,067	0	16,941
Acquisition expenses	24,549	1,194	243	0	25,986
Other operating expenses	218,608	51,138	37,334	(2,858)	304,222
Income before income taxes	$128,925	$22,229	$8,811	$0	$159,965
Assets	$10,505,919	$203,369	$66,548	($29,638)	$10,746,198
Goodwill	$629,916	$84,449	$20,065	$0	$734,430
Core deposit intangibles & Other intangibles	$25,025	$52,288	$13,345	$0	$90,658

NOTE V: SUBSEQUENT EVENTS

Companies are required to evaluate events and transactions that occur after the balance sheet date but before the date the financial statements are issued, or available to be issued in the case of non-public entities. They must recognize in the financial statements the effect of all events or transactions that provide additional evidence of conditions that existed at the balance sheet date, including the estimates inherent in the financial preparation process. Entities do not recognize the impact of events or transactions that provide evidence about conditions that did not exist at the balance sheet date but arose after that date.

Such events and transactions were evaluated through the date these consolidated financial statements were available to be issued. Based upon this evaluation, it was determined that no subsequent events occurred that required recognition or disclosure in the consolidated financial statements.

Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2019.

The consolidated financial statements of the Company have been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm that was engaged to express an opinion as to the fairness of presentation of such financial statements. PricewaterhouseCoopers LLP was also engaged to audit the effectiveness of the Company's internal control over financial reporting. The report of PricewaterhouseCoopers LLP follows this report.

Community Bank System, Inc.

By: /s/ Mark E. Tryniski
Mark E. Tryniski,
President, Chief Executive Officer and Director

By: /s/ Joseph E. Sutaris
Joseph E. Sutaris,
Treasurer and Chief Financial Officer

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Community Bank System, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of condition of Community Bank System, Inc. and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2019, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019 based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, 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 Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements 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. 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 audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Allowance for Loan Losses – Qualitative Calculation for Consumer Mortgage & Consumer Indirect Classes

As described in Notes A and D to the consolidated financial statements, the Company's allowance for loan losses on the Consumer Mortgage class and the Consumer Indirect class was $10.3 million and $13.7 million, respectively, as of December 31, 2019. The Company's allowance for loan losses methodology consists of two components – the general and the specific loan loss allocations. As disclosed by management, the general loan loss allocation is composed of two calculations. The first calculation is quantitative and determines an allowance based on the latest 36 months of historical net charge-off data for each loan class. The second calculation is qualitative and takes into consideration eight qualitative environmental factors, which include levels and trends in delinquencies and impaired loans and levels of and trends in charge-offs and recoveries.

The principal considerations for our determination that performing procedures relating to the qualitative calculation for the allowance for loan losses on the Consumer Mortgage and Consumer Indirect classes is a critical audit matter are (i) there was significant judgment and estimation by management in determining the impact of levels and trends in delinquencies and impaired loans and levels of and trends in charge-offs and recoveries used in the qualitative calculation on the allowance for loan losses for the Consumer Mortgage and Consumer Indirect classes, which in turn led to significant auditor subjectivity in performing procedures relating to the qualitative calculation; (ii) significant audit effort was necessary in performing procedures relating to the qualitative calculation; (iii) a high degree of auditor judgment was necessary to evaluate the audit evidence obtained relating to levels and trends in delinquencies and impaired loans and levels of and trends in charge-offs and recoveries used in the qualitative calculation for the Consumer Mortgage and Consumer Indirect classes; and (iv) the audit effort involved the use of professionals with specialized skill and knowledge to assist in evaluating the audit evidence obtained from these procedures.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the allowance for loan losses, including controls over the qualitative calculation. These procedures also included, among others, testing management's process for determining the allowance for loan losses, including testing the completeness and accuracy of significant data inputs used in the estimate; involvement of professionals with specialized skill and knowledge to assist in evaluating the appropriateness of management's methodology relating to the qualitative calculation and in evaluating the reasonableness of the impact of (i) levels and trends in delinquencies and impaired loans and (ii) levels of and trends in charge-offs and recoveries used in the qualitative calculation on the allowance for loan losses for the Consumer Mortgage and Consumer Indirect classes.

/s/PricewaterhouseCoopers LLP
Buffalo, New York
March 2, 2020

We have served as the Company's auditor since 1984.

TWO YEAR SELECTED QUARTERLY DATA (Unaudited)

2019 Results (000's omitted, except per share data)	4th Quarter	3rd Quarter	2nd Quarter	1st Quarter	Total
Net interest income	$92,740	$91,276	$88,300	$86,859	$359,175
Provision for loan losses	2,857	1,751	1,400	2,422	8,430
Net interest income after provision for loan losses	89,883	89,525	86,900	84,437	350,745
Noninterest income	57,123	57,094	60,706	55,696	230,619
Noninterest expenses	95,269	96,929	91,176	88,652	372,026
Income before income taxes	51,737	49,690	56,430	51,481	209,338
Income taxes	8,853	10,472	11,415	9,535	40,275
Net income	$42,884	$39,218	$45,015	$41,946	$169,063
Basic earnings per share	$0.82	$0.76	$0.87	$0.81	$3.26
Diluted earnings per share	$0.82	$0.75	$0.86	$0.80	$3.23

2018 Results (000's omitted, except per share data)	4th Quarter	3rd Quarter	2nd Quarter	1st Quarter	Total
Net interest income	$87,387	$86,198	$86,846	$84,624	$345,055
Provision for loan losses	2,495	2,215	2,448	3,679	10,837
Net interest income after provision for loan losses	84,892	83,983	84,398	80,945	334,218
Noninterest income	54,218	55,791	56,559	57,491	224,059
Noninterest expenses	87,613	85,233	86,112	86,331	345,289
Income before income taxes	51,497	54,541	54,845	52,105	212,988
Income taxes	10,674	11,435	10,239	11,999	44,347
Net income	$40,823	$43,106	$44,606	$40,106	$168,641
Basic earnings per share	$0.79	$0.84	$0.87	$0.78	$3.28
Diluted earnings per share	$0.78	$0.83	$0.86	$0.78	$3.24

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures, as defined in Rule 13a -15(e) and 15d – 15(e) under the Securities Exchange Act of 1934, as amended, designed to: (i) record, process, summarize, and report within the time periods specified in the SEC's rules and forms, and (ii) accumulate and communicate to management, including the principal executive and principal financial officers, as appropriate, to allow timely decisions regarding disclosure. Based on evaluation of the Company's disclosure controls and procedures, with the participation of the Chief Executive Officer ("CEO") and the Chief Financial Officer ("CFO"), the CEO and CFO have concluded that, as of the end of the period covered by this Annual Report on Form 10-K, these disclosure controls and procedures were effective as of December 31, 2019.

Management's Annual Report on Internal Control over Financial Reporting

Management's annual report on internal control over financial reporting is included under the heading "Report on Internal Control Over Financial Reporting" at Item 8 of this Annual Report on Form 10-K.

Report of the Registered Public Accounting Firm

The report of the Company's registered public accounting firm is included under the heading "Report of the Independent Registered Public Accounting Firm" at Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting
The Company continually assesses the adequacy of its internal control over financial reporting and enhances its controls in response to internal control assessments, and internal and external audit and regulatory recommendations. No change in internal control over financial reporting during the quarter ended December 31, 2019 has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

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 due to changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Item 9B. Other Information

None

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information concerning the Directors of the Company required by this Item 10 is incorporated herein by reference to the sections entitled "Proposal One: Election of Directors" in the Company's Definitive Proxy Statement for its 2020 Annual Meeting of Shareholders, which will be filed with the SEC on or about April 1, 2020 (the "Proxy Statement"). The information concerning executive officers of the Company required by this Item 10 is presented in Item 4A of this Annual Report on Form 10-K. Information concerning the Audit Committee and the Audit Committee Financial Experts is included in the Proxy Statement under the caption "Audit Committee Report" and is incorporated herein by reference.

The Company has adopted a code of ethics that applies to its principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. The text of the code of ethics is posted on the Company's website at www.cbna.com, and is available free of charge in print to any person who requests it. The Company intends to satisfy the requirements under Item 5.05 of Form 8-K regarding an amendment to, or a waiver from, the code of ethics that relates to certain elements thereof, by posting such information on its website referenced above.

Item 11. Executive Compensation

The information required by this Item 11 is incorporated herein by reference to the sections entitled "Compensation Discussion and Analysis," "Compensation Committee Report," "Compensation Committee Interlocks and Insider Reporting," and "Executive Compensation Disclosure Tables" in the Company's Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by Item 403 of Regulation S-K is incorporated herein by reference to the section entitled "Security Ownership of Certain Beneficial Owners, Directors and Executive Officers" in the Company's Proxy Statement. The information required by Item 201(d) of Regulation S-K concerning equity compensation plans is presented under the caption "Equity Compensation Plan Information" on page 25 of this Annual Report on Form 10-K.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by this Item 13 is incorporated herein by reference to the sections entitled "Corporate Governance" and "Transactions with Related Parties" in the Company's Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 is incorporated herein by reference to the section entitled "Fees Paid to PricewaterhouseCoopers LLP" in the Company's Proxy Statement.

Part IV

Item 15. Exhibits, Financial Statement Schedules

(a) Documents filed as part of this report

(1) All financial statements. The following consolidated financial statements of Community Bank System, Inc. and subsidiaries are included in Item 8:

- Consolidated Statements of Condition,
  December 31, 2019 and 2018
- Consolidated Statements of Income,
  Years ended December 31, 2019, 2018, and 2017
- Consolidated Statements of Comprehensive Income,
  Years ended December 31, 2019, 2018, and 2017
- Consolidated Statements of Changes in Shareholders' Equity,
  Years ended December 31, 2019, 2018, and 2017
- Consolidated Statement of Cash Flows,
  Years ended December 31, 2019, 2018, and 2017
- Notes to Consolidated Financial Statements,
  December 31, 2019
- Report of Independent Registered Public Accounting Firm
- Quarterly selected data,
  Years ended December 31, 2019 and 2018 (unaudited)

(2) Financial statement schedules. Schedules are omitted since the required information is either not applicable or shown elsewhere in the financial statements.

(3) Exhibits. The exhibits filed as part of this report and exhibits incorporated herein by reference to other documents are listed below:

2.1	Assignment, Purchase and Assumption Agreement, dated as of January 19, 2012, by and among Community Bank, N.A. and First Niagara Bank, N.A. Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on January 20, 2012 (Registration No. 001-13695).
2.2	Purchase and Assumption Agreement, dated as of January 19, 2012, by and among Community Bank, N.A. and First Niagara Bank, N.A. Incorporated by reference to Exhibit 2.2 to the Current Report on Form 8-K filed on January 20, 2012 (Registration No. 001-13695).
2.3	Assignment, Purchase and Assumption Agreement, dated as of January 19, 2012, by and between Community Bank, N.A. and First Niagara Bank, N.A., as amended as restated as of July 19, 2012. Incorporated by reference to Exhibit No. 99.1 to the Current Report on Form 8-K filed on July 24, 2012 (Registration No. 001-13695).
2.4	Amendment No. 1 to Purchase and Assumption Agreement, dated as of September 6, 2012, by and among Community Bank, N.A. and First Niagara Bank, N.A. Incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K filed on September 13, 2012 (Registration No. 001-13695).
2.5	Purchase and Assumption Agreement, dated as of July 23, 2013, by and between Community Bank, N.A. and Bank of America, N.A. Incorporated by reference to Exhibit No. 2.1 to the Current Report on Form 8-K filed on July 26, 2013 (Registration No. 001-13695).
2.6	Agreement and Plan of Merger, dated as of February 24, 2015, by and between Community Bank System, Inc. and Oneida Financial Corp. Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on February 25, 2015 (Registration No. 001-13695).

2.7	Agreement and Plan of Merger, dated as of October 22, 2016, by and between Community Bank System, Inc. and Merchants Bancshares, Inc. Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on October 27, 2016 (Registration No. 001-13695).
2.8	Agreement and Plan of Merger, dated as of December 2, 2016, by and among Community Bank System, Inc., Northeast Retirement Services, Inc., Cohiba Merger Sub, LLC and Shareholder Representative Services LLC. Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on December 8, 2016 (Registration No. 001-13695).
2.9	Agreement and Plan of Merger, dated as of January 21, 2019, by and among Community Bank System, Inc., VB Merger Sub Inc., and Kinderhook Bank Corp. Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on January 25, 2019 (Registration No. 001-13695).
2.10	Agreement and Plan of Merger, dated as of October 18, 2019, by and between Community Bank System, Inc. and Steuben Trust Corporation. Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on October 24, 2019 (Registration No. 001-13695).
3.1	Certificate of Incorporation of Community Bank System, Inc., as amended. Incorporated by reference to Exhibit No. 3.1 to the Registration Statement on Form S-4 filed on October 20, 2000 (Registration No. 333-48374).
3.2	Certificate of Amendment of Certificate of Incorporation of Community Bank System, Inc. Incorporated by reference to Exhibit No. 3.1 to the Quarterly Report on Form 10-Q filed on May 7, 2004 (Registration No. 001-13695).
3.3	Certificate of Amendment of Certificate of Incorporation of Community Bank System, Inc. Incorporated by reference to Exhibit No. 3.1 to the Quarterly Report on Form 10-Q filed on August 9, 2013 (Registration No. 001-13695).
3.4	Bylaws of Community Bank System, Inc., amended July 18, 2007. Incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K filed on July 24, 2007 (Registration No. 001-13695).
4.1	Form of Common Stock Certificate. Incorporated by reference to Exhibit No. 4.1 to the Amendment No. 1 to the Registration Statement on Form S-3 filed on September 29, 2008 (Registration No. 333-153403).
4.2	Registration Rights Agreement, dated February 3, 2017, by and among Community Bank System, Inc. and the individuals and entities set forth on Schedule 1 thereto. Incorporated by reference to Exhibit No. 10.1 to the Registration Statement on Form S-3 filed on February 3, 2017 (Registration No. 333-215894).
4.3	Form of Replacement Organizers' Warrant to purchase Community Bank System, Inc. Common Stock. Incorporated by reference to Exhibit No. 4.1 to the Current Report on Form 8-K filed on May 18, 2017 (Registration No. 001-13695). (2)
4.4	First Supplemental Indenture, dated as of May 12, 2017, by and among Wilmington Trust Company, Community Bank System, Inc., and Merchants Bancshares, Inc. Incorporated by reference to Exhibit No. 4.2 to the Current Report on Form 8-K filed on May 18, 2017 (Registration No. 001-13695). (2)
4.5	Description of Community Bank System, Inc.'s securities registered pursuant to Section 12 of the Securities Exchange Act.
10.1	Indenture, dated as of December 8, 2006, between Community Bank System, Inc. and Wilmington Trust Company, as trustee. Incorporated by reference to Exhibit No. 4.1 to the Current Report on Form 8-K filed on December 12, 2006 (Registration No. 001-13695).

10.2 Amended and Restated Declaration of Trust, dated as of December 8, 2006, among Community Bank System, Inc., as sponsor, Wilmington Trust Company, as Delaware trustee, Wilmington Trust Company, as institutional trustee, and Mark E. Tryniski, Scott A. Kingsley, and Joseph J. Lemchak as administrators. Incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on December 12, 2006 (Registration No. 001-13695).

10.3 Guarantee Agreement, dated as of December 8, 2006, between Community Bank System, Inc., as guarantor, and Wilmington Trust Company, as guarantee trustee. Incorporated by reference to Exhibit 10.2 to the Form 8-K filed on December 12, 2006 (Registration No. 001-13695).

10.4 Employment Agreement, dated as of January 5, 2018, by and between Community Bank System, Inc., Community Bank, N.A., and Mark E. Tryniski. Incorporated by reference to Exhibit No. 10.1 to the Current Report on Form 8-K filed on January 5, 2018 (Registration No. 001-13695). (2)

10.5 Supplemental Retirement Plan Agreement, effective as of December 31, 2008, by and among Community Bank, N.A., Community Bank System, Inc., and Mark E. Tryniski. Incorporated by reference to Exhibit No. 10.2 to the Current Report on Form 8-K filed on March 19, 2009 (Registration No. 001-13695). (2)

10.6 Amendment to Supplemental Retirement Plan Agreement, dated January 5, 2018, by and among Community Bank System, Inc., Community Bank, N.A. and Mark E. Tryniski. Incorporated by reference to Exhibit No. 10.2 to the Current Report on Form 8-K filed on January 5, 2018 (Registration No. 001-13695). (2)

10.7 Employment Agreement, dated as of January 1, 2020, by and among Community Bank System, Inc., Community Bank N.A., and Scott Kingsley. Incorporated by reference to Exhibit No. 10.1 to the Current Report on Form 8-K filed on January 7, 2020 (Registration No. 001-13695). (2)

10.8 Supplemental Retirement Plan Agreement, effective September 29, 2009, by and between Community Bank System Inc., Community Bank, N.A., and Scott Kingsley. Incorporated by reference to Exhibit No. 10.1 to the Current Report on Form 8-K filed on October 1, 2009 (Registration No. 001-13695). (2)

10.9 Supplemental Retirement Plan Agreement, dated as of October 18, 2013, by and between Community Bank System Inc., Community Bank, N.A., and Brian D. Donahue. Incorporated by reference to Exhibit No. 10.2 to the Current Report on Form 8-K filed on October 23, 2013 (Registration No. 001-13695). (2)

10.10 Employment Agreement, dated as of January 1, 2020, by and among Community Bank System, Inc., Community Bank N.A., and George J. Getman. Incorporated by reference to Exhibit No. 10.2 to the Current Report on Form 8-K filed on January 7, 2020 (Registration No. 001-13695). (2)

10.11 Supplemental Retirement Plan Agreement, dated as of October 18, 2013, by and among Community Bank System, Inc., Community Bank, N.A., and George J. Getman. Incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed on October 23, 2013 (Registration No. 001-13695). (2)

10.12 Employment Agreement, dated as of March 11, 2016, by and among Community Bank System, Inc., Community Bank N.A., and Joseph F. Serbun. Incorporated by reference to Exhibit No. 10.2 to the Current Report on Form 8-K filed on March 16, 2016 (Registration No. 001-13695). (2)

10.13 Employment Agreement, dated January 4, 2019, by and among Community Bank System, Inc., Community Bank, N.A. and Joseph F. Serbun. Incorporated by reference to Exhibit No. 10.1 to the Current Report on Form 8-K filed on January 8, 2019 (Registration No. 001-13695). (2)

10.14 Employment Agreement, dated as of May 21, 2018, by and between Community Bank System, Inc., Community Bank, N.A., and Joseph E. Sutaris. Incorporated by reference to Exhibit No. 10.2 to the Current Report on Form 8-K filed on May 21, 2018 (Registration No. 001-13695). (2)

10.15 Pre-2005 Supplemental Retirement Agreement, effective December 31, 2004, by and between Community Bank System, Inc., Community Bank, N.A., and Sanford Belden. Incorporated by reference to Exhibit No. 10.3 to the Annual Report on Form 10-K filed on March 15, 2005 (Registration No. 001-13695). (2)

10.16 Post-2004 Supplemental Retirement Agreement, effective January 1, 2005, by and between Community Bank System, Inc., Community Bank, N.A., and Sanford Belden. Incorporated by reference to Exhibit No. 10.2 to the Annual Report on Form 10-K filed on March 15, 2005 (Registration No. 001-13695). (2)

10.17 Supplemental Retirement Plan Agreement, effective March 26, 2003, by and between Community Bank System Inc. and Thomas McCullough. Incorporated by reference to Exhibit No. 10.11 to the Annual Report on Form 10-K filed on March 12, 2004 (Registration No. 001-13695). (2)

10.18 2004 Long-Term Incentive Compensation Program, as amended. Incorporated by reference to Exhibit No. 99.1 to the Registration Statement on Form S-8 filed on December 19, 2012 (Registration No. 001-13695). (2)

10.19 2014 Long-Term Incentive Plan, as amended. Incorporated by reference to Exhibit No. 10.1 to the Current Report on Form 8-K filed on May 2, 2017 (Registration No. 001-13695). (2)

10.20 Stock Balance Plan for Directors, as amended. Incorporated by reference to Annex I to the Definitive Proxy Statement on Schedule 14A filed on March 31, 1998 (Registration No. 001-13695). (2)

10.21 Community Bank System, Inc. Deferred Compensation Plan for Directors. Incorporated by reference to Exhibit No. 99.1 to the Registration Statement on Form S-8 filed on June 30, 2017 (Registration No. 333-219098). (2)

10.22 Community Bank System, Inc. Pension Plan Amended and Restated as of January 1, 2004. Incorporated by reference to Exhibit No. 10.27 to the Annual Report on Form 10-K filed on March 15, 2005 (Registration No. 001-13695). (2)

10.23 Amendment #1 to the Community Bank System, Inc. Pension Plan, as amended and restated as of January 1, 2004 ("Plan"). Incorporated by reference to Exhibit No. 10.27 to the Annual Report on Form 10-K filed on March 15, 2005 (Registration No. 001-13695). (2)

10.24 Community Bank System, Inc. 401(k) Employee Stock Ownership Plan, dated as of December 20, 2011. Incorporated by reference to Exhibit 4.5 to the Registration Statement on Form S-8 filed on December 20, 2013 (Registration No. 001-13695). (2)

10.25 Merchants Bancshares, Inc. and Subsidiaries Amended and Restated 1996 Compensation Plan for Non-Employee Directors. Incorporated by reference to Exhibit 10.3 to Merchants Bancshares, Inc.'s Annual Report on Form 10-K filed with the Commission on March 15, 2011. (2)

10.26 Merchants Bancshares, Inc. and Subsidiaries Amended and Restated 2008 Compensation Plan for Non-Employee Directors and Trustees. Incorporated by reference to Exhibit 10.4 to Merchants Bancshares, Inc.'s Annual Report on Form 10-K filed with the Commission on March 15, 2011. (2)

10.27 Merchants Bank Amended and Restated Deferred Compensation Plan for Directors. Incorporated by reference to Exhibit 10.7 to Merchants Bancshares, Inc.'s Annual Report on Form 10-K filed with the Commission on March 15, 2011. (2)

10.28	Merchants Bank Salary Continuation Plan. Incorporated by reference to Exhibit 10.9 to Merchants Bancshares, Inc.'s Annual Report on Form 10-K filed with the Commission on March 15, 2011. [(2)]
10.29	Community Bank System, Inc. Restoration Plan, effective June 1, 2018. Incorporated by reference to Exhibit No. 10.4 to the Current Report on Form 8-K filed on May 21, 2018 (Registration No. 001-13695). [(2)]
21.1	Subsidiaries of Registrant. [(1)]
23.1	Consent of PricewaterhouseCoopers LLP. [(1)]
31.1	Certification of Mark E. Tryniski, President and Chief Executive Officer of the Registrant, pursuant to Rule 13a-15(e) or Rule 15d-15(e) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. [(1)]
31.2	Certification of Joseph E. Sutaris, Treasurer and Chief Financial Officer of the Registrant, pursuant to Rule 13a-15(e) or Rule 15d-15(e) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. [(1)]
32.1	Certification of Mark E. Tryniski, President and Chief Executive Officer of the Registrant, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. [(3)]
32.2	Certification of Joseph E. Sutaris, Treasurer and Chief Financial Officer of the Registrant, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. [(3)]
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document. [(4)]
101.SCH	Inline XBRL Taxonomy Extension Schema Document [(4)]
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document [(4)]
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document [(4)]
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document [(4)]
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document [(4)]
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101) [(4)]

[(1)] Filed herewith.
[(2)] Denotes management contract or compensatory plan or arrangement.
[(3)] Furnished herewith.
[(4)] XBRL (Extensible Business Reporting Language) information is furnished and not filed or a part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, and otherwise is not subject to liability under these sections.

B. Not applicable.

C. Not applicable.

Item 16. Form 10-K Summary

None

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.

COMMUNITY BANK SYSTEM, INC.

By:
/s/ Mark E. Tryniski
Mark E. Tryniski
President and Chief Executive Officer
March 2, 2020

Pursuant to the requirements of the Securities and Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on the 2nd day of March 2020.

By:
/s/ Mark E. Tryniski
Mark E. Tryniski
President, Chief Executive Officer and Director
(Principal Executive Officer)

By:
/s/ Joseph E. Sutaris
Joseph E. Sutaris
Treasurer and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Directors:

/s/ Brian R. Ace
Brian R. Ace, Director

/s/ Mark J. Bolus
Mark J. Bolus, Director

/s/ Jeffrey L.
Jeffrey L. Davis, Director

/s/ Neil E. Fesette
Neil E. Fesette, Director

/s/ Michael R. Kallet
Michael R. Kallet, Director

/s/ Kerrie D. MacPherson
Kerrie D. MacPherson, Director

/s/ John Parente
John Parente,

/s/ Raymond C. Pecor, III
Raymond C. Pecor, III,

/s/ Sally A. Steele
Sally A. Steele, Director and Chair of the Board of Directors

/s/ Eric E. Stickels
Eric E. Stickels, Director

/s/ John F. Whipple, Jr.
John F. Whipple Jr., Director

DESCRIPTION OF COMMUNITY BANK SYSTEM, INC.'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

As of December 31, 2019, Community Bank System, Inc. (the "Company" or "our") had one class of securities, our common stock, par value $1.00 per share ("Common Stock"), registered under Section 12 of the Securities Exchange Act of 1934, as amended. The Common Stock is listed on the New York Stock Exchange under the symbol "CBU."

The following description of the Company's capital stock is a summary and subject to, and is qualified in its entirety by reference to the provisions of our Certificate of Incorporation, as amended (the "Charter"), and our By-laws, as amended (the "By-laws"), copies of which are incorporated by reference as Exhibits 3.1 through 3.4 to the Annual Report on Form 10-K for the year ended December 31, 2019 of which this Exhibit 4.5 is a part. We encourage you to read our Charter, our By-laws and the applicable provisions of Delaware General Corporation Law for additional information.

DESCRIPTION OF CAPITAL STOCK

Authorized Capital Stock. The total number of shares of capital stock authorized by the Charter is 75,500,000 shares, consisting of 75,000,000 shares of Common Stock and 500,000 shares of preferred stock, par value $1.00 per share. As of the date of this Exhibit, there were no shares of preferred stock issued and outstanding.

Voting Rights. The holders of Common Stock are entitled to one vote per share on all matters to be voted on by the shareholders. No shareholders have cumulative voting rights in the election of directors.

Dividends. The Company may pay dividends as declared from time to time by the Board of Directors out of funds legally available for dividends, subject to certain restrictions. The holders of the Company's Common Stock will be entitled to receive any dividends on the Common Stock in proportion to their holdings.

Rights in Liquidation. In the event of a liquidation, dissolution or winding up of the Company, each holder of Common Stock would be entitled to receive, after payment of all debts and liabilities of the Company and after any required distribution to holders of any issued and outstanding preferred stock, a pro rata portion of all remaining assets of the Company.

No Preemptive Rights; No Redemption. Holders of shares of Common Stock are not entitled to preemptive rights with respect to any shares of any capital stock of the Company that may be issued. The Company's Common Stock is not subject to call or redemption.

Certain Charter and By-laws Provisions.

There are provisions in the Company's Charter and By-laws which are intended to discourage non-negotiated takeover attempts. These provisions are intended to avoid costly takeover battles and lessen the Company's exposure to coercive takeover attempts at an unfair price, and are designed to maximize shareholder value in connection with unsolicited takeover attempts.

The Company's Charter authorizes the Board of Directors to issue, without further shareholder approval, up to 500,000 shares of preferred stock with rights senior to those of our Common Stock, except as may be required with respect to a particular transaction by applicable law or by regulatory agencies having jurisdiction over the Company. The Board of Directors of the Company is permitted to establish from time to time the relative rights, designations, preferences and limitations or restrictions of the preferred stock. The preferred stock could be used to deter future attempts to gain control of the Company.

The Company has a classified board which provides for the Board to be divided into three classes, as nearly equal in number as possible, with approximately one-third of the directors to be elected annually for three-year terms. A classified board helps to assure continuity and stability of corporate leadership and policy by extending the time required to elect a majority of the directors to at least two successive annual meetings. This extension of time may also discourage a tender offer or takeover bid by making it more difficult for a majority of shareholders to change the composition of the Board of Directors.

In addition, the Company's Charter contains a provision which requires that certain business combinations be approved by the affirmative vote of either (a) the holders of three-fourths of the outstanding shares of Common Stock and a majority of the Board of Directors; or (b) the holders of two-thirds of the outstanding shares of Common Stock and two-thirds of the continuing Directors. These "supermajority" requirements could result in the Company's Board exercising a stronger influence over any proposed takeover (subject to its fiduciary duties) by refusing to approve a proposed business combination and by obtaining sufficient additional votes, including votes obtained through the issuance of additional shares to parties friendly to their interests, to preclude the two-thirds or three-fourths shareholder approval requirement.

The Company's Charter also provides that the above described provisions designed to protect the Company from unfriendly takeover attempts can only be amended by the affirmative vote of (a) holders of at least three-fourths of the outstanding shares of Common Stock and a majority of the Board of Directors, or (b) holders of at least two-thirds of the outstanding shares of Common Stock and two-thirds of the continuing directors.

Under the Charter, the shareholders of the Company are prohibited from approving corporate actions by a written consent in lieu of a meeting. Instead, any corporate action to be approved by the Company's shareholders must be so approved at a shareholders' meeting.

Exhibit 21.1

Subsidiaries of Registrant
As of December 31, 2019

Name	Jurisdiction of Incorporation
Benefit Plans Administrative Services, Inc.	New York
Benefit Plans Administrative Services, LLC	New York
BPAS Actuarial and Pension Services, LLC	New York
BPAS Trust Company of Puerto Rico	Puerto Rico
Brilie Corporation	New York
CBNA Preferred Funding Corp.	Delaware
CBNA Treasury Management Corporation	New York
Community Bank, N.A.	Federally Chartered
Community Capital Trust IV	Delaware
Community Investment Services, Inc.	New York
Global Trust Company, Inc.	Maine
Gordon B. Roberts Agency, LLC	New York
Hand Benefits & Trust Company	Texas
Hand Securities, Inc.	Texas
Kinderhook Holdings, Inc.	New York
Northeast Retirement Services, LLC	Delaware
NOTCH Investment Fund, LLC	Vermont
Nottingham Advisors, Inc.	Delaware
OneGroup NY, Inc.	New York
Oneida Preferred Funding II, LLC	New York
The Carta Group, Inc.	New York
Town & Country Agency LLC	New York

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (Nos. 333-179119 and 333-215894) and Form S-8 (Nos. 033-60607, 333-16635, 333-17011, 333-61672, 333-61916, 333-119590, 333-119887, 333-185556, 333-192994, 333-196866, 333-210240, 333-219098, and 333-221190) of Community Bank System, Inc. of our report dated March 2, 2020 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/PricewaterhouseCoopers LLP

Buffalo, New York
March 2, 2020

Exhibit 31.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mark E. Tryniski, certify that:

1. I have reviewed this annual report on Form 10-K of Community Bank System, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 2, 2020

/s/ Mark E. Tryniski
Mark E. Tryniski,
President, Chief Executive Officer and Director

Exhibit 31.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Joseph E. Sutaris, certify that:

1. I have reviewed this annual report on Form 10-K of Community Bank System, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 2, 2020

/s/ Joseph E. Sutaris
Joseph E. Sutaris,
Treasurer and Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Community Bank System, Inc. (the "Company") on Form 10-K for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mark E. Tryniski, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Mark E. Tryniski
Mark E. Tryniski
President, Chief Executive Officer and Director
March 2, 2020

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Community Bank System, Inc. (the "Company") on Form 10-K for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Joseph E. Sutaris, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Joseph E. Sutaris
Joseph E. Sutaris,
Treasurer and Chief Financial Officer
March 2, 2020