Section 1: 10-K (FORM 10-K)

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

FORM 10-K

(Mark One)

X **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2018

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from ___________ to ___________ .

Commission file number 001-36613

Middlefield Banc Corp.

(Exact Name of Registrant as Specified in its Charter)

Ohio	34-1585111
State or Other Jurisdiction of Incorporation or Organization	I.R.S. Employer Identification No.
15985 East High Street, Middlefield, Ohio	44062-0035
Address of Principal Executive Offices	Zip Code

440-632-1666
Registrant's Telephone Number, Including Area Code

Securities Registered Pursuant To Section 12(b) Of The Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, Without Par Value	The NASDAQ Stock Market, LLC (NASDAQ Capital Market)

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 **X**

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 **X**

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 **X** 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 X No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 **X**
Non-accelerated filer ☐	Smaller reporting company **X**
	Emerging growth company ☐

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

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

The aggregate market value on June 30, 2018 of common stock held by non-affiliates of the registrant was approximately $163.8 million, based on the closing price of $50.70 per share of common stock as reported on the NASDAQ Capital Market. As of March 6, 2019, there were 3,632,828 shares of common stock issued and outstanding.

Documents Incorporated by Reference Portions of the registrant's definitive proxy statements for the 2019 Annual Meeting of Shareholders are incorporated by reference in Part III of this report. Portions of the Annual Report to Shareholders for the year ended December 31, 2018 are incorporated by reference into Part I and Part II of this report.

MIDDLEFIELD BANC CORP.
YEAR ENDED DECEMBER 31, 2018
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Part I

Item 1 — Business

Forward-looking Statements This document contains forward-looking statements (as defined in the Private Securities Litigation Reform Act of 1995) about the Company and subsidiaries. Information incorporated in this document by reference, future filings by the Company on Form 10-Q and Form 8-K, and future oral and written statements by the Company and its management may also contain forward-looking statements. Forward-looking statements include statements about anticipated operating and financial performance, such as loan originations, operating efficiencies, loan sales, charge-offs and loan loss provisions, growth opportunities, interest rates, and deposit growth. Words such as "may," "could," "should," "would," "believe," "anticipate," "estimate," "expect," "intend," "project," "plan," and similar expressions are intended to identify these forward-looking statements.

Forward-looking statements are necessarily subject to many risks and uncertainties. A number of things could cause actual results to differ materially from those indicated by the forward-looking statements. These include the factors we discuss immediately below, those addressed under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations," other factors discussed elsewhere in this document or identified in our filings with the Securities and Exchange Commission, and those presented elsewhere by our management from time to time. Many of the risks and uncertainties are beyond our control. The following factors could cause our operating and financial performance to differ materially from the plans, objectives, assumptions, expectations, estimates, and intentions expressed in forward-looking statements:

• the strength of the United States economy in general and the strength of the local economies in which we conduct our operations; general economic conditions, either nationally or regionally, may be less favorable than we expect, resulting in a deterioration in the credit quality of our loan assets, among other things

• the effects of, and changes in, trade, monetary and fiscal policies and laws, including interest rate policies of the Federal Reserve Board

• inflation, interest rate, market, and monetary fluctuations

• the development and acceptance of new products and services of the Company and subsidiaries and the perceived overall value of these products and services by customers, including the features, pricing, and quality compared to competitors' products and services

• the willingness of customers to substitute our products and services for those of competitors

• the impact of changes in financial services laws and regulations (including laws concerning taxes, banking, securities, and insurance)

• changes in consumer spending and saving habits

Forward-looking statements are based on our beliefs, plans, objectives, goals, assumptions, expectations, estimates, and intentions as of the date the statements are made. Investors should exercise caution because the Company cannot give any assurance that its beliefs, plans, objectives, goals, assumptions, expectations, estimates, and intentions will be realized. The Company disclaims any obligation to update or revise any forward-looking statements based on the occurrence of future events, the receipt of new information, or otherwise.

Middlefield Banc Corp. Incorporated in 1988 under the Ohio General Corporation Law, Middlefield Banc Corp. ("Company") is a bank holding company registered under the Bank Holding Company Act of 1956. The Company's subsidiaries are:

1. The Middlefield Banking Company ("MBC", or the "Bank"), an Ohio-chartered commercial bank that began operations in 1901. MBC engages in a general commercial banking business in northeastern and central Ohio. The principal executive office is located at 15985 East High Street, Middlefield, Ohio 44062-0035, and the telephone number is (440) 632-1666.

2. EMORECO Inc., an Ohio asset resolution corporation headquartered in Middlefield, Ohio. EMORECO exists to resolve and dispose of troubled assets. The principal executive office is located at 15985 East High Street, Middlefield, Ohio 44062-0035.

The Middlefield Banking Company MBC was chartered under Ohio law in 1901. MBC offers customers a broad range of banking services including checking, savings, negotiable order of withdrawal ("NOW") accounts, money market accounts, time certificates of deposit, commercial loans, real estate loans, a variety of consumer loans, safe deposit facilities, and travelers' checks. MBC offers online banking and bill payment services to individuals and online cash management services to business customers through its website at www.middlefieldbank.bank.

On January 12, 2017, the Company completed its acquisition of Liberty Bank, N.A. ("Liberty"), pursuant to a previously announced definitive merger agreement. Under the terms of the merger agreement, Liberty shareholders received $37.96 in cash or 1.1934 shares of the Company's common stock in exchange for each share of Liberty common stock they owned immediately prior to the merger. The Company issued 544,610 shares of its common stock in the merger and the aggregate merger consideration was approximately $42.2 million. Upon closing, Liberty was merged into MBC, and its three full-service bank offices, in Twinsburg in northern Summit County, and in Beachwood and Solon in eastern Cuyahoga County, became offices of MBC. The systems integration of Liberty into MBC was completed in February, 2017.

Engaged in general commercial banking in northeastern and central Ohio, MBC offers these services principally to small and medium-sized businesses, professionals, small business owners, and retail customers. MBC has developed a marketing program to attract and retain consumer accounts and to match banking services and facilities with the needs of customers.

MBC's loan products include operational and working capital loans, loans to finance capital purchases, term business loans, residential construction loans, selected guaranteed or subsidized loan programs for small businesses, professional loans, residential and mortgage loans, and consumer installment loans to make home improvements and to purchase automobiles, boats, and other personal expenditures. Although the bank makes agricultural loans, the amount of agricultural loans in the bank's loan portfolio is not significant.

EMORECO Organized in 2009 as an Ohio corporation under the name EMORECO, Inc. and wholly owned by the Company, the purpose of the asset resolution subsidiary is to maintain, manage, and dispose of nonperforming loans and other real estate owned ("OREO") acquired by the subsidiary bank as the result of borrower default on real estate-secured loans. At December 31, 2018, EMORECO's assets consist of one cash account and prepaid income tax. According to Federal law governing bank holding companies, real estate must be disposed of within two years of acquisition, although limited extensions may be granted by the Federal Reserve Bank. A holding company subsidiary has limited real estate investment powers. EMORECO may only manage and maintain property and may not improve or develop property without advance approval of the Federal Reserve Bank.

Market Area MBC's footprint is home to 3.8 million people, or roughly one third of the Ohio population. MBC's product offering is geared toward traditional banking business delivered to both consumers and businesses located in its footprint of Northeast Ohio and the Columbus metro area. MBC's current strategy is aimed at using a strong deposit relationship in the more rural markets of Northeast Ohio to fund loan growth and build scale in its newer metro markets of Cleveland/Akron and Columbus. Columbus is in Franklin County and Cleveland is in Cuyahoga County.

Franklin County is Ohio's most populous county and Cuyahoga County is Ohio's second-most populous county. Columbus is the state capital and largest city in Ohio. Per capita gross domestic product, a measure of prosperity and standard of living, is significantly higher in the Columbus metro area relative to Ohio and the nation. Real gross domestic product per capita in the Columbus metro area is nearly $10,000 higher than in the state and nearly $6,500 higher than in the nation. The growth rate in employment for the Columbus metro area is faster than Ohio's growth rate. Construction continues to be the fastest-growing sector in the Columbus metro area, as it has been since 2015. The financial activities sector, an area in which the Columbus area is specialized relative to the state or nation, is also growing strongly. Per capita income in the Columbus metro area continues to be above the statewide level for Ohio.

MBC's market area in Northeastern Ohio consists principally of Cuyahoga, Geauga, Portage, Lake, Summit, Trumbull, and Ashtabula Counties. MBC's market area in Northeastern Ohio benefits from the area's proximity to Cleveland. The Cleveland metro area's real personal income per capita is more than $4,500 greater than Ohio's income per capita. The Cleveland MSA has a population of 2.1 million (2.8 million including Akron). MBC's four central Ohio branches are located in Dublin and Westerville, of Franklin County, and Sunbury and Powell, of Delaware County.

Based upon U.S. Census Bureau data compiled for 2012 through 2016, Delaware, Geauga and Lake counties are the first, third and seventh highest ranked counties, respectively, among Ohio's 88 counties based upon median family income. Powell and Dublin are the fourth and fifth highest ranked cities, respectively, in Ohio based upon median family income and MBC's offices in Beachwood and Solon, in Cuyahoga County, are located in three of the top twenty highest ranked cities in Ohio based upon median family income. A city of more than 47,000 residents located just northwest of Columbus, Ohio, Dublin is home to more than 20 corporate headquarters, an entrepreneurial center, and 4,300+ businesses. Dublin is also home to Ohio's largest corporation, Cardinal Health – 21 on the Fortune 500 list – and Dublin is also headquarters of the Wendy's Company. According to the 2010 Decennial Census and the census estimate between 2010 and 2016 from the Delaware County Regional Planning Commission, Delaware County is the fastest growing suburban county in Ohio.

Beachwood in eastern Cuyahoga County is suburban Cleveland's premier commercial and financial center. There is a high concentration of small businesses and affluent individuals in Beachwood. Home to almost 3,000 companies, Beachwood recently saw the opening of the world headquarters of Eaton Corporation. Beachwood's 12,000 residents have a median household income of $88,287. 52% of the adult residents in Beachwood have at least a bachelor's degree and 62% are in executive, managerial and professional positions. According to reliable third-party information, there are approximately 30,000 small businesses in Cuyahoga County.

The economy of MBC's Northeast markets is centered around manufacturing and agriculture and includes a large Amish population. Geauga County is the center of the 4th largest Amish population in the world. Home to 94,020 residents, Geauga County has a median household income of $74,165. Geauga County's labor participation rate of 66.4% outpaces that of Ohio (62.9%) and the US (63.2%).

MBC is not dependent upon any one significant customer or specific industry. Business is not seasonal to any material degree.

Lending — *Loan Portfolio Composition and Activity*. The Bank makes residential and commercial mortgage, home equity, secured and unsecured consumer installment, commercial and industrial, and real estate construction loans for owner-occupied and income producing properties. The Bank's Credit Policy aspires to a loan composition mix consisting of approximately 45% to 70% consumer purpose transactions including residential real estate loans, home equity loans and other consumer loans. The Policy is also designed to provide for 35% to 40% of total loans as business purpose commercial loans and business and consumer credit card accounts of up to 5% of total loans.

Although Ohio law imposes no material restrictions on the types of loans the Bank may make, real estate-based lending has historically been the Bank's primary focus. For prudential reasons, we avoid lending on the security of real estate located outside our market area. Ohio law does restrict the amount of loans an Ohio-chartered bank may make, generally limiting credit to any single borrower to less than 15% of capital. An additional margin of 10% of capital is allowed for loans fully secured by readily marketable collateral. This 15% legal lending limit has not been a material restriction on lending. We can accommodate loan volumes exceeding the legal lending limit by selling loan participations to other banks. As of December 31, 2018, MBC's 15%-of-capital limit on loans to a single borrower was approximately $17.7 million.

The Bank offers specialized loans for business and commercial customers, including equipment and inventory financing, real estate construction loans and Small Business Administration loans for qualified businesses. A portion of the Bank's commercial loans are designated as real estate loans for regulatory reporting purposes because they are secured by mortgages on real property. Loans of that type may be made for purposes of financing commercial activities, such as accounts receivable, equipment purchases and leasing, but they are secured by real estate to provide the Bank with an extra measure of security. Although these loans might be secured in whole or in part by real estate, they are treated in the discussions to follow as commercial and industrial loans. The Bank's consumer installment loans include secured and unsecured loans to individual borrowers for a variety of purposes, including personal, home improvements, revolving credit lines, autos, boats, and recreational vehicles.

The following table shows on a consolidated basis the composition of the loan portfolio along with a reconciliation to loans receivable, net.

	Loan Portfolio Composition at December 31,				
(Dollars in thousands)	2018	2017	2016	2015	2014
Type of loan:					
Commercial and industrial	$ 83,857	$ 101,346	$ 60,630	$ 42,536	$ 34,928
Real estate - construction	56,731	47,017	23,709	22,137	30,296
Real estate - mortgage:					
Residential	336,487	318,157	270,830	232,478	210,096
Commercial	498,247	437,947	249,490	231,701	190,685
Consumer installment	16,787	18,746	4,481	4,858	4,579
Total loans	992,109	923,213	609,140	533,710	470,584
Less:					
Allowance for loan and lease losses	7,428	7,190	6,598	6,385	6,846
Net loans	$ 984,681	$ 916,023	$ 602,542	$ 527,325	$ 463,738

The following table presents consolidated maturity information for the loan portfolio. The table does not include prepayments or scheduled principal repayments. All loans are shown as maturing based on contractual maturities.

	Loan Portfolio Maturity at December 31, 2018			
(Dollars in thousands)	Commercial and Industrial	Real Estate - Construction	Real Estate - Mortgage Commercial	Total
Amount due:				
In one year or less	$ 17,656	$ 2,690	$ 20,433	$ 40,779
After one year through five years	35,625	6,674	101,168	143,467
After five years	30,576	47,367	376,646	454,589
Total amount due	$ 83,857	$ 56,731	$ 498,247	$ 638,835

Loans due on demand and overdrafts are included in the amount due in one year or less. The Company has no loans without a stated schedule of repayment or a stated maturity.

The following table shows on a consolidated basis the dollar amount of all loans due after December 31, 2018 that have predetermined interest rates and the dollar amount of all loans due after December 31, 2018 that have floating or adjustable rates.

(Dollars in thousands)	Fixed Rate	Adjustable Rate	Total
Commercial and industrial	$ 54,899	$ 28,958	$ 83,857
Real estate - construction	8,741	47,990	56,731
Real estate - mortgage:			
Commercial	167,094	331,153	498,247
	$ 230,734	$ 408,101	$ 638,835

Residential Mortgage Loans A significant portion of the Bank's lending consists of origination of conventional loans secured by 1-4 family real estate located in Franklin, Geauga, Portage, Trumbull, Summit, Cuyahoga, Delaware, and Ashtabula counties. Residential mortgage loans approximated $336.5 million or 33.9% of the Bank's total loan portfolio at December 31, 2018.

The Bank makes loans of up to 80% of the value of the real estate and improvements securing a loan ("LTV" ratio) on 1-4 family real estate. The Bank generally does not lend in excess of the lower of 80% of the appraised value or sales price of the property. The Bank offers residential real estate loans with terms of up to 30 years.

Approximately 88.3% of the portfolio of conventional mortgage loans secured by 1-4 family real estate at December 31, 2018 is adjustable rate. Generally, the Bank originates fixed-rate, single-family mortgage loans in conformity with Freddie Mac guidelines, so are saleable to Freddie Mac. These loans are sold with servicing rights retained, and are sold in furtherance of the Bank's goal of better matching the maturities and interest rate sensitivity of its assets and liabilities. The Bank generally retains responsibility for collecting and remitting loan payments, inspecting the properties, making certain insurance and tax payments on behalf of borrowers and otherwise servicing the loans it sells and receives a fee for performing these services. Sales of loans also provide funds for additional lending and other purposes.

The Bank's home equity credit policy generally allows for a loan of up to 85% of a property's appraised value (and up to 89% for qualifying properties or borrowers), less the principal balance of the outstanding first mortgage loan. The Bank's home equity loans generally have terms of 20 years.

At December 31, 2018, residential mortgage loans of approximately $3.5 million were non-accruing or 90 days or more delinquent and accruing on that date, representing 1.0% of the residential mortgage loan portfolio. At December 31, 2017, residential mortgage loans of approximately $4.0 million were over 90 days delinquent or non-accruing on that date, representing 1.3% of the residential mortgage loan portfolio.

Commercial and Industrial Loans and Commercial Real Estate Loans

The Bank's commercial loan services include:

- accounts receivable, inventory and working capital loans
- renewable operating lines of credit
- loans to finance capital equipment
- term business loans
- demand lines of credit
- short-term notes
- selected guaranteed or subsidized loan programs for small businesses
- loans to professionals
- commercial real estate loans

Commercial real estate loans include commercial properties occupied by the proprietor of the business conducted on the premises, and income-producing or farm properties. Although the Bank makes agricultural loans, it currently does not have a significant amount of agricultural loans. The primary risks of commercial real estate loans are loss of income of the owner or lessee of the property and the inability of the market to sustain rent levels. Although commercial and commercial real estate loans generally bear more risk than single-family residential mortgage loans, they tend to be higher yielding, have shorter terms and provide for interest-rate adjustments. Accordingly, commercial and commercial real estate loans enhance a lender's interest rate risk management and, in management's opinion, promote more rapid asset and income growth than a loan portfolio composed strictly of residential real estate mortgage loans.

Although a risk of nonpayment exists for all loans, certain specific risks are associated with various kinds of loans. One of the primary risks associated with commercial loans is the possibility that the commercial borrower will not generate cash flow sufficient to repay the loan. The Bank's Credit Policy provides that commercial loan applications must be supported by documentation indicating cash flow sufficient for the borrower to service the proposed loan. Financial statements or tax returns for at least three years must be submitted, and annual reviews are required for business purpose relationships of $500,000 or more. Ongoing financial information is generally required for any commercial relationship where the exposure is $250,000 or more.

The fair value of collateral for collateralized commercial loans must exceed the Bank's exposure. For this purpose fair value is determined by independent appraisal or by the loan officer's estimate employing guidelines established by the Credit Policy. Loans not secured by real estate generally have terms of five years or fewer, unless guaranteed by the U.S. Small Business Administration or other governmental agency, and term loans secured by collateral having a useful life exceeding five years may have longer terms. The Bank's Credit Policy allows for terms of up to 20 years for loans secured by commercial real estate, and one year for business lines of credit. The maximum LTV ratio for commercial real estate loans is 80% of the appraised value or cost, whichever is less.

Real estate is commonly a material component of collateral for the Bank's loans, including commercial loans. Although the expected source of repayment is generally the operations of the borrower's business or personal income, real estate collateral provides an additional measure of security. Risks associated with loans secured by real estate include fluctuating land values, changing local economic conditions, changes in tax policies, and a concentration of loans within a limited geographic area.

At December 31, 2018, commercial and commercial real estate loans totaled $582.1 million, or 58.7% of the Bank's total loan portfolio. At December 31, 2018, commercial and commercial real estate loans of approximately $4.1 million were non-accruing or 90 days or more delinquent and accruing on that date, and represented 0.7% of the commercial and commercial real estate loan portfolios. At December 31, 2017, commercial and commercial real estate loans totaled $539.3 million, or 58.4% of the Bank's total loan portfolio. At December 31, 2017, commercial and commercial real estate loans of approximately $4.4 million were over 90 days delinquent or non-accruing on that date, and represented 0.8% of the commercial and commercial real estate loan portfolios.

Real Estate Construction

The Bank originates several different types of loans that it categorizes as construction loans, including:

- residential construction loans to borrowers who will occupy the premises upon completion of construction,
- residential construction loans to builders,
- commercial construction loans, and
- real estate acquisition and development loans.

Because of the complex nature of construction lending, these loans are generally recognized as having a higher degree of risk than other forms of real estate lending. The Bank's fixed-rate and adjustable-rate construction loans do not provide for the same interest rate terms on the construction loan and on the permanent mortgage loan that follows completion of the construction phase of the loan. It is the norm for the Bank to make residential construction loans without an existing written commitment for permanent financing. The Bank's Credit Policy provides that the Bank may make construction loans with terms of up to one year, with a maximum LTV ratio for residential construction of 80%. The Bank also offers residential construction-to-permanent loans that have a twelve-month construction period followed by 30 years of permanent financing.

At December 31, 2018, real estate construction loans totaled $56.7 million, or 5.7% of the Bank's total loan portfolio. There were no real estate construction loans 90 days delinquent or non-accruing on that date. At December 31, 2017, real estate construction loans totaled $47.0 million, or 5.1% of the Bank's total loan portfolio. There were no real estate construction loans 90 days delinquent or non-accruing on that date.

Consumer Installment Loans The Bank's consumer installment loans include secured and unsecured loans to individual borrowers for a variety of purposes, including personal, home improvement, revolving credit lines, autos, boats, and recreational vehicles. The Bank does not currently do any indirect lending. Unsecured consumer loans carry significantly higher interest rates than secured loans. The Bank maintains a higher loan loss allowance for consumer loans, while maintaining strict credit guidelines when considering consumer loan applications.

According to the Bank's Credit Policy, consumer loans secured by collateral other than real estate generally may have terms of up to five years, and unsecured consumer loans may have terms up to three years. Real estate security generally is required for consumer loans having terms exceeding five years.

At December 31, 2018, the Bank had approximately $16.8 million in its consumer installment loan portfolio, representing 1.7% of total loans. At December 31, 2017, the Bank had approximately $18.7 million in its consumer installment loan portfolio, representing 2.0% of total loans.

Loan Solicitation and Processing Loan originations are developed from a number of sources, including continuing business with depositors, other borrowers and real estate builders, solicitations by Bank personnel and walk-in customers.

When a loan request is made, the Bank reviews the application, credit bureau reports, property appraisals or evaluations, financial information, verifications of income, and other documentation concerning the creditworthiness of the borrower, as applicable to each loan type. The Bank's underwriting guidelines are set by senior management and approved by the Board of Directors. The Credit Policy specifies each individual officer's loan approval authority. Loans exceeding an individual officer's approval authority are submitted to an Officer's Loan Committee, which has authority to approve loans up to $3,000,000. The Board of Directors' Loan Committee acts as an approval authority for exposures over $3,000,000 and up to $6,000,000. Loans exceeding $6,000,000 require approval from the full Board of Directors.

Income from Lending Activities The Bank earns interest and fee income from its lending activities. Net of origination costs, loan origination fees are amortized over the life of a loan. The Bank also receives loan fees related to existing loans, including late charges. Income from loan origination and commitment fees and discounts varies with the volume and type of loans and commitments made and with competitive and economic conditions. Note 1 to the Consolidated Financial Statements included herein contains a discussion of the manner in which loan fees and income are recognized for financial reporting purposes.

Mortgage Banking Activity The Bank originates conventional loans secured by first lien mortgages on one-to-four family residential properties located within its market area for either portfolio or sale into the secondary market. During the year ended December 31, 2018, the Bank recorded gains of $231,000 on the sale of $13.0 million in loans receivable originated for sale. During the year ended December 31, 2017, the Bank recorded gains of $291,000 on the sale of $10.0 million in loans receivable originated for sale. The sold loans were sold on a servicing retained basis to Freddie Mac.

In addition to interest earned on loans and income recognized on the sale of loans, the Bank receives fees for servicing loans that it has sold. Because the Bank has data processing capacity that will allow it to expand its portfolio of serviced loans without incurring significant incremental expenses, the Bank intends in the future to augment its portfolio of loans serviced by continuing to originate and sell such fixed-rate single-family residential mortgage loans to Freddie Mac while retaining servicing.

Income from these activities will vary from period to period with the volume and type of loans originated and sold, which in turn is dependent on prevailing mortgage interest rates and their effect on the demand for loans in the Bank's market area.

Student Lending Through its acquisition of Liberty Bank, N.A., on January 12, 2017, MBC acquired Liberty's private student loan business. These loans provided qualified borrowers with the ability to finance the costs associated with obtaining a degree and to refinance their existing student loans. Pursuant to loan origination agreements with student loan originating and servicing companies, MBC made student loans to qualified students and sold those loans, without recourse and with servicing released, into the secondary market. Gains on the sales of these loans as well as interest income earned while held by MBC are included in the Consolidated Statement of Income. The lending program changed near the end of 2017, requiring the Company to expand "in-school" lending and extending the Company's carrying period, both of which increased the risk profile. The Company ceased the origination of new student loans at the end of 2017.

Nonperforming Loans Late charges on residential mortgages and consumer loans are assessed if a payment is not received by the due date plus a grace period. When an advanced stage of delinquency appears on a single-family loan and if repayment cannot be expected within a reasonable time or a repayment agreement is not entered into, a required notice of foreclosure or repossession proceedings may be prepared by the Bank's attorney and delivered to the borrower so that foreclosure proceedings may be initiated promptly, if necessary. The Bank also collects late charges on commercial loans.

When the Bank acquires real estate through foreclosure, voluntary deed, or similar means, the real estate is classified as OREO until it is sold. When property is acquired in this manner, it is recorded at the lower of cost (the unpaid principal balance at the date of acquisition) or fair value, less anticipated cost to sell. Any subsequent write-down is charged to expense. All costs incurred from the date of acquisition to maintain the property are expensed. OREO is appraised during the foreclosure process, before acquisition when possible. Losses are recognized for the amount by which the book value of the related mortgage loan exceeds the estimated net realizable value of the property.

The Bank undertakes regular review of the loan portfolio to assess its risks, particularly the risks associated with the commercial loan portfolio.

Classified Assets FDIC regulations governing classification of assets require nonmember commercial banks — including the Bank — to classify their own assets and to establish appropriate general and specific allowances for losses, subject to FDIC review. The regulations are designed to encourage management to evaluate assets on a case-by-case basis, discouraging automatic classifications. Under this classification system, problem assets of insured institutions are classified as "substandard," "doubtful," or "loss." An asset is considered "substandard" if it is inadequately protected by the current net worth and paying capacity of the obligor or of the collateral pledged, if any. Substandard assets include those characterized by the distinct possibility that the insured institution will sustain some loss if the deficiencies are not corrected. Assets classified as "doubtful" have all the weaknesses inherent in those classified substandard, with the added characteristic that the weaknesses make collection of principal in full — on the basis of currently existing facts, conditions, and values — highly questionable and improbable. Assets classified as "loss" are those considered uncollectible and of such little value that their continuance as assets without the establishment of a specific loss reserve is not warranted. Assets that do not expose the Bank to risk sufficient to warrant classification in one of the above categories, but that possess some potential weakness, are required to be designated "special mention" by management.

When an FDIC insured institution classifies assets as either "substandard" or "doubtful," it may establish allowances for loan losses in an amount deemed prudent by management. When an insured institution classifies assets as "loss," it is required either to establish an allowance for losses equal to 100% of that portion of the assets so classified or to charge off that amount. An Ohio nonmember bank's determination about classification of its assets and the amount of its allowances is subject to review by the FDIC and the Ohio Division of Financial Institutions (the "ODFI"), which may order the establishment of additional loss allowances. Management also employs an independent third party to semi-annually review and validate the internal loan review process and loan classifications.

Consolidated classified loans were as follows:

	December 31,									
	2018		2017		2016		2015		2014	
(Dollars in thousands)	Amount	Percent of total loans	Amount	Percent of total loans	Amount	Percent of total loans	Amount	Percent of total loans	Amount	Percent of total loans
Classified loans:										
Special mention	$ 13,076	1.32%	$ 11,829	1.28%	$ 5,657	0.93%	$ 5,297	0.99%	$ 4,987	1.06%
Substandard	13,867	1.40%	13,625	1.48%	11,777	1.93%	15,586	2.92%	16,211	3.44%
Doubtful	-	0.00%	-	0.00%	-	0.00%	130	0.02%	627	0.13%
Total amount due	$ 26,943	2.72%	$ 25,454	2.76%	$ 17,434	2.86%	$ 21,013	3.93%	$ 21,825	4.63%

Other than those disclosed in the preceding table, the Bank does not believe there are any loans classified for regulatory purposes as loss, doubtful, substandard, special mention or otherwise, which will result in losses or have a material impact on future operations, liquidity or capital reserves. We are not aware of any other information that causes us to have serious doubts as to the ability of borrowers in general to comply with repayment terms.

Investments Investment securities provide a return on residual funds after lending activities. Investments may be in federal funds sold, corporate securities, U.S. Government and agency obligations, state and local government obligations and government-guaranteed mortgage-backed securities. The Bank generally does not invest in securities that are rated less than investment grade by a nationally recognized statistical rating organization. Ohio law prescribes the kinds of investments an Ohio-chartered bank may make. Permitted investments include local, state, and federal government securities, mortgage-backed securities, and securities of federal government agencies. An Ohio-chartered bank also may invest up to 10% of its assets in corporate debt and equity securities, or a higher percentage in certain circumstances. Ohio law also limits to 15% of capital the amount an Ohio-chartered bank may invest in the securities of any one issuer, other than local, state, and federal government and federal government agency issuers and mortgage-backed securities issuers. These provisions have not been a material constraint upon the Bank's investment activities.

All securities-related activity is reported to the Bank's board of directors. General changes in investment strategy are required to be reviewed and approved by the board. Senior management can purchase and sell securities in accordance with the Bank's stated investment policy.

Management determines the appropriate classification of securities at the time of purchase. At this time the Bank has no securities that are classified as held to maturity. Securities to be held for indefinite periods and not intended to be held to maturity or on a long-term basis are classified as available for sale. Available-for-sale securities are reflected on the balance sheet at their fair value. In accordance with the adoption of ASU 2016-01 on January 1, 2018, the Company reclassified $625,000 from investment securities available for sale to equity securities.

The following table exhibits the consolidated amortized cost of the Bank's investment portfolio:

	December 31,		
(Dollars in thousands)	2018	2017	2016
Available for Sale:			
U.S. Government agency securities	$ 7,442	$ 8,664	$ 10,158
Obligations of states and political subdivisions:			
Taxable	502	504	1,615
Tax-exempt	72,387	65,408	78,327
Mortgage-backed securities in government- sponsored entities	18,185	18,640	20,128
Total Available-for-Sale Securities	98,516	93,216	111,807
Equity securities in financial institutions	415	415	750
Total Investment Securities	$ 98,931	$ 93,631	$ 112,557

The contractual maturity of investment debt securities is as follows:

	December 31, 2018										
	One year or less		More than one to five years		More than five to ten years		More than ten years		Total investment securities		
(Dollars in thousands)	Amortized cost	Average yield	Amortized cost	Average yield	Amortized cost	Average yield	Amortized cost	Average yield	Amortized cost	Average yield	Fair value
U.S. government agency securities	$ 2,000	1.37%	$ -	-	$ 224	4.97%	$ 5,218	3.21%	$ 7,442	2.77%	$ 7,471
Obligations of states and political subdivisions:											
Taxable	-	-	502	4.85%	-	-	-	-	502	4.85%	512
Tax-exempt **	6,547	3.42%	1,606	3.45%	9,303	3.25%	54,931	3.15%	72,387	3.19%	72,581
Mortgage-backed securities in government-sponsored entities	-	-	-	-	3,646	1.94%	14,539	2.92%	18,185	2.72%	17,758
Total	$ 8,547	2.94%	$ 2,108	3.78%	$ 13,173	2.92%	$ 74,688	3.11%	$ 98,516	3.08%	$ 98,322

** Tax equivalent yield

Expected maturities of investment securities could differ from contractual maturities because the borrower, or issuer, could have the right to call or prepay obligations with or without call or prepayment penalties.

As of December 31, 2018, the Bank also held 36,793 shares of $100 par value Federal Home Loan Bank of Cincinnati stock, which is a restricted security. FHLB stock represents an equity interest in the FHLB, but it does not have a readily determinable market value. The stock can be sold at its par value only, and only to the FHLB or to another member institution. Member institutions are required to maintain a minimum stock investment in the FHLB, based on total assets, total mortgages, and total mortgage-backed securities. The Bank's minimum investment in FHLB stock at December 31, 2018 was $3.7 million.

Sources of Funds — *Deposit Accounts* Deposit accounts are a major source of funds for the Bank. The Bank offers a number of deposit products to attract both commercial and regular consumer checking and savings customers, including regular and money market savings accounts, NOW accounts, and a variety of fixed-maturity, fixed-rate certificates with maturities ranging from 3 to 60 months. These accounts earn interest at rates established by management based on competitive market factors and management's desire to increase certain types or maturities of deposit liabilities. The Bank also provides travelers' checks, official checks, money orders, ATM services, and IRA accounts.

The following table shows on a consolidated basis the amount of time deposits of $100,000 or more as of December 31, 2018, including certificates of deposit, by time remaining until maturity.

(Dollar amounts in thousands)	Amount	Percent of Total
Within three months	$ 39,834	20.92%
Beyond three but within six months	18,644	9.79%
Beyond six but within twelve months	41,840	21.97%
Beyond one year	90,094	47.32%
Total	$ 190,412	100.00%

Borrowings Deposits and repayment of loan principal are the Bank's primary sources of funds for lending activities and other general business purposes. However, when the supply of funds cannot satisfy the demand for loans or general business purposes, the Bank can obtain funds from the FHLB of Cincinnati. Interest and principal are payable monthly, and the line of credit is secured by a pledge collateral agreement. At December 31, 2018, MBC had $90.6 million of FHLB borrowings outstanding. The Company's subsidiary bank also has access to credit through the Federal Reserve Bank of Cleveland and other funding sources.

The outstanding balances and related information about short-term borrowings as of December 31, 2018, 2017, and 2016, which includes securities sold under agreements to repurchase, lines of credit with other banks and Federal Funds purchased are summarized on a consolidated basis as follows:

(Dollar amounts in thousands)	2018	2017	2016
Balance at year-end	$ 90,398	$ 74,707	$ 68,359
Average balance outstanding	42,231	63,910	37,130
Maximum month-end balance	101,857	114,025	68,359
Weighted-average rate at year-end	2.53%	1.36%	0.61%
Weighted-average rate during the year	1.99%	1.18%	0.89%

Competition

The banking and financial services industry is highly competitive, and we compete with a wide range of financial institutions within our markets, including local, regional and national commercial banks and credit unions. We also compete with brokerage firms, consumer finance companies, mutual funds, securities firms, insurance companies, fintech companies and other financial intermediaries for certain of our products and services. Some of our competitors are not currently subject to the regulatory restrictions and the level of regulatory supervision applicable to us.

Interest rates on loans and deposits, as well as prices on fee-based services, are typically significant competitive factors within the banking and financial services industry. Many of our competitors are much larger financial institutions that have greater financial resources than we do and compete aggressively for market share. These competitors attempt to gain market share through their financial product mix, pricing strategies and banking center locations.

Other important standard competitive factors in our industry and markets include office locations and hours, quality of customer service, community reputation, continuity of personnel and services, capacity and willingness to extend credit, and ability to offer sophisticated banking products and services. While we seek to remain competitive with respect to fees charged, interest rates and pricing, we believe that the of the Bank's commitment to personal service, innovation, and involvement in the communities and primary market areas that the Bank serves, as well as the Bank's commitment to quality community banking service, are factors that contribute to the Bank's competitive advantage and will enable us to compete successfully within our markets and enhance our ability to attract and retain customers.

Personnel

As of December 31, 2018, the Bank had 200 full-time equivalent employees. None of the employees are represented by a collective bargaining group.

Supervision and Regulation

The following discussion of bank supervision and regulation is qualified in its entirety by reference to the statutory and regulatory provisions discussed. Changes in applicable law or in the policies of various regulatory authorities could materially affect the business and prospects of the Company.

The Company is a bank holding company within the meaning of the Bank Holding Company Act of 1956. As such, the Company is subject to regulation, supervision, and examination by the Board of Governors of the Federal Reserve System, acting primarily through the Federal Reserve Bank of Cleveland. The Company is required to file annual reports and other information with the Federal Reserve. The bank subsidiary is an Ohio-chartered commercial bank. As a state-chartered, nonmember bank, the bank is primarily regulated by the FDIC and by the Ohio Division of Financial Institutions.

The Company and The Middlefield Banking Company are subject to federal banking laws, and the Company is also subject to Ohio bank law. These federal and state laws are intended to protect depositors, not stockholders. Federal and state laws applicable to holding companies and their financial institution subsidiaries regulate the range of permissible business activities, investments, reserves against deposits, capital levels, lending activities and practices, the nature and amount of collateral for loans, establishment of branches, mergers, dividends, and a variety of other important matters. The Bank is subject to detailed, complex, and sometimes overlapping federal and state statutes and regulations affecting routine banking operations. These statutes and regulations include but are not limited to state usury and consumer credit laws, the Truth in Lending Act and Regulation Z, the Equal Credit Opportunity Act and Regulation B, the Fair Credit Reporting Act, the Truth in Savings Act, and the Community Reinvestment Act. The Bank must comply with Federal Reserve Board regulations requiring depository institutions to maintain reserves against their transaction accounts (principally NOW and regular checking accounts). Because required reserves are commonly maintained in the form of vault cash or in a noninterest-bearing account (or pass-through account) at a Federal Reserve Bank, the effect of the reserve requirement is to reduce an institution's earning assets.

The Federal Reserve Board and the FDIC have extensive authority to prevent and to remedy unsafe and unsound practices and violations of applicable laws and regulations by institutions and holding companies. The agencies may assess civil money penalties, issue cease-and-desist or removal orders, seek injunctions, and publicly disclose those actions. In addition, the Ohio Division of Financial Institutions possesses enforcement powers to address violations of Ohio banking law by Ohio-chartered banks.

Regulation of Bank Holding Companies — *Bank and Bank Holding Company Acquisitions* The Bank Holding Company Act requires every bank holding company to obtain approval of the Federal Reserve before:

- directly or indirectly acquiring ownership or control of any voting shares of another bank or bank holding company, if after the acquisition the acquiring company would own or control more than 5% of the shares of the other bank or bank holding company (unless the acquiring company already owns or controls a majority of the shares),
- acquiring all or substantially all of the assets of another bank, or
- merging or consolidating with another bank holding company.

The Federal Reserve will not approve an acquisition, merger, or consolidation that would have a substantially anticompetitive result, unless the anticompetitive effects of the proposed transaction are clearly outweighed by a greater public interest in satisfying the convenience and needs of the community to be served. The Federal Reserve also considers capital adequacy and other financial and managerial factors in its review of acquisitions and mergers.

Additionally, the Bank Holding Company Act, the Change in Bank Control Act and the Federal Reserve Board's Regulation Y require advance approval of the Federal Reserve to acquire "control" of a bank holding company. Control is conclusively presumed to exist if an individual or company acquires 25% or more of a class of voting securities of the bank holding company. If the holding company has securities registered under Section 12 of the Securities Exchange Act of 1934, as the Company does, or if no other person owns a greater percentage of the class of voting securities, control is presumed to exist if a person acquires 10% or more, but less than 25%, of any class of voting securities. Approval of the Ohio Division of Financial Institutions is also necessary to acquire control of an Ohio-chartered bank.

Nonbanking Activities With some exceptions, the Bank Holding Company Act generally prohibits a bank holding company from acquiring or retaining direct or indirect ownership or control of more than 5% of the voting shares of any company that is not a bank or bank holding company, or from engaging directly or indirectly in activities other than those of banking, managing or controlling banks, or providing services for its subsidiaries. The principal exceptions to these prohibitions involve nonbank activities that, by statute or by Federal Reserve Board regulation or order, are held to be closely related to the business of banking or of managing or controlling banks. In making its determination that a particular activity is closely related to the business of banking, the Federal Reserve considers whether the performance of the activities by a bank holding company can be expected to produce benefits to the public — such as greater convenience, increased competition, or gains in efficiency in resources — that will outweigh the risks of possible adverse effects such as decreased or unfair competition, conflicts of interest, or unsound banking practices. Some of the activities determined by Federal Reserve Board regulation to be closely related to the business of banking are: making or servicing loans or leases; engaging in insurance and discount brokerage activities; owning thrift institutions; performing data processing services; acting as a fiduciary or investment or financial advisor; and making investments in corporations or projects designed primarily to promote community welfare.

Financial Holding Companies On November 12, 1999 the Gramm-Leach-Bliley Act became law, repealing much of the 1933 Glass-Steagall Act's separation of the commercial and investment banking industries. The Gramm-Leach-Bliley Act expands the range of nonbanking activities a bank holding company may engage in, while preserving existing authority for bank holding companies to engage in activities that are closely related to banking. The legislation creates a new category of holding company called a "financial holding company." Financial holding companies may engage in any activity that is:

- financial in nature or incidental to that financial activity, or
- complementary to a financial activity and that does not pose a substantial risk to the safety and soundness of depository institutions or the financial system generally.

Activities that are financial in nature include:

- acting as principal, agent, or broker for insurance,
- underwriting, dealing in, or making a market in securities, and
- providing financial and investment advice.

The Federal Reserve Board and the Secretary of the Treasury have authority to decide that other activities are also financial in nature or incidental to financial activity, taking into account, among others, changes in technology, changes in the banking marketplace, and competition for banking services. The Company is engaged solely in activities that were permissible for a bank holding company before enactment of the Gramm-Leach-Bliley Act. Federal Reserve Board rules require that all of the depository institution subsidiaries of a financial holding company be and remain well capitalized and well managed. If all depository institution subsidiaries of a financial holding company do not remain well capitalized and well managed, the financial holding company must enter into an agreement acceptable to the Federal Reserve Board, undertaking to comply with all capital and management requirements within 180 days. In the meantime the financial holding company may not use its expanded authority to engage in nonbanking activities without Federal Reserve Board approval and the Federal Reserve may impose other limitations on the holding company's or affiliates' activities. If a financial holding company fails to restore the well-capitalized and well-managed status of a depository institution subsidiary, the Federal Reserve may order divestiture of the subsidiary.

Holding Company Capital and Source of Strength The Federal Reserve considers the adequacy of a bank holding company's capital on essentially the same risk-adjusted basis as capital adequacy is determined by the FDIC at the bank subsidiary level. It is also Federal Reserve Board policy that bank holding companies serve as a source of strength for their subsidiary banking institutions.

Under Bank Holding Company Act section 5(e), the Federal Reserve Board may require a bank holding company to terminate any activity or relinquish control of a nonbank subsidiary if the Federal Reserve Board determines that the activity or control constitutes a serious risk to the financial safety, soundness or stability of a subsidiary bank. And with the Federal Deposit Insurance Corporation Improvement Act of 1991's addition of the prompt corrective action provisions to the Federal Deposit Insurance Act, section 38(f)(2)(I) of the Federal Deposit Insurance Act now provides that a federal bank regulatory authority may require a bank holding company to divest itself of an undercapitalized bank subsidiary if the agency determines that divestiture will improve the bank's financial condition and prospects.

Capital — *Risk-Based Capital Requirements* The Federal Reserve Board and the FDIC employ similar risk-based capital guidelines in their examination and regulation of bank holding companies and financial institutions. If capital falls below the minimum levels established by the guidelines, the bank holding company or bank may be denied approval to acquire or establish additional banks or nonbank businesses or to open new facilities. Failure to satisfy capital guidelines could subject a banking institution to a variety of restrictions or enforcement actions by federal bank regulatory authorities, including the termination of deposit insurance by the FDIC and a prohibition on the acceptance of brokered deposits.

A bank's capital hedges its risk exposure, absorbing losses that can be predicted as well as losses that cannot be predicted. According to the Federal Financial Institutions Examination Council's explanation of the capital component of the Uniform Financial Institutions Rating System, commonly known as the "CAMELS" rating system, a rating system employed by the Federal bank regulatory agencies, a financial institution must "maintain capital commensurate with the nature and extent of risks to the institution and the ability of management to identify, measure, monitor, and control these risks. The effect of credit, market, and other risks on the institution's financial condition should be considered when evaluating the adequacy of capital."

Under regulations promulgated by the federal bank regulators, U.S. banking organizations are subject to comprehensive capital standards that were established in July 2013 (the Basel III capital rules), subject to phase-in periods for certain components and other provisions. The capital standards require the maintenance of common equity Tier 1 capital, Tier 1 capital and total capital to risk-weighted assets of at least 4.5%, 6% and 8%, respectively, and a leverage ratio of at least 4% Tier 1 capital. Common equity Tier 1 capital is generally defined as common stockholders' equity and retained earnings. Tier 1 capital is generally defined as common equity Tier 1 and Additional Tier 1 capital. Additional Tier 1 capital generally includes certain noncumulative perpetual preferred stock and related surplus and minority interests in equity accounts of consolidated subsidiaries. Total capital includes Tier 1 capital (common equity Tier 1 capital plus Additional Tier 1 capital) and Tier 2 capital. Tier 2 capital is comprised of capital instruments and related surplus meeting specified requirements, and may include cumulative preferred stock and long-term perpetual preferred stock, mandatory convertible securities, intermediate preferred stock and subordinated debt. Also included in Tier 2 capital is the allowance for loan and lease losses limited to a maximum of 1.25% of risk-weighted assets and, for institutions that have exercised an opt-out election regarding the treatment of Accumulated Other Comprehensive Income ("AOCI"), up to 45% of net unrealized gains on available-for-sale equity securities with readily determinable fair market values. Institutions that have not exercised the AOCI opt-out have AOCI incorporated into common equity Tier 1 capital (including unrealized gains and losses on available-for-sale-securities). During the first quarter of 2015, the Company exercised the opt-out election regarding the treatment of AOCI. Calculation of all types of regulatory capital is subject to deductions and adjustments specified in the regulations.

In determining the amount or risk-weighted assets for purposes of calculating risk-based capital ratios, a bank's assets, including certain off-balance sheet assets (e.g., recourse obligations, direct credit substitutes, residual interests), are multiplied by a risk-weight factor assigned by the regulations based on perceived risks inherent in the type of asset. Higher levels of capital are required for asset categories believed to present greater risk. For example, a risk weight of 0% is assigned to cash and U.S. government securities, a risk weight of 50% is generally assigned to prudently underwritten first lien one-to-four family residential mortgages, a risk weight of 100% is assigned to commercial and consumer loans, a risk weight of 150% is assigned to certain past due loans and a risk weight of between 0% and 600% is assigned to permissible equity interest, depending on certain specified factors.

In addition to establishing the minimum regulatory capital requirements, the regulations limit capital distributions and certain discretionary bonus payments to management if the institutions does not hold a "capital conservation buffer: consisting of 2.5% of common equity Tier 1 capital to risk-weighted assets above the amount necessary to meet its minimum risk-based capital requirements. The capital conservation buffer requirement has been phasing in since January 1, 2016 and was fully implemented at 2.5% on January 1, 2019.

Regulatory relief legislated enacted in May 2018 requires the federal banking agencies, including the Federal Deposit Insurance Corporation, to establish for institutions with assets of less than $10 billion of assets a "community bank leverage ratio" (the ratio of a bank's tangible equity capital to average total consolidated assets) of between 8 to 10%. A "qualifying community bank" with capital exceeding the specified requirement will be considered compliant with all applicable regulatory capital and leverage requirements, including the requirement to be "well capitalized." On November 21, 2018, the federal banking agencies issued a notice of proposed rulemaking seeking comment on a proposal that would create an alternative, voluntary, capital framework for qualifying institutions that will deem an institution to be well capitalized so long as the institutions maintains a leverage ratio of at least 9%. After the rule is finalized, a financial institution could elect to be subject to this new simplified capital requirement. At December 31, 2018, the Company and the Middlefield Banking Company exceeded each of its capital requirements.

The FDIC also employs a market risk component in its calculation of capital requirements for nonmember banks. The market risk component could require additional capital for general or specific market risk of trading portfolios of debt and equity securities and other investments or assets. The FDIC's evaluation of an institution's capital adequacy takes account of a variety of other factors as well, including interest rate risks to which the institution is subject, the level and quality of an institution's earnings, loan and investment portfolio characteristics and risks, risks arising from the conduct of nontraditional activities, and a variety of other factors.

Accordingly, the FDIC's final supervisory judgment concerning an institution's capital adequacy could differ significantly from the conclusions that might be derived from the absolute level of an institution's risk-based capital ratios. Therefore, institutions generally are expected to maintain risk-based capital ratios that exceed the minimum ratios discussed above. This is particularly true for institutions contemplating significant expansion plans and institutions that are subject to high or inordinate levels of risk. Moreover, although the FDIC does not impose explicit capital requirements on holding companies of institutions regulated by the FDIC, the FDIC can take account of the degree of leverage and risks at the holding company level. If the FDIC determines that the holding company (or another affiliate of the institution regulated by the FDIC) has an excessive degree of leverage or is subject to inordinate risks, the FDIC may require the subsidiary institution(s) to maintain additional capital or the FDIC may impose limitations on the subsidiary institution's ability to support its weaker affiliates or holding company.

Prompt Corrective Action. To resolve the problems of undercapitalized institutions and to prevent a recurrence of the banking crisis of the 1980s and early 1990s, the Federal Deposit Insurance Corporation Improvement Act of 1991 established a system known as "prompt corrective action." Under the prompt corrective action provisions and implementing regulations, every institution is classified into one of five categories, depending on its total capital ratio, its Tier 1 capital ratio, its common equity Tier 1 risk-based capital ratio, its leverage ratio, and subjective factors. The categories are "well capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized" and "critically undercapitalized." To be considered well capitalized for purposes of the prompt corrective action rules, a bank must maintain total risk-based capital of 10.0% or greater, Tier 1 risk-based capital of 8.0% or greater, common equity Tier 1 capital of 6.5% or greater, and leverage capital of 5.0% or greater. An institution with a capital level that might qualify for well capitalized or adequately capitalized status may nevertheless be treated as though it were in the next lower capital category if its primary federal banking supervisory authority determines that an unsafe or unsound condition or practice warrants that treatment.

A financial institution's operations can be significantly affected by its capital classification under the prompt corrective action rules. For example, an institution that is not well capitalized generally is prohibited from accepting brokered deposits and offering interest rates on deposits higher than the prevailing rate in its market without advance regulatory approval, which can have an adverse effect on the bank's liquidity. At each successively lower capital category, an insured depository institution is subject to additional restrictions. Undercapitalized institutions are required to take specified actions to increase their capital or otherwise decrease the risks to the federal deposit insurance funds. A bank holding company must guarantee that a subsidiary bank that adopts a capital restoration plan will satisfy its plan obligations. Any capital loans made by a bank holding company to a subsidiary bank are subordinated to the claims of depositors in the bank and to certain other indebtedness of the subsidiary bank. If bankruptcy of a bank holding company occurs, any commitment by the bank holding company to a Federal banking regulatory agency to maintain the capital of a subsidiary bank would be assumed by the bankruptcy trustee and would be entitled to priority of payment. Bank regulatory agencies generally are required to appoint a receiver or conservator shortly after an institution becomes critically undercapitalized.

The following table illustrates the capital and prompt corrective action guidelines applicable to the Company and the bank:

	As of December 31, 2018			
	Leverage	Tier 1 Risk Based	Common Equity Tier 1	Total Risk Based
The Middlefield Banking Company	9.60%	11.09%	11.09%	11.83%
Middlefield Banc Corp.	10.55%	10.35%	9.65%	11.00%
Adequately capitalized ratio	4.00%	6.00%	4.50%	8.00%
Adequately capitalized ratio plus fully phased-in capital conservation buffer	4.00%	8.50%	7.00%	10.50%
Well-capitalized ratio (Bank only)	5.00%	8.00%	6.50%	10.00%

Limits on Dividends and Other Payments The Company's ability to obtain funds for the payment of dividends and for other cash requirements depends on the amount of dividends that may be paid to it by the bank. Ohio bank law and FDIC policy are consistent, providing that banks generally may rely solely on current earnings for the payment of dividends. Under Ohio Revised Code section 1107.15(B) a dividend may be declared from surplus, meaning additional paid-in capital, with the approval of (*x*) the Ohio Superintendent of Financial Institutions and (*y*) the holders of two thirds of the bank's outstanding shares. Superintendent approval is also necessary for payment of a dividend if the total of all cash dividends in a year exceeds the sum of (*x*) net income for the year and (*y*) retained net income for the two preceding years. Relying on 12 U.S.C. 1818(b), the FDIC may restrict a bank's ability to pay a dividend if the FDIC has reasonable cause to believe that the dividend would constitute an unsafe and unsound practice. A bank's ability to pay dividends may be affected also by the FDIC's capital maintenance requirements and prompt corrective action rules. A bank may not pay a dividend if the bank is undercapitalized or if payment would cause the bank to become undercapitalized.

A 1985 policy statement of the Federal Reserve Board declares that a bank holding company should not pay cash dividends on common stock unless the organization's net income for the past year is sufficient to fully fund the dividends and the prospective rate of earnings retention appears consistent with the organization's capital needs, asset quality, and overall financial condition.

The Dodd-Frank Act The Dodd-Frank Wall Street Reform and Consumer Protection Act ("DFA") became law on July 21, 2010. The DFA includes corporate governance and executive compensation reforms, new registration requirements for hedge fund and private equity fund advisers, increased regulation of over-the-counter derivatives and asset-backed securities, and new rules for credit rating agencies. The DFA includes these provisions:

- Title X established an independent Federal regulatory body within the Federal Reserve System. Dedicated exclusively to consumer protection and known as the Consumer Financial Protection Bureau (the "CFPB"), this regulatory body has responsibility for most consumer protection laws, with rulemaking, supervisory, examination, and enforcement authority.

- under section 334 the FDIC's minimum reserve ratio is to be increased from 1.15% to 1.35%, with the goal of attaining that 1.35% level by September 30, 2020. As of September 30, 2018, the reserve ratio exceeded the required minimum of 1.35%. Small banks, such as the Bank, with total assets less than $10 billion, will receive credits to offset the portion of their assessments that helped to raise the reserve ratio from 1.15 percent to 1.35 percent. The DFA gives the FDIC much greater discretion to manage its insurance fund reserves, including where to set the insurance fund's designated reserve ratio. When the reserve ratio is at or above 1.38%, the FDIC has stated that it will automatically apply credits to reduce a small bank's regular assessment up to the entire amount of the assessment.

- the deposit insurance cover limit was increased to $250,000 by section 335.

- section 627 repealed the longstanding prohibition against financial institutions paying interest on checking accounts.

- section 331 changed the way deposit insurance premiums are calculated by the FDIC as well. That is, deposit insurance premiums are calculated based upon an institution's so-called assessment base. Until the DFA became law, the assessment base consisted of an institution's deposit liabilities. As revised by section 331, the assessment base is the difference between total assets and tangible equity. In other words, the assessment base takes account of all liabilities, not merely deposit liabilities.

- the Office of the Comptroller of the Currency's ability to preempt state consumer protection laws is constrained by section 1044, and because of section 1042 state attorneys general have greater authority to enforce state consumer protection laws against national banks and their operating subsidiaries.

The CFPB, which has rulemaking, supervisory, and enforcement powers under specific federal consumer financial protection laws, including the Equal Credit Opportunity Act, Truth in Lending Act, Real Estate Settlement Procedures Act, Fair Credit Reporting Act, Fair Debt Collection Act, and Consumer Financial Privacy provisions of the Gramm-Leach-Bliley Act. In addition to giving the CFPB responsibility for these specific statutes, the DFA grants to the CFPB broad authority to prohibit the offering by banks of consumer financial products or engaging in acts or practices that the CFPB considers to be unfair, deceptive, or abusive. The CFPB has examination and primary enforcement authority over depository institutions with $10 billion or more in assets, not smaller institutions. However, smaller institutions are subject to CFPB rules. In addition, the standards established by the CFPB for large institutions have applied in practice to smaller institutions as well. The DFA does not prevent states from adopting consumer protection laws and standards that are more stringent than those adopted at the federal level and, in certain circumstances, permits state attorneys general to enforce compliance with both the state and federal laws and regulations.

Implementing section 1411 of the DFA, in 2013 the CFPB amended Regulation Z under the Truth in Lending Act, adding a rule that mortgage lenders must make a reasonable and good faith determination that a consumer being granted mortgage credit has the ability to repay the loan according to its terms. Under this new rule, referred to as the "ability-to-repay" rule, mortgage lenders may determine the consumer's ability to repay in one of two ways. The first alternative involves assessment of eight underwriting factors, including the loan applicant's current or reasonably expected income or assets, current employment status, monthly payment for the credit applied for, monthly payment on any simultaneous loan being made to the applicant, monthly payment for mortgage-related obligations, current debt obligations, alimony, and child support, monthly debt-to-income ratio or residual income, and credit history. The second alternative involves origination of a so-called "qualified mortgage," meaning a mortgage with terms that are consistent with minimum standards established by the CFPB, which currently include a maximum 43% debt-to-income ratio for the borrower (although the 43% minimum debt-to-income ratio does not apply if the loan is eligible to be purchased, insured, or guaranteed by FNMA, FHLMC, HUD, or the VA). In general terms, a qualified mortgage is one with a term of 30 years or less, with substantially equal regular periodic payments (although adjustable-rate mortgages can be qualified mortgages), with total points and fees of 3% of the loan amount or less, and without negative amortization or interest-only payments or balloon payments.

A lender originating a qualified mortgage is protected against a legal claim that the lender failed to comply with the ability-to-repay rule. A mortgage with an interest rate exceeding the prime rate by 1.5 percentage points or more (3.5 percentage points for subordinate-lien loans such as home equity loans) is referred to in the CFPB rule as a higher-priced mortgage loan. The lender making a subprime qualified mortgage has less protection under the ability-to-repay rule than a lender making a prime qualified mortgage. A lender originating a mortgage that is not a qualified mortgage is exposed to a potential claim that the lender did not comply with the ability-to-repay rules, which could require the lender to pay damages to the borrower, including but not necessarily limited to the sum of all finance charges and fees paid by the borrower (a lender originating a subprime qualified mortgage bears this risk to a degree as well). The borrower’s claim also could impair the lender’s ability to enforce the loan terms or foreclose on the real estate collateral. Compliance with the ability-to-repay rules has increased community banks’ compliance costs, including our own.

In addition to ability to repay, the DFA imposes a risk-retention requirement on mortgage lenders selling loans into the secondary mortgage market. With some exceptions a mortgage lender selling a loan into the secondary mortgage market must retain ownership of at least 5% of the loan, the assumption being that if mortgage lenders remain exposed to credit risk they will not knowingly make loans that fail to satisfy ordinary and reasonable standards of creditworthiness. A qualified mortgage for purposes of the ability-to-repay rule is also exempt from the risk-retention requirement, allowing a mortgage lender to sell 100% of a qualified mortgage rather than only 95%.

The existing and future rulemakings issued under the Dodd-Frank Act have resulted, and may continue to result, in a significant cost of compliance. The changes resulting from the Dodd-Frank Act may impact the profitability of our business activities, require changes to certain of our business practices, impose upon us more stringent capital, liquidity and leverage requirements or otherwise materially and adversely affect us.

In an Executive Order signed on February 3, 2017, the President of the United States directed the Secretary of the Treasury, in consultation with federal financial regulators, to assess the rules promulgated under the Dodd-Frank Act since 2010 with a view to producing a plan to revise them as necessary. It is unknown at this time to what extent new legislation will be passed into law, what pending or new regulatory proposals will be adopted, or if existing legislation or regulations will be repealed. It is also unknown what the effect of such passage, adoption or repeal would have, either positively or negatively, on our industry or on us. If legislation or regulations are implemented or repealed, it may be time-consuming and expensive for us to alter our internal operations in order to comply with such changes.

The Regulatory Relief Act The Economic Growth, Regulatory Relief, and Consumer Protection Act (the “Regulatory Relief Act”) was signed into law in May 2018. The Regulatory Relief Act amends parts of the Dodd-Frank Act, as well as other laws that involve regulation of the financial industry. While the Regulatory Relief Act keeps in place fundamental aspects of the Dodd-Frank Act’s regulatory framework, the Regulatory Relief Act includes a number of provisions that are favorable to bank holding companies with total consolidated assets of less than $10 billion, such as the Company, and also makes changes to consumer mortgage and credit reporting regulations and to the authorities of the agencies that regulate the financial industry. A number of the provisions included in the Regulatory Relief Act require the federal banking agencies to either promulgate regulations or amend existing regulations, and it will likely take some time for these agencies to implement the necessary changes.

The following is a brief summary of select provisions of the Regulatory Relief Act which are not otherwise covered in other sections below.

Provisions that are Favorable to Community Banks. There are a number of provisions in the Regulatory Relief Act that will have a favorable impact on community banks such as The Middlefield Banking Company. These are briefly referenced below.

- *Simplified Capital Requirements for Community Banks*. The Regulatory Relief Act simplifies capital calculations by requiring regulators to create a community bank leverage ratio of tangible equity/average assets between 8% and 10%. Depository institutions that maintain a higher ratio would automatically be deemed to be well capitalized and in compliance with capital and leverage requirements, although regulators retain the flexibility to determine that a depository institution may not qualify for the community bank leverage ratio test based on the institution’s risk profile. On November 21, 2018, the federal banking agencies issued a notice of proposed rulemaking seeking comment on a proposal that would create an alternative, voluntary, capital framework for qualifying institutions that will deem an institution to be well capitalized so long as the institution maintains a leverage ratio of at least 9% and adequately capitalized so long as the institution maintains a leverage ratio of at least 7.5%. Under the proposed rule, banks with less than $10 billion in assets would be able to elect the community bank leverage ratio framework if they meet the 9 percent ratio and if they hold 25 or less percent of assets in off-balance sheet exposures, 5 percent or less of assets in total trading assets and liabilities, 25 percent or less in mortgage servicing assets and 25 percent or less in temporary difference deferred tax assets. The proposal provides details about the calculation of the community bank leverage ratio, the election process and how the agencies would handle situations when banks' leverage ratios deteriorate and when Prompt Corrective Action is required. A qualifying community banking organization that has chosen the alternative framework would not be required to calculate the existing risk-based and leverage capital requirements and would also be considered to have met the capital ratio requirements to be well capitalized for the agencies' prompt corrective action rules, provided it has a community bank leverage ratio greater than 9 percent.

- *Revised Capital Requirements for High Volatility Commercial Real Estate Loans.* The Regulatory Relief Act also provides that federal banking regulators may not impose higher capital standards on High Volatility Commercial Real Estate (HVCRE) exposures unless they are for acquisition, development or construction (ADC), and clarifies ADC status. The Regulatory Relief Act expands the exclusions from the current definition of an HVCRE exposure by (1) excluding loans for (a) the acquisition or refinancing of existing income-producing real property if the cash flow of the property is sufficient to support the debt service and expenses of the property and (b) for improvements to existing income-producing real property if the cash flow of the property is sufficient to support the debt service and expenses of the property and (2) by counting paid development expenses and contributed real property or improvements towards the borrower's contributed capital. This new two-prong test provides lenders with the flexibility to terminate the HVCRE ADC designation and release the borrower's additional capital without the need for refinancing. The Regulatory Relief Act also makes it clear that lenders have discretion to determine when and if the two-prong test has been satisfied based on their own underwriting criteria.

- *Exception for Certain Reciprocal Deposits from Treatment as Brokered Deposits.* The Regulatory Relief Act amends the Federal Deposit Insurance Act to exclude reciprocal deposits of an insured depository institution from limitations on broker deposits. A well-managed and well-capitalized depository institution may now hold reciprocal deposits in an amount that does not exceed the lesser of $5 billion or 20% of the depository institution’s total liabilities without those reciprocal deposits being treated as brokered deposits. Reciprocal deposits are defined in the Regulatory Relief Act as deposits that a bank receives through a deposit placement network with the same maturity (if any) and in the same aggregate amount as deposits (other than deposits obtained through a deposit broker) placed by the bank in another network bank. The amendment will also have the effect of lowering deposit insurance premiums for well-capitalized banks that use deposit placement networks.

- *Increase in Asset Threshold for Qualifying for an 18-Month Examination Cycle.* For well-managed, well-capitalized banks, the Regulatory Relief Act increases the asset threshold for institutions qualifying for an 18-month on-site examination cycle, from the current 12-month on-site examination cycle, from $1 billion to $3 billion in total consolidated assets.

- *Short Form Call Reports.* The Regulatory Relief Act requires the federal banking agencies to promulgate regulations allowing an insured depository institution with less than $5 billion in total consolidated assets (and that satisfies such other criteria as determined to be appropriate by the agencies) to submit a short-form call report for its first and third quarters of a calendar year.

- *Consumer Protection Enhancements.* The Regulatory Relief Act improves consumer access to mortgage credit by, among other things, (i) exempting banks with less than $10 billion in assets from the ability-to-repay requirements for certain qualified residential mortgage loans; (ii) removing the requirement to obtain appraisals for certain transactions valued at less than $400,000 in rural areas; (iii) exempting banks and credit unions that originate fewer than 500 open-end and 500 closed-end mortgages from expanded Home Mortgage Disclosure Act data disclosures mandated by the Dodd-Frank Act; (iv) amending the SAFE Mortgage Licensing Act by providing registered mortgage loan originators in good standing with 120 days of transitional authority to originate loans when moving from a federal depository institution to a non-depository institution or across state lines; (v) requiring the CFPB to clarify how TILA-RESPA Integrated Disclosure applies to mortgage assumption transactions and construction-to-permanent home loans as well as outline certain liabilities related to model disclosure use, (vi) adding certain protections for consumers, including veterans and active duty military personnel, expanded credit freezes and creation of an identity theft protection database.

Other new proposals for legislation continue to be introduced in the U.S. Congress that could further substantially revise regulation of the bank and non-bank financial services industries and impose restrictions on the operations and general ability of firms within the industry to conduct business consistent with historical practices. Federal and state regulatory agencies also frequently adopt changes to their regulations or change the manner in which existing regulations are applied. Certain aspects of current or proposed regulatory or legislative changes to laws applicable to the financial industry, if enacted or adopted, may impact the profitability of our business activities, require more oversight or change certain of our business practices, including the ability to offer new products, obtain financing, attract deposits, make loans and achieve satisfactory interest spreads and could expose us to additional costs, including increased compliance costs. These changes also may require us to invest significant management attention and resources to make any necessary changes to operations to comply and could have an adverse effect on our business, financial condition and results of operations.

Sarbanes-Oxley Act of 2002 The goals of the Sarbanes-Oxley Act enacted in 2002 are to increase corporate responsibility, to provide for enhanced penalties for accounting and auditing improprieties at publicly traded companies, and to protect investors by improving the accuracy and reliability of corporate disclosures made under the securities laws. The changes are intended to allow shareholders to monitor the performance of companies and directors more easily and efficiently.

The Sarbanes-Oxley Act generally applies to all companies that file periodic reports with the SEC under the Securities Exchange Act of 1934. The Act has an impact on a wide variety of corporate governance and disclosure issues, including the composition of audit committees, certification of financial statements by the chief executive officer and the chief financial officer, forfeiture of bonuses and profits made by directors and senior officers in the 12-month period covered by restated financial statements, a prohibition on insider trading during pension plan black-out periods, disclosure of off-balance sheet transactions, a prohibition on personal loans to directors and officers (excluding FDIC-insured financial institutions), expedited filing requirements for stock transaction reports by officers and directors, the formation of a public accounting oversight board, auditor independence, and various increased criminal penalties for violations of securities laws.

Deposit Insurance The Deposit Insurance fund of the FDIC insures deposits at insured depository institutions such as the Bank. Deposit accounts in the Bank are insured by the FDIC generally up to a maximum of $250,000 based upon the ownership rights and capacities in which deposit accounts are maintained at the Bank. The premium that banks pay for deposit insurance is based upon a risk classification system established by the FDIC. Banks with higher levels of capital and a low degree of supervisory concern are assessed lower premiums than banks with lower levels of capital or a higher degree of supervisory concern.

The FDIC is able to assess higher rates to institutions with a significant reliance on secured liabilities or a significant reliance on brokered deposits but, for well-managed and well-capitalized institutions, only when accompanied by rapid asset growth.

Assessments are based on the average consolidated total assets less tangible equity capital of a financial institution. Assessment rates range from 2.5 to 9 basis points on the broader assessment base for banks in the lowest risk category ("well capitalized" and CAMELS I or II) and up to 30 to 45 basis points for banks in the highest risk category.

Effective July 1, 2016, the FDIC changed the way established small banks are assessed for deposit insurance. The FDIC has eliminated the risk categories for banks, such as the Bank, that have been FDIC insured for at least five years and have less than $10 billion in total assets, and assessments are now based on financial measures and supervisory ratings derived from statistical modeling estimating the probability of failure within three years. In conjunction with the Deposit Insurance Fund reserve ratio achieving 1.15%, the assessment range (inclusive of possible adjustments) for established small banks with CAMELS I or II ratings has been reduced to 1.5 to 16 basis points and the maximum assessment rate for established small banks with CAMELS III through V ratings is 30 basis points.

As of September 30, 2018, the Deposit Insurance Fund reserve ratio exceeded the required minimum of 1.35% set by the Dodd-Frank Act. Small banks, such as the Bank, with total assets less than $10 billion, will receive credits to offset the portion of their assessments that helped to raise the Deposit Insurance Fund reserve ratio from 1.15 percent to 1.35 percent. The total amount of small bank credits is estimated to be approximately $750 million. When the Deposit Insurance Fund reserve ratio is at or above 1.38%, the FDIC has stated that it will automatically apply credits to reduce a small bank's regular assessment up to the entire amount of the assessment.

The FDIC has authority to increase insurance assessments. Any significant increases would have an adverse effect on the operating expenses and results of operations of the Bank. Management cannot predict what assessment rates will be in the future.

Interstate Banking and Branching Section 613 of the DFA amends the interstate branching provisions of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994. The expanded *de novo* branching authority of the DFA authorizes a state or national bank to open a *de novo* branch in another state if the law of the state where the branch is to be located would permit a state bank chartered by that state to open the branch. Section 607 of the DFA also increases the approval threshold for interstate bank acquisitions, providing that a bank holding company must be well capitalized and well managed as a condition to approval of an interstate bank acquisition, rather than being merely adequately capitalized and adequately managed, and that an acquiring bank must be and remain well capitalized and well managed as a condition to approval of an interstate bank merger.

Transactions with Affiliates Although The Middlefield Banking Company is not a member bank of the Federal Reserve System, it is required by the Federal Deposit Insurance Act to comply with section 23A and section 23B of the Federal Reserve Act — pertaining to transactions with affiliates — as if it were a member bank. These statutes are intended to protect banks from abuse in financial transactions with affiliates, preventing FDIC-insured deposits from being diverted to support the activities of unregulated entities engaged in nonbanking businesses. An affiliate of a bank includes any company or entity that controls or is under common control with the bank. Generally, section 23A and section 23B of the Federal Reserve Act:

- limit the extent to which a bank or its subsidiaries may lend to or engage in various other kinds of transactions with any one affiliate to an amount equal to 10% of the institution's capital and surplus, limiting the aggregate of covered transactions with all affiliates to 20% of capital and surplus,
- impose restrictions on investments by a subsidiary bank in the stock or securities of its holding company,
- require that affiliate transactions be on terms substantially the same, or at least as favorable to the institution or subsidiary, as those provided to a non-affiliate, and
- impost strict collateral requirements on loans or extensions or credit by a bank to an affiliate

The Bank's authority to extend credit to insiders — meaning executive officers, directors and greater than 10% stockholders — or to entities those persons control, is subject to section 22(g) and section 22(h) of the Federal Reserve Act and Regulation O of the Federal Reserve Board. Among other things, these laws require insider loans to be made on terms substantially similar to those offered to unaffiliated individuals, place limits on the amount of loans a bank may make to insiders based in part on the bank's capital position, and require that specified approval procedures be followed. Loans to an individual insider may not exceed the legal limit on loans to any one borrower, which in general terms is 15% of capital but can be higher in some circumstances. And the aggregate of all loans to all insiders may not exceed the Bank's unimpaired capital and surplus. Insider loans exceeding the greater of 5% of capital or $25,000 must be approved in advance by a majority of the board, with any "interested" director not participating in the voting. Lastly, loans to executive officers are subject to special limitations. Executive officers may borrow in unlimited amounts to finance their children's education or to finance the purchase or improvement of their residence, and they may borrow no more than $100,000 for most other purposes. Loans to executive officers exceeding $100,000 may be allowed if the loan is fully secured by government securities or a segregated deposit account. A violation of these restrictions could result in the assessment of substantial civil monetary penalties, the imposition of a cease-and-desist order or other regulatory sanctions.

Banking agency guidance for commercial real estate lending In December 2006 the FDIC and other Federal banking agencies issued final guidance on sound risk management practices for concentrations in commercial real estate lending, including acquisition and development lending, construction lending, and other land loans, which experience has shown can be particularly high-risk lending.

The commercial real estate risk management guidance does not impose rigid limits on commercial real estate lending but does create a much sharper supervisory focus on the risk management practices of banks with concentrations in commercial real estate lending. According to the guidance, an institution that has experienced rapid growth in commercial real estate lending, has notable exposure to a specific type of commercial real estate, or is approaching or exceeds the following supervisory criteria may be identified for further supervisory analysis of the level and nature of its commercial real estate concentration risk:

- total reported loans for construction, land development, and other land represent 100% or more of the institution's total capital, or

- total commercial real estate loans represent 300% or more of the institution's total capital and the outstanding balance of the institution's commercial real estate loan portfolio has increased by 50% or more during the prior 36 months.

These measures are intended merely to enable the banking agencies to identify institutions that could have an excessive commercial real estate lending concentration, potentially requiring close supervision to ensure that the institutions have sound risk management practices in place. Conversely, these measures do not imply that banks are authorized by the December 2006 guidance to accumulate a commercial real estate lending concentration up to the 100% and 300% thresholds.

Community Reinvestment Act Under the Community Reinvestment Act of 1977 and implementing regulations of the banking agencies, a financial institution has a continuing and affirmative obligation — consistent with safe and sound operation — to address the credit needs of its entire community, including low- and moderate-income neighborhoods. The CRA does not establish specific lending requirements or programs for financial institutions, nor does it limit an institution's discretion to develop the types of products and services it believes are best suited to its particular community. The CRA requires that bank regulatory agencies conduct regular CRA examinations and provide written evaluations of institutions' CRA performance. The CRA also requires that an institution's CRA performance rating be made public. CRA performance evaluations are based on a four-tiered rating system: Outstanding, Satisfactory, Needs to Improve and Substantial Noncompliance.

Although CRA examinations occur on a regular basis, CRA performance evaluations have been used principally in the evaluation of regulatory applications submitted by an institution. CRA performance evaluations are considered in evaluating applications for such things as mergers, acquisitions, and applications to open branches.

MBC's CRA performance evaluation dated March 6, 2017 states that MBC's CRA rating is "Satisfactory."

Federal Home Loan Bank The Federal Home Loan Bank serves as a credit source for their members. As a member of the FHLB of Cincinnati, MBC is required to maintain an investment in the capital stock of the FHLB of Cincinnati in an amount calculated by reference to the FHLB member bank's amount of loans, and or "advances," from the FHLB.

Each FHLB is required to establish standards of community investment or service that its members must maintain for continued access to long-term advances from the FHLB. The standards take into account a member's performance under the Community Reinvestment Act and its record of lending to first-time home buyers.

Cybersecurity Recent statements by federal regulators regarding cybersecurity indicate that financial institutions should design multiple layers of security controls to establish lines of defense and to ensure that their risk management processes also address the risk posed by compromised client credentials, including security measures to reliably authenticate clients accessing Internet-based services of the financial institution. Financial institution management is also expected to maintain sufficient business continuity planning processes to ensure the rapid recovery, resumption and maintenance of the institution's operations after a cyber-attack involving destructive malware. A financial institution is expected to develop appropriate processes to enable recovery of data and business operations and address rebuilding network capabilities and restoring data if the institution or its critical service providers fall victim to this type of cyber-attack. If the Bank fails to observe regulatory guidance regarding appropriate cybersecurity safeguards we could be subject to various regulatory sanctions, including financial penalties.

In the ordinary course of business, the Bank relies on electronic communications and information systems to conduct its operations and to store sensitive data. The Bank employs an in-depth, layered, defensive approach that incorporates security processes and technology to manage and maintain cybersecurity controls. The Bank employs a variety of preventative and detective tools to monitor, block, and provide alerts regarding suspicious activity, as well as to report on any suspected advanced persistent threats. Notwithstanding the strength of the Bank's defensive measures, the threat from cyber-attacks is severe, attacks are sophisticated and increasing in volume, and attackers respond rapidly to changes in defensive measures. While to date we have not experienced a significant compromise, significant data loss or any material financial losses related to cybersecurity attacks, our systems and those of our clients and third-party service providers are under constant threat and it is possible that we could experience a significant event in the future. Risks and exposures related to cybersecurity attacks are expected to remain high for the foreseeable future due to the rapidly evolving nature and sophistication of these threats, as well as due to the expanding use of Internet banking, mobile banking and other technology-based products and services by the Bank and its clients.

Anti-money laundering and anti-terrorism legislation The Bank Secrecy Act of 1970 requires financial institutions to maintain records and report transactions to prevent the financial institutions from being used to hide money derived from criminal activity and tax evasion. The Bank Secrecy Act establishes (a) record keeping requirements to assist government enforcement agencies with tracing financial transactions and flow of funds, (b) reporting requirements for Suspicious Activity Reports and Currency Transaction Reports to assist government enforcement agencies with detecting patterns of criminal activity, (c) enforcement provisions authorizing criminal and civil penalties for illegal activities and violations of the Bank Secrecy Act and its implementing regulations, and (d) safe harbor provisions that protect financial institutions from civil liability for their cooperative efforts.

The Treasury's Office of Foreign Asset Control administers and enforces economic and trade sanctions against targeted foreign countries, entities, and individuals based on U.S. foreign policy and national security goals. As a result, financial institutions must scrutinize transactions to ensure that they do not represent obligations of or ownership interests in entities owned or controlled by sanctioned targets.

Signed into law on October 26, 2001, the USA PATRIOT Act of 2001 is omnibus legislation enhancing the powers of domestic law enforcement organizations to resist the international terrorist threat to United States security. Title III of the legislation, the International Money Laundering Abatement and Financial Anti-Terrorism Act of 2001, most directly affects the financial services industry, enhancing the Federal government's ability to fight money laundering through monitoring of currency transactions and suspicious financial activities. The USA PATRIOT Act has significant implications for depository institutions and other businesses involved in the transfer of money:

- a financial institution must establish due diligence policies, procedures, and controls reasonably designed to detect and report money laundering through correspondent accounts and private banking accounts,

- no bank may establish, maintain, administer, or manage a correspondent account in the United States for a foreign shell bank,

- financial institutions must abide by Treasury Department regulations encouraging financial institutions, their regulatory authorities, and law enforcement authorities to share information about individuals, entities, and organizations engaged in or suspected of engaging in terrorist acts or money laundering activities,

- financial institutions must follow Treasury Department regulations setting forth minimum standards regarding customer identification. These regulations require financial institutions to implement reasonable procedures for verifying the identity of any person seeking to open an account, maintain records of the information used to verify the person's identity, and consult lists of known or suspected terrorists and terrorist organizations provided to the financial institution by government agencies,

- every financial institution must establish anti-money laundering programs, including the development of internal policies and procedures, designation of a compliance officer, employee training, and an independent audit function.

Consumer protection laws and regulations. The Middlefield Banking Company is subject to regular examination by the FDIC to ensure compliance with statutes and regulations applicable to the bank's business, including consumer protection statutes and implementing regulations, some of which are discussed below. Violations of any of these laws may result in fines, reimbursements, and other related penalties.

Equal Credit Opportunity Act. The Equal Credit Opportunity Act generally prohibits discrimination in any credit transaction, whether for consumer or business purposes, on the basis of race, color, religion, national origin, sex, marital status, age (except in limited circumstances), receipt of income from public assistance programs, or good faith exercise of any rights under the Consumer Credit Protection Act.

Truth in Lending Act. The Truth in Lending Act is designed to ensure that credit terms are disclosed in a meaningful way so that consumers may compare credit terms more readily and knowledgeably. As a result of the Truth in Lending Act, all creditors must use the same credit terminology to express rates and payments, including the annual percentage rate, the finance charge, the amount financed, the total of payments and the payment schedule, among other things.

Fair Housing Act. The Fair Housing Act makes it unlawful for a residential mortgage lender to discriminate against any person because of race, color, religion, national origin, sex, handicap, or familial status. A number of lending practices have been held by the courts to be illegal under the Fair Housing Act, including some practices that are not specifically mentioned in the Fair Housing Act.

Home Mortgage Disclosure Act. The Home Mortgage Disclosure Act arose out of public concern over credit shortages in certain urban neighborhoods. The Home Mortgage Disclosure Act requires financial institutions to collect data that enable regulatory agencies to determine whether the financial institutions are serving the housing credit needs of the neighborhoods and communities in which they are located. The Home Mortgage Disclosure Act also requires the collection and disclosure of data about applicant and borrower characteristics as a way to identify possible discriminatory lending patterns. The vast amount of information that financial institutions collect and disclose concerning applicants and borrowers receives attention not only from state and Federal banking supervisory authorities but also from community-oriented organizations and the general public.

Real Estate Settlement Procedures Act. The Real Estate Settlement Procedures Act requires that lenders provide borrowers with disclosures regarding the nature and cost of real estate settlements. The Real Estate Settlement Procedures Act also prohibits abusive practices that increase borrowers' costs, such as kickbacks and fee-splitting without providing settlement services.

Privacy. Under the Gramm-Leach-Bliley Act, all financial institutions are required to establish policies and procedures to restrict the sharing of non-public customer data with non-affiliated parties and to protect customer data from unauthorized access. In addition, the Fair Credit Reporting Act of 1971 includes many provisions concerning national credit reporting standards and permits consumers to opt out of information-sharing for marketing purposes among affiliated companies.

State Banking Regulation As an Ohio-chartered bank, The Middlefield Banking Company is subject to regular examination by the Ohio Division of Financial Institutions. State banking regulation affects the internal organization of the bank as well as its savings, lending, investment, and other activities. State banking regulation may contain limitations on an institution's activities that are in addition to limitations imposed under federal banking law. The Ohio Division of Financial Institutions may initiate supervisory measures or formal enforcement actions, and if the grounds provided by law exist it may take possession and control of an Ohio-chartered bank.

Monetary Policy The earnings of financial institutions are affected by the policies of regulatory authorities, including monetary policy of the Federal Reserve Board. An important function of the Federal Reserve System is regulation of aggregate national credit and money supply. The Federal Reserve Board accomplishes these goals with measures such as open market transactions in securities, establishment of the discount rate on bank borrowings, and changes in reserve requirements against bank deposits. These methods are used in varying combinations to influence overall growth and distribution of financial institutions' loans, investments and deposits, and they also affect interest rates charged on loans or paid on deposits. Monetary policy is influenced by many factors, including inflation, unemployment, short-term and long-term changes in the international trade balance, and fiscal policies of the United States government. Federal Reserve Board monetary policy has had a significant effect on the operating results of financial institutions in the past, and it can be expected to influence operating results in the future.

Item 1A — Risk Factors

Risks Related to the Company's Business

We are exposed to interest rate risk. The interest rate risk that exists for most or all financial institutions arises out of interest rates that increase more than anticipated or that increase more quickly than expected. If interest rates change more abruptly than we have simulated or if the increase is greater than we have simulated, this could have an adverse effect on our net interest income and equity value.

The Company operates in a highly competitive industry and market area. The Company faces significant competition both in making loans and in attracting deposits. Competition is based on interest rates and other credit and service charges, the quality of services rendered, the convenience of banking facilities, the range and type of products offered and, in the case of loans to larger commercial borrowers, lending limits, among other factors. Competition for loans comes principally from commercial banks, savings banks, savings and loan associations, credit unions, mortgage banking companies, insurance companies, and other financial service companies. The Company's most direct competition for deposits has historically come from commercial banks, savings banks, and savings and loan associations. Technology has also lowered barriers to entry and made it possible for non-banks to offer products and services traditionally provided by banks, such as automatic transfer and automatic payment systems. Larger competitors may be able to achieve economies of scale and, as a result, offer a broader range of products and services. The Company's ability to compete successfully depends on a number of factors, including, among other things:

- the ability to develop, maintain, and build long-term customer relationships based on top quality service, high ethical standards, and safe, sound assets;
- the ability to expand the Company's market position;
- the scope, relevance, and pricing of products and services offered to meet customer needs and demands;
- the rate at which the Company introduces new products and services relative to its competitors;
- customer satisfaction with the Company's level of service; and
- industry and general economic trends

Failure to perform in any of these areas could significantly weaken the Company's competitive position, which could adversely affect growth and profitability.

The Company may not be able to attract and retain skilled people. The Company's success depends, in large part, on its ability to attract and retain key people. Competition for the best people can be intense and the Company may not be able to hire people or to retain them. The unexpected loss of the services of key personnel of the Company could have a material adverse impact on the Company's business because of their skills, knowledge of the Company's market, years of industry experience, and the difficulty of promptly finding qualified replacement personnel. The Company has non-competition agreements with senior officers and key personnel.

The Company does not have the financial and other resources that larger competitors have; this could affect its ability to compete for large commercial loan originations and its ability to offer products and services competitors provide to customers. The northeastern Ohio and central Ohio markets in which the Company operates have high concentrations of financial institutions. Many of the financial institutions operating in our markets are branches of significantly larger institutions headquartered in Cleveland or in other major metropolitan areas, with significantly greater financial resources and higher lending limits. In addition, many of these institutions offer services that the Company does not or cannot provide. For example, the larger competitors' greater resources offer advantages such as the ability to price services at lower, more attractive levels, and the ability to provide larger credit facilities. The Company accommodates loan volumes in excess of its lending limits from time to time through the sale of loan participations to other banks.

The business of banking is changing rapidly with changes in technology, which poses financial and technological challenges to small and mid-sized institutions. With frequent introductions of new technology-driven products and services, the banking industry is undergoing rapid technological changes. In addition to enhancing customer service, the effective use of technology increases efficiency and enables financial institutions to reduce costs. Financial institutions' success is increasingly dependent upon use of technology to provide products and services that satisfy customer demands and to create additional operating efficiencies. Many of the Company's competitors have substantially greater resources to invest in technological improvements, which could enable them to perform various banking functions at lower costs than the Company, or to provide products and services that the Company is not able to economically provide. The Company cannot assure you that we will be able to develop and implement new technology-driven products or services or that the Company will be successful in marketing these products or services to customers. Because of the demand for technology-driven products, banks increasingly rely on unaffiliated vendors to provide data processing services and other core banking functions. The use of technology-related products, services, delivery channels, and processes exposes banks to various risks, particularly transaction, strategic, reputation, and compliance risk. The Company cannot assure you that we will be able to successfully manage the risks associated with our dependence on technology.

The banking industry is heavily regulated; the compliance burden to the industry is considerable; the principal beneficiary of federal and state regulation is the public at large and depositors, not stockholders. The Company and its subsidiaries are and will remain subject to extensive state and federal government supervision and regulation. This supervision and regulation affects many aspects of the banking business, including permissible activities, lending, investments, payment of dividends, the geographic locations in which our services can be offered, and numerous other matters. State and federal supervision and regulation are intended principally to protect depositors, the public, and the deposit insurance fund administered by the FDIC. Protection of stockholders is not a goal of banking regulation.

The burdens of federal and state banking regulation place banks in general at a competitive disadvantage compared to less regulated competitors. Applicable statutes, regulations, agency and court interpretations, and agency enforcement policies have undergone significant changes, and could change significantly again. Federal and state banking agencies also require banks and bank holding companies to maintain adequate capital. Failure to maintain adequate capital or to comply with applicable laws, regulations, and supervisory agreements could subject a bank or bank holding company to federal or state enforcement actions, including termination of deposit insurance, imposition of fines and civil penalties, and, in the most severe cases, appointment of a conservator or receiver for a depositary institution. Changes in applicable laws and regulatory policies could adversely affect the banking industry generally or the Company in particular. The Company gives you no assurance that we will be able to adapt successfully to industry changes caused by governmental actions.

Success in the banking industry requires disciplined management of lending risks. There are many risks in the business of lending, including risks associated with the duration over which loans may be repaid, risks resulting from changes in economic conditions, risks inherent in dealing with individual borrowers, and risks resulting from changes in the value of loan collateral. We attempt to mitigate this risk by a thorough review of the creditworthiness of loan customers. Nevertheless, there is risk that our credit evaluations will prove to be inaccurate due to changed circumstances or otherwise.

Our allowance for loan losses may prove to be insufficient to absorb the probable, incurred losses in our loan portfolio. Lending money is a substantial part of our business. However, every loan we make carries a risk of nonpayment. This risk is affected by, among other things: the cash flow of the borrower and/or the project being financed; in the case of a collateralized loan, the changes and uncertainties as to the future value of the collateral, the credit history of a particular borrower, changes in economic and industry conditions, and the duration of the loan. The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States ("GAAP") requires management to make significant estimates that affect the financial statements. One of our most critical estimates is the level of the allowance for loan losses. The allowance for loan losses is a reserve established through a provision for possible loan losses charged to expense that represents management's best estimate of probable losses that have been incurred within the existing portfolio of loans. Current accounting standards for loan loss provisioning are based on the so-called "incurred loss" model. Under this model, a bank can reserve against a loan loss through a provision to the loan loss reserve only if that loss has been "incurred," which means a loss that is probable and can be reasonably estimated. To meet that standard, banks have to document why a loss is probable and reasonably estimable, and the easiest way to do that is to refer to historical loss rates and the bank's own prior loss experience with the type of asset in question. Banks are not limited to using historical experience in deciding the appropriate level of the loan loss reserve. In making these determinations, management can use judgment that takes into account other factors, such as changes in underwriting standards and changes in the economic environment that would have an impact on loan losses.

The level of the allowance for loan losses reflects management's continuing evaluation of industry concentrations; specific credit risks; loan loss experience; current loan portfolio quality; present economic, political, and regulatory conditions; and unidentified losses inherent in the current loan portfolio. The determination of the appropriate level of the allowance for possible loan losses inherently involves a high degree of subjectivity and requires management to make significant estimates of current credit risks, all of which may undergo material changes. Continuing deterioration in economic conditions affecting borrowers, new information regarding existing loans, identification of additional problem loans and other factors, both within and outside of the Company's control, may require an increase in the allowance for possible loan losses. If charge-offs in future periods exceed the allowance for possible loan losses, the Company will need additional provisions to increase the allowance for possible loan losses. In addition, bank regulatory agencies periodically review the allowance for loan and lease losses and may require an increase in the provision for possible loan losses or the recognition of further loan charge-offs, based on judgments different than those of management. Any increases in the allowance for possible loan losses will result in a decrease in net income and, possibly, capital, and may have a material adverse effect on the Company's financial condition and results of operations.

A new accounting standard may require us to increase our allowance for loan and lease losses and may have a material adverse effect on our financial condition and results of operations. The Financial Accounting Standards Board ("FASB") has adopted a new accounting standard that will be effective for the Bank for our first fiscal year after December 15, 2019. This standard, referred to as Current Expected Credit Loss, or CECL, will require financial institutions to determine periodic estimates of lifetime expected credit losses on loans, and recognize the expected credit losses as allowances for loan losses. This will change the current method of providing allowances for loan losses that are probable, which may require us to increase our allowance for loan and lease losses, and to greatly increase the types of data we will need to collect and review to determine the appropriate level of the allowance for loan and lease losses Any change in the allowance for loan and lease losses at the time of adoption will be an adjustment to retained earnings and would change the Bank's capital levels. A banking organization that experiences a reduction in retained earnings as of the CECL adoption date may elect to phase in the regulatory capital impact of adopting CECL over a three-year transition period. Any increase in our allowance for loan and lease losses or expenses incurred to determine the appropriate level of the allowance for loan and lease losses may have a material adverse effect on our financial condition and results of operations. Upon adoption of the CECL, credit loss allowances may increase, which would decrease retained earnings and thereby affect common equity tier 1 capital for regulatory capital purposes. CECL implementation poses operational risk, including the failure to properly transition internal processes or systems, which could lead to call report errors, financial misstatements, or operational losses. Successful implementation may require adjustments to existing data elements and credit loss methods.

Material breaches in security of bank systems may have a significant effect on the Company's business. We collect, process and store sensitive consumer data by utilizing computer systems and telecommunications networks operated by both banks and third party service providers. We have security, backup and recovery systems in place, as well as a business continuity plan to ensure systems will not be inoperable. We also have security to prevent unauthorized access to the system. In addition, we require third party service providers to maintain similar controls. However, we cannot be certain that these measures will be successful. A security breach in the system and loss of confidential information could result in losing customers' confidence and thus the loss of their business as well as additional significant costs for privacy monitoring activities.

Our necessary dependence upon automated systems to record and process transaction volumes poses the risk that technical system flaws or employee errors, tampering or manipulation of those systems will result in losses and may be difficult to detect. We may also be subject to disruptions of the operating systems arising from events that are beyond our control (for example, computer viruses or electrical or telecommunications outages). We are further exposed to the risk that third party service providers may be unable to fulfill their contractual obligations (or will be subject to the same risk of fraud or operational errors). These disruptions may interfere with service to customers and result in a financial loss or liability.

Changing interest rates have a direct and immediate impact on financial institutions. The risk of nonpayment of loans — or credit risk — is not the only lending risk. Lenders are subject also to interest rate risk. Fluctuating rates of interest prevailing in the market affect a bank's net interest income, which is the difference between interest earned from loans and investments, on one hand, and interest paid on deposits and borrowings, on the other. Changes in the general level of interest rates can affect our net interest income by affecting the difference between the weighted-average yield earned on our interest-earning assets and the weighted-average rate paid on our interest-bearing liabilities, or interest rate spread, and the average life of our interest-earning assets and interest-bearing liabilities. Changes in interest rates also can affect (i) our ability to originate loans, (ii) the value of our interest-earning assets, and our ability to realize gains from the sale of such assets, (iii) our ability to obtain and retain deposits in competition with other available investment alternatives, and (iv) the ability of our borrowers to repay adjustable or variable rate loans. Interest rates are highly sensitive to many factors, including governmental monetary policies, domestic and international economic and political conditions, and other factors beyond our control. Although the Company believes that the estimated maturities of our interest-earning assets currently are well balanced in relation to the estimated maturities of our interest-bearing liabilities (which involves various estimates as to how changes in the general level of interest rates will impact these assets and liabilities), there can be no assurance that our profitability would not be adversely affected during any period of changes in interest rates.

A lack of liquidity could impair our ability to fund operations and adversely impact our business, financial condition and results of operations. Liquidity is essential to our business. We rely on our ability to generate deposits and effectively manage the repayment and maturity schedules of our loans and investment securities, respectively, to ensure that we have adequate liquidity to fund our operations. An inability to raise funds through deposits, borrowings, sales of our investment securities, sales of loans or other sources could have a substantial negative effect on our liquidity and our ability to continue our growth strategy.

Our most important source of funds is deposits. As of December 31, 2018, approximately $536.8 million, or 52.8%, of our total deposits were negotiable order of withdrawal, or NOW, savings and money market accounts. Historically our savings, money market deposit and NOW accounts have been stable sources of funds. However, these deposits are subject to potentially dramatic fluctuations in availability or price due to certain factors that may be outside of our control, such as a loss of confidence by customers in us or the banking sector generally, customer perceptions of our financial health and general reputation, increasing competitive pressures from other financial services firms for consumer or corporate customer deposits, changes in interest rates and returns on other investment classes, any of which could result in significant outflows of deposits within short periods of time or significant changes in pricing necessary to maintain current customer deposits or attract additional deposits, increasing our funding costs and reducing our net interest income and net income.

Additional liquidity is provided by our ability to borrow from the Federal Home Loan Bank of Atlanta, or the Cincinnati, and the Federal Reserve Bank of Cleveland. We also may borrow funds from third-party lenders, such as other financial institutions. Our access to funding sources in amounts adequate to finance or capitalize our activities, or on terms that are acceptable to us, could be impaired by factors that affect us directly or the financial services industry or economy in general, such as disruptions in the financial markets or negative views and expectations about the prospects for the financial services industry. Our access to funding sources could also be affected by one or more adverse regulatory actions against us.

A prolonged economic downturn in our market area would adversely affect our loan portfolio and our growth prospects. Our lending market area is concentrated in northeastern and central Ohio, particularly Franklin, Geauga, Portage, Trumbull, Ashtabula, Summit, Delaware, and Cuyahoga Counties. A very significant percentage of our loan portfolio is secured by real estate collateral, primarily residential mortgage loans. Commercial and industrial loans to small and medium-sized businesses also represent a significant percentage of our loan portfolio. The asset quality of our loan portfolio is largely dependent upon the area's economy and real estate markets. A prolonged economic downturn would likely lead to deterioration of the credit quality of our loan portfolio and reduce our level of customer deposits, which in turn would hurt our business. Borrowers may be less likely to repay their loans as scheduled or at all. Moreover, the value of real estate or other collateral that may secure our loans could be adversely affected. Unlike many larger institutions, we are not able to spread the risks of unfavorable local economic conditions across a large number of diversified economies and geographic locations. A prolonged economic downturn could, therefore, result in losses that could materially and adversely affect our business.

Changes in accounting standards could materially impact our consolidated financial statements. Our accounting policies and methods are fundamental to how the Company records and reports its financial condition and results of operations. The accounting standard setters, including the Financial Accounting Standards Board, the SEC, and other regulatory bodies, from time to time may change the financial accounting and reporting standards that govern the preparation of our consolidated financial statements. These changes can be hard to predict and can materially impact how we record and report our financial condition and results of operations. In some cases, the Company could be required to apply a new or revised standard retroactively, resulting in changes to previously reported financial results, or a cumulative charge to retained earnings. Management may be required to make difficult, subjective, or complex judgments about matters that are uncertain. Materially different amounts could be reported under different conditions or using different assumptions.

Regulatory requirements affecting our loans secured by commercial real estate could limit our ability to leverage our capital and adversely affect our growth and profitability. Rising commercial real estate lending concentrations may expose institutions like the Bank to unanticipated earnings and capital volatility in the event of adverse changes in the commercial real estate market. In addition, institutions that are exposed to significant commercial real estate concentration risk may be subject to increased regulatory scrutiny. The federal banking agencies have issued guidance for institutions that are deemed to have concentrations in commercial real estate lending. Pursuant to the supervisory criteria contained in the guidance for identifying institutions with a potential commercial real estate concentration risk, institutions that have (i) total reported loans for construction, land development, and other land which represent 100% or more of an institution's total risk-based capital; or (ii) total commercial real estate loans representing 300% or more of the institution's total risk-based capital and the outstanding balance of the institution's commercial real estate loan portfolio has increased 50% or more during the prior 36 months are encouraged to identify and monitor credit concentrations and enhance risk management systems. As of December 31, 2018, our loans for construction, land development, and other land represent only 51% of our total risk-based capital. At December 31, 2018, the Bank's non-owner occupied commercial real estate concentration was 404% of the Bank's capital and the Bank's commercial real estate loan portfolio has increased by approximately 178% during the prior 36 months. The Bank has determined that its CRE portfolio concentration levels require enhanced monitoring under the regulatory guidance. Management has implemented and continues to maintain heightened portfolio monitoring and reporting, and enhanced underwriting criteria with respect to its commercial real estate portfolio. Nevertheless, our level of commercial real estate lending could limit our growth or require us to obtain additional capital, lead to increased regulatory scrutiny, and could have a material adverse effect on our business, financial condition and results of operations.

Our net-loan-to-deposit-ratio is higher than our peer group and may affect our future profitability and growth. At December 31, 2018, the ratio of our net loans to our total deposits was 96.9%. FDIC-insured, low-cost deposits are a stable and desirable source of funding for banks. If we have insufficient core deposits to fund our loan growth, we may be required to rely more heavily on nondeposit sources of funds. The availability and cost of nondeposit funding are more sensitive to changing economic or financial conditions. Our need to rely on noncore funding sources to support future growth may reduce our net interest margin and have an adverse effect on our profitability.

Changes in Tax Laws Could Have an Adverse Effect on Us, Our Industry, Our Customers, The Value of Collateral Securing Our Loans and Demand for Our Loans. Federal tax reform legislation enacted by Congress in December 2017 contains a number of provisions that could have an impact on the banking industry, borrowers and the market for single-family residential and multifamily residential real estate. Among the changes are: a lower cap on the amount of mortgage interest that a borrower may deduct on single-family residential mortgages; the lower mortgage interest cap will be spread among all of the borrower's residential mortgages, which may result in elimination or lowering of the mortgage interest deduction on a second home; limitations on deductibility of business interest expense; limitations on the deductibility of state and local income and property taxes. Such changes could have an adverse effect on the market for and valuation of single-family residential properties and multifamily residential properties, and on the demand for such loans in the future. If home ownership or multifamily residential property ownership become less attractive, demand for our loans could decrease. The value of the properties securing loans in our portfolio may be adversely impacted as a result of the changing economics of home ownership and multifamily residential ownership, which could require an increase in our provision for loan losses, which would reduce our profitability and could materially adversely affect our business, financial condition and results of operations.

We Are Dependent on Our Management Team and Key Employees, and If We Are Not Able to Retain Them, Our Business Operations Could Be Materially Adversely Affected. Our success depends, in large part, on our management team and key employees. Our management team has significant industry experience. Our future success also depends on our continuing ability to attract, develop, motivate and retain key employees. Qualified individuals are in high demand, and we may incur significant costs to attract and retain them. Because the market for qualified individuals is highly competitive, we may not be able to attract and retain qualified officers or candidates. The loss of any of our management team or our key employees could materially adversely affect our ability to execute our business strategy, and we may not be able to find adequate replacements on a timely basis, or at all. We cannot ensure that we will be able to retain the services of any members of our management team or other key employees. Though we have change-in-control agreements in place with certain members of our management team they may still elect to leave at any time. Failure to attract and retain a qualified management team and qualified key employees could have a material adverse effect on our business, financial condition and results of operations.

Our operations could be interrupted if our third-party service providers experience difficulty, terminate their services or fail to comply with banking regulations. We depend to a significant extent on a number of relationships with third-party service providers. Specifically, we receive core systems processing, essential web hosting and other internet systems, deposit processing and other processing services from third-party service providers. If these third-party service providers experience difficulties or terminate their services and we are unable to replace them with other service providers, our operations could be interrupted. If an interruption were to continue for a significant period of time, our business, financial condition and results of operations could be adversely affected, perhaps materially. Even if we are able to replace them, it may be at a higher cost to us, which could adversely affect our business, financial condition and results of operations.

We have a continuing need for technological change, and we may not have the resources to effectively implement new technology or we may experience operational challenges when implementing new technology. The financial services industry is undergoing rapid technological changes with frequent introductions of new technology-driven products and services. In addition to better serving customers, the effective use of technology increases efficiency and enables financial institutions to reduce costs. Our future success will depend in part upon our ability to address the needs of our customers by using technology to provide products and services that will satisfy customer demands for convenience as well as to create additional efficiencies in our operations as we continue to grow and expand our market area. We may experience operational challenges as we implement these new technology enhancements, or seek to implement them across all of our offices and business units, which could result in us not fully realizing the anticipated benefits from such new technology or require us to incur significant costs to remedy any such challenges in a timely manner.

We face a risk of noncompliance and enforcement action with the Bank Secrecy Act and other anti-money laundering statutes and regulations. The Bank Secrecy Act of 1970, the Uniting and Strengthening America by Providing Appropriate Tools to Intercept and Obstruct Terrorism Act of 2001, or the USA Patriot Act or Patriot Act, and other laws and regulations require financial institutions, among other duties, to institute and maintain an effective anti-money laundering program and to file reports such as suspicious activity reports and currency transaction reports. We are required to comply with these and other anti-money laundering requirements. Our federal and state banking regulators, the Financial Crimes Enforcement Network, or FinCEN, and other government agencies are authorized to impose significant civil money penalties for violations of anti-money laundering requirements. We are also subject to increased scrutiny of compliance with the regulations issued and enforced by the Office of Foreign Assets Control, or OFAC. If our program is deemed deficient, we could be subject to liability, including fines, civil money penalties and other regulatory actions, which may include restrictions on our business operations and our ability to pay dividends, restrictions on mergers and acquisitions activity, restrictions on expansion, and restrictions on entering new business lines. Failure to maintain and implement adequate programs to combat money laundering and terrorist financing could also have significant reputational consequences for us. Any of these circumstances could have a material adverse effect on our business, financial condition or results of operations.

There are risks with respect to future expansion and acquisitions or mergers. The Company may seek in the future to acquire other financial institutions or parts of those institutions. The Company may also expand into new markets or lines of business or offer new products or services. These activities would involve a number of risks, including:

- the time and expense associated with identifying and evaluating potential acquisitions and merger partners;

- using inaccurate estimates and judgments to evaluate credit, operations, management, and market risks with respect to the target institution or assets;
- diluting our existing shareholders in an acquisition;
- the time and expense associated with evaluating new markets for expansion, hiring experienced local management, and opening new offices;
- taking a significant amount of time negotiating a transaction or working on expansion plans, resulting in management's attention being diverted from the operation of our existing business; and
- the time and expense associated with integrating the operations and personnel of the combined businesses, creating an adverse short-term effect on our results of operations.

There is also a risk that any expansion effort will not be successful.

Government regulation could restrict our ability to pay cash dividends. Dividends from the bank are the only significant source of cash for the Company. Statutory and regulatory limits could prevent the bank from paying dividends or transferring funds to the Company. As of December 31, 2018, MBC could have declared dividends of approximately $10.1 million in the aggregate to the Company. The Company cannot assure you that subsidiary bank profitability will continue to allow dividends to the Company, and the Company therefore cannot assure you that the Company will be able to continue paying regular, quarterly cash dividends.

We may need to raise additional capital in the future, and such capital may not be available when needed or at all. We may need to raise additional capital in the future to provide us with sufficient capital resources and liquidity to meet our commitments and business needs, particularly if our asset quality or earnings were to deteriorate significantly. Our ability to raise additional capital, if needed, will depend on, among other things, conditions in the capital markets at that time, which are outside of our control, and our financial condition. Economic conditions and the loss of confidence in financial institutions may increase our cost of funding and limit access to certain customary sources of capital, including inter-bank borrowings, repurchase agreements and borrowings from the discount window of the Federal Reserve.

We cannot give assurance that such capital will be available on acceptable terms or at all. Any occurrence that may limit our access to the capital markets, such as a decline in the confidence of debt purchasers, depositors of counterparties participating in the capital markets, or a downgrade of the Company's debt ratings, may adversely affect our capital costs and our ability to raise capital and, in turn, our liquidity. Moreover, if we need to raise capital in the future, we may have to do so when many other financial institutions are also seeking to raise capital and would have to compete with those institutions for investors. An inability to raise additional capital on acceptable terms when needed could have a materially adverse effect on our business, financial condition and results of operations.

The value of our goodwill and core deposit intangible assets may decline in the future. As of December 31, 2018, we had $17.5 million of goodwill and core deposit intangible assets. A significant decline in our expected future cash flows, a significant adverse change in the business climate, slower growth rates or a significant and sustained decline in the price of the Company's common stock may necessitate taking charges in the future related to the impairment of our goodwill and core deposit intangible assets. If we were to conclude that a future write-down of goodwill and core deposit intangible assets is necessary, we would record the appropriate charge, which could have a material adverse effect on our business, financial condition and results of operations.

Risks Associated with the Company's Common Stock

A limited trading market exists for our common shares which could lead to price volatility. Your ability to sell our common shares depends upon the existence of an active trading market for our common shares. While our stock is quoted on the NASDAQ Capital Market, there is low trading volume in our common stock. As a result, you may be unable to sell or purchase our common shares at the volume, price and time you desire. The limited trading market for our common shares may cause fluctuations in the market value of our common shares to be exaggerated, leading to price volatility in excess of that which would occur in a more active trading market. In addition, even if a more active market of our common stock develops, we cannot assure you that such a market will continue.

Factors that may affect the volatility of our stock include:

- our actual or anticipated operating and financial results, including how those results vary from the expectations of management, securities analysts and investors
- changes in financial estimates or publication of research reports and recommendations by financial analysts or actions taken by rating agencies with respect to other financial institution
- failure to declare dividends on our common stock from time to time
- reports in the press or investment community generally or relating to our reputation or the financial services industry

- developments in our business or operations or in the financial sector generally
- any future offerings by us of our common stock
- legislative or regulatory changes affecting our industry generally or our business and operations specifically
- the operating and stock price performance of companies that investors consider to be comparable to us
- announcements of strategic developments, acquisitions, restructurings, dispositions, financings and other material events by us or our competitors
- expectations of (or actual) equity dilution, including the actual or expected dilution to various financial measures, including earnings per share, that may be caused by this offering
- actions by our current shareholders, including future sales of common shares by existing shareholders, including our directors and executive officers
- proposed or final regulatory changes or developments
- anticipated or pending regulatory investigations, proceedings, or litigation that may involve or affect us
- other changes in U.S. or global financial markets, global economies and general market conditions, such as interest or foreign exchange rates, stock, commodity, credit or asset valuations or volatility

Item 1B — Unresolved Staff Comments

Not applicable

Item 2 — Properties

The Bank's offices are:

Location	County	Owned/Leased	Other Information
Main Office: 15985 East High Street Middlefield, Ohio	Geauga	Owned	
Branches : West Branch 15545 West High Street Middlefield, Ohio	Geauga	Owned	
Garrettsville Branch 8058 State Street Garrettsville, Ohio	Portage	Owned	
Mantua Branch 10519 South Main Street Mantua, Ohio	Portage	Leased	three-year lease renewed in November 2016, with option to renew for two additional consecutive three-year terms
Chardon Branch 348 Center Street Chardon, Ohio	Geauga	Owned	
Orwell Branch 30 South Maple Street Orwell, Ohio	Ashtabula	Owned	
Newbury Branch 11110 Kinsman Road Newbury, Ohio	Geauga	Leased	ten-year lease dated April 2006, with option to renew for four additional consecutive five-year terms; lease renewed in December 2016 for five years
Cortland Branch 3450 Niles Cortland Road Cortland, Ohio	Trumbull	Owned	
Dublin Branch 6215 Perimeter Drive Dublin, Ohio	Franklin	Leased	fifteen-year lease dated February 2004, extended to expire September 2021, with one option to renew for an additional three-year period
Westerville Branch 17 North State Street Westerville, Ohio	Franklin	Owned	
Administrative Offices: 15200 Madison Road Suite 108 Middlefield, Ohio	Geauga	Owned	
Mentor Loan Production Office 8353 Mentor Avenue Mentor, Ohio	Lake	Leased	one-year lease dated September 2015, revised December 2017, with option to renew for two additional terms of one year each
Sunbury Branch 492 West Cherry Street Sunbury, Ohio	Delaware	Leased	five-year lease dated July 2016, with the option to renew for two additional five-year terms

Beachwood Branch 25201 Chagrin Blvd. Beachwood, Ohio	Cuyahoga	Leased	ten-year lease dated June 2005, extended for a period of 10 years commencing on July 1, 2015, with option to renew for two consecutive periods of five years each
Solon Branch 6134 Kruse Drive Solon, Ohio	Cuyahoga	Leased	twelve-year lease dated June 2008, with the option to renew for four additional five-year terms, first option exercised July 26, 2016, lease expiring July 31, 2025
Twinsburg Branch 2351 Edison Blvd Twinsburg, Ohio	Summit	Owned	
Powell Branch 10628 Sawmill Parkway Powell, Ohio	Delaware	Owned	

At December 31, 2018, the net book value of the Bank's investment in premises and equipment totaled $13.0 million.

Item 3 — Legal Proceedings

From time to time the Company and the subsidiary bank are involved in various legal proceedings that are incidental to its business. In the opinion of management, no current legal proceedings are material to the financial condition of the Company or the subsidiary bank, either individually or in the aggregate.

Item 4 — Mine Safety Disclosures

Not applicable

Part II

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

Our common stock is traded on the NASDAQ Capital Market under the symbol "MBCN." At the close of business on December 31, 2018, there were approximately 1,035 shareholders of record.

Information relating to the market for Middlefield's common equity and related shareholder matters appears under "Return on Equity and Assets" and "Market Price of and Dividends on the Registrant's Common Equity and Related Stockholder Matters" in the Company's 2018 Annual Report to Shareholders and is incorporated herein by reference.

Item 6 — Selected Financial Data

Not applicable.

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

The above-captioned information appears under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the Company's 2018 Annual Report to Shareholders and is incorporated herein by reference.

Item 7A — Quantitative and Qualitative Disclosures about Market Risk

Not applicable.

Item 8 — Financial Statements and Supplementary Data

The Consolidated Financial Statements of the Company and its subsidiaries, together with the report thereon by S.R. Snodgrass, P.C. appear in the Company's 2018 Annual Report to Shareholders and are incorporated herein by reference.

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

None

Item 9A – Controls and Procedures

(a) Disclosure Controls and Procedures

The Company's management, including the Company's principal executive officer and principal financial officer, have evaluated the effectiveness of the Company's "disclosure controls and procedures," as such term is defined in Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based upon their evaluation, the principal executive officer and principal financial officer concluded that, as of the end of the period covered by this report, the Company's disclosure controls and procedures were effective for the purpose of ensuring that the information required to be disclosed in the reports that the Company files or submits under the Exchange Act with the Securities and Exchange Commission (the "SEC") (1) is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (2) is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

(b) Internal Controls Over Financial Reporting

Management's annual report on internal control over financial reporting and the attestation report of the independent registered public accounting firm are incorporated herein by reference to Item 8 - the Company's audited Consolidated Financial Statements in this Annual Report on Form 10-K.

(c) Changes to Internal Control Over Financial Reporting

There were no changes in the Company's internal control over financial reporting during the period ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B — Other Information

None

Part III

Item 10 — Directors, Executive Officers, and Corporate Governance

Incorporated by reference to the definitive proxy statement for the 2019 annual meeting of shareholders, which will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2018.

The Company's Code of Ethics is available on the corporate website at www.middlefieldbank.bank/pdf/CodeofEthics.pdf. In addition, any future amendments to, or waivers from, a provision of the Code of Ethics that applies to the Company's directors or executive officers (including the Chief Executive Officer and Principal Financial and Accounting Officer) will be posted at this internet address.

Item 11 — Executive Compensation

Incorporated by reference to the definitive proxy statement for the 2019 annual meeting of shareholders, which will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2018.

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

Incorporated by reference to the definitive proxy statement for the 2019 annual meeting of shareholders, which will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2018.

Item 13 — Certain Relationships and Related Transactions, and Director Independence

Incorporated by reference to the definitive proxy statement for the 2019 annual meeting of shareholders, which will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2018.

Item 14 — Principal Accountant Fees and Services

Incorporated by reference to the definitive proxy statement for the 2019 annual meeting of shareholders, which will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2018.

PART IV

Item 15 — Exhibits, Financial Statement Schedules

(a)(1) Financial Statements

Index to Consolidated Financial Statements :
Consolidated Financial Statements as of December 31, 2018 and 2017 and for each of the two years in the period ended December 31, 2018:

Report of Independent Registered Public Accounting firm
Consolidated Balance Sheet
Consolidated Statement of Income
Consolidated Statement of Comprehensive Income
Consolidated Statement of Changes in Stockholders' Equity
Consolidated Statement of Cash Flows
Notes to Consolidated Financial Statements

(a)(2) Financial Statement Schedules

Financial Statement Schedules have been omitted because they are not applicable or the required information is shown elsewhere in the document in the Financial Statements or Notes thereto, or in "Management's Discussion and Analysis of Financial Condition and Results of Operations."

(a)(3) Exhibits

See the list of exhibits below

(b) Exhibits Required by Item 601 of Regulation S-K

Exhibit Number	Description	Location
3.1	Second Amended and Restated Articles of Incorporation of Middlefield Banc Corp., as amended	Incorporated by reference to Exhibit 3.1 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Fiscal Year Ended December 31, 2005, filed on March 29, 2006
3.2	Regulations of Middlefield Banc Corp.	Incorporated by reference to Exhibit 3.2 of Middlefield Banc Corp.'s registration statement on Form 10 filed on April 17, 2001
4	Specimen stock certificate	Incorporated by reference to Exhibit 4 of Middlefield Banc Corp.'s registration statement on Form 10 filed on April 17, 2001
4.1	Amended and Restated Trust Agreement, dated as of December 21, 2006, between Middlefield Banc Corp., as Depositor, Wilmington Trust Company, as Property trustee, Wilmington Trust Company, as Delaware Trustee, and Administrative Trustees	Incorporated by reference to Exhibit 4.1 of Middlefield Banc Corp.'s Form 8-K Current Report filed on December 27, 2006
4.2	Junior Subordinated Indenture, dated as of December 21, 2006, between Middlefield Banc Corp. and Wilmington Trust Company	Incorporated by reference to Exhibit 4.2 of Middlefield Banc Corp.'s Form 8-K Current Report filed on December 27, 2006
4.3	Guarantee Agreement, dated as of December 21, 2006, between Middlefield Banc Corp. and Wilmington Trust Company	Incorporated by reference to Exhibit 4.3 of Middlefield Banc Corp.'s Form 8-K Current Report filed on December 27, 2006

10.1.0*	2017 Omnibus Equity Plan	Incorporated by reference to Middlefield Banc Corp.'s definitive proxy statement for the 2017 Annual Meeting of Shareholders, Appendix A, filed on April 4, 2017
10.1.1*	2007 Omnibus Equity Plan	Incorporated by reference to Middlefield Banc Corp.'s definitive proxy statement for the 2008 Annual Meeting of Shareholders, Appendix A, filed on April 7, 2008
10.2*	Severance Agreement between Middlefield Banc Corp. and Thomas G. Caldwell, dated January 7, 2008	Incorporated by reference to Exhibit 10.2 of Middlefield Banc Corp.'s Form 8-K Current Report filed on January 9, 2008
10.3*	Severance Agreement between Middlefield Banc Corp. and James R. Heslop, II, dated January 7, 2008	Incorporated by reference to Exhibit 10.3 of Middlefield Banc Corp.'s Form 8-K Current Report filed on January 9, 2008
10.4	Federal Home Loan Bank of Cincinnati Agreement for Advances and Security Agreement dated September 14, 2000	Incorporated by reference to Exhibit 10.4 of Middlefield Banc Corp.'s registration statement on Form 10 filed on April 17, 2001
10.4.1*	Severance Agreement between Middlefield Banc Corp. and Teresa M. Hetrick, dated January 7, 2008	Incorporated by reference to Exhibit 10.4.1 of Middlefield Banc Corp.'s Form 8-K Current Report filed on January 9, 2008
10.4.2	[reserved]	
10.4.3*	Severance Agreement between Middlefield Banc Corp. and Donald L. Stacy, dated January 7, 2008	Incorporated by reference to Exhibit 10.4.3 of Middlefield Banc Corp.'s Form 8-K Current Report filed on January 9, 2008
10.4.4*	Severance Agreement between Middlefield Banc Corp. and Alfred F. Thompson Jr., dated January 7, 2008	Incorporated by reference to Exhibit 10.4.4 of Middlefield Banc Corp.'s Form 8-K Current Report filed on January 9, 2008
10.5	[reserved]	
10.6*	Amended Director Retirement Agreement with Richard T. Coyne	Incorporated by reference to Exhibit 10.6 of Middlefield Banc Corp.'s Form 8-K Current Report filed on January 9, 2008
10.7*	Amended Director Retirement Agreement with Frances H. Frank	Incorporated by reference to Exhibit 10.7 of Middlefield Banc Corp.'s Form 8-K Current Report filed on January 9, 2008
10.8*	[reserved]	
10.9*	[reserved]	

10.10*	Director Retirement Agreement with Donald D. Hunter	Incorporated by reference to Exhibit 10.10 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2001, filed on March 28, 2002
10.11*	Director Retirement Agreement with Martin S. Paul	Incorporated by reference to Exhibit 10.11 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2001, filed on March 28, 2002
10.12*	[reserved]	
10.13*	[reserved]	
10.14*	Executive Survivor Income Agreement (aka DBO agreement [death benefit only]) with Donald L. Stacy	Incorporated by reference to Exhibit 10.14 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2003, filed on March 30, 2004
10.15*	DBO Agreement with Jay P. Giles	Incorporated by reference to Exhibit 10.15 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2003, filed on March 30, 2004
10.16*	DBO Agreement with Alfred F. Thompson Jr.	Incorporated by reference to Exhibit 10.16 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2003, filed on March 30, 2004
10.17*	DBO Agreement with Teresa M. Hetrick	Incorporated by reference to Exhibit 10.18 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2003, filed on March 30, 2004
10.18 *	Executive Deferred Compensation Agreement with Jay P. Giles	Incorporated by reference to Exhibit 10.18 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2011, filed on March 20, 2012
10.19	[reserved]	
10.20*	DBO Agreement with James R. Heslop, II	Incorporated by reference to Exhibit 10.20 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2003, filed on March 30, 2004
10.21*	DBO Agreement with Thomas G. Caldwell	Incorporated by reference to Exhibit 10.21 of Middlefield Banc Corp.'s Annual Report on Form 10-K for the Year Ended December 31, 2003, filed on March 30, 2004
10.22*	Annual Incentive Plan	Incorporated by reference to Exhibit 10.22 of Middlefield Banc Corp.'s Form 8-K Current Report filed on June 12, 2012

10.22.1*	Annual Incentive Plan 2018 Award Summary	Incorporated by reference to Middlefield Banc Corp.'s Form 8-K current Report filed on March 13, 2018
10.23*	Amended Executive Deferred Compensation Agreement with Thomas G. Caldwell	Incorporated by reference to Exhibit 10.23 of Middlefield Banc Corp.'s Form 8-K Current Report filed on May 9, 2008
10.24*	Amended Executive Deferred Compensation Agreement with James R. Heslop, II	Incorporated by reference to Exhibit 10.24 of Middlefield Banc Corp.'s Form 8-K Current Report filed on May 9, 2008
10.25*	Amended Executive Deferred Compensation Agreement with Donald L. Stacy	Incorporated by reference to Exhibit 10.25 of Middlefield Banc Corp.'s Form 8-K Current Report filed on May 9, 2008
10.26*	Executive Variable Benefit Deferred Compensation Agreement with James R. Heslop, II	Incorporated by reference to Exhibit 10.26 of Middlefield Banc Corp.'s Form 8-K Current Report filed on July 11, 2018
10.27*	Executive Variable Benefit Deferred Compensation Agreement with Donald L. Stacy	Incorporated by reference to Exhibit 10.27 of Middlefield Banc Corp.'s Form 8-K Current Report filed on July 11, 2018
10.28*	Executive Deferred Compensation Agreement with Charles O. Moore	Incorporated by reference to Exhibit 10.28 of Middlefield Banc Corp.'s Form 10-Q Current Report filed on August 7, 2018
10.29*	Form of conditional stock award under the 2007 Omnibus Equity Plan	Incorporated by reference to Exhibit 10.29 of Middlefield Banc Corp.'s Form 8-K Current Report filed on March 4, 2016
10.29.1	Form of conditional stock award under the 2017 Omnibus Equity Plan	Incorporated by reference to Exhibit 10.29 of Middlefield Banc Corp.'s Form 8-K Current Report filed on July 24, 2017
13	Portions of Annual Report to Shareholders for the year ended December 31, 2018 incorporated by reference into this Form 10-K	filed herewith
21	Subsidiaries of Middlefield Banc Corp.	filed herewith
23	Consent of S.R. Snodgrass, P.C., independent auditors of Middlefield Banc Corp.	filed herewith
31.1	Rule 13a-14(a) certification of Chief Executive Officer	filed herewith
31.2	Rule 13a-14(a) certification of Chief Financial Officer	filed herewith
32	Rule 13a-14(b) certification	filed herewith

99.1	Form of Indemnification Agreement with directors of Middlefield Banc Corp. and with executive officers of Middlefield Banc Corp. and The Middlefield Banking Company	Incorporated by reference to Exhibit 99.1 of Middlefield Banc Corp.'s registration statement on Form 10, Amendment No. 1, filed on June 14, 2001
101.INS**	XBRL Instance	furnished herewith
101.SCH**	XBRL Taxonomy Extension Schema	furnished herewith
101.CAL**	XBRL Taxonomy Extension Calculation	furnished herewith
101.DEF**	XBRL Taxonomy Extension Definition	furnished herewith
101.LAB**	XBRL Taxonomy Extension Labels	furnished herewith
101.PRE**	XBRL Taxonomy Extension Presentation	furnished herewith

* management contract or compensatory plan or arrangement

** XBRL 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, as amended, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, as amended, and otherwise is not subject to liability under these sections.

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.

Middlefield Banc Corp.

By: /s/ Thomas G. Caldwell
Thomas G. Caldwell
President and Chief Executive Officer
Date: March 6, 2019

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

/s/ Thomas G. Caldwell Thomas G. Caldwell President, Chief Executive Officer, and Director	March 6, 2019
/s/ Donald L. Stacy Donald L. Stacy, Treasurer and Chief Financial Officer (Principal accounting and financial officer)	March 6, 2019
/s/ Carolyn J. Turk Carolyn J. Turk, Chairman of the Board	March 6, 2019
/s/ Eric W. Hummel Eric W. Hummel, Director	March 6, 2019
/s/ James R. Heslop, II James R. Heslop, II, Executive Vice President, Chief Operating Officer, and Director	March 6, 2019
/s/ Kenneth E. Jones Kenneth E. Jones, Director	March 6, 2019
/s/ James J. McCaskey James J. McCaskey, Director	March 6, 2019
/s/ William J. Skidmore William J. Skidmore, Director	March 6, 2019
/s/ Robert W. Toth Robert W. Toth, Director	March 6, 2019

/s/ Clayton W. Rose, III	March 6, 2019
Clayton W. Rose, III, Director	
/s/ Darryl E. Mast	March 6, 2019
Darryl E. Mast, Director	
/s/ Thomas W. Bevan	March 6, 2019
Thomas W. Bevan, Director	
/s/ William A. Valerian	March 6, 2019
William A. Valerian, Director	

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Section 2: EX-13 (EXHIBIT 13)

Exhibit 13

SNODGRASS
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Middlefield Banc Corp.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Middlefield Banc Corp. and subsidiaries (the "Company") as of December 31, 2018 and 2017; the related consolidated statements of income, comprehensive income, changes in stockholders' equity, and cash flows for the years then ended; and the related notes to the consolidated financial statements (collectively, the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years then ended, conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control – Integrated Framework,* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013, and our report dated March 6, 2019, expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements 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 U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

We have served as the Company's auditor since 1986.

/s/S.R. Snodgrass, P.C.

Cranberry Township, Pennsylvania
March 6, 2019

S.R. Snodgrass, P.C. ● 2009 Mackenzle Way, Suite 340 ● Cranberry Township, Pennsylvania 16066 ● Phone: 724-934-0344 ● Fax: 724-934-0345

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Middlefield Banc Corp.

Opinion on Internal Control over Financial Reporting

We have audited Middlefield Banc Corp. and subsidiaries' (the "Company") internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control — Integrated Framework,* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control — Integrated Framework,* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in stockholders' equity, and cash flows for the years then ended, of the Company, and our report dated March 6, 2019, expressed an unqualified opinion.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

S.R. Snodgrass, P.C. ● 2009 Mackenzle Way, Suite 340 ● Cranberry Township, Pennsylvania 16066 ● Phone: 724-934-0344 ● Fax: 724-934-0345

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/S.R. Snodgrass, P.C.

Cranberry Township, Pennsylvania
March 6, 2019

MIDDLEFIELD BANC CORP.
CONSOLIDATED BALANCE SHEET
(Dollar amounts in thousands, except shares)

	December 31, 2018	December 31, 2017
ASSETS		
Cash and cash equivalents	$ 107,933	$ 39,886
Equity securities, at fair value	616	-
Investment securities available for sale, at fair value	98,322	95,283
Loans held for sale	597	463
Loans	992,109	923,213
Less allowance for loan and lease losses	7,428	7,190
Net loans	984,681	916,023
Premises and equipment, net	13,003	11,853
Goodwill	15,071	15,071
Core deposit intangibles	2,397	2,749
Bank-owned life insurance	16,080	15,652
Accrued interest receivable and other assets	9,698	9,356
TOTAL ASSETS	$ 1,248,398	$ 1,106,336
LIABILITIES		
Deposits:		
Noninterest-bearing demand	$ 178,386	$ 164,424
Interest-bearing demand	117,128	112,004
Money market	196,685	150,277
Savings	222,954	208,502
Time	300,914	242,987
Total deposits	1,016,067	878,194
Short-term borrowings:		
Federal funds purchased and repurchase agreements	398	4,707
Federal Home Loan Bank advances	90,000	70,000
Total short-term borrowings	90,398	74,707
Other borrowings	8,803	29,065
Accrued interest payable and other liabilities	4,840	4,507
TOTAL LIABILITIES	1,120,108	986,473
STOCKHOLDERS' EQUITY		
Common stock, no par value; 10,000,000 shares authorized, 3,630,497 and 3,603,881 shares issued; 3,244,332 and 3,217,716 shares outstanding	85,925	84,859
Retained earnings	56,037	47,431
Accumulated other comprehensive (loss) income	(154)	1,091
Treasury stock, at cost; 386,165 shares	(13,518)	(13,518)
TOTAL STOCKHOLDERS' EQUITY	128,290	119,863
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 1,248,398	$ 1,106,336

See accompanying notes to the consolidated financial statements.

MIDDLEFIELD BANC CORP.
CONSOLIDATED STATEMENT OF INCOME
(Dollar amounts in thousands, except per share data)

	Year Ended December 31,	
	2018	2017
INTEREST AND DIVIDEND INCOME		
Interest and fees on loans	$ 46,576	$ 40,235
Interest-earning deposits in other institutions	558	328
Federal funds sold	46	15
Investment securities:		
Taxable interest	688	762
Tax-exempt interest	2,262	2,406
Dividends on stock	227	249
Total interest and dividend income	50,357	43,995
INTEREST EXPENSE		
Deposits	8,631	5,350
Short-term borrowings	842	753
Other borrowings	436	544
Total interest expense	9,909	6,647
NET INTEREST INCOME	40,448	37,348
Provision for loan losses	840	1,045
NET INTEREST INCOME AFTER PROVISION FOR LOAN LOSSES	39,608	36,303
NONINTEREST INCOME		
Service charges on deposit accounts	1,914	1,875
Investment securities gains on sale, net	-	886
Loss on equity securities	(9)	-
Earnings on bank-owned life insurance	428	431
Gain on sale of loans	231	826
Other income	1,164	841
Total noninterest income	3,728	4,859
NONINTEREST EXPENSE		
Salaries and employee benefits	15,749	13,758
Occupancy expense	1,933	1,846
Equipment expense	969	1,050
Data processing costs	1,806	1,792
Ohio state franchise tax	823	744
Federal deposit insurance expense	550	533
Professional fees	1,482	1,752
Advertising expense	921	821
Software amortization expense	605	414
Core deposit intangible amortization	352	374
Merger expense	-	1,060
Other expense	3,553	3,341
Total noninterest expense	28,743	27,485
Income before income taxes	14,593	13,677
Income taxes	2,162	4,222
NET INCOME	$ 12,431	$ 9,455
EARNINGS PER SHARE		
Basic	$ 3.85	$ 3.12
Diluted	3.83	3.10
DIVIDENDS DECLARED PER SHARE	$ 1.17	$ 1.08

See accompanying notes to the consolidated financial statements.

MIDDLEFIELD BANC CORP.
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
(Dollar amounts in thousands)

	Year Ended December 31, 2018	Year Ended December 31, 2017
Net income	$ 12,431	$ 9,455
Other comprehensive loss:		
Net unrealized holding (loss) gain on available- for-sale investment securities	(1,636)	719
Tax effect	345	(244)
Reclassification adjustment for investment securities gains included in net income	-	(886)
Tax effect	-	301
Total other comprehensive loss	(1,291)	(110)
Comprehensive income	$ 11,140	$ 9,345

See accompanying notes to the consolidated financial statements.

MIDDLEFIELD BANC CORP.
CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY
(Dollar amounts in thousands, except shares and dividend per share amount)

	Common Stock		Retained	Accumulated Other Comprehensive	Treasury	Total Stockholders'
	Shares	Amount	Earnings	Income (Loss)	Stock	Equity
Balance, December 31, 2016	2,640,418	$ 47,943	$ 41,334	$ 1,201	$ (13,518)	$ 76,960
Net income			9,455			9,455
Other comprehensive loss				(110)		(110)
Common stock issued in business combination	544,610	20,995				20,995
Common stock issuance, net of offering cost ($760)	399,008	15,164				15,164
Dividend reinvestment and purchase plan	11,721	540				540
Stock options exercised	7,301	184				184
Stock-based compensation	823	33				33
Cash dividends ($1.08 per share)			(3,358)			(3,358)
Balance, December 31, 2017	3,603,881	$ 84,859	$ 47,431	$ 1,091	$ (13,518)	$ 119,863
Change in accounting principle for adoption of ASU 2016-01			141	(141)		-
Change in accounting principle for adoption of ASU 2018-02			(187)	187		-
Net income			12,431			12,431
Other comprehensive loss				(1,291)		(1,291)
Dividend reinvestment and purchase plan	12,256	618				618
Stock options exercised	8,800	168				168
Stock-based compensation	5,560	280				280
Cash dividends ($1.17 per share)			(3,779)			(3,779)
Balance, December 31, 2018	3,630,497	$ 85,925	$ 56,037	$ (154)	$ (13,518)	$ 128,290

See accompanying notes to the consolidated financial statements.

MIDDLEFIELD BANC CORP.
CONSOLIDATED STATEMENT OF CASH FLOWS
(Dollar amounts in thousands)

	Year Ended December 31, 2018	2017
OPERATING ACTIVITIES		
Net income	$ 12,431	$ 9,455
Adjustments to reconcile net income to net cash provided by operating activities:		
Provision for loan losses	840	1,045
Investment securities gains on sale, net	-	(886)
Loss on equity securities	9	-
Depreciation and amortization of premises and equipment, net	951	1,291
Software amortization expense	605	414
Amortization of premium and discount on investment securities, net	419	451
Accretion of deferred loan fees, net	(868)	(451)
Amortization of core deposit intangibles	352	374
Stock-based compensation expense	467	33
Origination of loans held for sale	(13,196)	(10,020)
Proceeds from sale of loans	13,293	10,482
Gain on sale of loans	(231)	(291)
Origination of student loans held for sale	-	(365,674)
Proceeds from sale of student loans	-	372,162
Gain on sale of student loans	-	(535)
Earnings on bank-owned life insurance	(428)	(431)
Deferred income taxes	(241)	293
Net (gain) loss on other real estate owned	(55)	30
Increase in accrued interest receivable	(345)	(422)
Increase in accrued interest payable	166	136
Other, net	112	(3,536)
Net cash provided by operating activities	14,281	13,920
INVESTING ACTIVITIES		
Investment securities available for sale:		
Proceeds from repayments and maturities	7,280	14,899
Proceeds from sale of securities	-	6,474
Purchases	(12,999)	(3,080)
Increase in loans, net	(68,796)	(119,866)
Proceeds from the sale of other real estate owned	163	2,196
Purchase of premises and equipment	(2,101)	(1,201)
Purchase of restricted stock	(90)	(899)
Redemption of restricted stock	-	795
Acquisition, net of cash paid	-	5,431
Net cash used in investing activities	(76,543)	(95,251)
FINANCING ACTIVITIES		
Net increase in deposits	137,873	50,216
Increase in short-term borrowings, net	15,691	6,348
Repayment of other borrowings	(20,262)	(10,372)
Proceeds from other borrowings	-	30,000
Proceeds from common stock issued	-	15,164
Stock options exercised	168	184
Proceeds from dividend reinvestment and purchase plan	618	540
Cash dividends	(3,779)	(3,358)
Net cash provided by financing activities	130,309	88,722
Increase in cash and cash equivalents	68,047	7,391
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	39,886	32,495
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 107,933	$ 39,886

See accompanying notes to the consolidated financial statements.

	Year Ended December 31, 2018	2017
SUPPLEMENTAL INFORMATION		
Cash paid during the year for:		
Interest on deposits and borrowings	$ 9,743	$ 6,511
Income taxes	2,125	5,705
Noncash investing transactions:		
Transfers from loans to other real estate owned	$ 166	$ 1,179
Common stock issued in business acquisition	-	20,995
Transfer of equity securities from investment securities available for sale, at fair value	(625)	-
Acquisition of Liberty		
Noncash assets acquired		
Loans		$ 195,388
Loans held for sale		5,953
Premises and equipment, net		325
Accrued interest receivable		440
Bank-owned life insurance		1,681
Core deposit intangible		3,087
Other assets		997
Goodwill		10,740
Total noncash assets acquired		218,611
Liabilities assumed		
Time deposits		(30,744)
Deposits other than time deposits		(167,300)
Accrued interest payable		(47)
Deferred taxes		(1,134)
Other liabilities		(2,754)
Total liabilities assumed		(201,979)
Liberty stock acquired in business combination		(1,068)
Net noncash assets acquired		$ 15,564
Cash and cash equivalents acquired, net		$ 5,431

See accompanying notes to the consolidated financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A summary of the significant accounting and reporting policies applied in the presentation of the accompanying financial statements follows:

Nature of Operations and Basis of Presentation

Middlefield Banc Corp. (the "Company") is an Ohio corporation organized to become the holding company of The Middlefield Banking Company ("MBC"). MBC is a state-chartered bank located in Ohio. On October 23, 2009, the Company established an asset resolution subsidiary named EMORECO, Inc. The Company and its subsidiaries derive substantially all of their income from banking and bank-related services, which includes interest earnings on residential real estate, commercial mortgage, commercial and consumer financings as well as interest earnings on investment securities and deposit services to its customers through fifteen full-service locations. The Company is supervised by the Board of Governors of the Federal Reserve System, while MBC is subject to regulation and supervision by the Federal Deposit Insurance Corporation and the Ohio Division of Financial Institutions.

The consolidated financial statements of the Company include its wholly owned subsidiaries, MBC and EMORECO, Inc. Significant intercompany items have been eliminated in preparing the consolidated financial statements.

On January 12, 2017, the Company completed its acquisition of Liberty Bank, N.A. ("Liberty"), pursuant to a previously announced definitive merger agreement. Under the terms of the merger agreement, Liberty shareholders received $37.96 in cash or 1.1934 shares of the Company's common stock in exchange for each share of Liberty common stock they owned immediately prior to the merger. The Company issued 544,610 shares of its common stock in the merger and the aggregate merger consideration was approximately $42.2 million. Upon closing, Liberty was merged into MBC, and its three full-service bank offices, in Twinsburg in northern Summit County and in Beachwood and Solon in eastern Cuyahoga County, became offices of MBC. The systems integration of Liberty into MBC was completed in February, 2017.

The financial statements have been prepared in conformity with U.S. Generally Accepted Accounting Principles. In preparing the financial statements, management is required to make estimates and assumptions that affect the reported amounts of assets and liabilities as of the balance sheet date and revenues and expenses for the period. Actual results could differ from those estimates.

Investment and Equity Securities

Investment and equity securities are classified at the time of purchase, based on management's intention and ability, as securities held to maturity or securities available for sale. Debt securities acquired with the intent and ability to hold to maturity are stated at cost adjusted for amortization of premium and accretion of discount, which are computed using a level yield method and recognized as adjustments of interest income. Certain other debt securities have been classified as available for sale to serve principally as a source of liquidity. Unrealized holding gains and losses for available-for-sale securities are reported as a separate component of stockholders' equity, net of tax, until realized. Realized security gains and losses are computed using the specific identification method. Interest and dividends on investment securities are recognized as income when earned. On January 1, 2018, the Company adopted ASU 2016-01 which resulted in a reclassification of $625,000 from investment securities available for sale to equity securities on the Consolidated Balance Sheet, and a reclassification of $141,000 between accumulated other comprehensive income (loss) and retained earnings on the Consolidated Balance Sheet and Consolidated Statement of Changes in Stockholders' Equity. Additionally, for the year ended December 31, 2018, the unrealized gains and losses on equity securities were recorded as a separate component of noninterest income.

Securities are evaluated on at least a quarterly basis and more frequently when economic or market conditions warrant such an evaluation to determine whether a decline in their value is other than temporary. For debt securities, management considers whether the present value of cash flows expected to be collected are less than the security's amortized cost basis (the difference defined as the credit loss), the magnitude and duration of the decline, the reasons underlying the decline and the Bank's intent to sell the security or whether it is more likely than not that the Bank would be required to sell the security before its anticipated recovery in market value, to determine whether the loss in value is other than temporary. Once a decline in value is determined to be other than temporary, if the Bank does not intend to sell the security, and it is more likely than not that it will not be required to sell the security, before recovery of the security's amortized cost basis, the charge to earnings is limited to the amount of credit loss. Any remaining difference between fair value and amortized cost (the difference defined as the non-credit portion) is recognized in other comprehensive income, net of applicable taxes. Otherwise, the entire difference between fair value and amortized cost is charged to earnings. For equity securities where the fair value has been significantly below cost for one year, the Bank's policy is to recognize an impairment loss unless sufficient evidence is available that the decline is not other than temporary and a recovery period can be predicted.

Restricted Stock

Common stock of the Federal Home Loan Bank (“FHLB”) represents ownership in an institution that is wholly owned by other financial institutions. This equity security is accounted for at cost and classified with other assets. The FHLB of Cincinnati has reported profits for 2018 and 2017, remains in compliance with regulatory capital and liquidity requirements, and continues to pay dividends on the stock and make redemptions at the par value. With consideration given to these factors, management concluded that the stock was not impaired at December 31, 2018 or 2017.

Mortgage Banking Activities

Mortgage loans originated and intended for sale in the secondary market are carried at fair value. The Bank sells the loans on a servicing retained basis. Servicing rights are initially recorded at fair value with the income statement effect recorded in gains on sales of loans. The Bank measures servicing assets using the amortization method. Fair value is based on market prices for comparable mortgage servicing contracts, when available, or alternatively, is based on a valuation model that calculates the present value of estimated future net servicing income. Loan servicing rights are amortized in proportion to and over the period of estimated net future servicing revenue. The expected period of the estimated net servicing income is based in part on the expected prepayment of the underlying mortgages. The unamortized balance of mortgage servicing rights is included in accrued interest and other assets on the Consolidated Balance Sheet.

Mortgage servicing rights are periodically evaluated for impairment. Impairment represents the excess of amortized cost over its estimated fair value. Impairment is determined by stratifying rights into tranches based on predominant risk characteristics, such as interest rate and original time to maturity. Any impairment is reported as a valuation allowance for an individual tranche. If the Company later determines that all or a portion of the impairment no longer exists for a particular grouping, a reduction of the allowance will be recorded as an increase to income.

Servicing fee income is recorded for fees earned for servicing loans. The fees are based on a contractual percentage of outstanding principal and are recorded as income when earned. The amortization of mortgage servicing rights is netted against loan servicing fee income. Late fees and ancillary fees related to loan servicing are not material. The Bank is servicing loans for others in the amount of $59.4 million and $50.4 million at December 31, 2018 and 2017, respectively.

Loans

Loans that management has the intent and ability to hold for the foreseeable future or until maturity or payoff generally are reported at their outstanding unpaid principal balances net of the allowance for loan and lease losses. Interest income is recognized as income when earned on the accrual method. The accrual of interest is discontinued on a loan when management believes, after considering economic and business conditions, the borrower’s financial condition is such that collection of interest is doubtful. Interest received on nonaccrual loans is recorded as income or applied against principal according to management’s judgment as to the collectability of such principal.

Loan origination fees and certain direct loan origination costs are being deferred and the net amount amortized as an adjustment of the related loan’s yield. Management is amortizing these amounts over the contractual life of the related loans.

Allowance for Loan and Lease Losses

The allowance for loan and lease losses represents the amount which management estimates is adequate to provide for probable loan losses inherent in the loan portfolio. The allowance method is used in providing for loan losses. Accordingly, all loan losses are charged to the allowance, and all recoveries are credited to it. The allowance for loan and lease losses is established through a provision for loan losses which is charged to operations. The provision is based on management’s periodic evaluation of the adequacy of the allowance for loan and lease losses, which encompasses the overall risk characteristics of the various portfolio segments, past experience with losses, the impact of economic conditions on borrowers, and other relevant factors. The estimates used in determining the adequacy of the allowance for loan and lease losses, including the amounts and timing of future cash flows expected on impaired loans, are particularly susceptible to significant change in the near term.

A loan is considered impaired when it is probable the borrower will not repay the loan according to the original contractual terms of the loan agreement. Loans that experience insignificant payment delays, which are defined as 89 days or less, generally are not classified as impaired. A loan is not impaired during a period of delay in payment if the Company expects to collect all amounts due, including interest accrued, at the contractual interest rate for the period of delay. All loans identified as impaired are evaluated independently by management. The Company estimates credit losses on impaired loans based on the present value of expected cash flows or the fair value of the underlying collateral if the loan repayment is expected to come from the sale or operation of such collateral. Impaired loans, or portions thereof, are charged off when it is determined a realized loss has occurred. Until such time, an allowance for loan and lease losses is maintained for estimated losses. Cash receipts on impaired loans are applied first to accrued interest receivable unless otherwise required by the loan terms, except when an impaired loan is also a nonaccrual loan, in which case the portion of the payment related to interest is used to reduce principal.

Mortgage loans secured by one-to-four family properties and all consumer loans are large groups of smaller-balance homogeneous loans and are measured for impairment collectively. Management determines the significance of payment delays on a case-by-case basis, taking into consideration all circumstances concerning the loan, the creditworthiness and payment history of the borrower, the length of the payment delay, and the amount of shortfall in relation to the principal and interest owed.

Loans Acquired

Loans acquired, including loans that have evidence of deterioration of credit quality since origination and for which it is probable, at acquisition, that the Company will be unable to collect all contractually required payments receivable, are initially recorded at fair value (as determined by the present value of expected future cash flows) with no valuation allowance. Loans are evaluated individually to determine if there is evidence of deterioration of credit quality since origination. The difference between the undiscounted cash flows expected at acquisition and the investment in the loan, or the “accretable yield,” is recognized as interest income on a level-yield method over the life of the loan. Contractually required payments for interest and principal that exceed the undiscounted cash flows expected at acquisition, or the “non-accretable difference,” are not recognized as a yield adjustment or as a loss accrual or a valuation allowance. Increases in expected cash flows subsequent to the initial investment are recognized prospectively through adjustment of the yield on the loan over its remaining estimated life. Decreases in expected cash flows are recognized immediately as impairment. Any valuation allowances on these impaired loans reflect only losses incurred after acquisition.

For purchased loans acquired that are not deemed impaired at acquisition, credit discounts representing the principal losses expected over the life of the loan are a component of the initial fair value. Loans are aggregated and accounted for as a pool of loans if the loans being aggregated have common risk characteristics. Subsequent to the purchase date, the methods utilized to estimate the required allowance for credit 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 credit discounts. The remaining differences between the purchase price and the unpaid principal balance at the date of acquisition are recorded in interest income over the life of the loans.

Loans acquired from Liberty in 2017 were recorded without their ALLL determination. As such, recoveries received on these loans, and any other loans acquired subsequent to being charged-off, are recorded as noninterest income.

Premises and Equipment

Land is carried at cost. Premises and equipment are stated at cost net of accumulated depreciation. Depreciation is computed on the straight-line method over the estimated useful lives of the assets, which range from 3 to 20 years for furniture, fixtures, and equipment and 3 to 40 years for buildings and leasehold improvements. Expenditures for maintenance and repairs are charged against income as incurred. Costs of major additions and improvements are capitalized.

Goodwill

The Company accounts for goodwill using a three-step process for testing the impairment of goodwill on at least an annual basis. This approach could cause more volatility in the Company’s reported net income because impairment losses, if any, could occur irregularly and in varying amounts. No impairment of goodwill was recognized in any of the periods presented.

Intangible Assets

Intangible assets include core deposit intangibles, which are a measure of the value of consumer demand and savings deposits acquired in business combinations accounted for as purchases. The core deposit intangibles are being amortized to their estimated residual values over their expected useful lives, commonly of ten years. The recoverability of the carrying value of intangible assets is evaluated on an ongoing basis, and permanent declines in value, if any, are charged to expense.

Bank-Owned Life Insurance (“BOLI”)

The Company owns insurance on the lives of a certain group of key employees. The policies were purchased to help offset the increase in the costs of various fringe benefit plans including healthcare. The cash surrender value of these policies is included as an asset on the Consolidated Balance Sheet and any increases in the cash surrender value are recorded as noninterest income on the Consolidated Statement of Income. In the event of the death of an insured individual under these policies, the Company would receive a death benefit, which would be recorded as noninterest income.

Other Real Estate Owned

Real estate properties acquired through foreclosure are initially recorded at fair value at the date of foreclosure, establishing a new cost basis. After foreclosure, management periodically performs valuations and the real estate is carried at the lower of cost or fair value less estimated cost to sell. Revenue and expenses from operations of the properties, gains or losses on sales and additions to the valuation allowance are included in operating results.

Income Taxes

The Company and its subsidiaries file a consolidated federal income tax return. Deferred tax assets and liabilities are reflected at currently enacted income tax rates applicable to the period in which the deferred tax assets or liabilities are expected to be realized or settled. As changes in tax laws or rates are enacted, deferred tax assets and liabilities are adjusted through the provision for income taxes.

Earnings Per Share

The Company provides dual presentation of basic and diluted earnings per share. Basic earnings per share is calculated utilizing net income as reported in the numerator and average shares outstanding in the denominator. The computation of diluted earnings per share differs in that the dilutive effects of any stock options, warrants, and convertible securities are adjusted in the denominator.

Stock-Based Compensation

The Company accounts for stock compensation based on the grant date fair value of all share-based payment awards that are expected to vest, including employee share options to be recognized as employee compensation expense over the requisite service period.

Compensation cost is recognized for restricted stock issued to employees based on the fair value of these awards at the date of grant. The market price of the Company's common shares at the date of grant is used to estimate the fair value of restricted stock and stock awards. Compensation cost is recognized over the required service period, generally defined as the vesting period, and is recorded in "Salaries and employee benefits" expense. (See Note 14-Employee Benefits)

Cash Flow Information

The Company has defined cash and cash equivalents as those amounts included in the Consolidated Balance Sheet captions as "Cash and due from banks" and "Federal funds sold" with original maturities of less than 90 days.

Advertising Costs

Advertising costs are expensed as incurred.

Reclassification of Comparative Amounts

Certain comparative amounts for prior years have been reclassified to conform to current-year presentations. Such reclassifications did not affect net income or retained earnings.

Recently Adopted Accounting Pronouncements:

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers* (a new revenue recognition standard). The Update's core principle is that a company will recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In addition, this Update specifies the accounting for certain costs to obtain or fulfill a contract with a customer and expands disclosure requirements for revenue recognition. This Update is effective for annual reporting periods beginning after December 15, 2016, including interim periods within that reporting period. Since the guidance scopes out revenue associated with financial instruments, including loan receivables and investment securities, the adoption of the standard and its related amendments did not result in a material change from our current accounting for revenue because the majority of the Company's revenue is not within the scope of Topic 606. Upon adoption on January 1, 2018, we have included the related new disclosure requirements in Note 2.

In January 2016, the FASB issued ASU 2016-01, *Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*. This Update applies to all entities that hold financial assets or owe financial liabilities and is intended to provide more useful information on the recognition, measurement, presentation, and disclosure of financial instruments. Among other things, this Update (a) requires equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income; (b) simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment; (c) eliminates the requirement to disclose the fair value of financial instruments measured at amortized cost for entities that are not public business entities; (d) eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet; (e) requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes; (f) requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset (that is, securities or loans and receivables) on the balance sheet or the accompanying notes to the financial statements; and (g) clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity's other deferred tax assets. On January 1, 2018, the Company adopted ASU 2016-01 which resulted in a reclassification of $141,000 between accumulated other comprehensive income and retained earnings on the Consolidated Balance Sheet and Consolidated Statement of Changes in Stockholders' Equity. Additionally, the methods used to calculate the fair value of financial instruments in Note 18 were based on exit pricing assumptions as of December 31, 2018.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740)*, which requires recognition of current and deferred income taxes resulting from an intra-entity transfer of any asset (excluding inventory) when the transfer occurs. Consequently, the amendments in this Update eliminate the exception for an intra-entity transfer of an asset other than inventory. The adoption of the standard and its related amendments did not result in a material impact on the Company's financial position or results of operations.

In February 2018, the FASB issued ASU 2018-02, *Income Statement – Reporting Comprehensive Income (Topic 220)*, to allow a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act. Consequently, the amendments eliminate the stranded tax effects resulting from the Tax Cuts and Jobs Act and will improve the usefulness of information reported to financial statement users. On January 1, 2018, the Company adopted this standard which resulted in a reclassification of $187,000 between accumulated other comprehensive income and retained earnings on the Consolidated Balance Sheet and Consolidated Statement of Changes in Stockholders' Equity.

In January 2017, the FASB issued ASU 2017-01, *Business Combinations (Topic 805), Clarifying the Definition of a Business*, which provides a more robust framework to use in determining when a set of assets and activities (collectively referred to as a "set") is a business. The screen requires that when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in a single identifiable asset or a group of similar identifiable assets, the set is not a business. This screen reduces the number of transactions that need to be further evaluated.

In May 2017, the FASB issued ASU 2017-09, *Compensation – Stock Compensation (Topic 718)*, which affects any entity that changes the terms or conditions of a share-based payment award. This Update amends the definition of modification by qualifying that modification accounting does not apply to changes to outstanding share-based payment awards that do not affect the total fair value, vesting requirements, or equity/liability classification of the awards. The Company has determined the adoption of this standard did not have a significant impact on the Company's financial position or results of operations.

Recent Accounting Pronouncements:

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. The standard requires lessees to recognize the assets and liabilities that arise from leases on the balance sheet. 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. A short-term lease is defined as one in which (a) the lease term is 12 months or less and (b) there is not an option to purchase the underlying asset that the lessee is reasonably certain to exercise. For short-term leases, lessees may elect to recognize lease payments over the lease term on a straight-line basis. For public business entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2018, and interim periods within those years. For all other entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2019, and for interim periods within fiscal years beginning after December 15, 2020. The amendments should be applied at the beginning of the earliest period presented using a modified retrospective approach with earlier application permitted as of the beginning of an interim or annual reporting period. The Company is currently assessing the practical expedients it may elect at adoption, but does not anticipate the amendments will have a significant impact on the financial statements. Based on the Company's preliminary analysis of its current portfolio, the impact to the Company's balance sheet approximates a $6.7 million increase in assets and liabilities.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments ("CECL")*, which changes the impairment model for most financial assets. This Update is intended to improve financial reporting by requiring timelier recording of credit losses on loans and other financial instruments held by financial institutions and other organizations. The underlying premise of the Update is that financial assets measured at amortized cost should be presented at the net amount expected to be collected, through an allowance for credit losses that is deducted from the amortized cost basis. The allowance for credit losses should reflect management's current estimate of credit losses that are expected to occur over the remaining life of a financial asset. The income statement will be affected by the measurement of credit losses for newly recognized financial assets, as well as the expected increases or decreases of expected credit losses that have taken place during the period. ASU 2016-13 is effective for annual and interim periods beginning after December 15, 2019, and early adoption is permitted for annual and interim periods beginning after December 15, 2018. With certain exceptions, transition to the new requirements will be through a cumulative effect adjustment to opening retained earnings as of the beginning of the first reporting period in which the guidance is adopted. Management is currently evaluating the impact of the adoption of this guidance on the Company's consolidated financial statements. Management will oversee the implementation of CECL and is currently in the process of implementing a software solution to assist in the adoption of this ASU. Management is running the current incurred loss model and the CECL model concurrently prior to the adoption of this guidance on January 1, 2020.

In January 2017, the FASB issued ASU 2017-04, *Simplifying the Test for Goodwill Impairment*. To simplify the subsequent measurement of goodwill, the FASB eliminated Step 2 from the goodwill impairment test. In computing the implied fair value of goodwill under Step 2, an entity had to perform procedures to determine the fair value at the impairment testing date of its assets and liabilities (including unrecognized assets and liabilities) following the procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a business combination. Instead, under the amendments in this Update, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. A public business entity that is a U.S. Securities and Exchange Commission (SEC) filer should adopt the amendments in this Update for its annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2019. A public business entity that is not an SEC filer should adopt the amendments in this Update for its annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2020. All other entities, including not-for-profit entities, that are adopting the amendments in this Update should do so for their annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2021. This Update is not expected to have a significant impact on the Company's financial statements.

In March 2017, the FASB issued ASU 2017-08, *Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20)*. The amendments in this Update shorten the amortization period for certain callable debt securities held at a premium. Specifically, the amendments require the premium to be amortized to the earliest call date. The amendments do not require an accounting change for securities held at a discount; the discount continues to be amortized to maturity. For public business entities, the amendments in this Update are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early adoption is permitted, including adoption in an interim period. If an entity early adopts the amendments in an interim period, any adjustments should be reflected as of the beginning of the fiscal year that includes that interim period. An entity should apply the amendments in this Update on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. Additionally, in the period of adoption, an entity should provide disclosures about a change in accounting principle. This Update is not expected to have a significant impact on the Company's financial statements.

In June 2018, the FASB issued ASU 2018-07, *Compensation – Stock Compensation (Topic 718)*, which simplified the accounting for nonemployee share-based payment transactions. The amendments in this update expand the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. The amendments in this Update improve the following areas of nonemployee share-based payment accounting: (a) the overall measurement objective, (b) the measurement date, (c) awards with performance conditions, (d) classification reassessment of certain equity-classified awards, (e) calculated value (nonpublic entities only), and (f) intrinsic value (nonpublic entities only). The amendments in this Update are effective for public business entities for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. The Company is currently evaluating the impact the adoption of the standard will have on the Company's financial position or results of operations.

In July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842): Targeted Improvements*. This Update provides another transition method which allows entities to initially apply ASC 842 at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. Entities that elect this approach should report comparative periods in accordance with ASC 840, *Leases*. In addition, this Update provides a practical expedient under which lessors may elect, by class of underlying assets, to not separate nonlease components from the associated lease component, similar to the expedient provided for lessees. However, the lessor practical expedient is limited to circumstances in which the nonlease component or components otherwise would be accounted for under the new revenue guidance and both (a) the timing and pattern of transfer are the same for the nonlease component(s) and associated lease component and (b) the lease component, if accounted for separately, would be classified as an operating lease. If the nonlease component or components associated with the lease component are the predominant component of the combined component, an entity should account for the combined component in accordance with ASC 606, *Revenue from Contracts with Customers*. Otherwise, the entity should account for the combined component as an operating lease in accordance with ASC 842. If a lessor elects the practical expedient, certain disclosures are required. This Update is effective for public business entities for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, with early adoption permitted. For all other entities, the amendments are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. The Company is currently evaluating the impact the adoption of the standard will have on the Company's financial position or results of operations.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework – Changes the Disclosure Requirements for Fair Value Measurements*. The Update removes the requirement to disclose the amount of and reasons for transfers between Level I and Level II of the fair value hierarchy; the policy for timing of transfers between levels; and the valuation processes for Level III fair value measurements. The Update requires disclosure of changes in unrealized gains and losses for the period included in other comprehensive income (loss) for recurring Level III fair value measurements held at the end of the reporting period and the range and weighted average of significant unobservable inputs used to develop Level III fair value measurements. This Update is effective for all entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The Company is currently evaluating the impact the adoption of the standard will have on the Company's financial position or results of operations.

In December 2018, the FASB issued ASU 2018-20, *Leases (Topic 842)*, which addressed implementation questions arising from stakeholders in regard to ASU 2016-02, *Leases*. Specifically addressed in this Update were issues related to 1) sales taxes and other similar taxes collected from lessees, 2) certain lessor costs, and 3) recognition of variable payments for contracts with lease and nonlease components. The amendments in this Update affect the amendments in Update 2016-02, which are not yet effective but can be early adopted. The effective date and transition requirements for the amendments in this Update are the same as the effective date and transition requirements in Update 2016-02 (for example, January 1, 2019, for calendar-year-end public business entities). Based on the Company's preliminary analysis of its current portfolio, the impact of the adoption of Update 2016-02 to the Company's balance sheet approximates a $6.7 million increase in assets and liabilities.

2. REVENUE RECOGNITION

Effective January 1, 2017, the Company adopted ASU 2014-09 *Revenue from Contracts with Customers – (Topic 606)* and all subsequent ASUs that modified ASC 606. The implementation of the new standard had no material impact on the measurement or recognition of revenue for prior periods and did not require any cumulative effect adjustment for adoption.

Management determined that the primary sources of revenue, which emanate from interest income on loans and investments, along with noninterest revenue resulting from investment security gains, gains on the sale of loans, and BOLI income, are not within the scope of ASC 606. As a result, no changes were made during the period related to these sources or revenue, which cumulatively comprise 92.8% of the total revenue of the Company.

The main types of noninterest income within the scope of the standard are as follows:

Service charges on deposit accounts – The Company has contracts with its deposit customers where fees are charged if the account balance falls below predetermined levels defined as compensating balances. The agreements can be cancelled at any time by either the Company or the deposit customer. Revenue from these transactions is recognized on a monthly basis as the Company has an unconditional right to the fee consideration. The Company also has transaction fees related to specific customer requests or activities that include overdraft fees, online banking fees, and other transaction fees. All of these fees are attributable to specific performance obligations of the Company where the revenue is recognized at a defined point in time, which is completion of the requested service/transaction.

Gains (losses) on sale of other real estate owned - Gains and losses are recognized at the completion of the property sale when the buyer obtains control of the real estate and all of the performance obligations of the Company have been satisfied. Evidence of the buyer obtaining control of the asset include transfer of the property title, physical possession of the asset, and the buyer obtaining control of the risks and rewards related to the asset. In situations where the Company agrees to provide financing to facilitate the sale, additional analysis is performed to ensure that the contract for sale identifies the buyer and seller, the asset to be transferred and the payment terms, that the contract has a true commercial substance and that amounts due from the buyer are reasonable. In situations where financing terms are not reflective of current market terms, the transaction price is discounted impacting the gain/loss and the carrying value of the asset.

The following table depicts the disaggregation of revenue derived from contracts with customers to depict the nature, amount, timing, and uncertainty of revenue and cash flows for the years ended December 31,

Noninterest Income	2018	2017
(Dollar amounts in thousands)		
Service charges on deposit accounts:		
Overdraft fees	$ 798	$ 790
ATM banking fees	867	739
Service charges and other fees	249	346
Investment securities gains on sale, net [(a)]	-	886
Loss on equity securities [(a)]	(9)	-
Earnings on bank-owned life insurance [(a)]	428	431
Gain on sale of loans [(a)]	231	826
Other income	1,164	841
Total noninterest income	$ 3,728	$ 4,859

(a) Not within scope of ASC 606

3. EARNINGS PER SHARE

There are no convertible securities that would affect the numerator in calculating basic and diluted earnings per share; therefore, net income as presented on the Consolidated Statement of Income will be used as the numerator. The following table sets forth the composition of the weighted-average common shares (denominator) used in the basic and diluted earnings per share computation for the year ended December 31:

	2018	2017
Weighted-average common shares issued	3,616,119	3,415,115
Average treasury stock shares	(386,165)	(386,165)
Weighted-average common shares and common stock equivalents used to calculate basic earnings per share	3,229,954	3,028,950
Additional common stock equivalents (stock options and restricted stock) used to calculate diluted earnings per share	13,953	23,635
Weighted-average common shares and common stock equivalents used to calculate diluted earnings per share	3,243,907	3,052,585

Options to purchase 7,450 shares of common stock at $17.55 a share were outstanding during the year ended December 31, 2018. Also outstanding were 21,824 shares of restricted stock. None of the outstanding options or restricted stock were anti-dilutive.

Options to purchase 19,750 shares of common stock at prices ranging from $17.55 to $23.00 were outstanding during the year ended December 31, 2017. Also outstanding were 14,601 shares of restricted stock. None of the outstanding options or restricted stock were anti-dilutive.

4. INVESTMENT AND EQUITY SECURITIES

The amortized cost, gross gains and losses and fair values of securities available for sale are as follows:

	December 31, 2018			
(Dollar amounts in thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. government agency securities	$ 7,442	$ 90	$ (61)	$ 7,471
Obligations of states and political subdivisions:				
Taxable	502	10	-	512
Tax-exempt	72,387	667	(473)	72,581
Mortgage-backed securities in government-sponsored entities	18,185	88	(515)	17,758
Total	$ 98,516	$ 855	$ (1,049)	$ 98,322

	December 31, 2017			
(Dollar amounts in thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. government agency securities	$ 8,664	$ 126	$ (71)	$ 8,719
Obligations of states and political subdivisions:				
Taxable	504	8	-	512
Tax-exempt	65,408	1,547	(38)	66,917
Mortgage-backed securities in government-sponsored entities	18,640	157	(287)	18,510
Total debt securities	93,216	1,838	(396)	94,658
Equity securities in financial institutions	415	210	-	625
Total	$ 93,631	$ 2,048	$ (396)	$ 95,283

On January 1, 2018, the Company reclassified $625,000 from investment securities available for sale to equity securities in accordance with the adoption of ASU 2016-01. Equity securities totaled $616,000 as of December 31, 2018, which incorporates a recognized net loss on equity investments of $9,000 for the year ended December 31, 2018. There were no net gains on sold equity securities were realized during this period.

The amortized cost and fair value of debt securities at December 31, 2018, 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.

(Dollar amounts in thousands)	Amortized Cost	Fair Value
Due in one year or less	$ 8,547	$ 8,590
Due after one year through five years	2,108	2,132
Due after five years through ten years	13,173	13,133
Due after ten years	74,688	74,467
Total	$ 98,516	$ 98,322

Investment securities with an approximate carrying value of $63.5 million and $57.9 million at December 31, 2018 and 2017, respectively, were pledged to secure deposits and other purposes as required by law.

There were no securities sold during the year ended December 31, 2018. Proceeds from the sales of investment securities and the gross realized gains and losses for the year ended December 31, 2017, are as follows (in thousands):

	2017
Proceeds from sales	$ 6,474
Gross realized gains	911 *
Gross realized losses	(25)

*Prior to the acquisition of Liberty, the Company held an equity interest in Liberty which was remeasured at fair value on the acquisition date and resulted in a gain of $488,000. This gain was recorded in Investment Securities Gains on Sale, Net on the Consolidated Income Statement for the year ended December 31, 2017.

The following tables show the Company's gross unrealized losses and fair value, aggregated by investment category and length of time that the individual securities have been in a continuous unrealized loss position.

	December 31, 2018					
	Less than Twelve Months		Twelve Months or Greater		Total	
(Dollar amounts in thousands)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
U.S. government agency securities	$ -	$ -	$ 4,105	$ (61)	$ 4,105	$ (61)
Obligations of states and political subdivisions						
Tax-exempt	20,451	(286)	11,053	(187)	31,504	(473)
Mortgage-backed securities in government-sponsored entities	2,068	(9)	12,257	(506)	14,325	(515)
Total	$ 22,519	$ (295)	$ 27,415	$ (754)	$ 49,934	$ (1,049)

	December 31, 2017					
	Less than Twelve Months		Twelve Months or Greater		Total	
(Dollar amounts in thousands)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
U.S. government agency securities	$ 557	$ (4)	$ 4,036	$ (67)	$ 4,593	$ (71)
Obligations of states and political subdivisions						
Tax-exempt	1,009	(6)	2,784	(32)	3,793	(38)
Mortgage-backed securities in government-sponsored entities	5,698	(71)	8,734	(216)	14,432	(287)
Total	$ 7,264	$ (81)	$ 15,554	$ (315)	$ 22,818	$ (396)

There were 85 securities that were considered temporarily impaired at December 31, 2018.

On a quarterly basis, the Company performs an assessment to determine whether there have been any events or economic circumstances indicating that a security with an unrealized loss has suffered other-than-temporary impairment ("OTTI"). A debt security is considered impaired if the fair value is less than its amortized cost basis at the reporting date. The accounting literature requires the Company to assess whether the unrealized loss is other than temporary. For equity securities where the fair value has been significantly below cost for one year, the Company's policy is to recognize an impairment loss unless sufficient evidence is available that the decline is not other than temporary and a recovery period can be predicted.

The Company has asserted that at December 31, 2018 and 2017, the declines outlined in the above table represent temporary declines and the Company does not intend to sell and does not believe it will be required to sell these securities before recovery of their cost basis, which may be at maturity. The Company has concluded that any impairment of its investment securities portfolio outlined in the above table is not other than temporary and is the result of interest rate changes, sector credit rating changes, or company-specific rating changes that are not expected to result in the non-collection of principal and interest during the period.

Debt securities issued by U.S. government agencies, U.S. government-sponsored enterprises, and state and political subdivisions accounted for 100% of the total available-for-sale portfolio as of December 31, 2018, and no credit losses are expected, given the explicit and implicit guarantees provided by the U.S. federal government and the lack of significant unrealized loss positions within the obligations of state and political subdivisions security portfolio. The Company evaluates credit losses on a quarterly basis. The Company considered the following factors in determining whether a credit loss exists and the period over which the debt security is expected to recover:

- The length of time and the extent to which the fair value has been less than the amortized cost basis.
- Changes in the near term prospects of the underlying collateral of a security such as changes in default rates, loss severity given default and significant changes in prepayment assumptions.
- The level of cash flows generated from the underlying collateral supporting the principal and interest payments of the debt securities.
- Any adverse change to the credit conditions and liquidity of the issuer, taking into consideration the latest information available about the overall financial condition of the issuer, credit ratings, recent legislation, and government actions affecting the issuer's industry and actions taken by the issuer to deal with the present economic climate.

5. LOANS AND RELATED ALLOWANCE FOR LOAN AND LEASE LOSSES

Major classifications of loans at December 31 are summarized as follows (in thousands):

	2018	2017
Commercial and industrial	$ 83,857	$ 101,346
Real estate - construction	56,731	47,017
Real estate - mortgage:		
Residential	336,487	318,157
Commercial	498,247	437,947
Consumer installment	16,787	18,746
	992,109	923,213
Less: Allowance for loan and lease losses	(7,428)	(7,190)
Net loans	$ 984,681	$ 916,023

The amounts above include net deferred loan origination costs of $1.6 million and $1.5 million at December 31, 2018 and December 31, 2017, respectively.

The Company's primary business activity is with customers located within its local Northeastern Ohio trade area, eastern Geauga County, and contiguous counties to the north, east, and south. The Company also serves the central Ohio market with offices in Dublin, Sunbury, Powell and Westerville, Ohio. The Northeastern Ohio trade area includes the recently acquired Liberty locations in Beachwood, Twinsburg, and Solon, Ohio. Commercial, residential, consumer, and agricultural loans are granted. Although the Company has a diversified loan portfolio at December 31, 2018 and 2017, loans outstanding to individuals and businesses are dependent upon the local economic conditions in the Company's immediate trade area.

The following tables summarize the primary segments of the loan portfolio and the allowance for loan and lease losses (in thousands):

December 31, 2018	Commercial and industrial	Real estate- construction	Real Estate- Mortgage Residential	Real Estate- Mortgage Commercial	Consumer installment	Total
Loans:						
Individually evaluated for impairment	$ 2,570	$ -	$ 1,970	$ 9,533	$ 2	$ 14,075
Collectively evaluated for impairment	81,287	56,731	334,517	488,714	16,785	978,034
Total loans	$ 83,857	$ 56,731	$ 336,487	$ 498,247	$ 16,787	$ 992,109

December 31, 2017	Commercial and industrial	Real estate- construction	Real estate- Mortgage Residential	Real estate- Mortgage Commercial	Consumer installment	Total
Loans:						
Individually evaluated for impairment	$ 3,627	$ 44	$ 2,824	$ 5,610	$ 4	$ 12,109
Collectively evaluated for impairment	97,719	46,973	315,333	432,337	18,742	911,104
Total loans	$ 101,346	$ 47,017	$ 318,157	$ 437,947	$ 18,746	$ 923,213

December 31, 2018	Commercial and industrial	Real estate- construction	Real Estate- Mortgage Residential	Real Estate- Mortgage Commercial	Consumer installment	Total
Allowance for loan and lease losses:						
Ending allowance balance attributable to loans:						
Individually evaluated for impairment	$ 667	$ -	$ 43	$ 643	$ 1	$ 1,354
Collectively evaluated for impairment	302	100	1,538	4,008	126	6,074
Total ending allowance balance	$ 969	$ 100	$ 1,581	$ 4,651	$ 127	$ 7,428

December 31, 2017	Commercial and industrial	Real estate- construction	Real Estate- Mortgage Residential	Real Estate- Mortgage Commercial	Consumer installment	Total
Allowance for loan and lease losses:						
Ending allowance balance attributable to loans:						
Individually evaluated for impairment	$ 694	$ -	$ 140	$ 733	$ -	$ 1,567
Collectively evaluated for impairment	305	313	1,620	3,303	82	5,623
Total ending allowance balance	$ 999	$ 313	$ 1,760	$ 4,036	$ 82	$ 7,190

The Company's loan portfolio is segmented to a level that allows management to monitor risk and performance. The portfolio is segmented into Commercial and Industrial ("C&I"), Real Estate Construction, Real Estate - Mortgage which is further segmented into Residential and Commercial real estate, and Consumer Installment Loans. The C&I loan segment consists of loans made for the purpose of financing the activities of commercial customers. The residential mortgage loan segment consists of loans made for the purpose of financing the activities of residential homeowners. The commercial mortgage loan segment consists of loans made for the purpose of financing the activities of commercial real estate owners and operators. The consumer loan segment consists primarily of installment loans and overdraft lines of credit connected with customer deposit accounts.

Management evaluates individual loans in all of the commercial segments for possible impairment based on guidance established by the Board of Directors. Loans are considered to be impaired when, based on current information and events, 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. Factors considered by management in evaluating impairment include payment status, collateral value, and the probability of collecting scheduled principal and interest payments when due. Management determines the significance of payment delays and payment shortfalls on a case-by-case basis, taking into consideration all of the circumstances surrounding the loan and the borrower, including the length of the delay, the reasons for the delay, the borrower's prior payment record, and the amount of the shortfall in relation to the principal and interest owed. The Company does not separately evaluate individual consumer and residential mortgage loans for impairment, unless such loans are part of a larger relationship that is impaired, or the loan was modified in a troubled debt restructuring.

Once the determination has been made that a loan is impaired, the determination of whether a specific allocation of the allowance is necessary is measured by comparing the recorded investment in the loan to the fair value of the loan using one of three methods: (a) the present value of expected future cash flows discounted at the loan's effective interest rate; (b) the loan's observable market price; or (c) the fair value of the collateral less selling costs. The method is selected on a loan-by-loan basis. The evaluation of the need and amount of a specific allocation of the allowance and whether a loan can be removed from impairment status is made on a quarterly basis. The Company's policy for recognizing interest income on impaired loans does not differ from its overall policy for interest recognition.

The following tables present impaired loans by class, segregated by those for which a specific allowance was required and those for which a specific allowance was not necessary (in thousands):

	December 31, 2018		
	Impaired Loans		
	Recorded Investment	Unpaid Principal Balance	Related Allowance
With no related allowance recorded:			
Commercial and industrial	$ 207	$ 413	$ -
Real estate - mortgage:			
Residential	1,306	1,462	-
Commercial	1,867	2,186	-
Total	$ 3,380	$ 4,061	$ -
With an allowance recorded:			
Commercial and industrial	$ 2,363	$ 3,013	$ 667
Real estate - mortgage:			
Residential	664	715	43
Commercial	7,666	7,676	643
Consumer installment	2	2	1
Total	$ 10,695	$ 11,406	$ 1,354
Total:			
Commercial and industrial	$ 2,570	$ 3,426	$ 667
Real estate - mortgage:			
Residential	1,970	2,177	43
Commercial	9,533	9,862	643
Consumer installment	2	2	1
Total	$ 14,075	$ 15,467	$ 1,354

December 31, 2017			
Impaired Loans	Recorded Investment	Unpaid Principal Balance	Related Allowance
With no related allowance recorded:			
Commercial and industrial	$ 450	$ 1,006	$ -
Real estate - construction	44	44	-
Real estate - mortgage:			
Residential	1,685	1,904	-
Commercial	1,870	1,984	-
Consumer installment	4	4	-
Total	$ 4,053	$ 4,942	$ -
With an allowance recorded:			
Commercial and industrial	$ 3,177	$ 3,888	$ 694
Real estate - mortgage:			
Residential	1,139	1,179	140
Commercial	3,740	3,913	733
Total	$ 8,056	$ 8,980	$ 1,567
Total:			
Commercial and industrial	$ 3,627	$ 4,894	$ 694
Real estate - construction	44	44	-
Real estate - mortgage:			
Residential	2,824	3,083	140
Commercial	5,610	5,897	733
Consumer installment	4	4	-
Total	$ 12,109	$ 13,922	$ 1,567

The tables above include troubled debt restructuring totaling $4.4 million and $5.4 million as of December 31, 2018 and 2017, respectively.

The following table presents interest income by class, recognized on impaired loans (in thousands):

	As of December 31, 2018		As of December 31, 2017	
	Average Recorded Investment	Interest Income Recognized	Average Recorded Investment	Interest Income Recognized
Commercial and industrial	$ 4,210	$ 172	$ 2,378	$ 123
Real estate - construction	9	-	565	20
Real estate - mortgage:				
Residential	2,531	57	3,068	75
Commercial	6,805	377	6,820	159
Consumer installment	3	-	5	-
Total	$ 13,558	$ 606	$ 12,836	$ 377

Troubled Debt Restructuring (TDR) describes loans on which the bank has granted concessions for reasons related to the customer’s financial difficulties. Such concessions may include one or more of the following:

- reduction in the interest rate to below market rates
- extension of repayment requirements beyond normal terms
- reduction of the principal amount owed
- reduction of accrued interest due
- acceptance of other assets in full or partial payment of a debt

In each case the concession is made due to deterioration in the borrower's financial condition, and the new terms are less stringent than those required on a new loan with similar risk. The total impact on the ALLL for 2018 and 2017 related to TDRs was $459,000 and $509,000, respectively.

The following tables present the number of loan modifications by class, the corresponding recorded investment, and the subsequently defaulted modifications (in thousands) for the years ended:

	December 31, 2018				
	Number of Contracts				
Troubled Debt Restructurings	Term Modification	Other	Total	Pre-Modification Outstanding Recorded Investment	Post-Modification Outstanding Recorded Investment
Commercial and industrial	1	-	1	$ 44	$ 44
Residential real estate	3	2	5	286	286
Commercial real estate	1	-	1	94	94
				$ 424	$ 424

	December 31, 2017				
	Number of Contracts				
Troubled Debt Restructurings	Term Modification	Other	Total	Pre-Modification Outstanding Recorded Investment	Post-Modification Outstanding Recorded Investment
Commercial and industrial	4	-	4	$ 127	$ 127
Residential real estate	5	-	5	256	256
				$ 383	$ 383

	December 31, 2018	
Troubled Debt Restructurings subsequently defaulted	Number of Contracts	Recorded Investment
Residential real estate	1	$ 19

There were no subsequent defaults of troubled debt restructurings for the year ended December 31, 2017.

Management uses a nine-point internal risk-rating system to monitor the credit quality of the overall loan portfolio. The first five categories are considered not criticized and are aggregated as Pass rated. The criticized rating categories utilized by management generally follow bank regulatory definitions. The Special Mention category includes assets that are currently protected but are potentially weak, resulting in an undue and unwarranted credit risk, but not to the point of justifying a Substandard classification. Loans in the Substandard category have well-defined weaknesses that jeopardize the liquidation of the debt and have a distinct possibility that some loss will be sustained if the weaknesses are not corrected. All loans greater than 90 days past due are considered Substandard or Doubtful. Loans classified as doubtful have all the weaknesses inherent in those classified as substandard, with the added characteristic that the weaknesses make collection or liquidation in full, on the basis of currently existing facts, conditions, and values, highly questionable and improbable. Any portion of a loan that has been charged off is placed in the Loss category.

To help ensure that risk ratings are accurate and reflect the present and future capacity of borrowers to repay a loan as agreed, the Company has a structured loan-rating process with several layers of internal and external oversight. Generally, consumer and residential mortgage loans are included in the Pass categories unless a specific action, such as bankruptcy, repossession, or death, occurs to raise awareness of a possible credit event. The Company's Commercial Loan Officers are responsible for the timely and accurate risk rating of the loans in their portfolios at origination and on an ongoing basis. The Credit Department performs an annual review of all commercial relationships with loan balances of $500,000 or greater. Confirmation of the appropriate risk grade is included in the review on an ongoing basis. The Company engages an external consultant to conduct loan reviews on a semiannual basis. Generally, the external consultant reviews commercial relationships greater than $250,000 and/or criticized relationships greater than $125,000. Detailed reviews, including plans for resolution, are performed on loans classified as Substandard on a quarterly basis. Loans in the Special Mention and Substandard categories that are collectively evaluated for impairment are given separate consideration in the determination of the allowance.

The following tables present the classes of the loan portfolio summarized by the aggregate Pass rating and the criticized categories of Special Mention, Substandard, and Doubtful within the internal risk rating system (in thousands):

December 31, 2018	Pass	Special Mention	Substandard	Doubtful	Total Loans
Commercial and industrial	$ 77,002	$ 4,572	$ 2,283	$ -	$ 83,857
Real estate - construction	55,397	1,334	-	-	56,731
Real estate - mortgage:					
Residential	332,475	553	3,459	-	336,487
Commercial	483,516	6,617	8,114	-	498,247
Consumer installment	16,776	-	11	-	16,787
Total	$ 965,166	$ 13,076	$ 13,867	$ -	$ 992,109

December 31, 2017	Pass	Special Mention	Substandard	Doubtful	Total Loans
Commercial and industrial	$ 95,621	$ 1,942	$ 3,783	$ -	$ 101,346
Real estate - construction	46,995	-	22	-	47,017
Real estate - mortgage:					
Residential	312,176	723	5,258	-	318,157
Commercial	424,225	9,164	4,558	-	437,947
Consumer installment	18,742	-	4	-	18,746
Total	$ 897,759	$ 11,829	$ 13,625	$ -	$ 923,213

Management further monitors the performance and credit quality of the loan portfolio by analyzing the age of the portfolio as determined by the length of time a recorded payment is past due. The following tables present the classes of the loan portfolio summarized by the aging categories of loans and nonaccrual loans (in thousands):

December 31, 2018	Current	30-59 Days Past Due	60-89 Days Past Due	90 Days+ Past Due	Total Past Due	Total Loans
Commercial and industrial	$ 82,770	$ 288	$ 213	$ 586	$ 1,087	$ 83,857
Real estate - construction	56,731	-	-	-	-	56,731
Real estate - mortgage:						
Residential	331,379	2,612	1,083	1,413	5,108	336,487
Commercial	496,597	664	-	986	1,650	498,247
Consumer installment	16,768	19	-	-	19	16,787
Total	$ 984,245	$ 3,583	$ 1,296	$ 2,985	$ 7,864	$ 992,109

December 31, 2017	Current	30-59 Days Past Due	60-89 Days Past Due	90 Days+ Past Due	Total Past Due	Total Loans
Commercial and industrial	$ 99,633	$ 1,607	$ 29	$ 77	$ 1,713	101,346
Real estate - construction	47,017	-	-	-	-	47,017
Real estate - mortgage:						
Residential	314,866	1,977	227	1,087	3,291	318,157
Commercial	434,879	1,907	1	1,160	3,068	437,947
Consumer installment	18,736	10	-	-	10	18,746
Total	$ 915,131	$ 5,501	$ 257	$ 2,324	$ 8,082	923,213

The following tables present the classes of the loan portfolio summarized by nonaccrual loans and loans 90 days or more past due and still accruing (in thousands):

December 31, 2018	Nonaccrual	90+ Days Past Due and Accruing
Commercial and industrial	$ 996	$ 91
Real estate - construction	-	-
Real estate - mortgage:		
Residential	2,731	754
Commercial	2,864	100
Consumer installment	4	-
Total	$ 6,595	$ 945

December 31, 2017	Nonaccrual	90+ Days Past Due and Accruing
Commercial and industrial	$ 1,120	$ -
Real estate - construction	-	-
Real estate - mortgage:		
Residential	4,002	-
Commercial	3,311	-
Consumer installment	-	-
Total	$ 8,433	$ -

Interest income that would have been recorded had these loans not been placed on nonaccrual status was $456,000 in 2018 and $437,000 in 2017.

An allowance for loan and lease losses ("ALLL") is maintained to absorb losses from the loan portfolio. The ALLL is based on management's continuing evaluation of the risk characteristics and credit quality of the loan portfolio, assessment of current economic conditions, diversification and size of the portfolio, adequacy of collateral, past and anticipated loss experience, and the amount of nonperforming loans.

The Company's methodology for determining the ALLL is based on the requirements of ASC Section 310-10-35 for loans individually evaluated for impairment (discussed above) and ASC Subtopic 450-20 for loans collectively evaluated for impairment, as well as the Interagency Policy Statement on the Allowance for Loan and Lease Losses and other bank regulatory guidance. The total of the two components represents the Company's ALLL. Management also performs impairment analysis on TDRs, which may result in specific reserves.

Loans that are collectively evaluated for impairment are analyzed, with general allowances being made as appropriate. For general allowances, historical loss trends are used in the estimation of losses in the current portfolio. These historical loss amounts are modified by other qualitative factors.

The classes described above, which are based on the purpose code assigned to each loan, provide the starting point for the ALLL analysis. Management tracks the historical net charge-off activity at the purpose code level. A historical charge-off factor is calculated utilizing the last twelve consecutive historical quarters.

Management has identified a number of additional qualitative factors which it uses to supplement the historical charge-off factor, because these factors are likely to cause estimated credit losses associated with the existing loan pools to differ from historical loss experience. The additional factors that are evaluated quarterly and updated using information obtained from internal, regulatory, and governmental sources are: national and local economic trends and conditions; levels of and trends in delinquency rates and nonaccrual loans; trends in volumes and terms of loans; effects of changes in lending policies; experience, ability, and depth of lending staff; value of underlying collateral; and concentrations of credit from a loan type, industry, and/or geographic standpoint.

Management reviews the loan portfolio on a quarterly basis using a defined, consistently applied process in order to make appropriate and timely adjustments to the ALLL. When information confirms all or part of specific loans to be uncollectible, these amounts are promptly charged off against the ALLL.

The following tables summarize the primary segments of the loan portfolio (in thousands):

	Commercial and industrial	Real estate-construction	Real estate-residential mortgage	Real estate-commercial mortgage	Consumer installment	Total
ALLL balance at December 31, 2017	$ 999	$ 313	$ 1,760	$ 4,036	$ 82	$ 7,190
Charge-offs	(610)	-	(177)	(111)	(220)	(1,118)
Recoveries	287	63	128	-	38	516
Provision	293	(276)	(130)	726	227	840
ALLL balance at December 31, 2018	$ 969	$ 100	$ 1,581	$ 4,651	$ 127	$ 7,428

	Commercial and industrial	Real estate-construction	Real estate-residential mortgage	Real estate-commercial mortgage	Consumer installment	Total
ALLL balance at December 31, 2016	$ 448	$ 172	$ 2,818	$ 3,135	$ 25	$ 6,598
Charge-offs	(536)	-	(117)	(39)	(462)	(1,154)
Recoveries	234	34	241	111	81	701
Provision	853	107	(1,182)	829	438	1,045
ALLL balance at December 31, 2017	$ 999	$ 313	$ 1,760	$ 4,036	$ 82	$ 7,190

The negative provision allocated to real estate construction loans for the year ended December 31, 2018 is due to the historical loss rate for the real estate construction pool changing to -0.127% from 0.775% in the first quarter of 2018 as well as no charge-offs for the year. The decline in the reserve allocated for residential real estate is due to a continued decline in historical losses and consistent decreases in the ratio of nonperforming loans to total loans in this segment over the past few years resulting in a decrease in the reserves required. The increase in the ALLL balance for consumer installment loans is primarily due to increases in historical losses for this segment over the prior year. The negative provision allocated to residential real estate loans in the amount of $1.2 million for the year ended December 31, 2017 is due to the payoff of a large residential credit during that period.

6. PREMISES AND EQUIPMENT

Major classifications of premises and equipment at December 31:

(Dollar amounts in thousands)	2018	2017
Land and land improvements	$ 2,920	$ 2,920
Building and leasehold improvements	15,377	14,277
Furniture, fixtures, and equipment	8,011	7,010
Total premises and equipment	26,308	24,207
Less accumulated depreciation and amortization	13,305	12,354
Total premises and equipment, net	$ 13,003	$ 11,853

Depreciation expense charged to operations was $951,000 in 2018 and $876,000 in 2017.

7. GOODWILL AND INTANGIBLE ASSETS

Goodwill totaled $15.1 million for both years ended December 31, 2018, and 2017. Core deposit intangible carrying amount was $2.4 million and $2.7 million for the years ended December 31, 2018, and 2017, respectively. Core deposit accumulated amortization was $1.0 million and $692,000 for the years ended December 31, 2018, and 2017.

Core deposit intangible assets are amortized to their estimated residual values over their expected useful lives, commonly of ten years. Amortization expense totaled $352,000 and $374,000 in 2018 and 2017, respectively. The estimated aggregate future amortization expense for core deposit intangible assets as of December 31, 2018 is as follows:

2019	$	341
2020		332
2021		321
2022		309
2023		296
Thereafter		798
Total	$	2,397

8. ACCRUED INTEREST RECEIVABLE AND OTHER ASSETS

The components of accrued interest receivable and other assets at the years ended December 31:

(Dollar amounts in thousands)		2018		2017
Restricted stock	$	3,679	$	3,589
Accrued interest receivable on investment securities		794		707
Accrued interest receivable on loans		2,839		2,581
Deferred tax asset, net		1,232		647
Other real estate owned		270		212
Other		884		1,620
Total	$	9,698	$	9,356

9. DEPOSITS

Time deposits at December 31, 2018, mature $140.9 million, $73.4 million, $41.9 million, $25.6 million, $19.1 million, and $52,000 during 2019, 2020, 2021, 2022, 2023, and thereafter, respectively.

The aggregate of all time deposit accounts of $250,000 or more amounted to $75.8 million and $39.4 million at December 31, 2018 and 2017, respectively.

10. SHORT-TERM BORROWINGS

For the year ended December 31, outstanding balances and related information of short-term borrowings, which includes securities sold under agreements to repurchase and short-term borrowings from other banks, are summarized as follows:

(Dollar amounts in thousands)		2018		2017
Balance at year-end	$	90,398	$	74,707
Average balance outstanding		42,231		63,910
Maximum month-end balance		101,857		114,025
Weighted-average rate at year-end		2.53%		1.36%
Weighted-average rate during the year		1.99%		1.18%

Average balances outstanding during the year represent daily average balances, and average interest rates represent interest expense divided by the related average balance.

The Company maintains a $6.0 million line of credit at an adjustable rate, currently 5.75%, a $10.0 million line of credit at an adjustable rate, currently at 5.65%, and a $4.0 million line of credit at an adjustable rate, currently 5.81%. At December 31, 2018, and 2017, there were no outstanding borrowings under these lines of credit. The additional borrowing capacity on FHLB advances was $27.0 million and $41.5 million at December 31, 2018 and 2017, respectively.

The Company ended its participation in repurchase agreements in the fourth quarter of 2018. As such, the Company has no recognized liability related to repurchase agreements as of December 31, 2018, but retains ownership of securities purchased for this purpose in the amount of $2.4 million as of this date. The following table provides detail regarding collateral pledged to secure the Company's repurchase agreements, which are overnight and continuous, as of December 31, 2017:

(Dollar amounts in thousands)		December 31, 2017
Repurchase agreements secured by:		
Mortgage-backed securities in government sponsored entities	$	2,040
Tax-exempt obligations of states and political subdivisions		495
Gross amount of pledged collateral		2,535
Gross amount of recognized liabilities	$	1,989

11. OTHER BORROWINGS

Other borrowings consist of advances from the FHLB and subordinated debt as follows:

(Dollar amounts in thousands) Description	Maturity range from	to	Weighted-average interest rate	Stated interest rate range from	to		2018		2017
Fixed-rate amortizing	07/01/25	10/01/28	4.06%	4.02%	4.47%	$	555	$	20,817
Junior subordinated debt	12/21/37	12/21/37	3.83%	3.05%	4.19%		8,248		8,248
Total						$	8,803	$	29,065

The scheduled maturities of other borrowings are as follows:

(Dollar amounts in thousands) Year Ending December 31,		Amount	Weighted-Average Rate
2019	$	154	4.06%
2020		113	4.06%
2021		85	4.06%
2022		63	4.06%
2023		47	4.06%
Beyond 2023		8,341	3.83%
Total	$	8,803	3.84%

Fixed-rate amortizing advances from the FHLB require monthly principal and interest payments and an annual 20 percent pay-down of outstanding principal. Monthly principal and interest payments are adjusted after each 20 percent pay-down. Under the terms of a blanket agreement, FHLB borrowings are secured by certain qualifying assets of the Company which consist principally of first mortgage loans or mortgage-backed securities. Under this credit arrangement, the Company has a remaining borrowing capacity of approximately $211.7 million at December 31, 2018.

The Company formed a special purpose entity ("Entity") to issue $8.0 million of floating rate, obligated mandatorily redeemable securities, and $248,000 in common securities as part of a pooled offering. The rate adjusts quarterly, equal to LIBOR plus 1.67%. The Entity may redeem them, in whole or in part, at face value. The Company borrowed the proceeds of the issuance from the Entity in December 2006 in the form of an $8.3 million note payable, which is included in the other borrowings on the Company's Consolidated Balance Sheet.

12. ACCRUED INTEREST PAYABLE AND OTHER LIABILITIES

The components of accrued interest payable and other liabilities are as follows at December 31:

(Dollar amounts in thousands)	2018	2017
Accrued interest payable	$ 744	$ 578
Accrued directors' benefits	1,346	1,427
Accrued salary expense	1,058	956
Other	1,692	1,546
Total	$ 4,840	$ 4,507

13. INCOME TAXES

The provision for federal income taxes for the years ended December 31, consists of:

(Dollar amounts in thousands)	2018	2017
Current payable	$ 2,403	$ 3,929
Deferred	(241)	293
Total provision	$ 2,162	$ 4,222

The tax effects of deductible and taxable temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are as follows at December 31,:

(Dollar amounts in thousands)	2018	2017
Deferred tax assets:		
Allowance for loan and lease losses	$ 1,327	$ 1,210
Supplemental retirement plan	454	528
Investment security basis adjustment	18	18
Nonaccrual interest income	389	371
OREO adjustments	-	2
Accrued compensation	222	201
Other	-	86
Gross deferred tax assets	2,410	2,416
Deferred tax liabilities:		
Premises and equipment	328	356
Net unrealized gain on securities	1	347
FHLB stock dividends	139	139
Intangibles	342	307
Mortgage servicing rights	75	71
Deferred origination fees, net	13	294
Acquisition fair value adjustments	275	250
Other	5	5
Gross deferred tax liabilities	1,178	1,769
Net deferred tax assets	$ 1,232	$ 647

No valuation allowance was established at December 31, 2018 and 2017, in view of the Company’s ability to carry back to taxes paid in previous years and certain tax strategies, coupled with the anticipated future taxable income as evidenced by the Company's earnings potential.

The reconciliation between the federal statutory rate and the Company's effective consolidated income tax rate for the years ended December 31, is as follows:

(Dollar amounts in thousands)	2018		2017	
	Amount	% of Pretax Income	Amount	% of Pretax Income
Provision at statutory rate	$ 3,065	21.0%	$ 4,651	34.0%
Tax-exempt income	(622)	(4.3)%	(1,045)	(7.6)%
Nondeductible interest expense	27	0.2%	32	0.2%
Nondeductible merger-related expenses	-	-%	43	0.3%
Stock-based compensation	(37)	(0.3)%	(50)	-0.4%
Change in effective corporate tax rate	-	-%	401	2.9%
Other	(271)	(1.8)%	190	1.5%
Actual tax expense and effective rate	$ 2,162	14.8%	$ 4,222	30.9%

ASC 740-10 prescribes a recognition threshold and a measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. 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 that would have full knowledge of all relevant information. A tax position that meets the more-likely-than-not recognition threshold is measured at the largest amount of benefit that is greater than 50 percent likely of being realized upon ultimate settlement. Tax positions that previously failed to meet the more-likely-than-not recognition threshold should be recognized in the first subsequent financial reporting period in which that threshold is met. Previously recognized tax positions that no longer meet the more-likely-than-not recognition threshold should be derecognized in the first subsequent financial reporting period in which that threshold is no longer met.

On December 22, 2017, H.R.1, commonly known as the Tax Cuts and Jobs Act (the "Act"), was signed into law. The Act includes many provisions that affected our income tax expense, including reducing our federal tax rate from 34% to 21% effective January 1, 2018. As a result of the rate reduction, we were required to re-measure, through income tax expense in the period of enactment, our deferred tax assets and liabilities using the enacted rate at which we expect them to be recovered or settled. The re-measurement of our net deferred tax asset resulted in additional 2017 income tax expense of $401 thousand.

Also on December 22, 2017, the U.S. Securities and Exchange Commission ("SEC") released Staff Accounting Bulletin No. 118 ("SAB 118") to address any uncertainty or diversity of views in practice in accounting for the income tax effects of the Act in situations where a registrant did not have the necessary information available, prepared, or analyzed in reasonable detail to complete this accounting in the reporting period that includes the enactment date. SAB 118 allowed for a measurement period not to extend beyond one year from the Act's enactment date to complete the necessary accounting.

At December 31, 2018 and December 31, 2017, the Company had no ASC 740-10 unrecognized tax benefits. The Company does not expect the total amount of unrecognized tax benefits to significantly increase within the next 12 months. The Company recognizes interest and penalties on unrecognized tax benefits as a component of income tax expense.

The Company and the Bank are subject to U.S. federal income tax as well as an income tax in the states of Ohio and Florida, and the Bank is subject to a capital-based franchise tax in the state of Ohio. The Company and the Bank are no longer subject to examination by taxing authorities for years before December 31, 2015.

14. EMPLOYEE BENEFITS

Employee Retirement Plan

The Bank maintains section 401(k) employee savings and investment plans for all full-time employees and officers of the Bank who are at least 21 years of age. The Bank's contributions to the plans are discretionary, and were based on 50% matching of voluntary contributions up to 6% of compensation for the years ended December 31, 2018 and 2017. Employee contributions are vested at all times, and MBC contributions are fully vested after six years beginning at the second year in 20% increments. Special vesting provisions are in place for legacy Liberty employees with 3 or more years of service. Contributions for 2018 and 2017 to these plans amounted to $306,000 and $258,000, respectively.

Directors' Retirement Plan

Until 2001, MBC maintained a Directors' Retirement Plan to provide postretirement payments over a ten-year period to members of the Board of Directors who had completed five or more years of service. The plan required payment of 25% of the final average annual board fees paid to a director in the three years preceding the director's retirement.

The following table illustrates the components of the projected payments for the Directors' Retirement Plan for the years ended:

	Projected Payments
2019	$ 11,000
2020	10,000
2021	2,000
Total	$ 23,000

The retirement plan is available solely for nonemployee directors of MBC, but MBC has not entered into any additional retirement arrangements for nonemployee directors since 2001. All director participants have retired.

Executive Deferred Compensation Plans

The Company maintains executive deferred compensation plans to provide post-retirement payments to members of senior management. The plan agreements are noncontributory, defined contribution arrangements that provide supplemental retirement income benefits to several officers, with contributions made solely by the Bank. Accrued executive deferred compensation amounted to $504,000 and $912,000 as of December 31, 2018 and 2017, respectively. During 2018 and 2017, the Company contributed $98,000 and $110,000, respectively, to the Plan.

Stock Option and Restricted Stock Plan

In 2007, the Company adopted the 2007 Omnibus Equity Plan (the "2007 Plan") for granting incentive stock options, nonqualified stock options, and restricted stock to key officers and employees and nonemployee directors of the Company. A total of 160,000 shares of authorized and unissued or issued common stock were reserved for issuance under the 2007 Plan, which expired ten years from the date of board approval of the plan. Although the 2007 Plan expired in 2017, there remain outstanding 7,450 shares in incentive stock options awards granted under the 2007 Plan. The per share exercise price of an option granted is not less than the fair value of a share of common stock on the date the option was granted.

In 2017, the Company adopted the 2017 Omnibus Equity Plan (the "2017 Plan") for granting incentive stock options, nonqualified stock options, restricted stock and other equity awards to key officers and employees and nonemployee directors of the Company. The Company's stockholders approved the 2017 Plan at the annual meeting of the stockholders held on May 10, 2017. A total of 224,000 shares of authorized and unissued or issued common stock are reserved for issuance under the 2017 Plan, which expires ten years from the date of board approval of the plan. The per share exercise price of an option granted will not be less than the fair value of a share of common stock on the date the option is granted. Remaining available shares that can be issued under the Plan were 201,708 at December 31, 2018.

The following table presents share data related to the outstanding options:

	2018	Weighted-average Exercise Price Per Share
Outstanding, January 1	19,750	$ 20.94
Exercised	(12,300)	23.00
Outstanding, December 31	7,450	$ 17.55
Exercisable, December 31	7,450	$ 17.55

The total intrinsic value of outstanding in-the-money exercisable stock options was $185,356 and $538,000 at December 31, 2018 and 2017, respectively.

No options were granted for the years ended December 31, 2018 and 2017. The Company recognizes compensation expense in the amount of fair value of the common stock at the grant date and as an addition to stockholders' equity.

For the years ended December 31, 2018 and 2017, the Company recorded $215,000 and $0, respectively, of compensation cost related to vested stock options. As of December 31, 2018, there was no unrecognized compensation cost related to unvested stock options.

For the years ended December 31, 2018 and 2017, 12,300 and 8,237 options were exercised resulting in net proceeds to the participant of $85,000 and $95,000, respectively.

During 2018 and 2017, the Compensation Committee of the Board of Directors of the Company granted awards of restricted stock for an aggregate amount of 11,351 and 5,825 shares, respectively, to certain employees of the Bank. The expense recognized as a result of these awards was $286,000 and $196,000 for the years ended 2018 and 2017, respectively. The number of restricted stock earned or settled will depend on certain conditions and are also subject to service period-based vesting. The award recipient must maintain service with Middlefield Banc Corp. and affiliates until the third anniversary of the award to satisfy the service condition. The performance condition will be satisfied if the average total shareholder annual return on Middlefield Banc Corp. stock for the three subsequent years is at least 8.00%.

The Company recognized restricted stock forfeitures in the period they occur.

The following table presents the activity during 2018 related to awards of restricted stock:

	Units	Weighted-average Grant Date Fair Value Per Share
Nonvested at January 1, 2018	14,601	$ 35.14
Granted	11,351	47.89
Forfeited	(223)	35.31
Vested	(3,905)	33.61
Nonvested at December 31, 2018	21,824	$ 42.05
Expected to vest at December 31, 2018	4,850	$ 32.40

Compensation expense related to nonvested awards of restricted stock amounts to $453,000 as of December 31, 2018.

15. COMMITMENTS

In the normal course of business, there are various outstanding commitments and certain contingent liabilities which are not reflected in the accompanying consolidated financial statements. These commitments and contingent liabilities represent financial instruments with off-balance sheet risk. The contract or notional amounts of those instruments reflect the extent of involvement in particular types of financial instruments which were composed of the following at December 31:

(Dollar amounts in thousands)	2018	2017
Commitments to extend credit	$ 228,427	$ 234,023
Standby letters of credit	1,656	1,015
Total	$ 230,083	$ 235,038

These instruments involve, to varying degrees, elements of credit and interest rate risk in excess of the amount recognized in the Consolidated Balance Sheet. The Company's exposure to credit loss, in the event of nonperformance by the other parties to the financial instruments, is represented by the contractual amounts as disclosed. The Company minimizes its exposure to credit loss under these commitments by subjecting them to credit approval and review procedures and collateral requirements as deemed necessary. Commitments generally have fixed expiration dates within one year of their origination.

Standby letters of credit are conditional commitments issued by the Company to guarantee the performance of a customer to a third party. These instruments are issued primarily to support bid or performance-related contracts. The coverage period for these instruments is typically a one-year period with an annual renewal option subject to prior approval by management. Fees earned from the issuance of these letters are recognized over the coverage period. For secured letters of credit, the collateral is typically bank deposit instruments or customer business assets.

Leasing Arrangements

The Company leases certain of its banking facilities under operating leases which contain certain renewal options. As of December 31, 2018, approximate future minimum rental payments, including the renewal options under these leases, are as follows (in thousands):

2019	$ 663
2020	659
2021	660
2022	655
2023	655
Thereafter	1,976
Total	$ 5,268

The above amounts represent minimum rents not adjusted for possible future increases due to escalation provisions and assume that all renewal option periods will be exercised by the Company. Rent expense approximated $673,000 and $641,000 for the years ended December 31, 2018 and 2017, respectively.

16. REGULATORY RESTRICTIONS

The Company is subject to the regulatory requirements of the Federal Reserve System as a bank holding company. The bank is subject to regulations of the Federal Deposit Insurance Corporation ("FDIC") and the State of Ohio, Division of Financial Institutions.

Cash Requirements

The Federal Reserve Bank of Cleveland requires the Company to maintain certain average reserve balances. As of December 31, 2018 and 2017, the Bank had required reserves of $17.3 million and $15.8 million comprising vault cash and a depository amount held with the Federal Reserve Bank.

Loans

Federal law prevents the Company from borrowing from the Bank unless the loans are secured by specific obligations. Further, such secured loans are limited in amount of 10% of the Bank's common stock and capital surplus.

Dividends

MBC is subject to dividend restrictions that generally limit the amount of dividends that can be paid by an Ohio state-chartered bank. Under the Ohio Banking Code, cash dividends may not exceed net profits as defined for that year combined with retained net profits for the two preceding years less any required transfers to surplus. Under this formula the amount available for payment of dividends for 2018 approximates $10.1 million plus 2019 profits retained up to the date of the dividend declaration.

17. REGULATORY CAPITAL

The Bank and Company are subject to regulatory capital requirements administered by banking agencies. Capital adequacy guidelines and prompt corrective action regulations involve quantitative measures of assets, liabilities, and certain off-balance-sheet items calculated under regulatory accounting practices. Capital amounts and classifications are also subject to qualitative judgments by regulators about components, risk weightings, and other factors and the regulators can lower classifications in certain cases. Failure to meet various capital requirements can initiate regulatory action that could have a direct material effect on the financial statements. As of December 31, 2018, the Bank and Company have met all capital adequacy requirements to which they are subject.

The prompt corrective action regulations provide five classifications, including well capitalized, adequately capitalized, under-capitalized, significantly undercapitalized, and critically undercapitalized, although these terms are not used to represent overall financial condition. If an institution is adequately capitalized, regulatory approval is required before the institution may accept brokered deposits. If an institution is undercapitalized, capital distributions are limited, as is asset growth and expansion, and plans for capital restoration are required.

The Basel III Capital Rules became effective for the Bank on January 1, 2015 and certain provisions are subject to a phase-in period. The implementation of the capital conservation buffer began January 1, 2016 at the 0.625% level and has been fully 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). The capital conservation buffer is designed to absorb losses during periods of economic stress. Banking institutions with a ratio of Common Equity Tier 1 capital to risk-weighted assets above the minimum but below the conservation buffer (or below the combined capital conservation buffer and countercyclical capital buffer, when the latter is applied) will face constraints on dividends, equity repurchases and compensation based on the amount of the shortfall.

The following tables present actual and required capital ratios as of December 31, 2018 and 2017, under the Basel III Capital Rules. Capital levels required to be considered well capitalized are based upon prompt corrective action regulations, as amended to reflect the changes under the Basel III Capital Rules.

	As of December 31, 2018			
	Leverage	Tier 1 Risk Based	Common Equity Tier 1	Total Risk Based
The Middlefield Banking Company	9.60%	11.09%	11.09%	11.83%
Middlefield Banc Corp.	10.55%	10.35%	9.65%	11.00%
Adequately capitalized ratio	4.00%	6.00%	4.50%	8.00%
Adequately capitalized ratio plus fully phased-in capital conservation buffer	4.00%	8.50%	7.00%	10.50%
Well-capitalized ratio (Bank only)	5.00%	8.00%	6.50%	10.00%

	As of December 31, 2017			
	Leverage	Tier 1 Risk Based	Common Equity Tier 1	Total Risk Based
The Middlefield Banking Company	9.47%	10.88%	10.88%	11.64%
Middlefield Banc Corp.	10.20%	11.64%	10.79%	12.41%
Adequately capitalized ratio	4.00%	6.00%	4.50%	8.00%
Adequately capitalized ratio plus fully phased-in capital conservation buffer	4.00%	8.50%	7.00%	10.50%
Well-capitalized ratio (Bank only)	5.00%	8.00%	6.50%	10.00%

18. FAIR VALUE DISCLOSURE MEASUREMENTS

The following disclosures show the hierarchal disclosure framework associated with the level of pricing observations utilized in measuring assets and liabilities at fair value. The three broad levels defined by U.S. generally accepted accounting principles are as follows:

Level I: Quoted prices are available in active markets for identical assets or liabilities as of the reported date.

Level II: Pricing inputs are other than the quoted prices in active markets, which are either directly or indirectly observable as of the reported date. The nature of these assets and liabilities includes items for which quoted prices are available but traded less frequently and items that are fair-valued using other financial instruments, the parameters of which can be directly observed.

Level III: Assets and liabilities that have little to no pricing observability as of the reported date. These items do not have two-way markets and are measured using management's best estimate of fair value, where the inputs into the determination of fair value require significant management judgement or estimation.

This hierarchy requires the use of observable market data when available.

The following tables present the assets measured on a recurring basis on the Consolidated Balance Sheet at their fair value by level within the fair value hierarchy. Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

		December 31, 2018		
(Dollar amounts in thousands)	Level I	Level II	Level III	Total
Assets measured on a recurring basis:				
U.S. government agency securities	$ -	$ 7,471	$ -	$ 7,471
Obligations of states and political subdivisions	-	73,093	-	73,093
Mortgage-backed securities in government- sponsored entities	-	17,758	-	17,758
Total debt securities	-	98,322	-	98,322
Equity securities in financial institutions	616	-	-	616
Total	$ 616	$ 98,322	$ -	$ 98,938

		December 31, 2017		
(Dollar amounts in thousands)	Level I	Level II	Level III	Total
Assets measured on a recurring basis:				
U.S. government agency securities	$ -	$ 8,719	$ -	$ 8,719
Obligations of states and political subdivisions	-	67,429	-	67,429
Mortgage-backed securities in government- sponsored entities	-	18,510	-	18,510
Total debt securities	-	94,658	-	94,658
Equity securities in financial institutions (a)	375	-	-	375
Total	$ 375	$ 94,658	$ -	$ 95,033

(a) The Company held one equity investment not included in this total because it is held at amortized cost of $250,000 as of December 31, 2017.

Investment Securities Available for Sale – The Company obtains fair values from an independent pricing service which represent quoted prices for similar assets, fair values determined by pricing models using a market approach that considers observable market data, such as interest rate volatilities, LIBOR yield curve, credit spreads and prices from market makers and live trading systems (Level II).

Equity Securities - Equity securities that are traded on a national securities exchange are valued at their last reported sales price as of the measurement date. Equity securities traded in the over-the-counter ("OTC") markets and listed securities for which no sale was reported on that date are generally valued at their last reported "bid" price if held long, and last reported "ask" price if sold short. To the extent equity securities are actively traded and valuation adjustments are not applied, they are categorized in Level I of the fair value hierarchy. Equity securities traded on inactive markets or valued by reference to similar instruments are generally categorized in Level II of the fair value hierarchy. Equity securities are carried at fair value through net income at December 31, 2018.

The following tables present the assets measured on a non-recurring basis on the Consolidated Balance Sheet at their fair value by level within the fair value hierarchy. Collateral-dependent impaired loans are carried at fair value if they have been charged down to fair value or if a specific valuation allowance has been established. A new cost basis is established at the time a property is initially recorded in OREO. OREO properties are carried at fair value if a devaluation has been taken to the property's value subsequent to the initial measurement. No such devaluation occurred during the year ended December 31, 2018.

	December 31, 2018			
(Dollar amounts in thousands)	Level I	Level II	Level III	Total
Assets measured on a non-recurring basis:				
Impaired loans	$ -	$ -	$ 1,075	$ 1,075

	December 31, 2017			
(Dollar amounts in thousands)	Level I	Level II	Level III	Total
Assets measured on a non-recurring basis:				
Impaired loans	$ -	$ -	$ 3,072	$ 3,072
Other real estate owned	-	-	32	32

Impaired Loans – The Company has measured impairment on collateral-dependent impaired loans generally based on the fair value of the loan's collateral. Fair value is generally determined based upon independent third-party appraisals of the properties. In some cases, management may adjust the appraised value due to the age of the appraisal, changes in market conditions, or observable deterioration of the property since the appraisal was completed. Additionally, management makes estimates about expected costs to sell the property which are also included in the net realizable value. If the fair value of the collateral-dependent loan is less than the carrying amount of the loan, a specific reserve for the loan is made in the allowance for loan losses or a charge-off is taken to reduce the loan to the fair value of the collateral (less estimated selling costs) and the loan is included in the above table as a Level III measurement. If the fair value of the collateral exceeds the carrying amount of the loan, then the loan is not included in the above table as it is not currently being carried at its fair value. The fair values in the above tables exclude estimated selling costs of $492,000 and $1.3 million at December 31, 2018 and 2017, respectively.

Other Real Estate Owned (OREO) – OREO is carried at the lower of cost or fair value, which is measured at the date of foreclosure. If the fair value of the collateral exceeds the carrying amount of the loan, no charge-off or adjustment is necessary, the loan is not considered to be carried at fair value, and is therefore not included in the above table. If the fair value of the collateral is less than the carrying amount of the loan, management will charge the loan down to its estimated realizable value. The fair value of OREO is based on the appraised value of the property, which is generally unadjusted by management and is based on comparable sales for similar properties in the same geographic region as the subject property, and is included in the above table as a Level II measurement. In some cases, management may adjust the appraised value due to the age of the appraisal, changes in market conditions, or observable deterioration of the property since the appraisal was completed. In these cases, the loans are categorized in the above table as a Level III measurement since these adjustments are considered to be unobservable inputs. Income and expenses from operations and further declines in the fair value of the collateral subsequent to foreclosure are included in net expenses from OREO.

The following tables present additional quantitative information about assets measured at fair value on a non-recurring basis and for which the Company uses Level III inputs to determine fair value:

(Dollar amounts in thousands)	Quantitative Information about Level III Fair Value Measurements			
	Fair Value Estimate	Valuation Techniques	Unobservable Input	Range (Weighted Average)
December 31, 2018				
Impaired loans	$ 1,075	Appraisal of collateral (1)	Appraisal adjustments (2)	0% to 100.0%(40.6%)

(Dollar amounts in thousands)	Quantitative Information about Level III Fair Value Measurements			
	Fair Value Estimate	Valuation Techniques	Unobservable Input	Range (Weighted Average)
December 31, 2017				
Impaired loans	$ 3,072	Appraisal of collateral (1)	Appraisal adjustment (2)	0.0% to 86.1% (13.8%)
Other real estate owned	$ 32	Appraisal of collateral (1)	Appraisal adjustments (2)	0% to 10.0%

(1) Fair value is generally determined through independent appraisals of the underlying collateral, which generally include various level III inputs which are not identifiable, less any associated allowance.

(2) Appraisals may be adjusted by management for qualitative factors such as economic conditions and estimated liquidation expenses. The range and weighted average of liquidation expenses and other appraisal adjustments are presented as a percent of the appraisal.

The estimated fair value of the Company's financial instruments not measured at fair value on a recurring basis is as follows:

	December 31, 2018				
	Carrying Value	Level I	Level II	Level III	Total Fair Value
			(in thousands)		
Financial assets:					
Cash and cash equivalents	$ 107,933	$ 107,933	$ -	$ -	$ 107,933
Loans held for sale	597	-	597	-	597
Net loans	984,681	-	-	973,124	973,124
Bank-owned life insurance	16,080	16,080	-	-	16,080
Federal Home Loan Bank stock	3,679	3,679	-	-	3,679
Accrued interest receivable	3,633	3,633	-	-	3,633
Financial liabilities:					
Deposits	$ 1,016,067	$ 715,153	$ -	$ 298,891	$ 1,014,044
Short-term borrowings	90,398	90,398	-	-	90,398
Other borrowings	8,803	-	-	8,827	8,827
Accrued interest payable	744	744	-	-	744

	December 31, 2017				
	Carrying Value	Level I	Level II	Level III	Total Fair Value
			(in thousands)		
Financial assets:					
Cash and cash equivalents	$ 39,886	$ 39,886	$ -	$ -	$ 39,886
Loans held for sale	463	-	463	-	463
Net loans	916,023	-	-	913,323	913,323
Bank-owned life insurance	15,652	15,652	-	-	15,652
Federal Home Loan Bank stock	3,589	3,589	-	-	3,589
Accrued interest receivable	3,288	3,288	-	-	3,288
Financial liabilities:					
Deposits	$ 878,194	$ 635,207	$ -	$ 242,020	$ 877,227
Short-term borrowings	74,707	74,707	-	-	74,707
Other borrowings	29,065	-	-	29,069	29,069
Accrued interest payable	578	578	-	-	578

All financial instruments included in the above tables, with the exception of net loans, deposits, and other borrowings, are carried at cost, which approximates the fair value of the instruments.

19. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The following table presents the changes in accumulated other comprehensive income (loss) by component net of tax:

(Dollars in thousands)	Unrealized gains on available-for-sale securities (a)
Balance as of December 31, 2016	$ 1,201
Other comprehensive income before reclassification	475
Amount reclassified from accumulated other comprehensive income	(585)
Period change	(110)
Balance at December 31, 2017	$ 1,091
Balance as of December 31, 2017	$ 1,091
Other comprehensive loss	(1,291)
Change in accounting principle, ASC 2016-01 (b)	(141)
Change in accounting principle, ASC 2018-02 (b)	187
Period change	(1,245)
Balance at December 31, 2018	$ (154)

(a) All amounts are net of tax. Amounts in parentheses indicate debits to accumulated other comprehensive income.
(b) Reclassifications are the result of the adoption of ASUs 2016-01 and 2018-02 effective for the Company beginning January 1, 2018. The reclassifications are presented within the Consolidated Statement of Changes in Stockholders' Equity for the affected transitional periods.

There were no other reclassifications of amounts from accumulated other comprehensive income for the year ended December 31, 2018.

The following table presents significant amounts reclassified out of each component of accumulated other comprehensive income for the year ended December 31, 2017:

(Dollars in thousands) Details about other comprehensive income	December 31, 2017	Affected Line Item in the Statement Where Net Income is Presented
Unrealized gains on available-for-sale securities [a]		
	$ 886	Investment securities gains on sale, net
	(301)	Income taxes
	$ 585	

(a) Amounts in parentheses indicate expenses and other amounts indicate income.

20. BUSINESS ACQUISITION

In the second quarter of 2016, the Company announced the signing of a definitive merger agreement to acquire 100% of the outstanding equity interest of Liberty for cash and stock. Liberty was an Ohio bank that conducted its business from a main office in Beachwood, Ohio with branches in Twinsburg and Solon, Ohio.

The transaction closed on January 12, 2017, with Liberty having been merged into Middlefield Bank, with Middlefield Bank as the surviving entity. The acquisition established the Company's presence in Cuyahoga and Summit Counties.

Under the terms of the merger agreement, the Company acquired all of the outstanding shares of Liberty for a total purchase price of $42.2 million. As a result of the acquisition, the Company issued 544,610 common shares and $21.2 million in cash to the former shareholders of Liberty. The shares were issued with a value of $38.55 per share, which was the closing price of the Company's stock on January 12, 2017. Prior to the acquisition the Company had a previously held equity interest in Liberty which was re-measured at fair value on the acquisition date and resulted in a gain of $488,000, which was recorded in the investment securities gains – net line on the Consolidated Statement of Income for the year ended December 31, 2017.

The acquired assets and assumed liabilities were measured at estimated fair values. The Company relied on the income approach to estimate the value of the loans. The loans' underlying characteristics (account types, remaining terms (in months), annual interest rates or coupons, interest types, past delinquencies, timing of principal and interest payments, current market rates, loan-to-value ratios, loss exposures and remaining balance) were considered. Various assumptions were applied regarding credit, interest, and prepayment risks for the loans based on loan types, payment types and fixed or variable classifications.

The Company also recorded an identifiable intangible asset representing the core deposit base of Liberty. The discounted cash flow method was used in valuing this intangible. This method is based upon the principle of future benefits; economic value is based on anticipated future benefits as measured by cash flows expected to occur in the future. The estimated future cash flows are converted to a value indicator by determining the present value of the cash flows using a discount rate. The discount rate is based upon the nature of the business, the level of risk, and the expected stability of the estimated future cash flows. The higher the risk, the higher the discount rate, and the lower the value indicator.

Time deposit fair values were estimated using an income approach. The methodology entailed discounting the contractual cash flows of the instruments over their remaining contractual lives at prevailing market rates. Interest and principal payments were projected for each category of CDs over the period from the valuation date to the maturity dates. These payments represent future cash flows to be paid to depositors until maturity. Using appropriate market interest rates for each category of CDs, the future cash flows were discounted to their present value equivalents. The market interest rates were selected based on peer rates in Ohio from Bankrate as of the valuation date.

The following table summarizes the purchase of Liberty as of January 12, 2017:

(In Thousands, Except Per Share Data)		
Purchase Price Consideration in Common Stock		
Middlefield Banc Corp. shares issued	544,610	
Value assigned to Middlefield Banc Corp. common shares	$ 38.55	
Purchase price assigned to Liberty common shares exchanged for Middlefield Banc Corp. shares		20,995
Purchase Price Consideration in Cash		
Purchase price assigned to Liberty common shares exchanged for cash		21,173
Total Purchase Price		42,168
Previously held equity interest in Liberty		1,068
Net Assets Acquired:		
Liberty shareholders equity	$ 30,474	
Adjustments to reflect assets acquired at fair value:		
Loans		
Allowance for loan loss	3,257	
Loans - interest rate	578	
Loans - general credit	(2,161)	
Core deposit intangible	3,087	
Other	254	
Adjustments to reflect liabilities acquired at fair value:		
Time deposits	(141)	
Deferred taxes	(906)	
Change in control	(1,718)	
Total net assets acquired		32,724
Goodwill resulting from merger		$ 10,512

The following condensed statement reflects the amounts recognized as of the acquisition date for each major class of asset acquired and liability assumed, at fair value:

(In Thousands)		
Total purchase price		$ 42,168
Previously held equity interest in Liberty		1,068
Assets (liabilities) acquired:		
Net assets acquired:		
Cash	26,604	
Loans and loans held for sale	201,341	
Premises and equipment, net	325	
Accrued interest receivable	440	
Bank-owned life insurance	1,681	
Core deposit intangible	3,087	
Other assets	997	
Time deposits	(30,744)	
Non-time deposits	(167,300)	
Accrued interest payable	(47)	
Deferred taxes	(906)	
Other liabilities	(2,754)	
Total net assets acquired		32,724
Goodwill resulting from the Liberty merger		$ 10,512

Middlefield recorded goodwill and intangibles associated with the purchase of Liberty totaling $10.5 million. Goodwill is not amortized, but is periodically evaluated for impairment. Middlefield Bank did not recognize any impairment during the years ended December 31, 2018 or 2017. Management made adjustments to goodwill in 2017 subsequent to the acquisition of $575,000 due to refinements in a purchase accounting adjustment.

Identifiable intangibles are amortized to their estimated residual values over the expected useful lives. Such lives are also periodically reassessed to determine if any amortization period adjustments are required. During the year ended December 31, 2017, no such adjustments were recorded. The identifiable intangible assets consist of a core deposit intangible which is being amortized over the estimated useful life. The gross carrying amount of the core deposit intangible was at December 31, 2018 was $2.4 million with $690,000 accumulated amortization as of that date. The gross carrying amount of the core deposit intangible was at December 31, 2017 was $2.7 million with $342,000 accumulated amortization as of that date.

As of December 31, 2018, the current year and estimated future amortization expense for the core deposit intangible is as follows:

Remaining	2019	$	341
	2020		332
	2021		321
	2022		309
	2023		296
	Thereafter		798
	Total	$	2,397

Results of operations for Liberty prior to the acquisition date are not included in the Consolidated Statement of Income for the year ended December 31, 2017. The results of activities from the former Liberty operations that are included in the Consolidated Statement of Income from the date of acquisition through December 31, 2017 are broken out in the following table:

		Actual from Acquisition Date Through December 31, 2017 (in thousands)
Net interest income	$	10,354
Noninterest income	$	744
Net income	$	2,625

The table below presents unaudited pro forma information as of December 31, 2017, as if the acquisition of Liberty had occurred on January 1, 2017. This table, compared to the audited information as of December 31, 2018, was prepared for comparative purposes only and was not indicative of the actual results that would have been attained had the acquisition occurred as of the beginning of 2017, nor was it indicative of future results. Furthermore, the unaudited pro forma information did not reflect management’s estimate of any revenue-enhancing opportunities nor anticipated cost savings as a result of the integration and consolidation of the acquisition. Merger and acquisition integration costs and amortization of fair value adjustments were included in the 2017 amounts below.

	Twelve-month period ended December 31,			
			(Unaudited)	
	2018		2017	
	(in thousands, except per share data)			
Net interest income	$	40,448	$	37,646
Noninterest income		3,728		4,920
Net income	$	12,431	$	8,438
Pro forma earnings per share:				
Basic	$	3.85	$	2.79
Diluted	$	3.83	$	2.77

Included in the above net income amount for the twelve months ended December 31, 2017 is $1.1 million of non-recurring merger expenses.

21. PARENT COMPANY

Following are condensed financial statements for the Company.

CONDENSED BALANCE SHEET

(Dollar amounts in thousands)	December 31, 2018	2017
ASSETS		
Cash and due from banks	$ 1,582	$ 1,766
Equity securities, at fair value	616	625
Investment in nonbank subsidiary	2,364	2,363
Investment in subsidiary bank	128,366	119,946
Other assets	4,080	3,450
TOTAL ASSETS	$ 137,008	$ 128,150
LIABILITIES		
Trust preferred debt	$ 8,248	$ 8,248
Other liabilities	470	39
TOTAL LIABILITIES	8,718	8,287
STOCKHOLDERS' EQUITY	128,290	119,863
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 137,008	$ 128,150

CONDENSED STATEMENT OF COMPREHENSIVE INCOME

(Dollar amounts in thousands)	Year Ended December 31, 2018	2017
INCOME		
Dividends from subsidiary bank	$ 4,650	$ 10,425
(Loss) gain on equity securities	(9)	488
Other	9	80
Total income	4,650	10,993
EXPENSES		
Interest expense	325	460
Other	2,119	2,091
Total expenses	2,444	2,551
Income before income tax benefit	2,206	8,442
Income tax benefit	(513)	(673)
Income before equity in undistributed net income of subsidiaries	2,719	9,115
Equity in undistributed net income of subsidiaries	9,712	340
NET INCOME	$ 12,431	$ 9,455
Comprehensive Income	$ 11,140	$ 9,345

CONDENSED STATEMENT OF CASH FLOWS

(Dollar amounts in thousands)	Year Ended December 31, 2018	2017
OPERATING ACTIVITIES		
Net income	$ 12,431	$ 9,455
Adjustments to reconcile net income to net cash provided by operating activities:		
Equity in undistributed net income of Middlefield Banking Company	(9,711)	(337)
Equity in undistributed net loss of EMORECO	(1)	(3)
Stock-based compensation	371	33
Loss (gain) on equity securities	9	(488)
Other, net	(382)	282
Net cash provided by operating activities	2,717	8,942
INVESTING ACTIVITIES		
Acquisition, net of cash paid	-	(22,249)
FINANCING ACTIVITIES		
Proceeds from issuance of common stock	92	15,164
Stock options exercised	168	184
Proceeds from dividend reinvestment plan	618	540
Cash dividends	(3,779)	(3,358)
Net cash (used in) provided by financing activities	(2,901)	12,530
Decrease in cash	(184)	(777)
CASH AT BEGINNING OF YEAR	1,766	2,543
CASH AT END OF YEAR	$ 1,582	$ 1,766
SUPPLEMENTAL INFORMATION		
Common stock issued in business acquisition	$ -	$ 20,995
Increase in common stock through increase in other, net	183	-

22. SELECTED QUARTERLY FINANCIAL DATA (Unaudited)

(Dollar amounts in thousands)	Three Months Ended			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
Total interest and dividend income	$ 11,940	$ 12,129	$ 12,829	$ 13,459
Total interest expense	2,040	2,287	2,584	2,998
Net interest income	9,900	9,842	10,245	10,461
Provision for loan losses	210	210	210	210
Net interest income after provision for loan losses	9,690	9,632	10,035	10,251
Total noninterest income	788	1,009	954	977
Total noninterest expense	7,345	7,063	7,092	7,243
Income before income taxes	3,133	3,578	3,897	3,985
Income taxes	528	481	593	560
Net income	$ 2,605	$ 3,097	$ 3,304	$ 3,425
Per share data:				
Net income				
Basic	$ 0.81	$ 0.96	$ 1.02	$ 1.06
Diluted	0.80	0.96	1.02	1.05
Average shares outstanding:				
Basic	3,220,262	3,225,726	3,234,393	3,239,180
Diluted	3,238,069	3,240,329	3,248,326	3,250,149

(Dollar amounts in thousands)	Three Months Ended			
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017
Total interest and dividend income	$ 10,199	$ 10,902	$ 11,330	$ 11,564
Total interest expense	1,442	1,625	1,818	1,762
Net interest income	8,757	9,277	9,512	9,802
Provision for loan losses	165	170	280	430
Net interest income after provision for loan losses	8,592	9,107	9,232	9,372
Total noninterest income	1,511	989	1,441	918
Total noninterest expense	7,267	6,704	7,297	6,217
Income before income taxes	2,836	3,392	3,376	4,073
Income taxes	736	885	914	1,687
Net income	$ 2,100	$ 2,507	$ 2,462	$ 2,386
Per share data:				
Net income				
Basic	$ 0.78	$ 0.84	$ 0.77	$ 0.73
Diluted	0.78	0.83	0.76	0.73
Average shares outstanding:				
Basic	2,679,816	3,000,451	3,212,335	3,215,300
Diluted	2,692,015	3,014,140	3,223,753	3,231,791

Management's Discussion and Analysis of Financial Condition and Results of Operations

This information should be read in conjunction with the consolidated financial statements and accompanying notes to the financial statements.

This Management's Discussion and Analysis section of the Annual Report contains forward-looking statements. Forward-looking statements are based upon a variety of estimates and assumptions. The estimates and assumptions involve judgments about a number of things, including future economic, competitive, and financial market conditions and future business decisions. These matters are inherently subject to significant business, economic, and competitive uncertainties, all of which are difficult to predict and many of which are beyond the Company's control. Although the Company believes its estimates and assumptions are reasonable, actual results could vary materially from those shown. Inclusion of forward-looking information does not constitute a representation by the Company or any other person that the indicated results will be achieved. Investors are cautioned not to place undue reliance on forward-looking information.

These forward-looking statements may involve significant risks and uncertainties. Although the Company believes that the expectations reflected in such forward-looking statements are reasonable, actual results may differ materially from the results in these forward-looking statements.

Significant Factors Affecting Financial Results

Capital maintenance is a priority. The Company's Tier 1 leverage capital was 10.28% as of December 31, 2018, with total risk-based capital of 13.44%. MBC's Tier 1 leverage capital was 9.60% as of December 31, 2018, with total risk-based capital of 11.83%. In 2018, MBC grew the balance sheet as a result of increasing loan volumes. We also benefitted from strong income and stockholders' equity experienced growth. The goal of the elevated capital levels is to account for potential economic stress in the markets in which the Company operates and to account for the levels of substandard and other nonperforming assets.

Longer-term prospects for growth. An increase in loan demand and the availability of high-quality lending opportunities continues to be the driver of growth potential and depends on a broad range of economic factors in the markets in which the Company operates, including the condition of real estate markets in northeastern Ohio and in central Ohio.

Nonperforming and classified assets held by the banking industry have decreased from previous elevated levels. Because of uncertainty about economic sustainability and the potential for other factors to have an adverse impact on the prospects for the banking industry, such as national and global economic and political factors, the bank regulatory agencies have insisted that banks increase the size of the buffer that protects a bank from unknown potential adverse events and circumstances: regulatory capital.

The total number of banks and savings associations as of the end of 2018 is less than half the number at the end of 1990. Nevertheless, a large percentage of the institutions that remain are small, community-oriented institutions, although the share of total banking assets that they control continues to decline. We believe a strong incentive exists for growth through industry consolidation as a defense to pressure from competitors. We therefore believe that industry consolidation is likely to continue.

The trend toward consolidation would be most advantageous for financial institution organizations that have a surplus of capital, a strategy for growth, a strong financial profile, and few if any regulatory supervisory concerns. Our goal is to maintain that advantage, although we give no assurance that our efforts to do so will succeed. We continue to commit significant resources to increase operational effectiveness in The Middlefield Banking Company.

Critical Accounting Policies

Allowance for loan and lease losses. Arriving at an appropriate level of allowance for loan and lease losses involves a high degree of judgment. The Company's allowance for loan and lease losses provides for probable losses based upon evaluations of known and inherent risks in the loan portfolio.

Management uses historical information to assess the adequacy of the allowance for loan and lease losses as well as the prevailing business environment, which is affected by changing economic conditions and various external factors and which may impact the portfolio in ways currently unforeseen. The allowance is increased by provisions for loan losses and by recoveries of loans previously charged-off and reduced by loans charged-off. For a full discussion of the Company's methodology of assessing the adequacy of the reserve for loan losses, refer to Note 1 of "Notes to Consolidated Financial Statements" of this Annual Report.

Valuation of Securities. Investment securities are classified as held to maturity or available for sale on the date of purchase. Only those securities classified as held to maturity are reported at amortized cost. Available-for-sale securities are reported at fair value with unrealized gains and losses included in accumulated other comprehensive income, net of related deferred income taxes, on the Consolidated Balance Sheet. The majority of all of the Company's securities are valued based on prices compiled by third party vendors using observable market data. However, certain securities are less actively traded and do not always have quoted market prices. The determination of fair value for less actively traded securities, therefore, requires judgment, with such determination requiring benchmarking to similar instruments or analyzing default and recovery rates. Examples include certain collateralized mortgage and debt obligations and high-yield debt securities. Realized securities gains or losses are reported within noninterest income in the Consolidated Statement of Income. The cost of securities sold is based on the specific identification method.

Management evaluates securities for other-than-temporary impairment ("OTTI") at least on a quarterly basis, and more frequently when economic or market conditions warrant such an evaluation Investments in debt securities are generally evaluated for OTTI under Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 320, Investments — Debt and Equity Securities. Consideration is given to the length of time and the extent to which the fair value has been less than cost, the financial condition and near-term prospects of the issuer, whether the market decline was affected by macroeconomic conditions and whether the Company has the intent to sell the debt security or more likely than not will be required to sell the debt security before its anticipated recovery. In analyzing an issuer's financial condition, the Company may consider whether the securities are issued by the federal government or its agencies, or U.S. government-sponsored enterprises, whether downgrades by bond rating agencies have occurred, and the results of reviews of the issuer's financial condition. The assessment of whether an other-than-temporary decline exists involves a high degree of subjectivity and judgment and is based on the information available to management at a point in time.

When OTTI occurs, the amount of the OTTI recognized in earnings depends on whether an entity intends to sell the security or it is more likely than not it will be required to sell the security before recovery of its amortized cost basis. If an entity intends to sell or it is more likely than not it will be required to sell the security before recovery of its amortized cost basis, the OTTI shall be recognized in earnings equal to the entire difference between the investment's amortized cost basis and its fair value at the balance sheet date. The previous amortized cost basis less the OTTI recognized in earnings becomes the new amortized cost basis of the investment. For debt securities that do not meet the aforementioned criteria, the amount of impairment is split into two components as follows: 1) OTTI related to credit loss, which must be recognized in the income statement and 2) OTTI related to other factors, which is recognized in other comprehensive income or loss. The credit loss is defined as the difference between the present value of the cash flows expected to be collected and the amortized cost basis. For equity securities, the entire amount of impairment is recognized through earnings.

Debt securities issued by U.S. government agencies, U.S. government-sponsored enterprises, and state and political subdivisions accounted for 100% of the total available-for-sale portfolio as of December 31, 2018, and no credit losses are expected, given the explicit and implicit guarantees provided by the U.S. federal government and the lack of significant unrealized loss positions within the obligations of state and political subdivisions security portfolio. The Company considered the following factors in determining whether a credit loss exists and the period over which the debt security is expected to recover:

- The length of time and the extent to which the fair value has been less than the amortized cost basis.
- Changes in the near-term prospects of the underlying collateral of a security such as changes in default rates, loss severity given default and significant changes in prepayment assumptions.
- The level of cash flows generated from the underlying collateral supporting the principal and interest payments of the debt securities; and,
- Any adverse change to the credit conditions and liquidity of the issuer, taking into consideration the latest information available about the overall financial condition of the issuer, credit ratings, recent legislation and government actions affecting the issuer's industry and actions taken by the issuer to deal with the present economic climate.

Refer to Note 4 in the consolidated financial statements.

Income Taxes

The Company estimates income tax expense based on amounts expected to be owed to the various tax jurisdictions in which the Company conducts business. On a quarterly basis, management assesses the reasonableness of the Company's effective tax rate based upon management's current estimate of the amount and components of net income, tax credits and the applicable statutory tax rates expected for the full year. The estimated income tax expense is recorded in the Consolidated Statement of Income.

Deferred income tax assets and liabilities are determined using the balance sheet method and are reported in accrued taxes, interest and expenses in the Consolidated Balance Sheet. Under this method, the net deferred tax asset or liability is based on the tax effects of the differences between the book and tax basis of assets and liabilities and recognizes enacted changes in tax rates and laws. Deferred tax assets are recognized to the extent they exist and are subject to a valuation allowance based on management's judgment that realization is more likely than not.

Accrued taxes represent the net estimated amount due to taxing jurisdictions and are reported in accrued taxes, interest and expenses in the Consolidated Balance Sheet. The Company evaluates and assesses the relative risks and appropriate tax treatment of transactions and filing positions after considering statutes, regulations, judicial precedent and other information and maintains tax accruals consistent with management's evaluation of these relative risks and merits. Changes to the estimate of accrued taxes occur periodically due to changes in tax rates, interpretations of tax laws, the status of examinations being conducted by taxing authorities and changes to statutory, judicial and regulatory guidance that impact the relative risks of tax positions. These changes, when they occur, can affect deferred taxes and accrued taxes as well as the current period's income tax expense and can be significant to the operating results of the Company.

Goodwill and Other Intangible Assets

Goodwill is the excess of the purchase price over the fair value of the assets acquired in connection with business acquisitions accounted for as purchases. Other intangible assets consist of branch acquisition core deposit premiums. Initially, an assessment of qualitative factors is performed to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If, after assessing the totality of events or circumstances, we determine it is not more likely than not that the fair value of a reporting unit is less than its carrying value, then performing the two-step impairment test is unnecessary. However, if we conclude otherwise, then we are required to perform the impairment test by calculating the fair value of the reporting unit and comparing against the carrying amount of the reporting unit. If the fair value is less than the carrying value, an expense may be required to write down the goodwill to the proper carrying value.

The Company must assess goodwill and other intangible assets each year for impairment. The Company evaluates goodwill using financial data as of September 30. Based on the analysis performed as of September 30, 2018, the Company determined that goodwill was not impaired.

Fair Value of Financial Instruments

The disclosure of the fair value of financial instruments is based on available market prices or management's estimates of the fair value of such instruments.

Management consults with a third party for available market prices as well as performs calculations of the present value of contractual cash flows discounted at current comparative market inputs. Prepayment estimates are utilized when appropriate.

Changes in Financial Condition

General The Company's total assets increased $142.1 million or 12.8% to $1.25 billion at December 31, 2018 from $1.11 billion at December 31, 2017. This increase was mostly due to an increase in cash and cash equivalents and net loans of $68.0 million and $68.7 million, respectively.

The increase in the Company's total assets reflects a related increase in total liabilities of $133.6 million or 13.5% to a total balance of $1.12 billion at December 31, 2018 from $986.5 million at December 31, 2017. The Company experienced an increase in total stockholders' equity of $8.4 million.

The increase in total liabilities was due to growth in deposits and short-term borrowings for the year. Total deposits increased $137.9 million or 15.7% to $1.02 billion at December 31, 2018 from $878.2 million as of December 31, 2017. Other borrowings decreased $20.3 million or 69.7% to $8.8 million at December 31, 2018 from $29.1 million as of December 31, 2017. The net increase in total stockholders' equity can be attributed to an increase in common stock and retained earnings of $1.1 million and $8.6 million, respectively, partially offset by a decrease in accumulated other comprehensive (loss) income of $1.2 million.

On January 12, 2017, the Company completed its acquisition of Liberty pursuant to a previously announced definitive merger agreement. Under the terms of the merger agreement, Liberty shareholders received $37.96 in cash or 1.1934 shares of Middlefield's common stock in exchange for each share of Liberty common stock they owned immediately prior to the merger. Middlefield issued 544,610 shares of its common stock in the merger and the aggregate merger consideration was approximately $42.2 million.

In a private placement completed on May 10, 2017, the Company sold 400,000 shares of its common stock, without par value, at a purchase price of $40.00 per share. The offering was to accredited investors only. The gross proceeds of the offering were $16.0 million before compensation of $760,000 payable to the investment bank acting as placement agent. The offer and sale of the Company's common stock in the private placement were exempt from the registration requirements of the Securities Act of 1933, as amended (the "Securities Act") pursuant to Section 4(a)(2) of, and Rule 506 of Regulation D under, the Securities Act. The Company used the proceeds of the private placement to repay outstanding borrowings of approximately $12.0 million, for general corporate purposes, and for future cash flows.

Cash and cash equivalents Cash and due from banks and federal funds sold represent cash and cash equivalents which increased $68.0 million or 170.6% to $107.9 million at December 31, 2018 from $39.9 million at December 31, 2017. This increase resulted from increasing short-term borrowings to strengthen on-balance-sheet liquidity. Deposits from customers into savings and checking accounts, loan and security repayments and proceeds from borrowed funds typically increase these accounts. Decreases result from customer withdrawals, new loan originations, security purchases and repayments of borrowed funds.

Investment securities Management's objective in structuring the portfolio is to maintain a prudent level of liquidity while providing an acceptable rate of return without sacrificing asset quality. The balance of investment securities available for sale increased $3.0 million, or 3.2%, as compared to 2017. This increase includes purchases of investment securities available for sale of $13.0 million during the year ended December 31, 2018. The ratio of securities to total assets decreased to 7.9% at December 31, 2018, compared to 8.6% at December 31, 2017. Included in this decrease is a reclassification from investment securities available for sale to equity securities of $625,000 in accordance with the adoption of ASU 2016-01 on January 1, 2018.

The Company benefits from owning municipal bonds, which totaled $72.6 million or 73.8% of the Company's total investment portfolio at December 31, 2018. The weighted-average federal tax equivalent (FTE) yield on all debt securities at year-end 2018 decreased to 3.67% from 4.22% at year-end 2017, due to the change in tax law. While the Company's focus is to generate interest revenue primarily through loan growth, management will continue to invest excess funds in securities when opportunities arise.

Loans receivable The loans receivable category consists primarily of single-family mortgage loans used to purchase or refinance personal residences located within the Company’s market area and commercial real estate loans used to finance properties that are used in the borrowers’ businesses or to finance investor-owned rental properties and commercial loans to finance the business operations and to a lesser extent construction and consumer loans. Net loans receivable increased $68.7 million or 7.5% to $984.7 million at December 31, 2018 from $916.0 million at December 31, 2017 due to strategic growth goals. Included in the total increase to loans receivable were increases in the commercial real estate, residential real estate, and real estate-construction portfolios of $60.3 million, $18.3 million, and $9.7 million, respectively. Also included in the total increase to loans receivable were a decrease in the commercial and industrial portfolio of $17.5 million, which was due to payoffs during the year, and a decrease in the consumer installment portfolio of $2.0 million.

The product mix in the loan portfolio consists of commercial real estate loans equaling 50.2% of total loans, residential real estate loans, 33.9%, commercial and industrial loans, 8.5%, construction loans, 5.7%, and consumer loans, 1.7% at December 31, 2018 compared with 47.4%, 34.5%, 11.0%, 5.1%, and 2.0%, respectively, at December 31, 2017.

Loans contributed 92.5% of total interest income in 2018 and 91.5% in 2017. The loan portfolio yield of 4.91% in 2018 was 23 basis points higher than the average yield for total interest-earning assets. Management recognizes that while the loan portfolio holds some of the Company’s highest yielding assets, it is inherently the most risky portfolio. Accordingly, management attempts to balance credit risk versus return with conservative credit standards. Management has developed and maintains comprehensive underwriting guidelines and a loan review function that monitors credits during and after the approval process. Management follows additional procedures to obtain current borrower financial information annually throughout the life of the loan obligation.

To minimize risks associated with changes in the borrower’s future repayment capacity, the Company generally requires scheduled periodic principal and interest payments on all types of loans and normally requires collateral.

The Company will continue to monitor the size of its loan portfolio growth. The Company anticipates total loan growth to be steady, with volume to continue at a moderate pace. The Company remains committed to sound underwriting practices without sacrificing asset quality and avoiding exposure to unnecessary risk that could weaken the credit quality of the portfolio.

Restricted stock. The Company’s investment in restricted stock increased $90,000, or 2.5%, to $3.7 million as of December 31, 2018, compared to $3.6 million as of December 31, 2017.

Premises and equipment, net. The Company’s investment in premises and equipment, net increased $1.2 million, or 9.7%, to $13.0 million as of December 31, 2018, compared to $11.9 million as of December 31, 2017. This increase was mostly due to an increase in buildings and related furniture and equipment representing the new Powell branch opened in the third quarter of 2018.

Goodwill and other intangibles. Goodwill results from prior business acquisitions and represents the excess of the purchase price over the fair value of acquired tangible assets and liabilities and identifiable intangible assets. Goodwill is assessed annually for impairment and any such impairment is recognized in the period identified by a charge to earnings.

The process of evaluating goodwill for impairment requires management to make significant estimates and judgments. The use of different estimates, judgments or approaches to estimate fair value could result in a different conclusion regarding impairment of goodwill. Based on the analysis, management has determined that there is no goodwill impairment.

The Company values core deposits and monitors the ongoing value of core deposit intangibles and goodwill on an annual basis. As of December 31, 2018, the Company recorded a decrease in core deposit intangibles of $352,000, and no change in the goodwill asset.

Bank-owned life insurance. Bank-owned life insurance (BOLI) is universal life insurance, purchased by the Company, on the lives of the Company’s officers. The beneficial aspects of these universal life insurance policies are tax-free earnings and a tax-free death benefit, which are realized by the Company as the owner of the policies. BOLI increased by $428,000 to $16.1 million as of December 31, 2018 from $15.6 million at the end of 2017 as a result of increases in cash surrender value.

Deposits. Interest-earning assets are funded generally by both interest-bearing and noninterest-bearing core deposits. Deposits are influenced by changes in interest rates, economic conditions and competition from other banks. The Company considers various sources when evaluating funding needs, including but not limited to deposits, which represented 91.1% of the Company's total funding sources at December 31, 2018. The deposit base consists of demand deposits, savings, money market accounts and time deposits. Total deposits increased $137.9 million or 15.7% to $1.02 billion at December 31, 2018 from $878.2 million at December 31, 2017.

Savings and time deposits are the largest sources of funding for the Company's earning assets, making up a combined 51.6% of total deposits. The total increase in deposits is the result of increases in time, money market, savings, noninterest-bearing demand, and interest-bearing demand deposits of $57.9 million or 23.8%, $46.4 million or 30.9%, $14.5 million or 6.9%, $14.0 million or 8.5%, and $5.1 million or 4.6%, respectively, at December 31, 2018.

The Company will continue to experience increased competition for deposits in its market areas, which could challenge net growth in its deposit balances. The Company will continue to evaluate its deposit portfolio mix to properly employ both retail and wholesale funds to support earning assets and minimize interest costs.

Borrowed funds. The Company uses short and long-term borrowings as another source of funding to benefit asset growth and liquidity needs. These borrowings primarily include FHLB advances, junior subordinated debt, and lines of credit from other banks. Borrowed funds decreased $4.6 million or 4.6% to $99.2 million at December 31, 2018 from $103.8 million at December 31, 2017. The net decrease is a result of a partial shift of funding from FHLB to brokered deposits as well as movement out of term debt into short term overnight funding.

On July 27, 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 calculation 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. The Company formed a special purpose entity to issue $8.0 million of floating rate mandatorily redeemable trust preferred securities ("TruPS"). The rate on the TruPS adjusts quarterly, equal to LIBOR plus 1.67%. The cessation of LIBOR quotes in 2021 and the uncertainty over possible replacement rates for LIBOR will affect our TruPS. At this time, no consensus exists as to what rate or rates may become accepted alternatives to LIBOR and we cannot predict the cost of transitioning to or the effect of any such alternatives on the value of LIBOR-based securities.

Stockholders' equity. The Company maintains a capital level that exceeds regulatory requirements as a margin of safety for its depositors and shareholders. All of the capital ratios exceeded the regulatory well-capitalized guidelines.

Stockholders' equity totaled $128.3 million at December 31, 2018, compared to $119.9 million at December 31, 2017, which represents an increase of $8.4 million or 7.0%. Retained earnings increased $8.6 million resulting from net income, less cash dividends paid of $3.8 million, or $1.17 per share, year-to-date. Common stock increased $1.1 million, or 1.3%, to $85.9 million at December 31, 2018 from $84.9 million at December 31, 2017. The Company maintains a dividend reinvestment and stock purchase plan. The plan allows shareholders to purchase additional shares of Company stock. A benefit of the plan is to permit the shareholders to reinvest cash dividends as well as make supplemental purchases without the usual payment of brokerage commissions. During 2018, shareholders invested $618,000 through the dividend reinvestment and stock purchase plan. These proceeds resulted in the issuance of 12,256 new shares at a weighted average price of $47.61. Accumulated other comprehensive income decreased by $1.2 million during 2018 primarily due to a decrease in the value of the Company's available for sale securities. There was no change in the treasury stock balance of $13.5 million from 2017 to 2018.

Average Balance Sheet and Yield/Rate Analysis. The following table sets forth, for the periods indicated, information concerning the total dollar amounts of interest income from interest-earning assets and the resultant average yields, the total dollar amounts of interest expense on interest-bearing liabilities and the resultant average costs, net interest income, interest rate spread and the net interest margin earned on average interest-earning assets. For purposes of this table, average balances are calculated using monthly averages and the average loan balances include nonaccrual loans and exclude the allowance for loan and lease losses, and interest income includes accretion of net deferred loan fees. Yields on tax-exempt securities and loans (tax-exempt for federal income tax purposes) are shown on a fully tax-equivalent basis utilizing a federal tax rate of 21% and 34% for the years ended December 31, 2018 and 2017, respectively.

	For the Twelve Months Ended December 31,								
	2018			2017			2016		
(Dollar amounts in thousands)	Average Balance	Interest	Average Yield/Cost	Average Balance	Interest	Average Yield/Cost	Average Balance	Interest	Average Yield/Cost
Interest-earning assets:									
Loans receivable (3)	$ 950,455	$ 46,576	4.91%	$ 857,361	$ 40,235	4.69%	$ 565,223	$ 25,798	4.56%
Investment securities (3)	96,856	2,950	3.67%	104,444	3,168	4.22%	131,797	4,019	4.19%
Interest-earning deposits with other banks (4)	43,701	831	1.90%	47,168	592	1.26%	22,316	177	0.79%
Total interest-earning assets	1,091,012	50,357	4.68%	1,008,973	43,995	4.48%	719,336	29,994	4.38%
Noninterest-earning assets	53,964			60,683			37,716		
Total assets	$ 1,144,976			$ 1,069,656			$ 757,052		
Interest-bearing liabilities:									
Interest-bearing demand deposits	$ 120,191	280	0.23%	$ 113,054	236	0.21%	$ 88,552	195	0.22%
Money market deposits	158,364	1,754	1.11%	158,159	980	0.62%	80,331	332	0.41%
Savings deposits	217,270	1,421	0.65%	193,003	608	0.32%	174,995	427	0.24%
Certificates of deposit	282,602	5,176	1.83%	241,195	3,526	1.46%	186,627	2,664	1.43%
Short-term borrowings	42,231	842	1.99%	63,910	753	1.18%	37,130	330	0.89%
Other borrowings	15,914	436	2.74%	32,244	544	1.69%	9,735	242	2.49%
Total interest-bearing liabilities	836,572	9,909	1.18%	801,565	6,647	0.83%	577,370	4,190	0.73%
Noninterest-bearing liabilities:									
Noninterest-bearing demand deposits	181,067			153,300			106,161		
Other liabilities	2,263			3,825			4,780		
Stockholders' equity	125,074			110,966			68,741		
Total liabilities and stockholders' equity	$ 1,144,976			$ 1,069,656			$ 757,052		
Net interest income		$ 40,448			$ 37,348			$ 25,804	
Interest rate spread (1)			3.49%			3.65%			3.65%
Net interest margin (2)			3.77%			3.82%			3.80%
Ratio of average interest-earning assets to average interest-bearing liabilities			130.41%			125.88%			124.59%

(1) Interest rate spread represents the difference between the average yield on interest-earning assets and the average cost of interest-bearing liabilities.
(2) Net interest margin represents net interest income as a percentage of average interest-earning assets.
(3) Tax-equivalent adjustments to calculate the yield on tax-exempt securities and loans were $682, $1,239, and $1,501, for 2018, 2017, and 2016, respectively.
(4) Includes dividends received on restriced stock.

Interest Rates and Interest Differential

(Dollars in thousands)	2018 versus 2017			2017 versus 2016		
	Increase (decrease) due to			Increase (decrease) due to		
	Volume	Rate	Total	Volume	Rate	Total
Interest-earning assets:						
Loans receivable	$ 4,469	$ 1,872	$ 6,341	$ 13,522	$ 915	$ 14,437
Investment securities	(299)	81	(218)	(1,150)	299	(851)
Interest-bearing deposits with other banks	(55)	294	239	255	160	415
Total interest-earning assets	4,115	2,247	6,362	12,627	1,374	14,001
Interest-bearing liabilities:						
Interest-bearing demand deposits	16	28	44	53	(12)	41
Money market deposits	2	772	774	402	246	648
Savings deposits	118	695	813	50	131	181
Certificates of deposit	682	968	1,650	788	74	862
Short-term borrowings	(344)	433	89	277	146	423
Other borrowings	(361)	253	(108)	470	(168)	302
Total interest-bearing liabilities	113	3,149	3,262	2,040	417	2,457
Net interest income	$ 4,002	$ (902)	$ 3,100	$ 10,587	$ 957	$ 11,544

The ratio of net income to average shareholders' equity and average total assets and certain other ratios are as follows for periods ended December 31:

(Dollars in thousands)	2018	2017	2016
Average total assets	$ 1,144,976	$ 1,069,656	$ 757,052
Average shareholders' equity	$ 125,074	$ 110,966	$ 68,741
Net income	$ 12,431	$ 9,455	$ 6,416
Net income available to common shareholders	$ 12,431	$ 9,455	$ 6,416
Cash dividends declared per share	$ 1.17	$ 1.08	$ 1.08
Return on average total assets	1.09%	0.88%	0.85%
Return on average shareholders' equity	9.94%	8.52%	9.33%
Dividend payout ratio (1)	30.40%	35.52%	36.18%
Average shareholders' equity to average assets	10.92%	10.37%	9.08%

(1) Cash dividends declared on common shares divided by net income available to common shareholders

Allowance for Loan and Lease Losses. The allowance for loan and lease losses ("ALLL") represents the amount management estimates is adequate to provide for probable losses inherent in the loan portfolio as of the balance sheet date. Accordingly, all loan losses are charged to the allowance, and all recoveries credited to it. The ALLL is established through a provision for loan losses, which is charged to operations. The provision is based on management's periodic evaluation of the adequacy of the ALLL, taking into account the overall risk characteristics of the various portfolio segments, the Company's loan loss experience, the impact of economic conditions on borrowers, and other relevant factors. The estimates used to determine the adequacy of the ALLL, including the amounts and timing of future cash flows expected on impaired loans, are particularly susceptible to significant change in the near term. The total ALLL is a combination of a specific allowance for identified problem loans and a general allowance for homogeneous loan pools.

The allowance for loan and lease loss balance as of December 31, 2018 totaled $7.4 million representing a $238,000 increase from the end of 2017. For the year of 2018, the provision for loan losses was $840,000 which represented a decrease of $205,000 from the $1.0 million provided during 2017. Asset quality is a high priority in our overall business plan as it relates to long-term asset growth projections. During 2018, net charge-offs increased by $149,000 to $602,000 compared to $453,000 in 2017. Two key ratios to monitor asset quality performance are net charge-offs to average loans and the allowance for loan and lease losses to nonperforming loans. At year-end 2018, these ratios were 0.06% and 70.27%, respectively, compared to 0.05% and 53.6% in 2017.

The specific allowance incorporates the results of measuring impaired loans. The formula allowance is calculated by applying loss factors to outstanding loans by type, excluding loans for which a specific allowance has been determined. Loss factors are based on management's determination of the amounts necessary for concentrations and changes in mix and volume of the loan portfolio, and consideration of historical loss experience.

The non-specific allowance is determined based upon management's evaluation of existing economic and business conditions affecting the key lending areas of the Company and other conditions, such as new loan products, credit quality trends, collateral values, unique industry conditions within portfolio segments that existed as of the balance sheet date, and the impact of those conditions on the collectability of the loan portfolio. Management reviews these conditions quarterly. The non-specific allowance is subject to a higher degree of uncertainty because it considers risk factors that may not be reflected in the historical loss factors.

Although management uses the best information available to make the determination of the adequacy of the ALLL at December 31, 2018, future adjustments could be necessary if circumstances or economic conditions differ substantially from the assumptions used in making the initial determinations. A downturn in the local economy could result in increased levels of nonperforming assets and charge-offs, increased loan loss provisions, and reductions in income. Additionally, as an integral part of the examination process, bank regulatory agencies periodically review a Bank's ALLL. The banking agencies could require the recognition of additions to the loan loss allowance based on their judgment of information available to them at the time of their examination.

The following table sets forth information concerning the Company's ALLL at the dates and for the periods presented:

(Dollars in thousands)	For the Years Ended December 31, 2018	2017	2016	2015	2014
Allowance balance at beginning of period	$ 7,190	$ 6,598	$ 6,385	$ 6,846	$ 7,046
Loans charged off:					
Commercial and industrial	(610)	(536)	(237)	(280)	(237)
Real estate-construction	-	-	-	(385)	-
Real estate-mortgage:					
Residential	(177)	(117)	(414)	(425)	(671)
Commercial	(111)	(39)	(70)	(92)	(260)
Consumer installment	(220)	(462)	(22)	(15)	(44)
Total loans charged off	(1,118)	(1,154)	(743)	(1,197)	(1,212)
Recoveries of loans previously charged-off:					
Commercial and industrial	287	234	90	207	121
Real estate-construction	63	34	-	-	60
Real estate-mortgage:					
Residential	128	241	141	186	267
Commercial	-	111	140	5	40
Consumer installment	38	81	15	23	154
Total recoveries	516	701	386	421	642
Net loans charged off	(602)	(453)	(357)	(776)	(570)
Provision for loan losses	840	1,045	570	315	370
Allowance balance at end of period	$ 7,428	$ 7,190	$ 6,598	$ 6,385	$ 6,846
Loans outstanding:					
Average	$ 950,455	$ 857,361	$ 565,223	$ 494,931	$ 455,035
End of period	992,109	923,213	609,140	533,710	470,584
Ratio of allowance for loan and lease losses to loans outstanding at end of period	0.75%	0.78%	1.08%	1.20%	1.45%
Net charge-offs to average loans	0.06%	0.05%	0.06%	0.16%	0.13%

The following table illustrates the allocation of the Company's allowance for loan losses for each category of loan for each reported period. The allocation of the allowance to each category is not necessarily indicative of future loss in a particular category and does not restrict our use of the allowance to absorb losses in other loan categories.

	At December 31,									
	2018		2017		2016		2015		2014	
(Dollars in Thousands)	Amount	Percent of Loans in Each Category to Total Loans	Amount	Percent of Loans in Each Category to Total Loans	Amount	Percent of Loans in Each Category to Total Loans	Amount	Percent of Loans in Each Category to Total Loans	Amount	Percent of Loans in Each Category to Total Loans
Type of Loans:										
Commercial and industrial	$ 969	8.45%	$ 999	10.98%	$ 448	9.95%	$ 448	7.97%	$ 448	7.42%
Real estate construction	100	5.72	313	5.09	172	3.89	172	4.15	172	6.44
Mortgage:										
Residential	1,581	33.92	1,760	34.46	2,818	44.46	2,818	43.56	2,818	44.65
Commercial	4,651	50.22	4,036	47.44	3,135	40.96	3,135	43.41	3,135	40.52
Consumer installment	127	1.69	82	2.03	25	0.74	25	0.91	25	0.97
Total	$ 7,428	100.0%	$ 7,190	100.0%	$ 6,598	100.0%	$ 6,598	100.0%	$ 6,598	100.0%

Nonperforming assets. Nonperforming assets include nonaccrual loans, troubled debt restructurings (TDRs), loans 90 days or more past due, OREO, and repossessed assets. A loan is classified as nonaccrual when, in the opinion of management, there are serious doubts about collectability of interest and principal. Accrual of interest is discontinued on a loan when management believes, after considering economic and business conditions, the borrower’s financial condition is such that collection of principal and interest is doubtful. Payments received on nonaccrual loans are applied against principal.

TDRs are those loans which the Company, for economic or legal reasons related to a borrower’s financial difficulties, grants a concession to the borrower that the Company would not otherwise consider. The Company has 43 TDRs with a total balance of $4.4 million as of December 31, 2018 compared to 48 TDRs totaling $5.4 million as of December 31, 2017. Nonaccrual loans amounted to $6.6 million or 0.7% of total loans and $8.4 million or 0.9% of total loans at December 31, 2018 and December 31, 2017, respectively.

A major factor in determining the appropriateness of the ALLL is the type of collateral which secures the loans. Although this does not insure against all losses, the real estate provides substantial recovery, even in a distressed-sale and declining-value environment. The Bank’s objective is to work with the borrower to minimize the burden of the debt service and to minimize the future loss exposure to the Company.

The following table summarizes nonperforming assets by category.

	At December 31,				
	2018	2017	2016	2015	2014
	(Dollars in Thousands)				
Loans accounted for on a nonaccrual basis					
Commercial and industrial	$ 996	$ 1,120	$ 454	$ 1,450	$ 365
Real estate - construction	-	-	-	130	587
Real estate-mortgage:					
Residential	2,731	4,002	4,034	4,122	5,438
Commercial	2,864	3,311	1,409	1,842	955
Consumer installment	4	-	6	1	2
Total nonaccrual loans	$ 6,595	$ 8,433	$ 5,903	$ 7,545	$ 7,347
Accruing loans which are contractually past due ninety days or more	$ 945	$ -	$ -	$ 2	$ 165

Accrual of interest is discontinued on a loan when management believes, after considering economic and business conditions, the borrower's financial condition is such that collection of interest is doubtful. Payments received on nonaccrual loans are recorded as income or applied against principal according to management's judgment as to the collectability of principal.

A loan is considered impaired when it is probable the borrower will not repay the loan according to the original contractual terms of the loan agreement, including all troubled debt restructurings. Management has determined that first mortgage loans on one-to-four family properties and all consumer loans represent large groups of smaller-balance homogeneous loans that are to be collectively evaluated. Loans that experience insignificant payment delays, which are defined as 90 days or less, generally are not classified as impaired. A loan is not impaired during a period of delay in payment if the Company expects to collect all amounts due, including interest accrued at the contractual interest rate for the period of delay. Management evaluates all loans identified as impaired individually. The Company estimates credit losses on impaired loans based on the present value of expected cash flows, or the fair value of the underlying collateral if loan repayment is expected to come from the sale or operation of the collateral. Impaired loans, or portions thereof, are charged off when it is determined a realized loss has occurred. Until that time, an allowance for loan and lease loss is maintained for estimated losses.

Interest income that would have been recorded had these loans not been placed on nonaccrual status was $456,000 in 2018, and $437,000 in 2017. Management is not aware of any trends or uncertainties related to any loans classified as doubtful or substandard that might have a material effect on earnings, liquidity, or capital resources.

Changes in Results of Operations

2018 Results Compared to 2017 Results

General The Company posted net income of $12.4 million, compared to $9.5 million for the year ended December 31, 2017. On a per share basis, 2018 earnings were $3.83 per diluted share, representing an increase from the $3.10 per diluted share for the year ended December 31, 2017. The return on average equity for the year ended December 31, 2018, was 9.94% and the Company's return on average assets was 1.09%, compared to 8.52% and 0.88%, respectively, for the year ended December 31, 2017.

Net interest income Net interest income, which is the Company's largest revenue source, is the difference between interest income on earning assets and interest expense paid on liabilities. Net interest income is affected by the changes in interest rates and the composition of interest-earning assets and interest-bearing liabilities. Net interest income increased by $3.1 million in 2018 to $40.5 million compared to $37.3 million for 2017. This increase is the result of a $6.4 million increase in interest and dividend income with only a $3.3 million increase in interest expense. Interest-earning assets averaged $1.09 billion during 2018, a year-over-year increase of $82.0 million from $1.01 billion for 2017. The Company's average interest-bearing liabilities increased from $801.6 million in 2017 to $836.6 million in 2018.

Net interest margin, a key performance indicator, is net interest income as a percentage of total interest-earning assets. For 2018 the net interest margin, measured on a fully taxable equivalent basis, decreased to 3.77%, compared to 3.82% in 2017. This decrease is due to a lower impact from our tax-free assets as a result of the change in tax law.

Interest and dividend income Interest and dividend income increased $6.4 million to $50.4 million for 2018 which is attributable to a $6.4 million increase in interest and fees on loans. This change was the result of an increase in the average balance of loans receivable, accompanied by a higher yield on the portfolio. The average balance of loans receivable increased by $93.1 million or 10.9% to $950.5 million for the year ended December 31, 2018 as compared to $857.4 million for the year ended December 31, 2017. The loans receivable yield increased to 4.91% for 2018, from 4.69% in 2017.

Interest on investment securities decreased $218,000 to $3.0 million for 2018, compared to $3.2 million for 2017. The average balance of investment securities decreased $7.6 million to $96.9 million for the year ended December 31, 2018 as compared to $104.4 million for the year ended December 31, 2017. The investment securities yield decreased 55 basis points to 3.67% for 2018, compared to 4.22% for 2017 due to a lower impact from our tax-free investments as a result of the change in tax law.

Interest expense Interest expense increased $3.3 million or 49.1% to $9.9 million for 2018, compared with $6.7 million for 2017. This change in interest expense can be attributed to an increase in the average balance of interest-bearing liabilities. For the year ended December 31, 2018 the average balance of interest-bearing liabilities increased by $35.0 million to $836.6 million as compared to $801.6 million for the year ended December 31, 2017. Interest incurred on deposits increased by $3.3 million for the year from $5.4 million in 2017 to $8.6 million for year-end 2018. The change in deposit expense was due to an increase in the average balance as well as a 28 basis point increase in the cost of deposits during the year. Interest expense incurred on FHLB advances, repurchase agreements, junior subordinated debt and other borrowings decreased 1.5% from 2017. The decrease was due to a $38.0 million decrease in the average balance, partially offset by 85 basis points increase in the cost to borrow.

Provision for loan losses The provision for loan losses is an operating expense recorded to maintain the related balance sheet allowance for loan and lease losses at an amount considered adequate to cover probable losses incurred in the normal course of lending. The provision for loan losses for the year ended December 31, 2018 was $840,000 compared to $1.0 million in 2017. The loan loss provision is based upon management's assessment of a variety of factors, including types and amounts of nonperforming loans, historical loss experience, collectability of collateral values and guaranties, pending legal action for collection of loans and related guaranties, and current economic conditions. The loan loss provision reflects management's judgment of the current period cost-of-credit risk inherent in the loan portfolio. Although management believes the loan loss provision has been sufficient to maintain an adequate allowance for loan and lease losses, actual loan losses could exceed the amounts that have been charged to operations. The ratio of nonperforming loans to total loans was 1.07% at December 31, 2018, a decrease from 1.45% at December 31, 2017. The ratio of the allowance for loan and lease losses to total loans also decreased to 0.75% of total loans at December 31, 2018 compared to 0.78% at December 31, 2017.

Noninterest income Noninterest income decreased $1.1 million or 23.3% to $3.7 million for 2018 compared to $4.9 million for 2017. The decrease was largely the result of decreases in net investment security gains of $886,000 and gains on sales of loans of $595,000. The decrease in gains on sale of loans is due to the Company ceasing the origination of student lending as of December 31, 2017.

Noninterest expense Operating expenses increased $1.3 million, or 4.6% to $28.7 million for 2018 compared to $27.5 million for 2017. The increase was largely the result of an increase in salaries and employee benefits expense of $2.0 million. This increase was partially offset by decreases in merger expenses and professional fees of $1.1 million and $270,000, respectively. The salary increase is mostly due to annual pay adjustments, a one-time bonus to employees due to benefits of the change in tax law, and an increase in employees due to opening the Powell branch in the third quarter.

Provision for income taxes The provision for income taxes decreased by $2.1 million, or 48.8%, to $2.2 million for 2018 from $4.2 million for 2017. The Company's effective federal income tax rate in 2018 was 14.8% compared to 30.9% in 2017. The decrease in the effective tax rate is directly correlated to the decrease in corporate tax rates applied to the increase in net income before taxes.

Asset and Liability Management

The primary objective of the Company's asset and liability management function is to maximize net interest income while maintaining an acceptable level of interest rate risk given the Company's operating environment, capital and liquidity requirements, performance objectives and overall business focus. The principal determinant of the exposure of the Company's earnings to interest rate risk is the timing difference between the re-pricing or maturity of interest-earning assets and the re-pricing or maturity of its interest-bearing liabilities. The Company's asset and liability management policies are designed to decrease interest rate sensitivity primarily by shortening the maturities of interest-earning assets while at the same time extending the maturities of interest-bearing liabilities. The Board of Directors of the Company continues to believe in a strong asset/liability management process in order to insulate the Company from material and prolonged increases in interest rates.

The Company's Board of Directors has established an Asset and Liability Management Committee consisting of outside directors and senior management. This committee, which meets quarterly, generally monitors asset and liability management policies and strategies.

Liquidity and Capital Resources

Liquidity. Liquidity management involves monitoring the ability to meet the cash flow needs of bank customers, such as borrowings or deposit withdrawals, as well as the Company's own financial commitments. The principal sources of liquidity are net income, loan payments, maturing and principal reductions on securities and sales of securities available for sale, federal funds sold and cash and deposits with banks. Along with its liquid assets, the Company has additional sources of liquidity available to ensure adequate funds are available as needed. These include, but are not limited to, the purchase of federal funds, the ability to borrow funds under line of credit agreements with correspondent banks, a borrowing agreement with the Federal Home Loan Bank of Cincinnati and the adjustment of interest rates to obtain deposits. Management believes the Company has the capital adequacy, profitability and reputation to meet the current and projected needs of its customers.

Liquidity is managed based on factors including core deposits as a percentage of total deposits, the degree of funding source diversification, the allocation and amount of deposits among deposit types, the short-term funding sources used to fund assets, the amount of non-deposit funding used to fund assets, the availability of unused funding sources, off-balance sheet obligations, the availability of assets readily converted to cash without undue loss, the amount of cash and liquid securities we hold, and the re-pricing characteristics and maturities of our assets when compared to the re-pricing characteristics of our liabilities and other factors.

The Company's liquid assets consist of cash and cash equivalents, which include investments in very short-term investments (i.e., federal funds sold), equity securities, and investment securities classified as available for sale. The level of these assets is dependent on the Company's operating, investing, and financing activities during any given period. At December 31, 2018, cash and cash equivalents totaled $107.9 million or 8.6% of total assets, equity securities totaled $616,000 or 0.0% of total assets, and investment securities classified as available for sale totaled $98.3 million or 7.9% of total assets. Management believes that the liquidity needs of the Company are satisfied by the current balance of cash and cash equivalents, readily available access to traditional funding sources, FHLB advances, junior subordinated debt, and the portion of the investment and loan portfolios that mature within one year. These sources of funds will enable the Company to meet cash obligations and off-balance sheet commitments as they come due.

Operating activities provided net cash of $14.3 million and $13.9 million for 2018 and 2017, respectively, generated principally from net income of $12.4 million and $9.5 million in these respective periods.

Investing activities used $76.5 million which consisted primarily of loan originations and investment activity. The cash usages primarily consisted of loan increases of $68.8 million and investment purchases of $13.0 million. Partially offsetting the usage are proceeds from repayments and maturities of $7.3 million. For the same period ended 2017, investing activities used $95.3 million which consisted primarily of investment activity, loan originations, and acquisition activity. The cash usages primarily consisted of loan increases of $119.9 million and investment purchases of $3.1 million. Cash provided in relation to the Liberty acquisition was $5.4 million for the year ended December 31, 2017. Partially offsetting the usage are proceeds from repayments and maturities and proceeds from sale of securities of $14.9 million and $6.5 million, respectively.

Financing activities consist of the solicitation and repayment of customer deposits, borrowings and repayments and the payment of dividends. During 2018, net cash provided by financing activities totaled $130.3 million, principally derived from increases in deposit accounts, and increase in short-term borrowings, net, of $137.9 million, and $15.7 million, respectively. Partially offsetting the proceeds are repayments of other borrowings and the payment of cash dividends of $20.3 million and $3.8 million, respectively. During 2017, net cash provided by financing activities totaled $88.7 million, principally derived from increases in deposit accounts, proceeds from other borrowings, and the issuance of common stock of $50.2 million, $30.0 million, and $15.2 million, respectively. Partially offsetting the proceeds are repayments of other borrowings and the payment of cash dividends of $10.4 million and $3.4 million, respectively.

Liquidity may be adversely affected by many circumstances, including unexpected deposit outflows and increased draws on lines of credit. Management monitors projected liquidity needs and determines the desirable level based in part on the Company's commitment to make loans and management's assessment of the Company's ability to generate funds. The Company anticipates having sufficient liquidity to satisfy estimated short and long-term funding needs.

Capital Resources. The Company's primary source of capital is retained earnings. Historically, the Company has generated net retained income to support normal growth and expansion. Management has developed a capital planning policy to not only ensure regulatory compliance but capital adequacy for future expansion.

Market Price of and Dividends on the Registrant's Common Equity and Related Stockholder Matters

The Company had approximately 1,035 stockholders of record as of December 31, 2018. The Company’s common stock is traded and authorized for quotation on NASDAQ under the symbol “MBCN.” The Company currently expects consistency in the payout of future cash dividends.

MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. The Company's internal control over financial reporting is 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.

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.

A material weakness is a significant deficiency (as defined in Public Company Accounting Oversight Board Auditing Standard No. 5), or a combination of significant deficiencies, that results in there being more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis by management or employees in the normal course by management or employees in the normal course of performing their assigned functions.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2018. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013). Based on this assessment, management believes that, as of December 31, 2018, the Company's internal control over financial reporting was effective.

The Company's independent registered public accounting firm, S.R. Snodgrass, P.C., that audited the consolidated financial statements has issued an audit report on the effective operation of the Company's internal control over financial reporting as of December 31, 2018.

/s/ Thomas G. Caldwell
By: Thomas G. Caldwell
President and Chief Executive Officer
(Principal Executive Officer)

Date: March 6, 2019

/s/ Donald L. Stacy
By: Donald L. Stacy
Treasurer
(Principal Financial & Accounting Officer)

Date: March 6, 2019

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Section 3: EX-21 (EXHIBIT 21)

Exhibit 21

Middlefield Banc Corp. Subsidiaries

1 The Middlefield Banking Company ("MBC"), an Ohio-chartered commercial bank that began operations in 1901, engages in general commercial banking in northeastern and central Ohio. The principal executive office is located at 15985 East High Street, Middlefield, Ohio 44062-0035.

2 On October 23, 2009 Middlefield received approval from the Federal Reserve Bank of Cleveland to establish an asset resolution subsidiary. Organized as an Ohio corporation under the name EMORECO, Inc. and wholly owned by Middlefield Banc Corp, the purpose of the asset resolution subsidiary is to maintain, manage, and ultimately dispose of nonperforming loans and real estate acquired by the subsidiary bank as the result of borrower default on real estate-secured loans.

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Section 4: EX-23 (EXHIBIT 23)

Exhibit 23

SNODGRASS
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statements File Nos. 333-213607 and 333-219313 on Form S-3, File Nos. 333-153059 and 333-218859 on Form S-8 and Form S-8POS, File No. 333-183497 on Form S-3D and Form S-3DPOS, of Middlefield Banc Corp. of our report dated March 6, 2019, relating to our audit of the consolidated financial statements, which appears in the Annual Report to Shareholders, which is incorporated in this Annual Report on Form 10-K of Middlefield Banc Corp. for the year ended December 31, 2018.

/s/S.R. Snodgrass, P.C.

Cranberry Township, Pennsylvania
March 6, 2019

S.R. Snodgrass, P.C. ● 2009 Mackenzle Way, Suite 340 ● Cranberry Township, Pennsylvania 16066 ● Phone: 724-934-0344 ● Fax: 724-934-0345

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Section 5: EX-31.1 (EXHIBIT 31.1)

Exhibit 31.1

Certification of Principal Executive Officer
I, Thomas G. Caldwell, certify that:

1. I have reviewed this annual report on Form 10-K of Middlefield Banc Corp.;

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 6, 2019

/s/ Thomas G. Caldwell

Thomas G. Caldwell.
President and Chief Executive Officer

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Section 6: EX-31.2 (EXHIBIT 31.2)

Exhibit 31.2

Certification of Principal Financial and Accounting Officer
I, Donald L. Stacy, certify that:

1. I have reviewed this annual report on Form 10-K of Middlefield Banc Corp.;

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 6, 2019

/s/ Donald L. Stacy

Donald L. Stacy
Principal Financial and Accounting Officer

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Section 7: EX-32 (EXHIBIT 32)

Exhibit 32

mbc Middlefield Banc Corp

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 Middlefield Banc Corp. (the "Company") on Form 10-K for the period ending December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Thomas G. Caldwell, President, and Donald L. Stacy, Chief Financial Officer, certify, pursuant to 18 U.S.C., Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(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/ Thomas G. Caldwell

Thomas G. Caldwell
President and Chief Executive Officer

/s/ Donald L. Stacy

Donald L. Stacy
Principal Financial and Accounting Officer

Date: March 6, 2019

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

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