Juniata Valley Financial Corp.

HERE TO HELP 2019 ANNUAL REPORT

President's Letter

HERE TO HELP

As the financial services industry continues to change at an unprecedented pace, one constant remains: We need access to financial products and services for every stage of our adult lives.

Whether buying the first car, the first house, or adding an addition for a "new addition," access to the funds to make it happen is critical. **We're here to help**. At JVB, we understand how important financial life decisions are, and we have a solution for all of them. Equally important as funding for a home purchase, college education or a business expansion, is access to products and services to save and invest for financial security to assure a secure and full retirement.

There is no shortage of options. We can access financial services on our laptops, desktops, tablets or phones. We can establish a deposit account with an entity out-of-town, out-of-state or out-of-the-country. We can invest in commodities: gold, real stocks, bonds or bitcoin; and we can Google to research the pros and cons of each.

But do not forget one tried-and-true resource – your JVB banker. It is great to have information on all sorts of topics from all types of sources, but often our research uncovers too much information, frequently confusing and sometimes contradictory. **We're here to help**.

JVB offers secure online account opening, online loan processing and a full array of account-access tools for both consumers and business. But we also offer face-to-face conversations with experienced bankers in nineteen business locations.....or at **your** place of business....or in **your** kitchen. **We're here to help.**

JAVA WITH JVB

Last year we introduced **JAVA with JVB**, a monthly workshop held at centralized locations to share information on relevant topics such as identity theft, online banking, retirement planning and the mortgage application process. The workshops provided concise topical facts and facilitated small group or personalized interaction. The response from our valued customers was so positive that, in 2020, we are expanding this educational outreach to more geographically diverse venues on a more frequent basis.

PROFESSIONAL SERVICES SERIES

In addition to our structured, consumer-focused **JAVA, JVB** proudly hosted Professional Services seminars for business owners, attorneys, CPAs and other trusted professional advisors. Previous sessions addressed tax law changes, estate and tax planning for qualified funds, family farm inheritance concerns and business valuations.

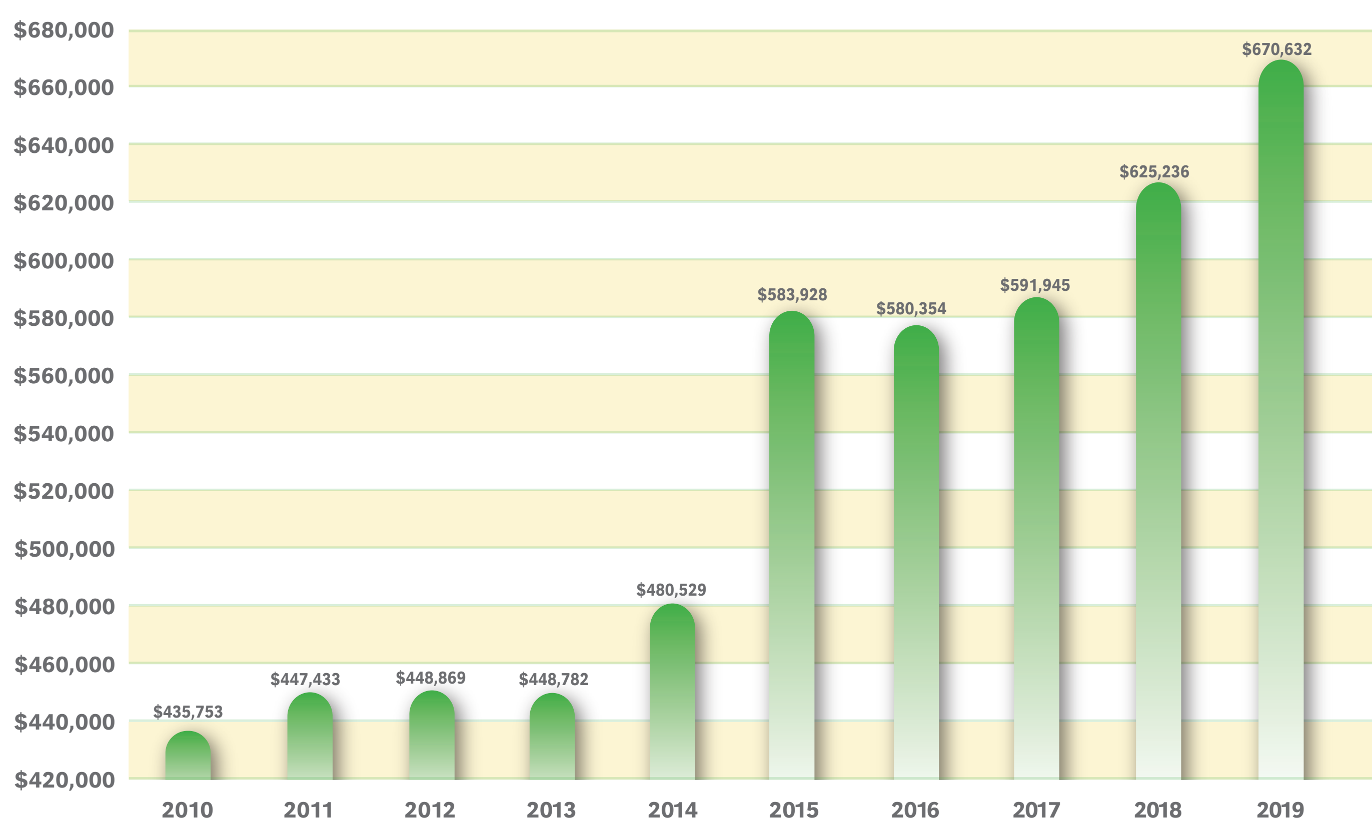
Nothing is as simple as it used to be, and the options for financial services and products, as well as delivery systems, are at times overwhelming. So, do the research, Google the topic, and then reach out to your JVB banker to talk through it…

We won't charge for our time or our interest in your needs. **We are HERE TO HELP.**

Marcie A. Barber | President and CEO

TOTAL ASSETS AT YEAR END

(In Thousands)



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

FORM 10-K

(Mark One)
☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Fiscal Year ended December 31, 2019

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 No. 0-13232

Juniata Valley Financial Corp.
(Exact name of registrant as specified in its charter)

Pennsylvania	23-2235254
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
Bridge and Main Streets, PO Box 66 Mifflintown, PA	17059-0066
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (855) 582-5101

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
N/A	N/A	N/A

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes ☐ No ☒

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

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

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

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

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

Large accelerated filer ☐ Accelerated filer ☒ Non-accelerated filer ☐ (Do not check if a smaller reporting company)
Smaller reporting company ☒ Emerging growth company ☐

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

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrants most recently completed second fiscal quarter was $100,318,551. [(1)]

There were 5,109,259 shares of the registrant's common stock outstanding as of March 16, 2020.

(1) The aggregate dollar amount of the voting stock set forth equals the number of shares of the Company's Common Stock outstanding, reduced by the amount of Common Stock held by officers, directors, shareholders owning in excess of 10% of the Company's Common Stock and the Company's employee benefit plans multiplied by the last reported sale price for the Company's Common Stock on June 28, 2019, the last business day of the registrants most recently completed second fiscal quarter. The information provided shall not be construed as an admission that any officer, director or 10% shareholder of the Company, or any employee benefit plan, may be deemed an affiliate of the Company or that such person or entity is the beneficial owner of the shares reported as being held by such person or entity, and any such inference is hereby disclaimed.

DOCUMENTS INCORPORATED BY REFERENCE

(Specific sections incorporated are identified under applicable items herein)

Certain portions of the Company's Proxy Statement to be filed in connection with its 2020 Annual Meeting of Shareholders are incorporated by reference in Part III of this Report; provided; however, that any information in such Proxy Statement that is not required to be included in this Annual Report on Form 10-K shall not be deemed to be incorporated herein or filed for the purposes of the Securities Act of 1933 or the Securities Exchange Act of 1934.

Other documents incorporated by reference are listed in the Exhibit Index.

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PART I

ITEM 1. BUSINESS

Overview

Juniata Valley Financial Corp. (the "Company" or "Juniata") is a Pennsylvania corporation that was formed in 1983 as a result of a plan of merger and reorganization of The Juniata Valley Bank (the "Bank"). The plan received regulatory approval on June 7, 1983, and Juniata, a one-bank holding company, registered under the Bank Holding Company Act of 1956. The Bank is the oldest independent commercial bank in Juniata and Mifflin Counties, having originated under a state bank charter in 1867. The Company has one reportable segment, consisting of the Bank, as described in Note 2 of The Notes to Consolidated Financial Statements.

Nature of Operations

Juniata operates primarily in central and northern Pennsylvania with the purpose of delivering financial services within its local markets. The Company provides retail and commercial banking services through 16 offices in the following locations: five community offices in Juniata County; five community offices and a financial services office in Mifflin County; two community offices in McKean County; one community office in each of Potter, Perry and Huntingdon Counties; and a loan production office in Centre County. On April 30, 2018, Juniata, which previously owned 39.16%, or 1,214 of the 3,100 outstanding common shares of Liverpool Community Bank ("Liverpool" or "LCB"), completed the acquisition of the remainder of Liverpool's outstanding common stock. Under the terms of a merger agreement between the parties, LCB merged with and into the Bank.

The Company offers a full range of consumer and commercial banking services. Consumer banking services include: online banking; mobile banking; telephone banking; automated teller machines; personal checking accounts; checking overdraft privileges; money market deposit accounts; savings accounts; debit cards; certificates of deposit; individual retirement accounts; secured lines of credit; construction and mortgage loans; and safe deposit boxes. Commercial banking services include: low and high-volume business checking accounts; online account management services; remote deposit capability; ACH origination; payroll direct deposit; commercial lines of credit; commercial letters of credit; mobile deposit for small business customers; and commercial term and demand loans.

The Bank also provides comprehensive trust, asset management and estate services, and the Company has a contractual arrangement with a broker-dealer to offer a full range of financial services, including annuities, mutual funds, stock and bond brokerage services and long-term care insurance, to the Bank's customers. Management believes the Bank has a relatively stable deposit base with no major seasonal depositor or group of depositors. Most of the Company's commercial customers are small and mid-sized businesses in central and northern Pennsylvania.

Juniata's loan underwriting policies are updated periodically and are presented for approval to the Board of Directors of the Bank. The purpose of the policies is to grant loans on a sound and collectible basis, to invest available funds in a safe, profitable manner, to serve the credit needs of the communities in Juniata's primary market area and to ensure that all loan applicants receive fair and equal treatment in the lending process. It is the intent of the underwriting policies to seek to minimize loan losses by requiring careful investigation of the credit history of each applicant, verifying the source of repayment and the ability of the applicant to repay, securing those loans for which collateral is deemed to be required, exercising care in the documentation of the application, review, approval and origination process and administering a comprehensive loan collection program.

The major types of investments held by Juniata consist of obligations and securities issued by U.S. government agencies or corporations, obligations of state and local political subdivisions, mortgage-backed securities and common stock. Juniata's investment policy directs that investments be managed in a way that provides necessary funding for the Company's liquidity needs and adequate collateral to pledge for public funds held and, as directed by the Asset Liability Committee, manages interest rate risk. The investment policy specifies the types of investments permitted to be owned, addresses credit quality of investments and includes limitations by investment types and issuer.

The Company's primary source of funds is deposits, consisting of transaction type accounts, such as demand deposits and savings accounts, and time deposits, such as certificates of deposit. The majority of deposits are held by customers residing or located in Juniata's market area. No material portion of the deposits has been obtained from a single or small group of customers, and the Company believes that the loss of any customer's deposits or a small group of customers' deposits would not have a material adverse effect on the Company.

Other sources of funds used by the Company include retail repurchase agreements, borrowings from the Federal Home Loan Bank of Pittsburgh and lines of credit established with various correspondent banks for overnight funding.

Competition

The Bank's service area is characterized by a high level of competition for banking and financial services among commercial banks, varying in size from local community banks to regional and national banks, credit unions, savings and loan associations, and non-bank financial institutions located inside and outside the Bank's market area. The Bank actively competes with dozens of such banks and institutions for local consumer and commercial deposit accounts, loans and other types of banking business. Many competitors have substantially greater financial resources and larger branch systems than those of the Bank.

In commercial transactions, the Company believes that the Bank's legal lending limit to a single borrower (approximately $9,813,000 as of December 31, 2019) enables it to compete effectively for the business of small and mid-sized businesses. However, this legal lending limit is considerably lower than that of various competing institutions and thus may act as a constraint on the Bank's effectiveness in competing for larger financings.

In consumer transactions, the Bank believes that it is able to compete on a substantially equal basis with larger financial institutions because it offers competitive interest rates on deposit products and on loans.

In competing with other banks, savings and loan associations and financial institutions, the Bank seeks to provide personalized services through management's knowledge and awareness of its service areas, customers and borrowers. In management's opinion, larger institutions often do not provide comparable attention to the retail depositors and the relatively small commercial borrowers that comprise the Bank's primary customer base.

Other competitors, including credit unions, consumer finance companies, insurance companies and money market mutual funds, compete with many of the lending and deposit services offered by the Bank. The Bank also competes with insurance companies, investment counseling firms, mutual funds and other business firms and individuals in corporate and trust investment management services.

Supervision and Regulation

General

The Company operates in a highly regulated industry, and thus may be affected by changes in state and federal regulations and legislation. As a registered bank holding company under the Bank Holding Company Act of 1956, as amended (the "Bank Holding Company Act"), the Company is subject to supervision and examination by the Board of Governors of the Federal Reserve System ("FRB") and is required to file periodic reports and information regarding its business operations and those of the Bank with the FRB. In addition, under the Pennsylvania Banking Code of 1965, the Pennsylvania Department of Banking and Securities has the authority to examine the books, records and affairs of the Company and to require any documentation deemed necessary to ensure compliance with the Pennsylvania Banking Code.

The Bank Holding Company Act requires the Company to obtain FRB approval before: acquiring more than a five percent ownership interest in any class of the voting securities of any bank; acquiring all or substantially all of the assets of a bank; or merging or consolidating with another bank holding company. In addition, the Bank Holding Company Act prohibits a bank holding company from acquiring the assets, or more than five percent of the voting securities, of a bank located in another state, unless such acquisition is specifically authorized by the statutes of the state in which the bank is located.

The Company is generally prohibited under the Bank Holding Company Act from engaging in, or acquiring direct or indirect ownership or control of more than five percent of the voting shares of any company engaged in, nonbanking activities unless the FRB, by order or regulation, has found such activities to be so closely related to banking or managing or controlling banks as to be a proper incident thereto. In making such determination, the FRB considers whether the performance of these activities by a bank holding company can reasonably be expected to produce benefits to the public that outweigh the possible adverse effects.

A satisfactory safety and soundness rating, particularly with regard to capital adequacy, and a satisfactory Community Reinvestment Act rating are generally prerequisites to obtaining federal regulatory approval to make acquisitions and open branch offices. As of December 31, 2019, the Bank was rated "satisfactory" under the Community Reinvestment Act and was a "well capitalized" bank. An institution's Community Reinvestment Act rating is considered in determining whether to grant approvals relating to charters, branches and other deposit facilities, relocations, mergers, consolidations and acquisitions. Less than satisfactory performance may be the basis for denying an application.

There are various legal restrictions on the extent to which the Company and its non-bank subsidiaries can borrow or otherwise obtain credit from the Bank. In general, these restrictions require that any such extensions of credit must be secured by designated amounts of specified collateral and are limited, as to any one of the Company or such non-bank subsidiaries, to ten percent of the lending bank's capital stock and surplus and, as to the Company and all such non-bank subsidiaries in the aggregate, to 20 percent of the Bank's capital stock and surplus. Further, the Company and the Bank are prohibited from engaging in certain tie-in arrangements in connection with any extension of credit, lease or sale of property or furnishing of services.

As a bank chartered under the laws of Pennsylvania, the Bank is subject to the regulations and supervision of the Federal Deposit Insurance Corporation ("FDIC") and the Pennsylvania Department of Banking and Securities. These government agencies conduct regular safety and soundness and compliance reviews that have resulted in satisfactory evaluations to date. Some of the aspects of the lending and deposit business of the Bank that are regulated by these agencies include personal lending, mortgage lending and reserve requirements.

The operations of the Bank are also subject to numerous Federal, state and local laws and regulations which set forth specific restrictions and procedural requirements with respect to interest rates on loans, the extension of credit, credit practices, the disclosure of credit terms and discrimination in credit transactions. The Bank also is subject to certain limitations on the amount of cash dividends that it can pay to the Company. See Note 16 of The Notes to Consolidated Financial Statements.

Under FRB policy, the Company is expected to act as a source of financial strength to the Bank, and to commit resources to support the Bank in circumstances where it might not be in a financial position to support itself. Consistent with the "source of strength" policy for subsidiary banks, the FRB has stated that, as a matter of prudent banking, a bank holding company generally should not maintain a rate of cash dividends unless its net income available to common stockholders has been sufficient to fully fund the dividends and the prospective rate of earnings retention appears to be consistent with the Company's capital needs, asset quality and overall financial condition.

As a public company, the Company is subject to the Securities and Exchange Commission's rules and regulations relating to periodic reporting, proxy solicitation and insider trading.

FDIC Insurance

The FDIC is an independent federal agency that insures the deposits, up to prescribed statutory limits, of federally insured banks and savings institutions and safeguards the safety and soundness of the banking and savings industries. The FDIC administers the Deposit Insurance Fund ("DIF"). The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act") permanently raised the standard maximum deposit insurance coverage amount to $250,000 and made the increase retroactive to January 1, 2008. The FDIC deposit insurance coverage limit applies per depositor, per insured depository institution for each account ownership category. The FDIC has been given greater latitude in setting the assessment rates for insured depository institutions which could be used to impose minimum assessments.

The FDIC is authorized to set the reserve ratios for the DIF annually at between 1.15% and 1.5% of estimated insured deposits. FDIC assessment rates currently range from 12 to 50 basis points. Institutions in the lowest risk category, Risk Category I, pay between 12 and 14 basis points. Initial base assessment rates range between 12 and 45 basis points (12 – 16 basis points for Category I). The initial base rates for risk categories II, III and IV were 20, 30 and 45 basis points, respectively. For institutions in any risk category, assessment rates rose above initial rates for institutions relying significantly on secured liabilities. Assessment rates increased for institutions with a ratio of secured liabilities (repurchase agreements, Federal Home Loan Bank advances, secured Federal Funds purchased and other secured borrowings) to domestic deposits of greater than 15%, with a maximum of 50% above the rate before such adjustment.

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd Frank Act") revised the statutory authorities governing the FDIC's management of the DIF. Key requirements from the Dodd-Frank Act have resulted in the FDIC's adoption of amendments that: (1) redefined the assessment base used to calculate deposit insurance assessments to "average consolidated total assets minus average tangible equity"; (2) raised the DIF's minimum reserve ratio to 1.35 percent and removed the upper limit on the reserve ratio; (3) revised adjustments to the assessment rates by eliminating one adjustment and adding another; and (4) revised the deposit insurance assessment rate schedules due to changes to the assessment base. Revised rate schedules and other revisions to the deposit insurance assessment rules became effective April 1, 2011. Though deposit insurance assessments maintain a risk-based approach, the FDIC's changes effective April 1, 2011, impose a more extensive risk-based assessment system on large insured depository, institutions with at least $10 billion in total assets since they are more complex in nature and could pose greater risk. Due to the changes to the assessment base and assessment rates, as well as the DIF restoration time frame, the impact on the Company's deposit insurance assessments resulted in lower premiums since 2011 and will likely continue in future years. In 2019, the Bank was allocated $160,000 in a small bank assessment credits and was permitted to use $102,000 during the year ended December 31, 2019, leaving the Bank with a $58,000 balance at year-end 2019.

Under the Reform Act, the FDIC may terminate the insurance of an institution's deposits upon finding that the institution has engaged in unsafe and unsound practices, is in an unsafe and unsound condition to continue operations or has violated any applicable law, regulation, rule, order or condition imposed by the FDIC. The Company does not know of any practice, condition or violation that might lead to termination of its deposit insurance.

In addition, all FDIC-insured institutions were required to pay assessments to fund interest payments on bonds issued by the Financing Corporation, an agency of the Federal government established to finance resolutions of insolvent thrifts. These assessments ceased in 2019 as the Financing Corporation bonds fully matured.

Community Reinvestment Act
Under the Community Reinvestment Act, the Bank has a continuing and affirmative obligation, consistent with its safe and sound operation, to help meet the credit needs of its entire community, including low and moderate-income neighborhoods. However, the Community Reinvestment Act 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 that it believes are best suited to its particular community. The Community Reinvestment Act also requires:

- the applicable regulatory agency to assess an institution's record of meeting the credit needs of its community;
- public disclosure of an institution's CRA rating; and
- that the applicable regulatory agency provides a written evaluation of an institution's CRA performance utilizing a four-tiered descriptive rating system.

Capital Regulation
The Bank is subject to risk-based and leverage capital standards. The risk-based capital standards relate a banking organization's capital to the risk profile of its assets and require it to maintain Tier 1 capital of at least 4% of total risk-adjusted assets, and total capital, including Tier 1 capital, equal to at least 8% of total risk-adjusted assets. Tier 1 capital includes common stockholders' equity and qualifying perpetual preferred stock together with related surpluses and retained earnings. The remaining portion of this capital standard, known as Tier 2 capital, may be comprised of limited life preferred stock, qualifying subordinated debt instruments and the reserves for possible loan losses.

Additionally, banking organizations must maintain a minimum leverage ratio of 3%, measured as the ratio of Tier 1 capital to adjusted average assets. This 3% leverage ratio is a minimum for the most highly rated banking organizations without any supervisory, financial or operational weaknesses or deficiencies. Other banking organizations are expected to maintain leverage capital ratios that are 100 to 200 basis points above such minimum, depending upon their financial condition.

Under the Federal Deposit Insurance Corporation Improvement Act of 1991 (the "1991 Act"), a bank holding company is required to guarantee that any "undercapitalized" (as such term is defined in the statute) insured depository institution subsidiary will comply with the terms of any capital restoration plan filed by such subsidiary with its appropriate federal banking agency up to the lesser of (i) an amount equal to 5% of the institution's total assets at the time the institution became undercapitalized, or (ii) the amount which is necessary (or would have been necessary) to bring the institution into compliance with all capital standards as of the time the institution failed to comply with such capital restoration plan.

See Note 16 of The Notes to Consolidated Financial Statements, for a table that provides the Company's risk-based capital ratios and leverage ratio.

Federal banking agencies have broad powers to take corrective action to resolve problems of insured depository institutions. The extent of these powers depends upon whether the institutions in question are "well capitalized," "adequately capitalized," "undercapitalized", "significantly undercapitalized," or "critically undercapitalized." As of December 31, 2019, the Bank was a "well-capitalized" bank, as defined by the FDIC.

The FDIC has issued a rule that sets the capital level for each of the five capital categories by which banks are evaluated. A bank is deemed to be "well capitalized" if the bank has a total risk-based capital ratio of 10% or greater, has a Tier 1 risk-based capital ratio of 6% or greater, has a leverage ratio of 5% or greater, and is not subject to any order or final capital directive by the FDIC to meet and maintain a specific capital level for any capital measure. A bank may be deemed to be in a capitalization category that is lower than is indicated by its actual capital position if it received an unsatisfactory safety and soundness examination rating.

All of the bank regulatory agencies have issued rules that amend their capital guidelines for interest rate risk and require such agencies to consider in their evaluation of a bank's capital adequacy the exposure of a bank's capital and economic value to changes in interest rates. These rules do not establish an explicit supervisory threshold. The agencies intend, at a subsequent date, to incorporate explicit minimum requirements for interest rate risk into their risk-based capital standards and have proposed a supervisory model to be used together with bank internal models to gather data and hopefully propose at a later date, explicit minimum requirements.

The United States is a member of the Basel Committee on Banking Supervision (the "Basel Committee") that provides a forum for regular international cooperation on banking supervisory matters. The Basel Committee develops guidelines and supervisory standards and is best known for its international standards on capital adequacy.

In December 2010, the Basel Committee released its final framework for strengthening international capital and liquidity regulation, officially identified by the Basel Committee as "Basel III". In July 2013, the FRB published final rules to implement the Basel III capital framework and revise the framework for the risk-weighting of assets. The Basel III rules, among other things, narrow the definition of regulatory capital. As fully phased in on January 1, 2019, Basel III requires bank holding companies and their bank subsidiaries to maintain substantially more capital, with a greater emphasis on common equity. Basel III also provides for a "countercyclical capital buffer," an additional capital requirement that generally is imposed when national regulators determine that excess aggregate credit growth has become associated with a buildup of systemic risk, in order to absorb losses during periods of economic stress. Banking institutions that maintain insufficient capital to comply with the capital conservation buffer face constraints on dividends, equity repurchases and compensation based on the amount of the shortfall.

Additionally, the Basel III framework requires banks and bank holding companies to measure their liquidity against specific liquidity tests, including a liquidity coverage ratio ("LCR") designed to ensure that the banking entity maintains a level of unencumbered high-quality liquid assets greater than or equal to the entity's expected net cash outflow for a 30-day time horizon under an acute liquidity stress scenario, and a net stable funding ratio ("NSFR") designed to promote more medium and long-term funding based on the liquidity characteristics of the assets and activities of banking entities over a one-year time horizon. In September 2014, the federal regulatory agencies finalized rules implementing the LCR for U.S. financial institutions that are "internationally active banking organizations" and those generally with more than $250 billion in total consolidated assets. The FRB separately adopted a less stringent, modified LCR requirement for bank holding companies that have more than $50 billion in total consolidated assets. Because of the Company's size, neither the LCR Rule nor any additional proposed rules under the Basel III liquidity framework are applicable to it.

The final rules revise federal regulatory agencies' risk-based and leverage capital requirements and their method for calculating risk-weighted assets to make them consistent with the Basel III framework. The final rules apply to all depository institutions, top-tier bank holding companies with total consolidated assets of $500 million or more, and top-tier savings and loan holding companies ("banking organizations"). Among other things, the rules establish a new common equity tier 1 ("CET1") minimum capital requirement (4.5% of risk-weighted assets) and a higher minimum tier 1 capital requirement (from 4.0% to 6.0% of risk-weighted assets), and assign higher risk weightings (150%) to exposures that are more than 90 days past due or are on nonaccrual status and certain commercial real estate facilities that finance the acquisition, development or construction of real property.

As fully phased in, Basel III requires financial institutions to maintain: (a) as a newly adopted international standard, a minimum ratio of CET1 to risk-weighted assets of at least 4.5%; (b) a minimum ratio of tier 1 capital to risk-weighted assets of at least 6.0%; (c) a minimum ratio of total (that is, tier 1 plus tier 2) capital to risk-weighted assets of at least 8.0%; and (d) as a newly adopted international standard, a minimum leverage ratio of 3.0%, calculated as the ratio of tier 1 capital balance sheet exposures plus certain off-balance sheet exposures (computed as the average for each quarter of the month-end ratios for the quarter). In addition, the final rules also limit a banking organization's capital distributions and certain discretionary bonus payments if the banking organization does not hold a "capital conservation buffer" of 2.5% above each of the foregoing capital requirements stated in (a) – (c).

As a result of the new capital conservation buffer rules, if the Company's bank subsidiary fails to maintain the required minimum capital conservation buffer, the Company may be unable to obtain capital distributions from it, which could negatively impact the Company's ability to pay dividends, service debt obligations or repurchase common stock. In addition, such a failure could result in a restriction on the Company's ability to pay certain cash bonuses to executive officers, negatively impacting the Company's ability to retain key personnel.

As of December 31, 2019, the Company's current capital levels meet the minimum capital requirements, including capital conservation buffer, as prescribed in the U.S. Basel III Capital Rules.

Gramm-Leach-Bliley Act
On November 12, 1999, the Gramm-Leach-Bliley Act ("GLB") became law. GLB permits commercial banks to affiliate with investment banks. It also permits bank holding companies which elect financial holding company status to engage in any type of financial activity, including securities, insurance, merchant banking/equity investment and other activities that are financial in nature. The Company has not elected financial holding company status. The merchant banking provisions of GLB allow a bank holding company to make a controlling investment in any kind of company, financial or commercial. GLB allows a bank to engage in virtually every type of activity currently recognized as financial or incidental or complementary to a financial activity. A commercial bank that wishes to engage in these activities is required to be well capitalized, well managed and to have a satisfactory or better Community Reinvestment Act rating. GLB also allows subsidiaries of banks to engage in a broad range of financial activities that are not permitted for banks themselves. Although the Company and the Bank have not commenced these types of activities to date, GLB enables them to evaluate new financial activities that would complement the products already offered to enhance non-interest income.

Sarbanes-Oxley Act of 2002
The Sarbanes-Oxley Act of 2002 implemented a broad range of corporate governance, accounting and reporting measures for companies, like Juniata, that have securities registered under the Securities Exchange Act of 1934. Specifically, the Sarbanes-Oxley Act and the various regulations promulgated under the Act, established, among other things: (i) requirements for audit committees, including independence, expertise, and responsibilities; (ii) additional responsibilities relating to financial statements for the Chief Executive Officer and Chief Financial Officer of reporting companies; (iii) standards for auditors and regulation of audits, including independence provisions that restrict non-audit services that accountants may provide to their audit clients; (iv) increased disclosure and reporting obligations for reporting companies and their directors and executive officers, including accelerated reporting of stock transactions and a prohibition on trading during pension blackout periods; and (v) a range of civil and criminal penalties for fraud and other violations of the securities laws. In addition, Sarbanes-Oxley required stock exchanges, such as NASDAQ, to institute additional requirements relating to corporate governance in their listing rules.

Section 404 of the Sarbanes-Oxley Act requires the Company to include in its Annual Report on Form 10-K a report by management and an attestation report by the Company's independent registered public accounting firm on the adequacy of the Company's internal control over financial reporting. Management's internal control report must, among other things, set forth management's assessment of the effectiveness of the Company's internal control over financial reporting.

Financial Privacy
Federal banking regulators have adopted rules that limit the ability of banks and other financial institutions to disclose non-public information about consumers to nonaffiliated third parties. These limitations require disclosure of privacy policies to consumers and, in some circumstances, allow consumers to prevent disclosure of certain personal information to a nonaffiliated third party. The privacy provisions of the GLB Act affect the Company by limiting how consumer information is transmitted and conveyed to outside vendors.

Anti-Money Laundering Initiatives and the USA Patriot Act
A major focus of governmental policy on financial institutions in recent years has been aimed at combating money laundering and terrorist financing. U.S. federal laws and regulations, including the USA Patriot Act of 2001 ("USA Patriot Act") imposes significant compliance and due diligence obligations, creates criminal and financial liability for non-compliance and expands the extra-territorial jurisdiction of the U.S. The United States Department of the Treasury has issued a number of regulations that apply various requirements of the USA Patriot Act to financial institutions. These regulations require financial institutions to maintain appropriate policies, procedures and controls to detect, prevent and report money laundering and terrorist financing and to verify the identity of their customers. Failure of a financial institution to maintain and implement adequate programs to combat money laundering and terrorist financing, or to comply with all of the relevant laws or regulations, could have serious legal and reputational consequences for the institution.

Office of Foreign Assets Control Regulation
The U.S. has instituted economic sanctions which restrict transactions with designated foreign countries, nationals and others. These are typically known as the "OFAC rules" because they are administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury ("OFAC"). The OFAC-administered sanctions target countries in various ways. Generally, however, they contain one or more of the following elements: (i) restrictions on trade with or investment in a sanctioned country, including prohibitions against direct or indirect imports from and exports to a sanctioned country, and prohibitions on "U.S. persons" engaging in financial transactions which relate to investments in, or providing investment-related advice or assistance to, a sanctioned country; and (ii) a blocking of assets in which the government or specially designated nationals of the sanctioned country have an interest, by prohibiting transfers of property subject to U.S. jurisdiction (including property in the possession or control of U.S. persons). Blocked assets (e.g., property and bank deposits) cannot be paid out, withdrawn, set off or transferred in any manner without a license from OFAC. Failure to comply with these sanctions could have serious legal and reputational consequences for the institution. As U.S. financial institutions, the Company and the Bank are required to comply with the OFAC rules.

Consumer Protection Statutes and Regulations
The Company is subject to many federal consumer protection statutes and regulations, including the Truth in Lending Act, Truth in Savings Act, Equal Credit Opportunity Act, Fair Housing Act, Real Estate Settlement Procedures Act and Home Mortgage Disclosure Act. Among other things, these acts:

- require banks to disclose credit terms in meaningful and consistent ways;
- prohibit discrimination against an applicant in any consumer or business credit transaction;
- prohibit discrimination in housing-related lending activities;
- require banks to collect and report applicant and borrower data regarding loans for home purchases or improvement projects;
- require lenders to provide borrowers with information regarding the nature and cost of real estate settlements;

- prohibit certain lending practices and limit escrow account amounts with respect to real estate transactions; and

- prescribe possible penalties for violations of the requirements of consumer protection statutes and regulations.

On November 17, 2009, the FRB published a final rule amending Regulation E, which implements the Electronic Funds Transfer Act. The final rule limits the ability of a financial institution to assess an overdraft fee for paying automated teller machine transactions and one-time debit card transactions that overdraw a customer's account, unless the customer affirmatively consents, or opts in, to the institution's payment of overdrafts for these transactions.

Dodd-Frank Act
The Dodd-Frank Act resulted in significant financial regulatory reform. The Dodd-Frank Act also changed the responsibilities of the current federal banking regulators. Among other things, the Dodd-Frank Act created the Financial Oversight Council, with oversight authority for monitoring and regulating systemic risk, and the Consumer Financial Protection Bureau ("CFPB"), which has broad regulatory and enforcement powers over consumer financial products and services. Effective July 21, 2011, the CFPB became responsible for administering and enforcing numerous federal consumer financial laws enumerated in the Dodd-Frank Act. The Dodd Frank Act also provided that, for banks with total assets of more than $10 billion, the CFPB would have exclusive or primary authority to examine those banks for, and enforce compliance with, the federal consumer financial laws. Although not subject to examination by the CFPB, the Company remains subject to the review and supervision of other applicable regulatory authorities, and such authorities may enforce compliance with regulations issued by the CFPB.

The scope of the Dodd-Frank Act impacts many aspects of the financial services industry, and it requires the development and adoption of numerous regulations, some of which have not yet been issued. The effects of the Dodd-Frank Act on the financial services industry will depend, in large part, upon the extent to which regulators exercise the authority granted to them under the Dodd-Frank Act and the approaches taken in implementing those regulations. Additional uncertainty regarding the effects of the Dodd-Frank Act exists due to court decisions and the potential for additional legislative changes to the Dodd-Frank Act.

The Dodd-Frank Act's provisions that have received the most public attention have generally been those which apply only to larger institutions with total consolidated assets of $50 billion or more. However, the Dodd-Frank Act contains numerous other provisions that affect all bank holding companies, including the Company.

The following is a list of significant provisions of the Dodd-Frank Act, and, if applicable, the resulting regulatory rules adopted, that apply (or will apply), most directly to the Company and its subsidiary:

- Federal deposit insurance - On April 1, 2011, the FDIC's revised deposit insurance assessment base changed from total domestic deposits to average total assets, minus average tangible equity. In addition, the Dodd-Frank Act created a two scorecard system, one for large depository institutions that have more than $10 billion in assets and another for highly complex institutions that have over $50 billion in assets.

- Debit card interchange fees - In June 2011, the FRB adopted regulations, which became effective on October 1, 2011, setting maximum permissible interchange fees issuers can receive or charge on electronic debit card transaction fees and network exclusivity arrangements.

- Interest on demand deposits - Beginning in July 2011, depository institutions were no longer prohibited from paying interest on business transaction and other accounts.

- Stress testing - In October 2012, the FRB issued final rules regarding company-run stress testing. In accordance with these rules, a company whose assets exceed $10 billion is required to conduct an annual stress test in the manner specified, and using assumptions for baseline, adverse and severely adverse scenarios announced by the FRB. The stress test is designed to assess the potential impact of various scenarios on a company's earnings, capital levels and capital ratios over at least a nine-quarter time horizon. If applicable, the Company's board of directors and its senior management are required to consider the results of the stress test in the normal course of business, including as part of its capital planning process and the evaluation of the adequacy of its capital. While the Company believes that both the quality and magnitude of its capital base are sufficient to support its current operations given its risk profile, this requirement is not applicable to the Company because its assets are under $10 billion.

- Ability-to-pay rules and qualified mortgages - As required by the Dodd-Frank Act, the CFPB issued a series of final rules in January 2013 amending Regulation Z, implementing the Truth in Lending Act, by requiring mortgage lenders to make a reasonable and good faith determination, based on verified and documented information, that a consumer applying for a residential mortgage loan has a reasonable ability to repay the loan according to its terms. These final rules, most of which became effective January 10, 2014, prohibit creditors, such as the Company, from extending residential mortgage loans without regard for the consumer’s ability to repay and add restrictions and requirements to residential mortgage origination and servicing practices. In addition, these rules restrict the imposition of prepayment penalties and compensation practices relating to residential mortgage loan origination. Mortgage lenders are required to determine consumers’ ability to repay in one of two ways. The first alternative requires the mortgage lender to consider eight underwriting factors when making the credit decision. Alternatively, the mortgage lender can originate "qualified mortgages," which are entitled to a presumption that the creditor making the loan satisfied the ability-to-repay requirements. In general, a "qualified mortgage" is a residential mortgage loan that does not have certain high-risk features, such as negative amortization, interest-only payments, balloon payments, or a term exceeding 30 years. In addition, to be a qualified mortgage, the points and fees paid by a consumer cannot exceed 3% of the total loan amount, and the borrower’s total debt-to-income ratio must be no higher than 43% (subject to certain limited exceptions for loans eligible for purchase, guarantee or insurance by a government sponsored entity or a federal agency).

  Compliance with these rules has increased Juniata’s overall regulatory compliance costs and required changes to the underwriting practices of the Company with respect to mortgage loans.

- Integrated disclosures under the Real Estate Settlement Procedures Act and the Truth in Lending Act - In December 2013, the CFPB issued final rules revising and integrating previously separate disclosures required under the Real Estate Settlement Procedures Act (RESPA) and the Truth in Lending Act (TILA) in connection with certain closed-end consumer mortgage loans. These final rules became effective August 1, 2015 and require lenders to provide a new Loan Estimate, combining content from the former Good Faith Estimate required under RESPA and the initial disclosures required under TILA not later than the third business day after submission of a loan application, and a new Closing Disclosure, combining content of the former HUD-1 Settlement Statement required under RESPA and the final disclosures required under TILA at least three days prior to the loan closing.

- Volcker Rule — As mandated by the Dodd-Frank Act, in December 2013, the OCC, FRB, FDIC, SEC and Commodity Futures Trading Commission issued a final rule (the "Final Rules") implementing certain prohibitions and restrictions on the ability of a banking entity and non-bank financial company supervised by the FRB to engage in proprietary trading and have certain ownership interests in, or relationships with, a "covered fund" (the so-called "Volcker Rule"). The Final Rules generally treat as a covered fund any entity that would be an investment company under the Investment Company Act of 1940 (the "1940 Act") but for the application of the exemptions from SEC registration set forth in Section 3(c)(1) (fewer than l00 beneficial owners) or Section 3(c)(7) (qualified purchasers) of the 1940 Act. The Final Rules also require regulated entities to establish an internal compliance program that is consistent with the extent to which it engages in activities covered by the Volcker Rule, which must include making regular reports about those activities to regulators. Although the Final Rules provide some tiering of compliance and reporting obligations based on size, the fundamental prohibitions of the Volcker Rule apply to banking entities of any size, including the Company.

  While the Company does not engage in proprietary trading or in any other activities prohibited by the Final Rules, the Company will continue to evaluate whether any of its investments fall within the definition of a "covered fund" and would need to be disposed of by the extended deadline. However, based on the Company’s evaluation to date, it does not currently expect that the Final Rules will have a material effect on its business, financial condition or results of operations.

- Incentive compensation — As required by the Dodd-Frank Act, a joint interagency proposed regulation was issued in April 2011. The proposed rule would require the reporting of incentive-based compensation arrangements by a covered financial institution and prohibit incentive-based compensation arrangements at a covered financial institution that provides excessive compensation or that could expose the institution to inappropriate risks that could lead to material financial loss. The proposed rule, if adopted as currently proposed, could limit the manner in which the Company structures incentive compensation for its executives.

National Monetary Policy
In addition to being affected by general economic conditions, the earnings and growth of the Bank and, therefore, the earnings and growth of the Company, are affected by the policies of regulatory authorities, including the FRB and the FDIC. An important function of the FRB is to regulate the money supply and credit conditions. Among the instruments used to implement these objectives are open market operations in U.S. government securities, setting the discount rate and changes in financial institution reserve requirements. These instruments are used in varying combinations to influence overall growth and distribution of credit, bank loans, investments and deposits, and their use may also affect interest rates charged on loans or paid on deposits.

The monetary policies and regulations of the FRB have had a significant effect on the operating results of commercial banks in the past and are expected to continue to do so in the future. The effects of such policies upon the future businesses, earnings and growth of the Company cannot be predicted with certainty.

Tax Cuts and Jobs Act
On December 22, 2017, the Tax Cuts and Jobs Act (TCJA) was signed into law. Among other changes, the TCJA significantly changed corporate income tax law by reducing the corporate income tax rate from 35% to 21%, allowing for immediate capital expensing of certain qualified property and eliminating the deductibility of DIF assessments. The tax laws were generally effective for the 2018 tax year; however, the Company recognized certain effects of the changes in 2017, which was when the new legislation was enacted.

Employees
As of December 31, 2019, the Company had a total of 131 full-time and 46 part-time employees.

Additional Information
The Company files annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission ("SEC"). Our SEC filings are available on the SEC's website (http://www.sec.gov).

The Company's common stock is quoted under the symbol "JUVF" on the Pink Open Market, an electronic inter-dealer quotation and trading system available through, and governed by, the NASDAQ system. You may also read reports, proxy statements and other information we file at the offices of the National Association of Securities Dealers, Inc., 1735 K Street, N.W., Washington, DC 20006.

The Company's website is www.JVBonline.com. At that address, we make available, free of charge, the Company's Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act (see "Investor Information" section of website), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

In addition, we will provide, at no cost, paper or electronic copies of our reports and other filings made with the SEC (except for exhibits). Requests should be directed to JoAnn N. McMinn, Chief Financial Officer, Juniata Valley Financial Corp., P.O. Box 66, Mifflintown, PA 17059, (855) 582-5101.

The information on the websites listed above is not, and should not be, part of this Annual Report on Form 10-K and is not incorporated by reference in this document.

ITEM 1A. RISK FACTORS

An investment in the Company's common stock involves certain risks, including, among others, the risks described below. In addition to the other information contained in this report, you should carefully consider the following risk factors in analyzing whether to make or to continue an investment in the Company:

RISKS RELATED TO INTEREST RATES AND LIQUIDITY

Fluctuations in market interest rates, particularly in a continuing period of low market interest rates, and relative balances of rate-sensitive assets to rate-sensitive liabilities, can negatively impact net interest margin and net interest income.

The operations of financial institutions such as the Company are dependent to a large degree on net interest income, which is the difference between interest income from loans and investments and interest expense on deposits and borrowings.

An institution's net interest income is significantly affected by market rates of interest that in turn are affected by prevailing economic conditions, by the fiscal and monetary policies of the federal government and by the policies of various regulatory agencies. The FRB regulates the national money supply in order to manage recessionary and inflationary pressures. In doing so, the FRB may use techniques such as engaging in open market transactions of U.S. Government securities, changing the discount rate and changing reserve requirements against bank deposits. The use of these techniques may also affect interest rates charged on loans and paid on deposits. The interest rate environment, which includes both the level of interest rates and the shape of the U.S. Treasury yield curve, has a significant impact on net interest income.

Low market interest rates have pressured the net interest margin in recent years. Interest-earning assets, such as loans and investments, have been originated, acquired or repriced at lower rates, reducing the average rate earned on those assets. While the average rate paid on interest-bearing liabilities, such as deposits and borrowings, has also declined, the decline has not always occurred at the same pace as the decline in the average rate earned on interest-earning assets, resulting in a narrowing of the net interest margin.

Competition sometimes requires the Company to lower rates charged on loans more than the decline in market rates would otherwise indicate. Competition may also require the Company to pay higher rates on deposits than market rates would otherwise indicate. Thus, although loan demand has improved in recent years, intense competition among lenders has continued to place downward pressure on loan yields, also narrowing the net interest margin. Further, due to historically low market interest rates, rates paid on deposits have tended to reach a natural floor below which it is difficult to further reduce such rates.

Like all financial institutions, the Company's consolidated statement of financial condition is affected by fluctuations in interest rates. Volatility in interest rates can also result in disintermediation, which is the flow of deposits away from financial institutions into direct investments, such as U.S. Government and corporate securities and other investment vehicles, including mutual funds, which, because of the absence of federal insurance premiums and reserve requirements, generally pay higher rates of return than bank deposit products. See "Item 7: Management's Discussion of Financial Condition and Results of Operations”.

See the section entitled “Interest Rate Risk” and “Table 5 – Maturity Distribution” in Management’s Discussion and Analysis of Financial Condition, for the maturity distribution and cumulative sensitivity ratio of the Company’s interest earning assets and interest bearing liabilities.

Capital and liquidity strategies, including the impact of the capital and liquidity requirements implemented by the Basel III standards, may require the Company to maintain higher levels of capital, which could restrict the amount of capital that the Company has available to deploy for income generating and other activities.

In July 2013, the FRB approved the final rules implementing the Basel III capital standards (the “Basel III Rules”) which substantially revise the risk-based capital requirements applicable to bank holding companies and depository institutions. See previous Capital Regulation discussion.

As of December 31, 2019, the Company believes its current capital levels meet the fully phased-in minimum capital requirements as prescribed in the U.S. Basel III Capital Rules. However, the new rules, which began January 1, 2015 and fully phased in on January 1, 2019, effectively require financial institutions to maintain higher capital levels than was previously required. As a result, Juniata may have to maintain capital in the form of assets that contribute less income to Juniata and that are not available for deployment as loans or other interest-income generating assets, funding of capital projects or other growth initiatives.

Competition, including competition on rates of deposit and for loan growth may negatively impact the Company's net interest margin.

There is significant competition among banks in the market areas served by the Company. In addition, as a result of deregulation of the financial industry, the Bank also competes with other providers of financial services, such as savings and loan associations, credit unions, consumer finance companies, securities firms, insurance companies, the mutual funds industry, full service brokerage firms and discount brokerage firms, some of which are subject to less extensive regulations than the Company with respect to the products and services they provide. Some of the Company's competitors have greater resources than the Company and, as a result, may have higher lending limits and may offer other services not offered by the Company. See "Item 1: Business - Competition." Competition may adversely affect the rates the Company pays on deposits and charges on loans, thereby potentially adversely affect the Company's profitability. The Company's profitability depends upon its continued ability to successfully compete in the markets it serves. Further, intense competition among lenders can contribute to downward pressure on loan yields.

Changes in interest rates or disruption in liquidity markets may adversely affect the Company's sources of funding.

The Company must maintain enough sources of liquidity to meet the demands of its depositors and borrowers, support its operations and meet regulatory expectations. The Company's liquidity practices emphasize core deposits and repayments and maturities of loans and investments as its primary sources of liquidity. These primary sources of liquidity can be supplemented by Federal Home Loan Bank ("FHLB") advances, borrowings from the Federal Reserve Bank and lines of credit from correspondent banks. Lower-cost, core deposits may be adversely affected by changes in interest rates, and secondary sources of liquidity can be costlier to the Company than funding provided by deposit account balances having similar maturities. In addition, adverse changes in the Company's results of operations or financial condition, regulatory actions involving the Company, or changes in regulatory, industry or market conditions could lead to increases in the cost of these secondary sources of liquidity, the inability to refinance or replace these secondary funding sources as they mature, or the withdrawal of unused borrowing capacity under these secondary funding sources.

While the Company attempts to manage its liquidity through various techniques, the assumptions and estimates used do not always accurately forecast the impact of changes in customer behavior. For example, the Company may face limitations on its ability to fund loan growth if customers move funds out of the Bank's deposit accounts in response to increases in interest rates. In the years following the 2008 financial crisis, even as the general level of market interest rates remained low by historical standards, depositors frequently avoided higher-yielding and higher-risk alternative investments, in favor of the safety and liquidity of non-maturing deposit accounts. These circumstances contributed to significant growth in non-maturing deposit account balances at the Company, and at depository financial institutions generally. In a rising rate environment, customers may become more sensitive to interest rates when making deposit decisions and considering alternative opportunities. This increased sensitivity to interest rates could cause customers to move funds into higher-yielding deposit accounts offered by the Company's bank subsidiary, require the Company's bank subsidiary to offer higher interest rates on deposit accounts to retain customer deposits or cause customers to move funds into alternative investments or deposits of other banks or non-bank providers. Technology and other factors have also made it more convenient for customers to transfer low-cost deposits into higher-cost deposits or into alternative investments or deposits of other banks or non-bank providers. Movement of customer deposits into higher-yielding deposit accounts offered by the Company's bank subsidiary, the need to offer higher interest rates on deposit accounts to retain customer deposits or the movement of customer deposits into alternative investments or deposits of other banks or non-bank providers could increase the Company's funding costs, reduce its net interest margin and/or create liquidity challenges.

Market conditions have been negatively impacted by disruptions in the liquidity markets in the past, and such disruptions or an adverse change in the Company's results of operations or financial condition could, in the future, have a negative impact on secondary sources of liquidity. If the Company is not able to continue to rely primarily on customer deposits to meet its liquidity and funding needs, continue to access secondary, non-deposit funding sources on favorable terms or otherwise fails to manage its liquidity effectively, the Company's ability to continue to grow may be constrained, and the Company's liquidity, operating margins, results of operations and financial condition may be materially adversely affected.

Regulators are increasingly emphasizing liquidity planning at both the bank and Company levels.

Due to regulatory limitations on the Corporation's ability to rely on short-term borrowings, any significant movements of deposits away from traditional depository accounts which negatively impacts the Corporation's loan-to-deposit ratio could restrict its ability to achieve growth in loans or require the Corporation to pay higher interest rates on deposit products in order to retain deposits to fund loans.

Liquidity must also be managed at the holding company level. Banking regulators scrutinize liquidity at the holding company level, in addition to consolidated and bank liquidity levels. For safety and soundness reasons, banking regulations limit the amount of cash that can be transferred from subsidiary banks to the parent company in the form of loans and dividends. Generally, these limitations are based on a subsidiary bank's regulatory capital levels and net income. These factors have affected some institutions' ability to pay dividends and have required some institutions to establish borrowing facilities at the holding company level.

COMPLIANCE AND REGULATORY RISKS

The increasing time and expense associated with regulatory compliance and risk management could negatively impact our results of operations.

The time, expense and internal and external resources associated with regulatory compliance continue to increase. Thus, balancing the need to address regulatory changes and effectively managing growth in non-interest expenses has become more challenging than it has been in the past.

The Company and the Bank are extensively regulated under federal and state banking laws and regulations that are intended primarily for the protection of depositors, federal deposit insurance funds and the banking system. In general, these laws and regulations establish: the eligible business activities for the Company; certain acquisition and merger restrictions; limitations on intercompany transactions such as loans and dividends; capital adequacy requirements; requirements for anti-money laundering programs; consumer lending and other compliance requirements. While these statutes and regulations are generally designed to minimize potential loss to depositors and the FDIC insurance funds, they do not eliminate risk, and compliance with such statutes and regulations increases the Company's expense, requires management's attention and can be a disadvantage from a competitive standpoint with respect to non-regulated competitors and larger bank competitors.

Compliance with banking statutes and regulations is important to the Company's ability to engage in new activities and to consummate additional acquisitions. Bank regulators are scrutinizing banks through longer and more extensive bank examinations in both the safety and soundness and compliance areas. The results of such examinations could result in a delay in receiving required regulatory approvals for potential new activities and transactional matters. If the Company's compliance record would be determined to be unsatisfactory, such approvals may not be able to be obtained. Federal and state banking regulators also possess broad powers to take supervisory actions, as they deem appropriate. These supervisory actions may result in higher capital requirements, higher deposit insurance premiums and limitations on the Company's operations that could have a material adverse effect on its business and profitability.

In addition, the Company is subject to changes in federal and state tax laws as well as changes in banking and credit regulations, accounting principles, governmental economic and monetary policies and collection efforts by taxing authorities.

Financial reform legislation is likely to have a significant impact on the Company's business and results of operations; however, until more implementing regulations are adopted, the extent to which the legislation will impact the Company is uncertain.

In July 2010, the President of the United States signed into law the Dodd-Frank Act. Among other things, the Dodd-Frank Act created the Financial Stability Oversight Council, with oversight authority for monitoring and regulating systemic risk, and the CFPB, which has broad regulatory and enforcement powers over consumer financial products and services. The Dodd-Frank Act also changed the responsibilities of the current federal banking regulators, imposed additional corporate governance and disclosure requirements in areas such as executive compensation and proxy access, and restricted private equity activities of banks.

The scope of the Dodd-Frank Act impacted many aspects of the financial services industry. However, its implementation requires the development and adoption of many regulations, some of which have not yet been proposed, adopted or fully implemented. The ultimate effect of the Dodd-Frank Act on the financial services industry will depend, in large part, upon the extent to which regulators exercise the authority granted to them under the Dodd-Frank Act and the approaches taken in implementing regulations. Additional uncertainty regarding the effect of the Dodd-Frank Act exists due to court decisions and the potential for additional legislative changes to the Dodd-Frank Act. The delay in the implementation of many of the regulations mandated by the Dodd-Frank Act has resulted in a lack of clear regulatory guidance to banks. The resulting uncertainty has caused banks to take a cautious approach to business initiatives and planning. The Company has been impacted, and will likely continue to be in the future, by the so-called Durbin Amendment to the Dodd-Frank Act, which reduced debit card interchange revenue of banks and revised deposit insurance assessments. It also is likely to be impacted by the Dodd-Frank Act in the areas of corporate governance, capital requirements, risk management, stress testing and regulation under consumer protection laws.

Pursuant to the Dodd-Frank Act, the CFPB was given rulemaking authority over most providers of consumer financial services in the U.S., examination and enforcement authority over the consumer operations of large banks, as well as interpretive authority with respect to numerous existing consumer financial services regulations. The CFPB began exercising these oversight authorities over the largest banks during 2011.

In January 2013, the CFPB issued a series of final rules related to mortgage loan origination and mortgage loan servicing, most provisions of which became effective January 10, 2014. These rules prohibit creditors, such as the Bank, from extending residential mortgage loans without regard for the consumer's ability to repay, provide certain safe harbor protections for the origination of loans that meet the requirements for a "qualified mortgage," add restrictions and requirements to residential mortgage origination and servicing practices and restrict the imposition of prepayment penalties and compensation practices relating to residential mortgage loan origination. Compliance with these rules has increased the Company's overall regulatory compliance costs and required the Bank to change its underwriting practices. Moreover, these rules may adversely affect the volume of mortgage loans that the Bank originates and may subject it to increased potential liability related to its residential loan origination activities. In December 2013, the CFPB issued final rules revising and integrating previously separate disclosures required under the Truth in Lending Act and RESPA in connection with closed-end consumer mortgages. These final rules became effective August 1, 2015, and compliance with these rules required the Corporation to adapt its systems and procedures to accommodate the use of new disclosure forms to be provided to closed-end consumer mortgage borrowers at the time of application and at the time of closing for those loans within the timeframes required under these new rules.

RISKS RELATED TO OPERATIONS

Cyber security incidents could disrupt business operations, result in the loss of critical and confidential information, and adversely impact our reputation and results of operations.

The Company's computer systems, software and networks are subject to ongoing cyber incidents, such as unauthorized access; mishandling or misuse of information; loss or destruction of data (including confidential customer information); account takeovers; unavailability of service; computer viruses or other malicious code; cyber-attacks designed to obtain confidential information, destroy data, disrupt or degrade service, sabotage systems or cause other damage; denial of service attacks; and other events. Cyber threats may arise from human error, fraud or malice on the part of employees or third parties, including third party vendors, or may result from accidental technological failure. In addition, the parties intent on penetrating our systems may also attempt to fraudulently induce employees, customers, third parties or other users of our systems to disclose sensitive information in order to gain access to the Company's data or that of the Company's customers.

Cyber security incidents, depending on their nature and scope, could potentially result in the misappropriation, destruction, corruption or unavailability of critical data and confidential or proprietary information (the Company's own or that of third parties) and the disruption of business operations. The potential consequences of a material cyber security incident include reputational damage, litigation with third parties, and increased cyber security protection and remediation costs, which in turn could adversely affect the Company's competitiveness and results of operations. The Company carries insurance to partially offset the risk of loss; however, there can be no assurance that the policy limits or policy exclusions would adequately protect the Company from a related loss.

Potential disruption or failure of network and information processing systems and those of third-party vendors may negatively impact our operations.

The Company's business activities are dependent on its ability to accurately and timely process, record and monitor many transactions. If any of its financial, accounting, network or other information processing systems fail or have other significant shortcomings, the Company could be materially adversely affected. The Company outsources some of it processing and other activities to third party vendors. Third parties with which the Company does business could be sources of operational risk to the Company, including the risk that the third parties' own network and information processing systems could fail. Any of these occurrences could materially diminish the Company's ability to operate one or more of the Company's businesses, or cause the Company to suffer financial loss, a disruption of its business, regulatory sanctions or damage to its reputation, any of which could materially adversely affect the Company.

The Company may be subject to disruptions or failures of the Company's financial, accounting, network and information processing systems arising from events that are wholly or partially beyond the Company's control, which may include, for example, computer viruses or electrical or telecommunications outages, denial of service attacks or hacking targeting the Company's network or information processing systems or the Company's websites, natural disasters, disease pandemics or other damage to property or physical assets or terrorist acts. The Company has developed an emergency recovery program, which includes plans to maintain or resume operations in the event of an emergency and has contingency plans if operations or systems cannot be resumed or restored. The emergency recovery program is periodically reviewed and updated, and components of the emergency recovery program are periodically tested and validated. The Company also reviews and evaluates the emergency recovery programs of vendors which provide certain third-party systems that the Company considers critical. Nevertheless, there is no guarantee that these measures or any other measures can provide absolute security. In addition, because the methods used to cause cyber-attacks change frequently or, in some cases, are not recognized until launched, the Corporation may be unable to implement effective preventive measures or proactively address these methods. Resulting disruptions or failures affecting any of our systems may give rise to interruption in service to customers, damage to the Company's reputation and loss or liability to the Company.

Failure by the Company to keep up with technological advancements in deployment of services and efficiency of operations may make it more vulnerable to competition.

The financial services industry is continually undergoing rapid technological change, with frequent introductions of new technology-driven products and services. The effective use of technology increases efficiency and enables financial institutions to better serve customers and to reduce costs. The Company's future success depends, in part, upon its ability to address the needs of its customers by using technology to provide products and services that will satisfy customer demands, as well as to create additional efficiencies in the Company's operations. Many of the Company's financial institution competitors have substantially greater resources to invest in technological improvements, and new payment services developed and offered by non-financial institution competitors pose an increasing threat to the traditional payment services offered by financial institutions. The Company may not be able to effectively implement new technology-driven products and services, be successful in marketing these products and services to its customers, or effectively deploy new technologies to improve the efficiency of its operations. Failure to successfully keep pace with technological change affecting the financial services industry could have a material adverse impact on the Company's business, financial condition and results of operations.

Further, the costs of new technology, including personnel, can be high in both absolute and relative terms. There can be no assurance, given the fast pace of change and innovation, that the Company's technology, either purchased or developed internally, will meet or continue to meet the needs of the Company and the needs of its customers.

ECONOMIC AND CREDIT RISKS

Difficult economic conditions and real estate markets, including protracted periods of low-growth and sluggish loan demand, can negatively impact the Company's income, and result in higher charge-offs as borrowers' ability to repay is negatively impacted by those conditions.

Lending money is an essential part of the banking business, and the revenues derived from lending activities are the most significant segment of the Company's income statement. Extended periods of sluggish loan demand can materially affect the composition of the Company's consolidated statement of financial condition, reducing the ratio of loans to deposits and the Company's profitability. Adverse changes in the economy and real estate markets and the duration of economic downturns can negatively affect the solvency of businesses and consumers. Borrowers' inability to repay loans causes increases in non-performing assets, which may result in elevated collection and carrying costs related to such non-performing assets and increases in loan charge-offs, significantly impacting the loan loss provision charged to earnings to fund the allowance for loan losses. The risk of non-payment is affected by credit risks of the borrower, changes in economic and industry conditions, the duration of the loan and, in the case of a collateralized loan, uncertainties as to the future value of the collateral supporting the loan. Historically, commercial loans have presented a greater risk of non-payment than consumer loans. The application of various federal and state laws, including bankruptcy and insolvency laws, may limit the amount that can be recovered on these loans.

The Company has established an allowance for loan losses that management believes to be adequate to offset probable losses on the Company's existing loans. However, there is no precise method of estimating loan losses. The Company determines the appropriate level of the allowance for credit losses based on many quantitative and qualitative factors, including, but not limited to: the size and composition of the loan portfolio; changes in risk ratings; changes in collateral values; delinquency levels; historical losses; and economic conditions. In addition, as the Company's loan portfolio grows, it will generally be necessary to increase the allowance for credit losses through additional provisions, which will impact the Company's operating results. If the Company's assumptions and judgments regarding such matters prove to be inaccurate, its allowance for credit losses might not be sufficient, and additional provisions for credit losses might need to be made. Depending on the amount of such provisions for credit losses, the adverse impact on the Company's earnings could be material. Also, there can be no assurance that any future declines in real estate market conditions, general economic conditions or changes in regulatory policies will not require the Company to increase its allowance for loan losses, through additional loan loss provisions, which could reduce earnings.

Investment securities losses, including other-than-temporary declines in the value of available for sale securities, may result in charges to earnings that could negatively impact our results of operations.

Price fluctuations in securities markets, as well as other market events, could have an impact on the Company's results of operations. As described below, the Company's holding of certain securities and the revenues the Company earns from its trust and investment management services business are particularly sensitive to those events:

Equity investments:
As of December 31, 2019, the Company's equity investments were comprised primarily of publicly traded financial institutions. The value of the securities in the Company's equity portfolio may be affected by several factors. General economic conditions and uncertainty surrounding the financial institution sector impacts the value of these securities. Upon the adoption of Accounting Standard Update (ASU) 2016-01, *Measurement of Financial Asset Instruments*, on January 1, 2018, equity investments are stated at fair value with realized and unrealized gains and losses reported in net income. Declines in bank stock values in general, as well as deterioration in the performance of specific banks, are now reflected on the Consolidated Statements of Income.

Prior to the adoption of ASU 2016-01, unrealized gains and losses on equity investments were reported as a separate component of AOCI, net of tax, and deterioration of the value or performance of the stock could result in other-than-temporary impairment charges. Considerations used to determine other-than-temporary impairment status to individual holdings include the length of time the stock has remained in an unrealized loss position, and the percentage of unrealized loss compared to the carrying cost of the stock, dividend reduction or suspension, market analyst reviews and expectations, and other pertinent news that would affect expectations for recovery or further decline.

Municipal securities:
As of December 31, 2019, the Company had approximately $4.6 million of municipal securities issued by various municipalities in its investment portfolio. Uncertainty with respect to the financial viability of municipal insurers places greater emphasis on the underlying strength of issuers. Increasing pressure on local tax revenues of issuers due to adverse economic conditions could also have a negative impact on the underlying credit quality of issuers.

Investment management and trust services revenue:
The Company's investment management and trust services revenue is also impacted by fluctuations in the securities markets. A portion of this revenue is based on the value of the underlying investment portfolios. If the values of those investment portfolios decrease, whether due to factors influencing U.S. securities markets in general or otherwise, the Company's revenue could be negatively impacted. In addition, the Company's ability to sell its brokerage services is dependent, in part, upon consumers' level of confidence in securities markets.

RISKS RELATED TO INVESTMENT IN THE COMPANY'S STOCK

The Corporation is a holding company and relies on dividends from its subsidiaries for substantially all its revenue and its ability to make dividends, distributions and other payments.

The Company is a separate and distinct legal entity from the Bank and depends on the payment of dividends from the Bank for substantially all its revenues. As a result, the Company's ability to make dividend payments on its common stock depends primarily on certain federal and state regulatory considerations and the receipt of dividends and other distributions from its subsidiaries. There are various regulatory and prudential supervisory restrictions, which may change from time to time, that impact the ability of the Bank to pay dividends or make other payments to the Company. There can be no assurance that the Bank will be able to pay dividends at past levels, or at all, in the future. If the Company does not receive enough cash dividends or is unable to borrow from the Bank, then the Company may not have enough funds to pay dividends to its shareholders, repurchase its common stock or service its debt obligations.

"Anti-takeover" provisions may keep shareholders from receiving a premium for their shares.

The Articles of Incorporation of the Company presently contain certain provisions, such as staggered Board of Directors terms and super majority voting requirements for transactions not approved by the Company's Board of Directors, which may be deemed to be "anti-takeover" in nature in that such provisions may deter, discourage or make more difficult the assumption of control of the Company by another Company or person through a tender offer, merger, proxy contest or similar transaction or series of transactions. In addition, provisions of Pennsylvania and applicable banking laws could similarly make it more difficult for a third party to acquire control of the Company. The overall effects of the "anti-takeover" provisions may be to discourage, make costlier or more difficult, or prevent a future takeover offer, thereby preventing shareholders from receiving a premium for their securities in a takeover offer. These provisions may also increase the possibility that a future bidder for control of the Company will be required to act through arms-length negotiation with the Company's Board of Directors. Copies of the Articles of Incorporation of the Company are on file with the Securities and Exchange Commission and the Pennsylvania Secretary of State.

If the Company fails to maintain an effective system of internal controls, it may not be able to accurately report its financial results or prevent fraud. As a result, current and potential shareholders could lose confidence in the Company's financial reporting, which could harm its business and the trading price of its common stock.

The Company has established a process to document and evaluate its internal controls over financial reporting in order to satisfy the requirements of Section 404 of the Sarbanes-Oxley Act of 2002 and related regulations, which require annual management assessments of the effectiveness of the Company's internal controls over financial reporting and a report by the Company's independent registered public accounting firm on the effectiveness of the Company's internal controls. In this regard, management has dedicated internal resources, engaged outside consultants and adopted a detailed work plan to (i) assess and document the adequacy of internal controls over financial reporting, (ii) take steps to improve control processes, where appropriate, (iii) validate through testing that controls are functioning as documented and (iv) maintain a continuous reporting and improvement process for internal control over financial reporting.

The Company's efforts to comply with Section 404 of the Sarbanes-Oxley Act of 2002 and the related regulations regarding the Company's assessment of its internal controls over financial reporting and the Company's independent registered public accounting firm audit of internal control are likely to continue to result in increased expenses. The Company's management and audit committee have given the Company's compliance with Section 404 a high priority. The Company cannot be certain that these measures will ensure that the Company implements and maintains adequate controls over its financial processes and reporting in the future. Any failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm the Company's operating results or cause the Company to fail to meet its reporting obligations. If the Company fails to correct any issues in the design or operating effectiveness of internal controls over financial reporting or fails to prevent fraud, current and potential shareholders could lose confidence in the Company's financial reporting, which could harm its business and the trading price of its common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The physical properties of the Company are all owned or leased by the Bank.

The Bank owns and operates, for banking purposes, the buildings located at:

One South Main Street, Mifflintown, Pennsylvania (branch office)
218 Bridge Street, Mifflintown, Pennsylvania (corporate headquarters)
4068 William Penn Highway, Mifflintown, Pennsylvania (branch office)
1762 Butcher Shop Road, Mifflintown, Pennsylvania (operations center and Trust offices)
301 Market Street, Port Royal, Pennsylvania (branch office)
30580 Rt. 35, McAlisterville, Pennsylvania (branch office)
Four North Market Street, Millerstown, Pennsylvania (branch office)
17428 Tuscarora Creek Road, Blairs Mills, Pennsylvania (branch office)
One East Market Street, Lewistown, Pennsylvania (branch office)
20 Prince Street, Reedsville, Pennsylvania (branch office)
100 West Water Street, Lewistown, Pennsylvania (branch office)
320 South Logan Boulevard, Burnham, Pennsylvania (branch office)
571 Main Street, Richfield, Pennsylvania (branch office)
64 Main Street, Port Allegany, Pennsylvania (branch office)
118 East Second Street, Coudersport, Pennsylvania (branch office)
104 N Front Street, Liverpool, Pennsylvania (branch office)

The Bank leases four offices:
Branch Offices
Wal-Mart Supercenter, Route 522 South, Lewistown, Pennsylvania (lease expires January 2022)
52 West Mill Street, Port Allegany, Pennsylvania (lease expires June 2028)
Financial Services Office
129 South Main Street, Suite 600, Lewistown, Pennsylvania (lease expires October 2029)
Loan Production Office
1366 South Atherton Street, State College, Pennsylvania (lease expires December 2020)

ITEM 3. LEGAL PROCEEDINGS

The nature of the Company's and Bank's business, at times, generates litigation involving matters arising in the ordinary course of business. However, in the opinion of management, there are no proceedings pending to which the Company or the Bank is a party or to which its property is subject, which, if adversely determined, would be material in relation to their financial condition. In addition, no material proceedings are pending or are known to be threatened or contemplated against the Company by government authorities or others.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information:
The common stock of Juniata Valley Financial Corp. is quoted under the symbol "JUVF" on the Pink Open Market, an electronic inter-dealer quotation and trading system available through, and governed by, the NASDAQ system.

Transfer Agent:
Computershare, Attn: Shareholder Services, P.O. Box 30170, College Station, TX 77842-3170. Phone: (800) 368-5948. Website: www.Computershare.com/investor.

Holders:
As of March 16, 2020, there were 1,742 registered holders of the Company's outstanding common stock.

For information concerning the Company's Equity Compensation Plans, see "Item 12: Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters".

Dividends:
Cash dividends of $0.88 were declared in 2019 and 2018. As stated in Note 16 – Stockholders' Equity and Regulatory Matters, in The Notes to Consolidated Financial Statements, the Company is subject to various regulatory capital requirements that limit the amount of capital available for dividends. While the Company expects to continue its policy of regular dividend payments, no assurance of future dividend payments can be given. Future dividend payments will depend upon the Company's financial condition, earnings, capital and regulatory requirements, prospects, business conditions and other factors deemed relevant by the Board of Directors.

Annual Meeting:
The Annual Meeting of Shareholders of Juniata Valley Financial Corp. will be held at 10:30 a.m., on Tuesday, May 19, 2020 at the Juniata Valley Bank Financial Center, 1762 Butcher Shop Road, Mifflintown, Pennsylvania.

Recent Sales of Unregistered Securities:
None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers:

The Company periodically repurchases shares of its common stock under the share repurchase program approved by the Board of Directors. The program will remain authorized until all approved shares are repurchased, unless terminated by the Board of Directors. There were 21,508 shares purchased with respect to the program during the fourth quarter of 2019, and 148,266 shares remain available to purchase under the program.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs (1)
October 1-31, 2019	—	$ —	—	169,774
November 1-30, 2019	8,210	19.95	—	161,564
December 1-31, 2019	13,298	19.90	—	148,266
Totals	21,508		—	148,266

ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

THREE-YEAR FINANCIAL SUMMARY

(Dollars in thousands, except share and per share data)

	2019	2018	2017
BALANCE SHEET INFORMATION at December 31			
Assets	$ 670,632	$ 625,236	$ 591,945
Deposits	531,937	521,722	477,668
Loans, net of allowance for loan losses	397,629	414,597	380,965
Investments	217,482	148,802	157,278
Goodwill	9,047	9,139	5,448
Short-term borrowings and repurchase agreements	13,129	14,511	21,769
Long-term debt	45,000	15,000	25,000
Stockholders' equity	73,707	67,378	59,387
Number of shares outstanding	5,099,729	5,092,048	4,767,656
Average for the year			
Assets	647,282	614,632	593,923
Stockholders' equity	70,771	62,689	59,938
Weighted average shares outstanding for the year - basic	5,101,595	4,987,186	4,765,165
Weighted average shares outstanding for the year - diluted	5,120,699	5,009,484	4,775,505
INCOME STATEMENT INFORMATION			
Years Ended December 31			
Total interest income	$ 25,614	$ 23,651	$ 21,374
Total interest expense	4,708	3,635	2,855
Net interest income	20,906	20,016	18,519
Provision for loan losses	(573)	337	439
Non-interest income	4,749	5,027	5,292
Non-interest expense	20,407	19,461	17,775
Income before income taxes	5,821	5,245	5,597
Federal income tax (benefit) expense	(14)	(659)	1,060
Net income	$ 5,835	$ 5,904	$ 4,537
PER SHARE DATA			
Earnings per share - basic	$ 1.14	$ 1.18	$ 0.95
Earnings per share - diluted	1.14	1.18	0.95
Cash dividends	0.88	0.88	0.88
Book value	14.45	13.23	12.46
FINANCIAL RATIOS			
Return on average assets	0.90 %	0.96 %	0.76 %
Return on average equity	8.24	9.42	7.57
Dividend payout	76.93	74.71	92.44
Average equity to average assets	10.93	10.20	10.09
Loans to deposits (year-end)	74.75	79.47	79.76
Yield on earning assets	4.31	4.18	3.92
Cost to fund earning assets	1.06	0.85	0.68
Non-interest income [excluding gains (losses) on sales or calls of securities] to average assets	0.74	0.82	0.89
Non-interest expense to average assets	3.15	3.17	2.99
Net non-interest expense to average assets	2.41	2.35	2.10

FORWARD-LOOKING STATEMENTS

The information contained in this Annual Report on Form 10-K contains forward-looking statements (as such term is defined in the Securities Exchange Act of 1934 and the regulations thereunder) including statements which are not historical facts or that reflect trends or management's intentions, plans, beliefs, expectations or opinions. Such forward-looking statements are subject to risks and uncertainties and may be affected by various factors which may cause actual results to differ materially from those in the forward-looking statements including, without limitation:

- the impact of adverse changes in the economy and real estate markets, including protracted periods of low-growth and sluggish loan demand;
- the effect of market interest rates and uncertainties, and relative balances of rate-sensitive assets to rate-sensitive liabilities, on net interest margin and net interest income;
- the effect of competition on rates of deposit and loan growth and net interest margin;
- increases in non-performing assets, which may result in increases in the allowance for credit losses, loan charge-offs and elevated collection and carrying costs related to such non-performing assets;
- other income growth, including the impact of regulatory changes which have reduced debit card interchange revenue;
- investment securities gains and losses, including other than temporary declines in the value of securities which may result in charges to earnings;
- the effects of changes in the applicable federal income tax rate;
- the level of other expenses, including salaries and employee benefit expenses;
- the impact of increased regulatory scrutiny of the banking industry;
- the impact of governmental monetary and fiscal policies, as well as legislative and regulatory changes;
- the results of regulatory examination and supervision processes;
- the failure of assumptions underlying the establishment of reserves for loan and lease losses, and estimations of collateral values and various financial assets and liabilities;
- the increasing time and expense associated with regulatory compliance and risk management;
- the ability to implement business strategies, including business acquisition activities and organic branch, product, and service expansion strategies;
- capital and liquidity strategies, including the impact of the capital and liquidity requirements modified by the Basel III standards;
- the effects of changes in accounting policies, standards, and interpretations on the presentation in the Company's consolidated balance sheets and consolidated statements of income;
- the Company's failure to identify and to address cyber-security risks;
- the Company's ability to keep pace with technological changes;
- the Company's ability to attract and retain talented personnel;
- the Company's reliance on its subsidiary for substantially all of its revenues and its ability to pay dividends;
- the effects of changes in relevant accounting principles and guidelines on the presentation in the Company's financial condition;
- acts of war, terrorism or pandemics;
- disruptions due to flooding, severe weather, or other natural disasters;
- failure of third party service providers to perform their contractual obligations; and
- impact of CECL.

OVERVIEW

This discussion concerns Juniata Valley Financial Corp. ("Company" or "Juniata") and its wholly owned subsidiary, The Juniata Valley Bank ("Bank"). Juniata is a bank holding company that delivers financial services within its market, primarily central Pennsylvania. The Bank provides retail and commercial banking, trust, estate, and wealth management services through 16 offices in Juniata, Mifflin, Perry, Huntingdon, McKean, Potter and Centre counties. On April 30, 2018, Juniata, which previously owned 39.16%, or 1,214 of the 3,100 outstanding common shares of Liverpool Community Bank ("Liverpool" or "LCB"), completed the acquisition of the remainder of Liverpool's outstanding common stock. Under the terms of a merger agreement between the parties, LCB merged with and into the Bank.

The overview is intended to provide a context for the following Management's Discussion and Analysis of Financial Condition and Results of Operations. Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our consolidated financial statements, including the notes thereto, included in this Annual Report on Form 10-K. We have attempted to identify the most important matters on which our management focuses in evaluating our financial condition and operating performance and the short-term and long-term opportunities, challenges and risks (including material trends and uncertainties) which we face. We also discuss the actions we are taking to address these opportunities, challenges and risks. The Overview is not intended as a summary of, or a substitute for review of, Management's Discussion and Analysis of Financial Condition and Results of Operations.

ECONOMIC AND INDUSTRY-WIDE FACTORS RELEVANT TO JUNIATA
As a financial services organization, Juniata's core business is most influenced by the level of, and movement of, interest rates. Lending and investing are done daily, using funding from deposits and borrowings, resulting in net interest income, the most significant portion of operating results. Through the use of asset/liability management tools, the Company continually evaluates the effects that possible changes in interest rates could have on operating results and balance sheet growth. Using this information, along with analysis of competitive factors, management designs and prices its products and services.

General economic conditions are relevant to Juniata's business. In addition, economic factors impact customers' needs for financing, thus affecting loan growth. Additionally, changes in the economy can directly impact the credit strength of existing and potential borrowers.

FOCUS OF MANAGEMENT

The management of Juniata believes that it is important to know who and what we are in order to be successful. We must be aligned in our efforts to achieve goals. We've identified the four characteristics that define the Company and the personnel that support it. We are **Committed, Capable, Caring** and **Connected**. Management seeks to be the preeminent financial institution in its market area and measures its success by the five key elements described below.

SHAREHOLDER SATISFACTION
Above all else, management is **committed** to maximizing the value of our shareholders' investment, through both stock value appreciation and dividend returns. Remaining **connected** to our communities will allow us to identify the financial needs of our market and to deliver those products and services **capably**. In doing so, we will seek to profitably grow the balance sheet and enhance earnings, while maintaining capital and liquidity levels that exceed all regulatory guidelines.

CUSTOMER RELATIONSHIPS
We are **committed** to maximizing customer satisfaction. We are sensitive to the expanding array of financial services and financial service providers available to our customers, both locally and globally. We are **committed** to fostering a complete customer relationship by helping clients identify their current and future financial needs and offering practical and affordable solutions to both. As our customers' lifestyles change, the channels through which we deliver our services must change as well. One element of the Company's strategic plan is to provide **connection** through every means available, wherever we are needed, whether through a stand-alone branch, in-store boutique, ATM or via online and mobile banking anywhere internet or cell phone signals can be received. In 2019, we continued to make advances in technological resources, placing data and information in the hands of our customers and employees, because we are **committed** to optimizing the customer experience.

BALANCE SHEET GROWTH
We are **capable** of profitable balance sheet growth. Rapid growth should not be a substitute for careful fiscal and strategic management. It is our goal to continue quality growth despite intense competition by paying **careful** attention to the needs of our customers. We will continue to maintain high credit standards, knowing that lending under the right circumstances is the proper way to maintain soundness and profitability. We believe we consistently pay fair market rates on all deposits and have invested wisely and conservatively in compliance with self-imposed standards, minimizing risk of asset impairment. We aspire to increase our market share within the current communities that we serve, and to expand in contiguous areas through acquisition and investment. As part of our strategic plan for growth, we continue to actively seek

opportunities for acquisitions of branches or stakes in other financial institutions, similar to those that have occurred in prior years, and most recently in April 2018 with the acquisition of LCB.

OPERATING RESULTS

We are **capable** of producing profitability ratios that exceed those of many of our peers. Recognizing that net interest margins have narrowed for banks in general and that they may not return to the ranges experienced in the past, we also focus on the importance of providing fee-generating services in which customers find value. Offering a broad array of services prevents us from becoming too reliant on one form of revenue. It has also been our philosophy to spend conservatively and to implement operating efficiencies where possible to keep non-interest expense from escalating in areas that can be controlled.

CONNECTION TO THE COMMUNITY

We are active corporate citizens of the communities we serve. Although the world of banking has transitioned to global availability through electronics, we believe that our community banking philosophy is not only still valid, but essential. Despite technological advances, banking is still a personal business, particularly in the rural areas we serve. We believe that our customers shop for services and value a relationship with an institution involved in the same community, with the same interests in its prosperity. We have a foundation and a history in each of the communities we serve. Management takes an active role in local business and industry development organizations to help attract and retain commerce in our market area. We provide businesses, large and small, with financial tools and financing needed to grow and prosper. We have always been **committed** to responsible lending practices. We invest locally by including local municipal bonds in our investment portfolio and participating in funding for such projects as low income and elderly housing. We support charitable programs that benefit the local communities, not only with monetary contributions, but also through the personal involvement of our **caring** employees. In 2019, we initiated the JAVA with JVB program offering in-person training and online videos via social media to educate our customers and the communities we serve on various banking and financial related topics.

JUNIATA'S OPPORTUNITIES

SOUNDNESS AND STABILITY

Our financial condition is strong. We enjoy strong capital and liquidity ratios that significantly exceed regulatory guidelines. Our business model includes a plan for growth without sacrificing profitability or integrity. We believe an opportunity exists for banks such as ours to offer the trusted, personal service of a locally managed institution that has roots in the community reaching back over 150 years.

EXPANSION OF CUSTOMER BASE

Our strategic focus is based on leveraging our collective knowledge of the Company's primary and contiguous markets to identify lending or fee-based opportunities consistent with our risk parameters and profitability targets. We continue to develop our sales team through mentoring and by making employee education paramount. We continually seek and implement back-room efficiencies. We recognize change is taking place in a world where convenience and mobility are priorities for consumers and businesses when choosing a financial institution with whom to do business. We offer full-featured secure mobile banking that includes remote check deposit for use on home computers and all mobile devices for consumers. For businesses, we provide options for cash management and remote deposit. We offer identity protection to the families of our customers, which we believe to be a true value-added service, with features that go far beyond traditional banking services, and sets us apart from other financial institutions in our market area. With the acquisition of First National Bank of Port Allegheny ("FNBPA") in 2015, we expanded our market into the northern tier region of Pennsylvania and integrated the JVB brand there and have since expanded our footprint in Perry County, Pennsylvania, through the consummation of the acquisition of LCB in April 2018.

DELIVERY SYSTEM ENHANCEMENTS

We seek to continually enhance our customer delivery system, both through technology and physical facilities. We actively seek opportunities to expand our branch network through acquisitions. We believe that it is imperative that our customers have convenient and easy access to personal financial services that complement their particular lifestyle, whether it is through electronic or personal delivery. We achieved an early entry into the mobile banking arena and have since expanded online delivery, including consumer remote deposit and Touch ID. Through the fully redesigned JVBonline.com website, we offer a suite of online services including the convenience of online loan applications for residential mortgages, home equity, vehicle and other personal loans. Online and mobile banking features include full bill-pay and monetary transfers between internal and external accounts. Our ATM network is equipped with state-of-the art machines. Our Customer Care Center provides a dedicated service to address all customer inquiries and provides outreach through our social media sites. Our updated branch facilities feature a highly interactive and complete customer experience. In 2020, Juniata plans to add online deposit account opening capability to our product line.

JUNIATA'S CHALLENGES

NET INTEREST MARGIN COMPRESSION

The low interest rate environment that has persisted in recent years has pressured the net interest margin for most banks, including Juniata. Loans have been originated, acquired or repriced at lower rates, reducing the average rate earned on those assets. While the average rate paid on interest-bearing liabilities, such as deposits and borrowings, has also declined, the decline has not always occurred at the same pace as the decline in the average rate earned on interest-earning assets, which can result in a narrowing of the net interest margin. We believe that increasing the net interest margin will continue to be a challenge until general market rates rise more significantly.

COMPETITION

Each year, competition becomes more intense and global in nature. To meet this challenge, we attempt to stay in close contact with our customers, monitoring their satisfaction with our services through surveys, personal visits and networking in the communities we serve. We strive to meet or exceed our customers' expectations and deliver consistent high-quality service. We believe that our customers have become acutely aware of the value of local service, and we strive to maintain their confidence.

RATE ENVIRONMENT

We intend to continue making what we believe to be rational pricing decisions for loans, deposits and non-deposit products. This strategy can be difficult to maintain, as many of our peers appear to continue pricing for growth, rather than long-term profitability and stability. We believe that a strategy of "growth for the sake of growth" results in lower profitability, and such actions by large groups of banks have had an adverse impact on the entire financial services industry. We intend to maintain our core pricing principles, which we believe protect and preserve our future as a sound community financial services provider, proven by results.

REGULATIONS

The Company is subject to banking regulation, as well as regulation by the Securities and Exchange Commission ("SEC") and, as such, must comply with many laws, including the USA Patriot Act, the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley") and the Dodd-Frank Wall Street Reform and Consumer Protection Act. Management has established a Disclosure Committee for Financial Reporting, an internal group at Juniata that seeks to ensure that current and potential investors in the Company receive full and complete information concerning our financial condition. Juniata has incurred direct and indirect costs associated with compliance with the SEC's filing and reporting requirements imposed on public companies by the Sarbanes-Oxley Act, as well as adherence to new and existing banking regulations and stronger corporate governance requirements. Regulatory burdens continue to increase as evidenced by the provisions in the Dodd-Frank Act that impact the Company in the areas of corporate governance, capital requirements and restrictions on fees that may be charged to consumers.

APPLICATION OF CRITICAL ACCOUNTING POLICIES

The Company's consolidated financial statements are prepared based upon the application of accounting principles generally accepted in the United States of America ("GAAP"), the most significant of which are described in Note 2 of The Notes to Consolidated Financial Statements – Summary of Significant Accounting Policies. Certain of these policies, particularly with respect to allowance for loan losses and the investment portfolio, require numerous estimates and economic assumptions, based upon information available as of the date of the consolidated financial statements. As such, over time, they may prove inaccurate or vary and may significantly affect the Company's reported results and financial position in future periods.

The accounting policy for establishing the allowance for loan losses relies to a greater extent on the use of estimates than other areas and, as such, has a greater possibility of producing results that could be different from those currently reported. Changes in underlying factors, assumptions or estimates in the allowance for loan losses could have a material impact on the Company's future financial condition and results of operations. The allowance for loan losses is maintained at a level believed adequate by management to absorb probable losses in the loan portfolio. Management's determination of the adequacy of the allowance for loan losses is based upon an evaluation of individual credits in the loan portfolio, historical loan loss experience, current economic conditions and other relevant factors. This determination is inherently subjective, as it requires material estimates, including the amounts and timing of future cash flows expected to be received on impaired loans that may be susceptible to significant change.

RESULTS OF OPERATIONS

2019 and 2018 FINANCIAL PERFORMANCE OVERVIEW

The comparability of the results of operations for the years ended December 31, 2019 and December 31, 2018 was impacted by the following events discussed in more detail below: (i) the termination of The Juniata Valley Bank Retirement Plan ("JVB Plan") and (ii) the acquisition of LCB. Juniata's management believes it is meaningful to present a performance comparison that segregates the financial impact of the afore-mentioned items, to allow a view of comparative results to 2018. The following discussion includes both GAAP, as well as non-GAAP financial measures that are reconciled to GAAP financial measures in the supplemental tables presented below. The non-GAAP measures are referred to as "adjusted" results.

In 2019, Juniata satisfied all obligations of the JVB Plan, recording pre-tax pension settlement charges of $1,221,000 during the year, compared to a pre-tax pension settlement charge of $210,000 recorded in 2018. The pre-tax charges represent the acceleration of pension expenses that would otherwise have impacted Juniata's future earnings.

Prior to Juniata's acquisition of Liverpool on April 30, 2018, Juniata owned 39.16% of the outstanding common stock of Liverpool and recorded its share of Liverpool's earnings as "income from unconsolidated subsidiary" using the equity method of accounting. In conjunction with the acquisition, Juniata incurred $884,000 in merger-related expenses during the year ended December 31, 2018, while no merger-related expenses were incurred in 2019. An adjustment to the carrying value of Juniata's previous 39.16% ownership of Liverpool at April 30, 2018 resulted in a recorded pre-tax net gain of $215,000 during the year ended December 31, 2018. In addition, a credit to the income tax provision of $406,000 was recorded in 2018 to remove a deferred tax liability related to Juniata's previous 39.16% ownership in Liverpool upon Juniata's acquisition of Liverpool, while no similar credit was recorded in 2019.

Net income for Juniata in 2019 was $5,835,000, compared to net income of $5,904,000 for 2018. Earnings per share on a fully diluted basis decreased from $1.18 in 2018 to $1.14 in 2019. When adjusted for the impact of the tax-effected events mentioned above, adjusted net income was $6,800,000 for the year ended December 31, 2019, an increase of 12.9% over adjusted net income of $6,024,000 for the year ended December 31, 2018. Adjusted earnings per share increased by 9.9% from $1.21 in 2018 to $1.33 in 2019. For 2019, return on average assets ("ROA") and return on average equity ("ROE") were 0.90% and 8.24%, respectively. On an adjusted basis, return on average assets was 1.05% in 2019 compared to 0.98% in 2018, while return on average equity was 9.61% in both 2019 and 2018.

The net interest margin, on a fully tax-equivalent basis, decreased from 3.60% in 2018 to 3.57% in 2019. The yield on earning assets increased 13 basis points to 4.31%, while the cost of funds increased 21 basis points, to 1.06%, in 2019 compared to 2018.

Below, and on the following page, are the comparative disclosures illustrating the reconciliation of the non-GAAP financial measures discussed on the previous page to GAAP financial measures for the most recent two years.

(Dollars in thousands)

	2019	2018
Non-GAAP presentation of comparative net income		
Net Income	$ 5,835	$ 5,904
Adjustments to reported net income to reconcile to non-GAAP measure		
Defined benefit plan settlement cost included in employee benefits	1,221	210
Tax benefit of defined benefit plan settlement cost	(256)	(44)
Merger-related expense	—	884
Tax benefit of merger-related expense	—	(186)
Merger-related net gain on carrying value of 39.16% in LCB	—	(215)
Tax expense of merger-related gains	—	45
(Increase) reduction in valuation of deferred tax assets due to TCJA	—	(168)
Reduction in deferred tax liability related to previous investment in unconsolidated subsidiary	—	(406)
Total adjustments to reported net income to reconcile to non-GAAP measure	965	120
Adjusted net income (non-GAAP)	$ 6,800	$ 6,024

(Dollars in thousands, except share and per share data)

	2019	2018
Non-GAAP presentation of performance ratios		
Adjusted Earnings Per Share (Diluted)		
Earnings per share (diluted)	$ 1.14	$ 1.18
Adjustments to reported diluted earnings per share to reconcile to non-GAAP measure (tax effected)		
Defined benefit settlement cost (tax effected)	0.19	0.03
Merger-related expenses (tax effected)	—	0.14
Merger-related gains (tax effected)	—	(0.03)
Reduction in valuation of deferred tax assets	—	(0.03)
Reduction in valuation of deferred tax liability	—	(0.08)
Total adjustments to reported diluted earnings per share to reconcile to non-GAAP measure	0.19	0.03
Adjusted earnings per share (diluted) (non-GAAP)	$ 1.33	$ 1.21
Net Income	$ 5,835	$ 5,904
Average Assets	647,282	614,632
Average Equity	70,771	62,689
Weighted average diluted shares outstanding	5,120,699	5,009,484
Adjusted Return on Average Assets		
Return on average assets	0.90 %	0.96 %
Total adjustments to reported net income to reconcile to non-GAAP measure	0.15	0.02
Adjusted return on average assets	1.05 %	0.98 %
Adjusted Return on Average Equity		
Return on average equity	8.24 %	9.42 %
Total adjustments to reported net income to reconcile to non-GAAP measure	1.36	0.19
Adjusted return on average equity	9.61 %	9.61 %

Juniata strives to attain consistently satisfactory earnings levels each year by protecting the core (repeatable) earnings base through conservative growth strategies that seek to minimize stockholder and balance-sheet risk, while serving its rural

Pennsylvania customer base. This approach has helped achieve solid performances year after year. The Company considers the return on assets ratio to be a key indicator of its success and constantly scrutinizes the broad categories of the income statement that impact this profitability indicator.

Summarized below are the components of net income and the contribution of each to ROA for 2019 and 2018.

(Dollars in thousands)	2019		2018	
	Net Income Components	% of Average Assets	Net Income Components	% of Average Assets
Net interest income	$ 20,906	3.23 %	$ 20,016	3.26 %
Provision for loan losses	573	0.09	(337)	(0.05)
Customer service fees	1,717	0.27	1,779	0.29
Debit card fee income	1,349	0.21	1,280	0.21
BOLI	289	0.04	352	0.06
Trust fees	394	0.06	430	0.07
Commissions from sales of non-deposit products	272	0.04	259	0.04
Income from unconsolidated subsidiary	—	—	296	0.05
Fees derived from loan activity	333	0.05	416	0.07
Mortgage banking income	68	0.01	70	0.01
Security losses	(43)	(0.01)	(188)	(0.03)
Other noninterest income	370	0.06	333	0.05
Total noninterest income	4,749	0.73	5,027	0.82
Employee expense (excluding defined benefit settlement cost)	(10,630)	(1.64)	(10,070)	(1.64)
Defined benefit settlement cost	(1,221)	(0.19)	(210)	(0.03)
Occupancy and equipment	(2,177)	(0.34)	(2,035)	(0.33)
Data processing expense	(2,114)	(0.33)	(1,924)	(0.31)
Director compensation	(206)	(0.03)	(215)	(0.03)
Professional fees	(961)	(0.1)	(640)	(0.1)
Taxes, other than income	(567)	(0.09)	(498)	(0.08)
FDIC insurance premiums	(108)	(0.02)	(274)	(0.04)
Gain on sales of other real estate owned	208	0.03	60	0.01
Intangible amortization	(87)	(0.01)	(79)	(0.01)
Amortization of investment in partnership	(792)	(0.12)	(800)	(0.13)
Merger and acquisition expense	—	—	(884)	(0.14)
Other noninterest expense	(1,752)	(0.27)	(1,892)	(0.31)
Total noninterest expense	(20,407)	(3.15)	(19,461)	(3.17)
Income tax benefit	14	0.00	659	0.11
Net income	$ 5,835	0.90 %	$ 5,904	0.96 %
Average assets	$ 647,282		$ 614,632	

NET INTEREST INCOME

Net interest income is the amount by which interest income on earning assets exceeds interest expense on interest bearing liabilities. Net interest income is the most significant component of revenue, comprising approximately 81% of total revenues (the total of net interest income and non-interest income, exclusive of security losses) for 2019. Interest spread measures the absolute difference between average rates earned and average rates paid. Because some interest earning assets are tax-exempt, an adjustment is made for analytical purposes to present all assets on a fully tax-equivalent basis. Net interest margin is the percentage of net return on average earning assets, on a fully tax-equivalent basis, and provides a measure of comparability of a financial institution's performance.

Both net interest income and net interest margin are impacted by interest rate changes, changes in the relationships between various rates and changes in the composition of the average balance sheet. Additionally, product pricing, product mix and customer preferences dictate the composition of the balance sheet and the resulting net interest income. Table 1 shows average asset and liability balances, average interest rates and interest income and expense for the years 2019, 2018 and 2017. Table 2 further shows changes attributable to the volume and rate components of net interest income.

TABLE 1
AVERAGE BALANCE SHEETS AND NET INTEREST INCOME ANALYSIS

(Dollars in thousands)	Year Ended December 31, 2019			Year Ended December 31, 2018			Year Ended December 31, 2017		
	Average Balance(1)	Interest	Yield/ Rate	Average Balance(1)	Interest	Yield/ Rate	Average Balance(1)	Interest	Yield/ Rate
ASSETS									
Interest earning assets:									
Taxable loans (5)	$ 375,333	$ 19,876	5.30 %	$ 379,696	$ 19,092	5.03 %	$ 355,033	$ 17,090	4.81 %
Tax-exempt loans	32,987	1,184	3.59	29,666	968	3.26	30,378	915	3.01
Total loans	408,320	21,060	5.16	409,362	20,060	4.90	385,411	18,005	4.67
Taxable investment securities	168,880	4,115	2.44	131,420	3,040	2.31	134,607	2,888	2.15
Tax-exempt investment securities	6,948	147	2.12	19,988	393	1.97	24,797	451	1.82
Total investment securities	175,828	4,262	2.42	151,408	3,433	2.27	159,404	3,339	2.09
Interest bearing deposits	6,835	206	3.01	3,246	132	4.07	580	30	5.17
Federal funds sold	3,804	86	2.26	1,267	26	2.05	—	—	0.00
Total interest earning assets	594,787	25,614	4.31	565,283	23,651	4.18	545,395	21,374	3.92
Non-interest earning assets:									
Cash and due from banks	12,018			12,685			10,513		
Allowance for loan losses	(3,121)			(3,016)			(2,809)		
Premises and equipment	8,565			8,757			6,823		
Other assets (7)	35,033			30,923			34,001		
Total assets	$ 647,282			$ 614,632			$ 593,923		
LIABILITIES AND STOCKHOLDERS' EQUITY									
Interest bearing liabilities:									
Interest bearing demand deposits (2)	$ 153,056	1,219	0.80	$ 141,483	978	0.69	$ 123,520	404	0.33
Savings deposits	98,462	98	0.10	102,086	102	0.10	99,385	99	0.10
Time deposits	149,532	2,389	1.60	148,671	1,988	1.34	139,652	1,626	1.16
Short-term and long-term borrowings and other interest bearing liabilities	42,081	1,002	2.38	33,136	567	1.71	56,846	726	1.28
Total interest bearing liabilities	443,131	4,708	1.06	425,376	3,635	0.85	419,403	2,855	0.68
Non-interest bearing liabilities:									
Demand deposits	127,577			120,521			108,141		
Other	5,803			6,046			6,441		
Stockholders' equity	70,771			62,689			59,938		
Total liabilities and stockholders' equity	$ 647,282			$ 614,632			$ 593,923		
Net interest income and net interest rate spread		$ 20,906	3.25 %		$ 20,016	3.33 %		$ 18,519	3.24 %
Net interest margin on interest earning assets (3)			3.51 %			3.54 %			3.40 %
Net interest income and net interest margin - Tax equivalent basis (4)		$ 21,260	3.57 %		$ 20,378	3.60 %		$ 19,223	3.52 %

Notes:

(1) Average balances were calculated using a daily average.

(2) Includes interest-bearing demand and money market accounts.

(3) Net margin on interest earning assets is net interest income divided by average interest earning assets.

(4) Interest on obligations of states and municipalities is not subject to federal income tax. In order to make the net yield comparable on a fully taxable basis, a tax equivalent adjustment is applied against the tax-exempt income utilizing a federal tax rate of 21% in both 2019 and 2018, and 34% in 2017.

TABLE 2
RATE/VOLUME ANALYSIS OF NET INTEREST INCOME

(Dollars in thousands)	2019 Compared to 2018			2018 Compared to 2017		
	Increase (Decrease) Due To (6)			Increase (Decrease) Due To (6)		
	Volume	Rate	Total	Volume	Rate	Total
ASSETS						
Interest earning assets:						
Loans:						
Taxable (5)	$ (219)	$ 1,003	$ 784	$ 1,219	$ 783	$ 2,002
Tax-exempt	108	108	216	(22)	75	53
Total loans (8)	(111)	1,111	1,000	1,197	858	2,055
Investment securities:						
Taxable	866	209	1,075	(70)	222	152
Tax-exempt	(256)	10	(246)	(92)	34	(58)
Total investment securities	610	219	829	(162)	256	94
Interest bearing deposits	146	(72)	74	110	(8)	102
Federal funds sold	52	8	60	26	—	26
Total interest earning assets	697	1,266	1,963	1,171	1,106	2,277
LIABILITIES AND STOCKHOLDERS' EQUITY						
Interest bearing liabilities:						
Demand deposits (2)	$ 80	$ 161	$ 241	$ 66	$ 508	$ 574
Savings deposits	(4)	—	(4)	3	—	3
Time deposits	12	389	401	110	252	362
Other, including short and long-term borrowings, and other interest bearing liabilities	153	282	435	(360)	201	(159)
Total interest bearing liabilities	241	832	1,073	(181)	961	780
Net interest income	$ 456	$ 434	$ 890	$ 1,352	$ 145	$ 1,497

Notes:
(5) Non-accruing loans are included in the above table until they are charged off.
(6) The change in interest due to rate and volume has been allocated to volume and rate changes in proportion to the relationship of the absolute dollar amounts of the change in each.
(7) Includes net unrealized gains (losses) on securities available for sale: ($486) in 2019, ($4,687) in 2018 and ($1,065) in 2017.
(8) Interest income includes loan fees of $70, $95 and $89 in 2019, 2018 and 2017, respectively.

On average, total loans outstanding declined $1,042,000 in 2019 compared to 2018 due to less loan volume. Average total loans outstanding increased by 6.2%, to $409,362,000, in 2018 when compared to 2017, primarily due to the addition of Liverpool's loan portfolio, as well as organic growth. Average yields on loans increased by 26 basis points in 2019 compared to 2018, which was 23 basis points greater than 2017. As shown in Table 2, Rate – Volume Analysis of Net Interest Income, the increase in yield in 2019 raised interest income on loans by approximately $1,111,000, while the decline in volume decreased interest income by $111,000 compared to 2018, resulting in a net increase in interest recorded on loans of $1,000,000. Contributing 5 basis points to the increase in loan yields in 2019 was the collection of a substantial amount of previously unaccrued interest on a loan charged off in 2012. During 2018, the increase in loan yield increased interest income by approximately $858,000 compared to 2017, while the increase in volume increased interest income by $1,197,000, resulting in an aggregate increase in interest recorded on loans of $2,055,000 in 2018 compared to 2017. The prime rate declined 75 basis points during 2019, ending at 4.75%. During 2018, the prime rate increased by 100 basis points to end the year at 5.50%, which contributed to the increase in the average yield on loans in 2018 compared to 2017.

During 2019, cash flows from maturities, sales and repayments of investment securities were reinvested into the securities portfolio, as were the additional funds from the growth in interest bearing liabilities. As a result, average balances of investment securities increased by $24,420,000, or 16.1%, during 2019 compared to 2018. This increase in volume accounted for a $610,000 increase in interest income compared to 2018. The 15 basis point improvement in the overall yield of the investment portfolio between 2019 and 2018 increased net interest income by $219,000, resulting in an aggregate increase in interest recorded on investment securities of $829,000 in 2019 compared to 2018.

During 2018, cash flows from maturities, sales and repayments of investment securities were primarily used to fund a portion of the loan growth and pay off maturing long-term debt and pay down short-term borrowings. Additional funds from deposit growth were invested into the loan portfolio and used to pay down debt. As a result, average balances of investment securities decreased by $7,996,000, and this volume decline accounted for a $162,000 decrease in interest income compared to 2017. The improvement in the overall yield of the investment portfolio by 18 basis points between 2017 and 2018 increased net interest income by $256,000, resulting in an aggregate increase in interest recorded on investment securities of $94,000 in 2018 compared to 2017.

In total, yield on earning assets in 2019 was 4.31% compared to 4.18% in 2018 and 3.92% in 2017. On a fully tax equivalent basis, the yield on earning assets increased 13 basis points to 4.37% in 2019, from 4.25% in 2018, which increased 20 basis points from 4.05% in 2017.

Average interest bearing liabilities increased by $17,755,000, or 4.2%, in 2019 compared to 2018, which increased $5,973,000 compared to 2017. Within the categories of interest bearing liabilities, deposits increased on average by $8,810,000 and average borrowings increased by $8,945,000 in 2019 compared to 2018. During 2018, average deposits increased by $29,683,000, while average borrowings declined by $23,710,000. The addition of Liverpool's deposits was the primary reason for the increase in average interest bearing deposits in 2018 as Liverpool's deposits were used to fund a reduction in overnight borrowings and the repayment of two FHLB long-term debt advances. Changes in the volume and rate of other interest-bearing liabilities, in aggregate, increased interest expense by $435,000 in 2019 compared to 2018, while the aggregate changes in volume and rate in 2018 decreased interest expense by $159,000 compared to 2017. The percentage of average interest earning assets funded by average non-interest bearing demand deposits was approximately 21.4% in 2019, compared to 23.1% in 2018 and 19.8% in 2017. The total cost to fund earning assets (computed by dividing the total interest expense by the total average earning assets) in 2019 was 0.79%, compared to 0.64% in 2018 and 0.52% in 2017. This increase was primarily caused by the flattening of the yield curve coupled with deposit rate competition.

Net interest income was $20,906,000 for 2019, an increase of $890,000 when compared to 2018. Increases in both volume and rates contributed $456,000 and $434,000, respectively, toward the improved net interest income in 2019 compared to 2018.

PROVISION FOR LOAN LOSSES

Juniata's provision for loan losses is determined as a result of an analysis of the adequacy level of the allowance for loan losses. In order to closely reflect the potential losses within the current loan portfolio based upon current information known, the Company carries no unallocated allowance. Using the process of analysis described in "Application of Critical Accounting Policies" earlier in this discussion, the Company determined that a credit of $573,000 was appropriate for 2019, a decrease of $910,000 when compared to 2018 when the total loan loss provision was $337,000. A credit of $573,000 was recorded to the loan loss provision during the year ended December 31, 2019 primarily due to net recoveries of $500,000 on previously charged off loans. Also contributing to the decline in the provision for loan losses in 2019 was a general improvement in credit quality factors, such as delinquency trends and classified loan balances. The discussion included in the Loans and Allowance for Loan Losses in the section below titled "Financial Condition" explains the information and analysis used to arrive at the provision for 2019.

NON-INTEREST INCOME

The Company remains committed to providing comprehensive services and products to meet the current and future financial needs of its customers. Juniata believes its responsiveness to customers' needs surpasses that of many of its competitors and measures its success by the customer acceptance of fee-based services. The Company continually explores avenues to enhance product offerings in areas beneficial to its customers, such as adding new features and services for its electronic banking clientele. Fraud protection services are made available to all consumer depositors. We offer a variety of options for financing to home-buyers that includes a mortgage referral program, providing significant fee income.

Juniata also provides alternative investment opportunities through an arrangement with a broker dealer that integrates the delivery of non–traditional products with Juniata's Trust and Wealth Management Division. This arrangement enables Juniata to meet the investment needs of a varied customer base and to better identify its clients' needs for traditional trust services.

Non-interest income was $4,749,000 in 2019 compared to $5,027,000 in 2018. Most significantly impacting the comparative year-end periods was a decline in income/gain from unconsolidated subsidiary of $296,000, which included a $215,000 gain from the adjustment to the carrying value of Juniata's previous 39.16% ownership in Liverpool prior to its 100% acquisition. The equity method of accounting for the Liverpool investment was discontinued with the acquisition by Juniata of the remaining outstanding Liverpool shares in April 2018. Since then, all income and expense items from the newly acquired Liverpool office have been included as part of Juniata's operations in the appropriate line items in the financial statements.

Fee-generated non-interest revenues consist of customer service fees derived from deposit accounts, trust relationships and sales of non-deposit products. In 2019, revenues from these services totaled $2,383,000, representing a decrease of $85,000, or 3.4%, from 2018 revenues, primarily due to declines in customer service and trust fees. Total fees from customer deposits decreased by $62,000, or 3.5%. Fees from both estate settlements and non-estate fees declined by $28,000 and $8,000, respectively, in 2019 compared to 2018. Variance in fees from estate settlements occurs because estate settlements occur sporadically and are not necessarily consistent year to year. Non-estate fees are repeatable revenues that generally increase and decrease in relation to movements in interest rates as market values of trust assets under management increase or decrease and as new relationships are established. Commissions from sales of non-deposit products increased in 2019, in comparison to 2018, by $13,000, or 5.0%, as sales increased.

Fees generated by debit card activity increased by $69,000, or 5.4%, in 2019 compared to the prior year due to general increased debit card usage.

Earnings on bank-owned life insurance and annuities declined by $63,000 in 2019 compared to 2018 caused by a reporting modification by our split dollar insurance service provider in which the income is no longer separated from the expense as it was in prior years. The split dollar income is now netted against the expense within employee benefits expense on the Consolidated Statements of Income. Split dollar insurance income of $57,000 was recorded in the year ended December 31, 2018, while there was no recorded income in 2019, which caused the majority of the decline in earnings on bank-owned life insurance and annuities in 2019 compared to 2018. The recorded net split dollar expense in 2019 was $30,000 compared to a net expense of $19,000 through the same period in 2018 based upon the gross expense of $76,000 recorded through December 31, 2018.

Other non-interest-related fees derived from loan activity decreased by $83,000 when comparing 2019 to 2018, partially due to a recovery on a purchased LCB loan recorded in 2018, as well as declines in revenues generated from title insurance fees and the loan referral program.

Losses realized from the sales and calls of investment securities during 2019 were $43,000 compared to losses of $188,000 in 2018. Strategies were undertaken in both years to replace lower yielding investments with higher yielding ones in order to position the portfolio for higher future returns.

As a percentage of average assets, non-interest income (excluding securities gains/losses on sales or calls of securities) was 0.74% and 0.85% in 2019 and 2018, respectively.

NON-INTEREST EXPENSE

Management strives to control non-interest expense where possible in order to improve operating results. Non-interest expense was $20,407,000 in 2019 compared to $19,461,000 in 2018. The increase was driven by Juniata's growth resulting from the Liverpool acquisition; specifically, increases in employee compensation, occupancy, equipment, and data processing; as well as the termination of the JVB Plan.

Employee compensation expense increased $435,000, or 5.6%, in 2019 compared to 2018, predominantly due to accounting for a full year of the Liverpool staff in 2019 compared to eight months in 2018. Employee compensation and benefits expense increased by $1,136,000 in 2019 compared to 2018, due to the recording of $1,221,000 in pre-tax pension settlement charges as a result of settling the remaining obligations associated with the final liquidation of the JVB Plan compared to $210,000 in pre-tax pension settlement charges recorded in 2018. Partially offsetting this increase were declines of $32,000 in medical expense in 2019 compared to 2018, as well as $45,000 in split dollar expense due to a reporting modification by our insurance service provider in 2019, which now nets the split dollar income against the expense as opposed to reporting the income separately as in prior years.

Data processing expense increased by $190,000, or 9.9%, in 2019 compared to 2018, along with an aggregate increase in occupancy and equipment expense of $142,000, or 7.0%, due to the increased expense of a full year of Liverpool's data processing, branch office, and equipment expenses in 2019 compared to eight months in 2018, as well as the completion of two remodeling projects in 2019.

Professional fees increased $321,000, or 50.2%, during 2019 compared to 2018. The increase was predominantly due to higher audit expenses related to an increase in fees incurred from the Company's former audit firm during the transition to the newly engaged firm. In addition, a new consulting arrangement to strengthen compliance reviews also added to the increased expense in 2019 compared to 2018.

Partially offsetting these increases was a decline of $884,000 in merger and acquisition expenses as no similar expense was recorded in 2019, as well as an increase in the gain on sales of other real estate owned of $148,000 in 2019 compared to 2018. FDIC insurance premiums declined by $166,000 due to the application of small bank assessment credits applied in 2019, while none were applied in 2018.

As a percentage of average assets, non-interest expense was 3.15% in 2019 as compared to 3.17% in 2018. Excluding defined benefit settlement costs and merger expenses in both periods, non-interest expense as a percentage of average assets was 2.96% in 2019 compared to 3.14% in 2018, an improvement of 18 basis points.

INCOME TAXES

Income tax for 2019 amounted to a benefit of $14,000 versus a benefit of $659,000 in 2018. Impacting the income tax provision in 2018 was the removal of a $406,000 deferred tax liability related to the previous investment in unconsolidated subsidiary. Both periods included the effect of a tax credit amounting to $902,000 in 2019 and $901,000 in 2018. The tax credit was available to the Company as a result of an equity investment in two low-income housing projects. Juniata's effective tax rate in 2019 was (0.2)% versus (12.6)% in 2018. See Note 15 of The Notes to Consolidated Financial Statements for further information on income taxes.

FINANCIAL CONDITION

BALANCE SHEET SUMMARY

Juniata functions as a financial intermediary and, as such, its financial condition can be best analyzed in terms of changes in its uses and sources of funds and can also be analyzed in terms of changes in daily average balances. The table below sets forth average daily balances for the last three years and the dollar change and percentage change for the past two years.

TABLE 3
CHANGES IN USES AND SOURCES OF FUNDS

(Dollars in thousands)	2019 Average Balance	Increase(Decrease) Amount	Increase(Decrease) %	2018 Average Balance
Funding Uses:				
Taxable loans	$ 375,333	$ (4,363)	(1.1)%	$ 379,696
Tax-exempt loans	32,987	3,321	11.2	29,666
Taxable securities	168,880	37,460	28.5	131,420
Tax-exempt securities	6,948	(13,040)	(65.2)	19,988
Interest bearing deposits	6,835	3,589	110.6	3,246
Federal funds sold	3,804	2,537	200.2	1,267
Total interest earning assets	594,787	29,504	5.2	565,283
Investment in:				
Unconsolidated subsidiary	—	(1,573)	(100.0)	1,573
Low income housing	4,283	(682)	(13.7)	4,965
BOLI and annuities	16,090	538	3.5	15,552
Goodwill and intangible assets	9,433	1,139	13.7	8,294
Other non-interest earning assets	26,296	(372)	(1.4)	26,668
Unrealized gains (losses) on securities	(486)	4,201	(89.6)	(4,687)
Less: Allowance for loan losses	(3,121)	(105)	3.5	(3,016)
Total uses	$ 647,282	$ 32,650	5.3 %	$ 614,632
Funding Sources:				
Interest bearing demand deposits	$ 153,056	$ 11,573	8.2 %	$ 141,483
Savings deposits	98,462	(3,624)	(3.5)	102,086
Time deposits under $100,000	110,432	(499)	(0.4)	110,931
Time deposits over $100,000	39,100	1,360	3.6	37,740
Repurchase agreements	3,246	(931)	(22.3)	4,177
Short-term borrowings	1,024	(8,882)	(89.7)	9,906
Long-term debt	36,246	18,753	107.2	17,493
Other interest bearing liabilities	1,565	5	0.3	1,560
Total interest bearing liabilities	443,131	17,755	4.2	425,376
Demand deposits	127,577	7,056	5.9	120,521
Other liabilities	5,803	(243)	(4.0)	6,046
Stockholders' equity	70,771	8,082	12.9	62,689
Total sources	$ 647,282	$ 32,650	5.3 %	$ 614,632

Overall, total average assets increased by $32,650,000, or 5.3%, for the year 2019 compared to 2018. The increase in 2019 was primarily due to an increase in long-term debt and interest bearing demand deposits, which were used to fund the purchases of additional taxable securities during the year. The ratio of average earning assets to total average assets was 91.9% in 2019, while it was 92.0% in 2018. The ratio of average interest-bearing liabilities to total average assets decreased in 2019 to 68.5% from 69.2% in 2018. Although Juniata's previous investment in its unconsolidated subsidiary, investment in low income elderly housing projects and its bank owned life insurance and annuities are not classified as interest-earning assets, income is derived directly from those assets. These instruments have represented 3.1% and 3.6% of total average assets in 2019 and 2018, respectively. A more detailed discussion of the Company's earning assets and interest bearing liabilities will follow in the Sections titled "Loans", "Investments" and "Deposits".

LOANS

Loans outstanding at the end of each year consisted of the following:

(Dollars in thousands)

	Years Ended December 31,				
	2019	2018	2017	2016	2015
Commercial, financial and agricultural	$ 51,785	$ 46,563	$ 45,802	$ 40,827	$ 34,171
Real estate - commercial	126,613	141,295	140,369	123,711	127,213
Real estate - construction	46,459	36,688	28,403	35,206	26,672
Real estate - mortgage	150,538	163,548	146,888	154,905	164,617
Obligations of states and political subdivisions	16,377	19,129	13,044	13,616	17,524
Personal	8,818	10,408	9,398	10,032	6,846
Total	$ 400,590	$ 417,631	$ 383,904	$ 378,297	$ 377,043

From year-end 2018 to year-end 2019, total loans outstanding decreased by $17,041,000, primarily due to early paydowns on several large commercial loans and real estate mortgage runoff, which, combined, exceeded new loan volume. The following table summarizes how the ending balances changed annually in each of the last two years.

(Dollars in thousands)

	2019	2018
Beginning balance	$ 417,631	$ 383,904
Net (paid off) new loans	(18,068)	2,931
Loans acquired through merger, net of fair value adjustments	—	31,331
Loans charged off	(137)	(285)
Loans transferred to other real estate owned and other adjustments to carrying value	1,164	(250)
Net change	(17,041)	33,727
Ending balance	$ 400,590	$ 417,631

The loan portfolio was comprised of approximately 39.8% consumer loans (real estate – mortgage and personal loans) and 60.2% commercial loans (commercial, financial and agricultural, real estate – commercial and construction, and obligations of states and political subdivisions) on December 31, 2019 compared to 41.7% consumer loans and 58.3% commercial loans on December 31, 2018. Management believes that diversification in the loan portfolio is important, and management performs a loan concentration analysis on a quarterly basis. The highest loan concentration by activity type was real estate - commercial loans secured by income-producing property, with debt service on this category of loans being reliant upon the cash flow generated by the property. In the aggregate, loans in this category had outstanding balances of $95,305,000 at December 31, 2019, or 131.72% of the Bank's capital. Components of this concentration group with balances considered for general reserve purposes are as follows:

NAIC Definition	Outstanding Balance	% of Bank Capital
Lessors of non-residential buildings	$ 32,242,748	44.56 %
Lessors of residential buildings and dwellings	23,000,495	31.79 %
Hotels and Motels	21,523,646	29.75 %
Continuing care retirement communities	18,537,819	25.62 %
Total	$ 95,304,708	131.72 %

Given the reserves allocated to this sector over the past several years and the continuing softness in the market, management continues to assess a concentration risk factor to this group of loans when analyzing the adequacy of the allowance for loan losses. See Note 7 of The Notes to Consolidated Financial Statements.

During 2019, there was growth in commercial, financial and agricultural loans, as well as real estate – construction loans, which was offset by a decline is all other loan categories. The decrease was largely due to a few unanticipated real estate

- commercial and obligations of states and political subdivision loan payoffs, as well as the competitive lending environment. There was growth in all loan categories in 2018, mainly due to the addition of Liverpool's loan portfolio, as well as organic growth. Juniata is willing, able and continues to lend to qualifying businesses and individuals. Our business model closely aligns lenders and community office managers' efforts to effectively develop referrals and existing customer relationships. Continued emphasis is placed on responsiveness and personal attention given to customers, which we believe differentiates the Bank from its competition. Nearly all commercial loans are either variable or adjustable rate loans, while non-mortgage consumer loans generally have fixed rates for the duration of the loan.

Juniata strives to offer fair, competitive rates and to provide optimal service in order to attract loan growth. Emphasis will continue to be placed upon attracting the entire customer relationship of our borrowers.

The loan portfolio carries the potential risk of past due, non-performing or, ultimately, charged-off loans. The Bank attempts to manage this risk through credit approval standards and aggressive monitoring and collection efforts. Where prudent, the Bank secures commercial loans with collateral consisting of real and/or tangible personal property. The Company maintains a dedicated credit administration division, in response to the need for heightened credit review, both in the loan origination process and in the ongoing risk assessment process. Juniata's lending strategy and credit standards stress quality growth, diversified by product. A standardized credit policy is in place throughout the Company, and the credit committee of the Board of Directors reviews and approves all loan requests for amounts that exceed management's approval levels. The Company makes credit judgments based on a customer's existing debt obligations, collateral, ability to pay and general economic trends. See Note 2 of The Notes to Consolidated Financial Statements.

The allowance for loan losses is determined in order to provide for probable losses on existing loans. A quarterly provision or credit is charged to earnings to maintain the allowance at adequate levels. Charge-offs and recoveries are recorded as adjustments to the allowance. The allowance for loan losses at December 31, 2019 was 0.74% of total loans, net of unearned interest compared to 0.73% of total loans, net of unearned interest, at the end of 2018. Loans that Juniata acquired through mergers and acquisitions, such as those acquired from Liverpool in 2018 and FNBPA in 2015 are recorded at fair value with no carryover of the related allowance for loan losses. Acquired loans subsequently deemed impaired are included in the allowance for loan losses as impaired loans. Through loan amortization and other scheduled payments, the excluded balances become a smaller percentage of total outstanding loans over time, contributing to the increase in the allowance as a percentage of total loans. The allowance decreased $73,000 when compared to December 31, 2018, as a result of recording net recoveries of $500,000 and a credit to the loan loss provision of $573,000 compared to net charge-offs of $242,000 in 2018 that were offset by the provision of $337,000. Net recoveries for 2019 were 0.12% compared to net charge-offs of 0.06% in 2018.

At December 31, 2019, non-performing loans (as defined in Table 4 below), as a percentage of the allowance for loan losses, were 74.4% as compared to 68.4% at December 31, 2018. Non-performing loans were 0.55% of loans as of December 31, 2019, and 0.50% of loans as of December 31, 2018. The increase in nonperforming loans in 2019 compared to 2018 was predominantly due to a $112,000 increase in non-accrual loans in 2019. Of the $2,202,000 in non-performing loans at December 31, 2019, only one loan for $14,000 was not collateralized with real estate.

TABLE 4
NON-PERFORMING LOANS

	Year Ended December 31,				
(Dollars in thousands)	2019	2018	2017	2016	2015
Non-performing loans					
Non-accrual loans	$ 1,819	$ 1,707	$ 2,874	$ 4,733	$ 3,688
Accruing loans past due 90 days or more, exclusive of loans acquired with credit deterioration	383	329	64	554	2
Restructured loans in default and non-accruing	—	39	87	25	—
Total	$ 2,202	$ 2,075	$ 3,025	$ 5,312	$ 3,690

Loans on which the accrual of interest has been discontinued are designated as non-accrual loans. Accrual of interest on loans is generally discontinued when the contractual payment of principal or interest has become 90 days past due or reasonable doubt exists as to the full, timely collection of principal or interest. However, it is the Company's policy to continue to accrue interest on loans over 90 days past due if (1) they are guaranteed or well secured and (2) there is an effective means of timely collection in process. When a loan is placed on non-accrual status, all unpaid interest credited to income in the current year is reversed against current period income, and unpaid interest accrued in prior years is charged against the allowance for loan losses. Interest received on non-accrual loans generally is either applied against principal or reported as interest income, according to management's judgment as to the collectability of principal. Generally, accruals are resumed on loans only when the obligation is brought fully current with respect to interest and principal, has performed in accordance with the contractual terms for a reasonable period of time and the ultimate collectability of the total contractual principal and interest is no longer in doubt. The Company's non-accrual and charge-off policies are the same, regardless of loan type. During 2019, gross interest income that would have been recorded if loans on non-accrual status had been current was $130,000, of which $88,000 was collected and included in net income.

ALLOWANCE FOR LOAN LOSSES

The amount of allowance for loan losses is determined through a critical quantitative and qualitative analysis performed by management that includes significant assumptions and estimates. It is maintained at a level deemed adequate to absorb probable estimated losses within the loan portfolio and supported by detailed documentation. To assess potential credit weaknesses, it is important to analyze observable trends that may be occurring.

Management systematically monitors the loan portfolio and the adequacy of the allowance for loan losses on a quarterly basis to provide for probable losses inherent in the portfolio. The Bank's methodology for maintaining the allowance is highly structured and contains two components: 1) specific allowances allocated to loans evaluated for impairment under the Financial Accounting Standards Board's Accounting Standards Codification ("FASB ASC") Section 310-10-35; and 2) allowances calculated for pools of loans evaluated for impairment under FASB ASC Subtopic 450-20 (Contingencies).

Component for impaired loans:

A loan is 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 determining impairment include payment status, collateral value and the probability of collecting scheduled principal and interest payments when due. Loans that experience insignificant payment delays and payment shortfalls generally are not classified as impaired. 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 loans 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. Impairment is measured on a loan by loan basis by the present value of expected future cash flows discounted at the loan's effective interest rate, the loan's observable market price or the fair value of the collateral if the loan is collateral dependent.

The estimated fair values of substantially all the Company's impaired loans are measured based on the estimated fair value of the loan's collateral. For commercial loans secured with real estate, estimated fair values are determined primarily through third-party appraisals. When a real estate secured loan becomes impaired, a decision is made regarding whether an updated certified appraisal of the real estate is necessary. This decision is based on various considerations, including the age of the most recent appraisal, the loan-to-value ratio based on the current appraisal and the condition of the property. Appraised values may be discounted to arrive at the estimated selling price of the collateral, which is considered to be the estimated fair value. The discounts also include the estimated costs to sell the property. For commercial loans secured by non-real estate collateral, estimated fair values are determined based on the borrower's financial statements, inventory reports, aging accounts receivable, equipment appraisals or invoices. Indications of value from these sources are generally discounted based on the age of the financial information or the quality of the assets. For such loans that are classified as impaired, an allowance is established when the discounted cash flows (or collateral value or observable market price) of the impaired loan is lower than the carrying value of that loan. The Company generally does not separately identify individual consumer segment loans for impairment analysis, unless such loans are subject to a restructuring agreement.

Loans whose terms are modified are classified as troubled debt restructurings if the Company grants borrower's concessions and it is deemed that those borrowers are experiencing financial difficulty. Concessions granted under a troubled debt restructuring generally involve a below-market interest rate based on the loan's risk characteristics or an extension of a loan's stated maturity date. Non-accrual troubled debt restructurings are restored to accrual status if principal and interest payments, under the modified terms, are current for a sustained period after modification. Loans classified as troubled debt restructurings are designated as impaired.

As of December 31, 2019, 31 loans, with aggregate outstanding balances of $2,516,000, were evaluated for impairment. A collateral analysis was performed on each of these 31 loans in order to establish a portion of the reserve needed to carry impaired loans at no higher than fair value. As a result of this analysis, no loans were determined to have insufficient collateral, and therefore, no specific reserves were established. Loans acquired with credit impairment are considered to be impaired loans but are not included with this component for consideration in the allowance. They were carried at fair value of $1,070,000 as of December 31, 2019.

Component for pooled loan contingencies:
A contingency is an existing condition, or set of circumstances, involving uncertainty as to possible gain or loss to the Company that will ultimately be resolved when one or more future events occur or fail to occur. These conditions may be considered in relation to individual loans or in relation to groups of similar types of loans. If the conditions are met, a provision is made even though the loans that are uncollectible may not be identifiable.

In accordance with FASB ASC Subtopic 450-20, when measuring estimated credit losses, these loans are grouped into homogenous pools with similar characteristics and evaluated collectively considering both quantitative measures, such as historical loss, and qualitative measures, in the form of environmental adjustments.

These pools are established by general loan type, or "class" as follows:

- Commercial, financial and agricultural
- Real estate – commercial
- Real estate – construction
- Real estate – mortgage
- Obligations of states and political subdivisions
- Personal

Some portfolio segments are further disaggregated and evaluated collectively for impairment based on "class segments," which are largely based on the type of collateral underlying each loan. For commercial, financial and agricultural loans, class segments include commercial loans secured by other-than real estate collateral. Real estate – commercial class segments include loans secured by farmland, multi-family properties, owner-occupied non-farm, non-residential properties and other nonfarm non-residential properties. Real estate - construction loan class segments include loans secured by commercial real estate, loans to commercial borrowers secured by residential real estate and loans to individuals secured by residential real estate. Real estate – mortgage includes loans secured by first and junior liens on residential real estate. Obligations of states and political subdivision loan class segment primarily includes tax-anticipation notes to local municipalities and other tax-exempt organizations. Personal loan class segments include direct consumer installment loans, indirect automobile loans and other revolving and unsecured loans to individuals.

Quantitative factor determination:
An average annual loss rate is calculated for each pool through an analysis of historical losses over a five-year look-back period. Using data for each loan, a loss emergence period is determined within each segmented class pool. The loss emergence period reflects the approximate length of time from the point when a loss is incurred (the loss trigger event) to the point of loss confirmation (the date of eventual charge-off). The loss emergence period is applied to the average annual loss to produce the quantitative factor for each pooled class segment.

Qualitative factor determination:
Historical loss rates computed in the quantitative component reflects an estimate of the level of incurred losses in the portfolio based on historical experience. Management considers that the current conditions may deviate from those that prevailed over the historical look-back period. Thus, the quantitative rates are an imperfect estimate, necessitating an evaluation of qualitative considerations, i.e. environmental factors, to incorporate these risks.

Management considered qualitative, environmental risk factors including:

- National, regional and local economic and business conditions, and developments that affect the collectability of the portfolio, including the condition of various market segments;
- Changes in the volume and severity of past due loans, the volume of non-accrual loans, and the volume and severity of adversely classified loans;
- Changes in the nature and volume of the portfolio and terms of loans;
- Changes in the experience, ability and depth of lending and credit management and other relevant staff;
- Existence and effect of any concentrations of credit and changes in the level of such concentrations;
- Changes in the quality of the loan review system;
- Changes in lending policies and procedures including changes in underwriting standards and collection, charge-off and recovery practices;
- Changes in the value of underlying collateral for collateral-dependent loans; and
- Effect of external influences, including competition, legal and regulatory requirements.

Within each loan segment, an analysis was performed over a ten-year look-back period to discover peak historical losses, and with this data, management established ranges of risk from minimal to very high, for each risk factor, to produce a supportable anchor for risk assignment. Based on the framework for risk factor evaluation and range of adjustments established through the anchoring process, a risk assessment and corresponding adjustment was assigned for each portfolio segment as of December 31, 2019. Adjustments to the factors are supported through documentation of changes in conditions in a narrative accompanying the allowance for loan loss calculation.

The combination of quantitative and qualitative factors was applied to year-end balances in each pooled segment to establish the overall allowance.

A summary of activity in the allowance for loan loss for the last five years is shown below. The area most affected by charge-offs in each of the five years presented was real estate – mortgages, which balances accounted for approximately 38% of the total loan portfolio at December 31, 2019. The Company recorded net recoveries of $500,000 in 2019. Based on the analysis described above, the provision for loan loss in 2019 was 170% lower than in 2018. With the credit to the provision exceeding net recoveries, the loan loss allowance decreased by 2.4% over the December 31, 2018 allowance. Management's analysis indicated that the loan loss allowance of $2,961,000 at December 31, 2019 was adequate.

(Dollars in thousands)	Years Ended December 31,				
	2019	**2018**	**2017**	**2016**	**2015**
Balance of allowance - beginning of period	$ 3,034	$ 2,939	$ 2,723	$ 2,478	$ 2,380
Loans charged off:					
Commercial, financial and agricultural	2	—	46	4	11
Real estate - commercial	15	60	70	146	66
Real estate - construction	—	—	—	—	24
Real estate - mortgage	66	183	149	103	305
Personal	54	42	27	26	9
Total charge-offs	137	285	292	279	415
Recoveries of loans previously charged off:					
Commercial, financial and agricultural	3	10	5	—	7
Real estate - commercial	314	5	2	24	—
Real estate - construction	295	—	—	—	—
Real estate - mortgage	7	12	45	15	1
Personal	18	16	17	19	3
Total recoveries	637	43	69	58	11
Net (recoveries) charge-offs	(500)	242	223	221	404
Provision for loan losses	(573)	337	439	466	502
Balance of allowance - end of period	$ 2,961	$ 3,034	$ 2,939	$ 2,723	$ 2,478
Ratio of net charge-offs during period to average loans outstanding	(0.12)%	0.06 %	0.06 %	0.06 %	0.13 %

The following tables show how the allowance for loan losses is allocated among the various types of outstanding loans and the percent of loans by type to total loans.

(Dollars in thousands)	Years Ended December 31,				
	2019	**2018**	**2017**	**2016**	**2015**
Commercial, financial and agricultural	$ 321	$ 275	$ 273	$ 318	$ 264
Real estate - commercial	754	1,074	1,022	948	836
Real estate - construction	718	558	288	231	191
Real estate - mortgage	1,081	1,035	1,285	1,143	1,140
Obligations of states and political subdivisions	17	20	—	—	—
Personal	70	72	71	83	47
	$ 2,961	$ 3,034	$ 2,939	$ 2,723	$ 2,478

(Dollars in thousands)	Years Ended December 31,				
	2019	2018	2017	2016	2015
Commercial, financial and agricultural	12.9 %	11.1 %	11.9 %	10.8 %	9.1 %
Real estate - commercial	31.6 %	33.8 %	36.6 %	32.7 %	33.7 %
Real estate - construction	11.6 %	8.8 %	7.4 %	9.3 %	7.1 %
Real estate - mortgage	37.6 %	39.2 %	38.3 %	40.9 %	43.7 %
Obligations of states and political subdivisions	4.1 %	4.6 %	3.4 %	3.6 %	4.6 %
Personal	2.2 %	2.5 %	2.4 %	2.7 %	1.8 %
	100 %	100 %	100 %	100 %	100 %

INVESTMENTS

Total investments, defined to include all interest earning assets except loans (i.e. debt securities available for sale at fair value), equity securities, federal funds sold, interest bearing deposits, restricted investment in bank stock and other interest-earning assets), totaled $217,564,000 on December 31, 2019, representing an increase of $67,923,000, or 45.5%, compared to year-end 2018. The following table summarizes how the ending balances changed annually in each of the last two years.

(Dollars in thousands)	2019	2018
Beginning balance	$ 149,641	$ 157,336
Purchases of investment securities	125,422	20,610
Sales, calls and maturities of investment securities	(59,876)	(29,794)
Change in value of equity securities under ASU 2016-01	26	(1)
Adjustment in market value of AFS securities	4,004	(1,028)
Amortization/Accretion	(817)	(540)
Restricted investment in bank stock, net change	1,001	(663)
Federal funds sold, net change	(729)	729
Interest bearing deposits with others, net change	(28)	52
Interest bearing time deposits with banks acquired through merger	—	3,675
Maturities of interest bearing time deposits with banks	(1,080)	(735)
Net change	67,923	(7,695)
Ending balance	$ 217,564	$ 149,641

On average, total investments, as defined above, increased by $30,546,000, or 19.6%, during 2019. The increase in 2019 was mainly the result of the decline in loan growth along with an increase in interest bearing liabilities, mainly deposits and long-term debt, as these funds were used to purchase investment securities.

The investment area is managed according to internally established guidelines and quality standards. Juniata segregates its investment securities portfolio into two classifications: those held to maturity and those available for sale. Juniata classifies all new marketable investment securities as available for sale, and currently holds no securities in the held to maturity or trading classifications. At December 31, 2019, the market value of the entire securities portfolio was greater than amortized cost by $647,000 as compared to December 31, 2018, when the market value was less than amortized cost by $3,357,000. The weighted average life of the investment portfolio was 3.8 years on December 31, 2019 and 4.5 years on December 31, 2018. The weighted average maturity has remained short in order to achieve a desired level of liquidity. Table 5, “Maturity Distribution”, in this Management’s Discussion and Analysis of Financial Condition shows the remaining maturity or earliest possible repricing for investment securities.

The following table sets forth the maturities of securities and the weighted average yields of such securities by contractual maturities or call dates. Yields on obligations of states and public subdivisions are presented on a tax-equivalent basis.

(Dollars in thousands)

Security type and maturity	December 31, 2019 Fair Value	December 31, 2019 Weighted Average Yield	December 31, 2018 Fair Value	December 31, 2018 Weighted Average Yield
Obligations of U.S. Government agencies and corporations				
Within one year	$ —	0.00 %	$ —	0.00 %
After one year but within five years	14,970	1.89 %	20,355	1.96 %
After five years but within ten years	5,950	2.16 %	2,911	2.29 %
	20,920	1.97 %	23,266	2.00 %
Obligations of state and political subdivisions				
Within one year	1,024	3.94 %	826	3.37 %
After one year but within five years	2,823	3.95 %	14,686	3.82 %
After five years but within ten years	728	3.88 %	2,669	3.74 %
	4,575	3.93 %	18,181	3.79 %
Mortgage-backed securities				
After one year but within five years	3,843	2.26 %	—	0.00 %
After five years but within ten years	3,617	1.90 %	5,664	2.19 %
After ten years	177,731	2.46 %	94,842	2.52 %
	185,191	2.51 %	100,506	2.51 %
	$ 210,686		$ 141,953	

BANK OWNED LIFE INSURANCE AND ANNUITIES

The Company periodically ensures the lives of certain bank officers in order to provide split-dollar life insurance benefits to some key officers and to offset the cost of providing post-retirement benefits through non-qualified plans. Some annuities are also owned to provide cash streams that match certain post-retirement liabilities. See Note 9 of The Notes to Consolidated Financial Statements. The following table summarizes how the cash surrender values of these instruments changed annually in each of the last two years.

(Dollars in thousands)

	2019	2018
Beginning balance	$ 15,938	$ 14,972
BOLI net increase in cash surrender value	296	303
BOLI policy acquired through merger	—	632
Annuities net increase in cash surrender value	32	31
Net change	328	966
Ending balance	$ 16,266	$ 15,938

GOODWILL AND INTANGIBLE ASSETS

Branch Acquisition

On September 8, 2006, the Company acquired a branch office in Richfield, PA. Goodwill at December 31, 2019 and 2018 was $2,046,000. The core deposit intangible of $431,000 was fully amortized as of December 31, 2019 and 2018. The core deposit intangible was amortized over a ten-year period on a straight-line basis. Goodwill is not amortized but is measured annually for impairment.

FNBPA Acquisition

On November 30, 2015, the Company completed its acquisition of FNBPA and, as of December 31, 2019 and 2018, goodwill related to the FNBPA acquisition was $3,402,000. In addition, a core deposit intangible in the amount of $303,000 was recorded and is being amortized over a ten-year period using a sum of the year's digits basis. Core deposit intangible amortization expense recorded in 2019 was $38,000 and, for the succeeding five years beginning 2020, is estimated to be $33,000, $27,000, $22,000, $16,000, and $10,000 per year, respectively, and $5,000 in total for years after

2024. Core deposit and other intangible assets, net of amortization, was $113,000 as of December 31, 2019 and $151,000 as of December 31, 2018.

LCB Acquisition

On April 30, 2018, Juniata completed the acquisition of LCB and, as a result, recorded goodwill of $3,691,000 as of December 31, 2018. ASC 805 allows for adjustments to the estimated fair value of assets and liabilities, and the resulting goodwill for a period of up to one year after the merger date for new information that becomes available reflecting circumstances at the merger date. During the first quarter of 2019, Juniata recorded a $92,000 credit adjustment to goodwill relating to the tax treatment of Liverpool's acquired net operating loss, resulting in goodwill of $3,599,000 as of December 31, 2019. In addition, a core deposit intangible of $289,000 was recorded and will be amortized over a ten-year period using a sum of the years' digits basis. Core deposit intangible expense recorded in 2019 was $49,000, and for the succeeding five years beginning 2020, is estimated to be $44,000, $39,000, $33,000, $28,000, and $23,000 per year, respectively, and $38,000 in total for years after 2024. Core deposit intangible, net of amortization, was $205,000 as of December 31, 2019 and $254,000 as of December 31, 2018.

Mortgage Servicing Rights

Due to a strategic shift in focus to a new mortgage product, which is increasing fees derived from loan activity, the Company did not originate and sell residential mortgage loans to the secondary market in 2019 or 2018; however, the Company retained the servicing rights on loans originated and sold in prior years. The mortgage servicing rights are valued based on the present value of estimated future cash flows on pools of mortgages stratified by rate and maturity date. The computed value is carried as an intangible asset. As of December 31, 2019 and December 31, 2018, the fair value of mortgage servicing rights was $180,000 and $200,000, respectively.

DEFERRED TAXES

The Company accounts for income taxes under the asset/liability method. Deferred tax assets and liabilities are recognized for the future consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, as well as operating loss and tax credit carryforwards, if applicable. A valuation allowance is established against deferred tax assets when, in the judgment of management, it is more likely than not that such deferred tax assets will not become realizable. Management established a valuation allowance of $34,000 in 2019 for a capital loss carryforward for which the tax benefit is not likely to be realized. No such valuation allowance was established at December 31, 2018. As of December 31, 2019 and 2018, the Company recorded a net deferred tax asset of $589,000 and $1,000,000, respectively, which was carried as a non-interest earning asset.

In 2018, the value of the Juniata's deferred tax asset was adjusted due primarily to a defined benefit contribution applied to the prior tax year, along with the removal of a deferred tax liability no longer applicable. The net adjustment resulted in a decrease in tax expense in 2018 of $168,000. The remainder of the difference was due to the various other changes in gross temporary tax differences. See Note 15 of The Notes to Consolidated Financial Statements.

OTHER NON-INTEREST EARNING ASSETS

The following table summarizes the components of the non-interest earning asset category, and how the ending balances changed annually over the last two years.

(Dollars in thousands)

	2019	2018
Beginning balance	$ 35,316	$ 27,992
Cash and cash equivalents	(2,959)	5,778
Premises and equipment, net	499	(143)
Other real estate owned	(744)	389
Investment in low income housing	(641)	(700)
Other receivables and prepaid expenses, including deferred tax assets	(1,843)	2,000
Net change	(5,688)	7,324
Ending balance	$ 29,628	$ 35,316

DEPOSITS

At December 31, 2019, total deposits were $531,937,000, an increase of $10,215,000 as compared to the previous year end. Deposits assumed from the LCB acquisition accounted for an increase of $36,052,000 in 2018. The following table summarizes how the ending balances changed annually over the last two years.

(Dollars in thousands)	2019	2018
Beginning balance	$ 521,722	$ 477,668
Demand deposits	8,646	10,146
Interest bearing demand deposits	2,744	25,006
Savings deposits	(2,256)	270
Time deposits	1,081	8,632
Net change	10,215	44,054
Ending balance	$ 531,937	$ 521,722

The following table shows the comparison of average core deposits and average time deposits as a percentage of total deposits for the last two years.

(Dollars in thousands)	Changes in Deposits			
	2019 Average Balance	Increase (Decrease) Amount	Increase (Decrease) %	2018 Average Balance
Core transaction deposits:				
Money market	$ 54,879	$ 6,669	13.8 %	$ 48,210
Interest bearing demand	98,177	4,904	5.3	93,273
Savings	98,462	(3,624)	(3.5)	102,086
Demand	127,577	7,056	5.9	120,521
Total core transaction deposits	379,095	15,005	4.1	364,090
Time deposits:				
$100,000 and greater	39,100	1,360	3.6	37,740
Other	110,432	(499)	(0.4)	110,931
Total time deposits	149,532	861	0.6	148,671
Total deposits	$ 528,627	$ 15,866	3.1 %	$ 512,761

Average deposits increased $15,866,000, or 3.1%, to $528,627,000 in 2019. Core transaction accounts increased by 4.1% in 2019. The largest dollar increase in 2019 compared the previous year was $7,056,000 in non-interest demand accounts, while the largest percentage increase of 13.8% was in money market accounts. In addition to our deposit products, we continue to provide alternatives to our customers through the sale of our wealth management (non-deposit) products.

The consumer continues to have a need for transaction accounts, and the Bank is continuing to focus on that need in order to build deposit relationships. Our products are geared toward low-cost convenience and ease for the customer. The Company's strategy is to aggressively seek to grow customer relationships by staying in touch with customers' changing needs and new methods of connectivity, in an effort to increase deposit (and loan) market share. The Bank offers identity protection services as an option for all consumer demand depositors. We believe this product to be a valuable and essential tool necessary to combat the upsurge in fraud and identity theft. This product is a unique benefit to our customers as there are no other banks in our immediate market that offer a similar service.

The Bank competes in the marketplace with many sources that offer products that directly compete with traditional banking products. In keeping with our desire to provide our customers with a full array of financial services, we supplement the services traditionally offered by our Trust Department by staffing our community offices with wealth management consultants that are licensed and trained to sell variable and fixed rate annuities, mutual funds, stock brokerage services and long-term care insurance. Although the sale of these products can reduce the Bank's deposit levels, these products offer solutions for our customers that traditional bank products cannot and allow us to more completely service our customer base. Fee income from the sale of non-deposit products (primarily annuities and mutual funds) was $272,000 and $259,000 in 2019 and 2018, respectively, representing approximately 5.7% and 5.2%, respectively, of total non-interest income.

OTHER INTEREST BEARING LIABILITIES

Juniata funds its needs primarily with local deposits and when necessary, relies on external funding sources for additional funding. External funding sources include credit facilities at correspondent banks and the Federal Home Loan Bank of Pittsburgh. Juniata's average balances for all borrowings increased by $8,945,000 in 2019 compared to 2018.

(Dollars in thousands)	Changes in Borrowings			
	2019 Average Balance	Increase (Decrease) Amount	Increase (Decrease) %	2018 Average Balance
Repurchase agreements	$ 3,246	$ (931)	(22.3)%	$ 4,177
Short-term borrowings	1,024	(8,882)	(89.7)	9,906
Long-term debt	36,246	18,753	107	17,493
Other interest bearing liabilities	1,565	5	0.3	1,560
Total borrowings	$ 42,081	$ 8,945	27.0 %	$ 33,136

PENSION PLAN

The Company's noncontributory pension plan, the JVB Plan, covered substantially all its employees employed prior to December 31, 2007. As of January 1, 2008, the JVB Plan was amended to close the plan to new entrants. All active participants as of December 31, 2007 became 100% vested in their accrued benefit and, as long as they remained eligible, continued to accrue benefits until December 31, 2012. The benefits were based on years of service and the employee's compensation. Effective December 31, 2012, the JVB Plan was amended to cease future service accruals after that date (i.e., it was frozen).

The JVB Plan was amended in 2016 to provide pension benefits to all former FNBPA employees that were previously participants in the former Retirement Plan for the First National Bank of Port Allegany ("FNB Plan"), as of November 30, 2015, at the same level of benefit provided in the FNB Plan. Effective December 31, 2016, the FNB Plan was merged into the JVB Plan, which was amended to provide the same benefits to the class of participants previously included in the FNB Plan.

In 2018, Juniata completed the second step of the strategy to reduce the liability associated with its defined benefit pension plan by making a lump sum payment offer to a small group of terminated vested participants in Juniata's defined benefit plan, which resulted in a pre-tax charge to earnings of $210,000 in the twelve months ended December 31, 2018.

Juniata's Board of Directors resolved to terminate the JVB Plan, effective November 30, 2018. All participants were properly notified. During the second quarter of 2019, JVB Plan participants elected preferences for receiving their vested benefit in the form of either lump sum payments or annuities. Those electing lump sums received payment in the second quarter, resulting in a pre-tax settlement charge of $278,000. In the third quarter of 2019, annuities were purchased to provide vested benefits to all remaining recipients, resulting in a pre-tax charge of $943,000. As of December 31, 2019, all obligations were satisfied, and The JVB Plan was liquidated. Please refer to Note 21 of The Notes to Consolidated Financial Statements.

STOCKHOLDERS' EQUITY

Total stockholders' equity increased by $6,329,000, or 9.4%, in 2019 compared to 2018. The Company was well-capitalized and had the capacity to maintain its traditional dividend level in 2019. The Company's net income exceeded dividends paid by $1,346,000. The adjustment to accumulated other comprehensive loss ("AOCI") to record the reclassification adjustment for gains on sales of debt securities, as well as the unrecognized net gains and the costs associated with the termination of the Company's defined benefit retirement plan increased equity by $4,898,000. Stock based compensation expense recorded pursuant to the Company's Long-Term Incentive Plan added $113,000 to stockholders' equity in 2019, while payments for exercised stock options increased shareholders' equity by $400,000. Treasury stock purchases during the year ended December 31, 2019 decreased stockholders' equity by $428,000.

The following table summarizes how the components of equity changed annually in the last two years.

(Dollars in thousands)

	2019	2018
Beginning balance	$ 67,378	$ 59,387
Net income	5,835	5,904
Dividends	(4,489)	(4,411)
Common stock issued for acquisition	—	6,463
Common stock issued for stock plans	—	42
Treasury stock issued for stock plans	400	90
Stock-based compensation	113	82
Repurchase of stock, net of re-issuance	(428)	(70)
Net change in unrealized security gains	3,163	(807)
Defined benefit retirement plan adjustments, net of tax	1,735	698
Net change	6,329	7,991
Ending balance	$ 73,707	$ 67,378

Average stockholders' equity in 2019 was $70,771,000, an increase of 12.9% from $62,689,000 in 2018, and was 59,938,000 in 2017. At December 31, 2019, Juniata held 42,020 shares of stock in treasury versus 42,201 at December 31, 2018. Return on average equity decreased to 8.24% in 2019 from 9.42% in 2018 partially due to the growth in average equity resulting from the increase in AOCI, as well as lower income in 2019 compared to 2018. The decrease in net income resulted from higher pension termination expenses in 2019, as well as well as the removal of the deferred tax liability in 2018 related to the Company's previous ownership of Liverpool, which resulted in a net tax benefit of $659,000 in 2018 compared to a net tax benefit of $14,000 in 2019. See the discussion in the 2019 Financial Overview section.

The Company periodically repurchases shares of its common stock under the share repurchase program approved by the Board of Directors. In December of 2016, the Board of Directors authorized the repurchase of an additional 200,000 shares of its common stock through its share repurchase program. The program will remain authorized until all approved shares are repurchased, unless terminated by the Board of Directors. Repurchases have typically been accomplished through open market transactions and have complied with all regulatory restrictions on the timing and amount of such repurchases. Shares repurchased have been added to treasury stock and accounted for at cost. These shares may be reissued for stock option exercises, employee stock purchase plan purchases, restricted stock awards, to fulfill dividend reinvestment program needs and to supply shares needed as consideration in an acquisition. During 2019 and 2018, 21,508 and 3,416 shares, respectively, were repurchased in conjunction with this program. There were also 800 restricted share awards forfeited in 2019. Treasury shares of 22,489 and 5,170 were also redeemed for stock option exercises and employee stock purchase plan purchases in 2019 and 2018, respectively. Shares remaining authorized for repurchase in the program were 148,266 as of December 31, 2019.

Juniata declared dividends of $0.88 per common share in both 2019 and 2018 (See Note 16 of The Notes to Consolidated Financial Statements regarding restrictions on dividends from the Bank to the Company). The dividend payout ratio was 76.93% and 74.71% in 2019 and 2018, respectively. The dividend payout ratio in 2019 was greater than 2018 due to lower net income in 2019 compared to 2018. In January 2020, the Board of Directors declared a dividend of $0.22 per share to stockholders of record on February 14, 2020, payable on February 28, 2020.

Juniata's book value per share at December 31, 2019 was $14.45 as compared to $13.23 at December 31, 2018. Juniata's average equity to assets ratio for 2019 and 2018 was 10.93% and 10.20%, respectively. Refer also to the Capital Risk section in the Asset / Liability management discussion that follows.

ASSET / LIABILITY MANAGEMENT OBJECTIVES

Management believes that optimal performance is achieved by maintaining overall risks at a low level. Therefore, the objective of asset/liability management is to control risk and produce consistent, high quality earnings independent of changing interest rates. The Company has identified five major risk areas discussed below:

- Liquidity Risk
- Capital Risk
- Interest Rate Risk
- Investment Portfolio Risk
- Economic Risk

Liquidity Risk

Through liquidity risk management, we seek to maintain our ability to readily meet commitments to fund loans, purchase assets and other securities and repay deposits and other liabilities. Liquidity management also includes the ability to manage unplanned changes in funding sources and recognize and address changes in market conditions that affect the quality of liquid assets. Juniata has developed a methodology for assessing its liquidity risk through an analysis of its primary and total liquidity sources. Juniata relies on three main types of liquidity sources: (1) asset liquidity, (2) liability liquidity and (3) off-balance sheet liquidity.

Asset liquidity refers to assets that we are quickly able to convert into cash, consisting of cash, federal funds sold and securities. Short-term liquid assets generally consist of federal funds sold and securities maturing over the next twelve months. The quality of our short-term liquidity is very good; as federal funds are unimpaired by market risk and as bonds approach maturity, their value moves closer to par value. Liquid assets tend to reduce earnings when there is not an immediate use for such funds, since normally these assets generate income at a lower rate than loans or other longer-term investments.

Liability liquidity refers to funding obtained through deposits. The largest challenge associated with liability liquidity is cost. Juniata's ability to attract deposits depends primarily on several factors, including sales effort, competitive interest rates and other conditions that help maintain consumer confidence in the stability of the financial institution. Large certificates of deposit, public funds and brokered deposits are all acceptable means of generating and providing funding. If the cost is favorable or fits the overall cost structure of the Bank, then these sources have many benefits. They are readily available, come in large block size, have investor-defined maturities and are generally low maintenance.

Off-balance sheet liquidity is closely tied to liability liquidity. Sources of off-balance sheet liquidity include Federal Home Loan Bank borrowings, repurchase agreements and federal funds lines with correspondent banks. These sources provide immediate liquidity to the Bank. They are available to be deployed when a need arises. These instruments also come in large block sizes, have investor-defined maturities and generally require low maintenance.

"Available liquidity" encompasses all three sources of liquidity when determining liquidity adequacy. It results from the Bank's access to short-term funding sources for immediate needs and long-term funding sources when the need is determined to be permanent. Management uses both on-balance sheet liquidity and off-balance sheet liquidity to manage its liquidity position. The Company's liquidity strategy seeks to maintain an adequate volume of high-quality liquid instruments to facilitate customer liquidity demands. Management also maintains sufficient capital, which provides access to the liability and off-balance sheet sides of the balance sheet for funding. An active knowledge of debt funding sources is important to liquidity adequacy.

Contingency funding management involves maintaining contingent sources of immediate liquidity. Management believes that it must consider an array of available sources in terms of volume, maturity, cash flows and pricing. To meet demands in the normal course of business or for contingency, secondary sources of funding such as public funds deposits, collateralized loans, sales of investment securities or sales of loan receivables are considered.

It is the Company's policy to maintain both a primary liquidity ratio and a total liquidity ratio greater than 10% of total assets. The primary liquidity ratio equals liquid assets divided by total assets, where liquid assets equal the sum of cash and due from banks, federal funds sold, interest-bearing deposits with other banks and available for sale securities. Total liquidity is comprised of all components noted in primary liquidity plus securities classified as held-to-maturity, if any. If either of these liquidity ratios falls below 10%, it is the Company's policy to increase liquidity in a timely manner to achieve the required ratio.

It is the Company's policy to maintain available liquidity greater than 10% of total assets and contingency liquidity greater than 7.5% of total assets.

Juniata is a member of the FHLB of Pittsburgh, which provides short-term liquidity and a source for long-term borrowings. The Bank uses this vehicle to satisfy temporary funding needs throughout the year. The Company had short-term borrowings of $9,700,000 on December 31, 2019 and $11,600,000 on December 31, 2018.

The Bank's maximum borrowing capacity with the FHLB was $183,790,000 at December 31, 2019. In order to borrow additional amounts, the FHLB would require the Bank to purchase additional FHLB Stock. The FHLB is a source of both short-term and long-term funding. The Bank must maintain sufficient qualifying collateral to secure all outstanding advances.

Juniata needs to have liquid resources available to fulfill contractual obligations that require future cash payments.

Capital Risk

The Company maintains sufficient core capital to protect depositors and shareholders and to take advantage of business opportunities while ensuring that it has resources to absorb the risks inherent in the business. Federal banking regulators have established capital adequacy requirements for banks and bank holding companies based on risk factors, which require more capital backing for assets with higher potential credit risk than assets with lower credit risk.

In December 2010, the Basel Committee released its final framework for strengthening international capital and liquidity regulation, officially identified by the Basel Committee as "Basel III". In July 2013, the FRB approved final rules to implement the Basel III capital framework which revises the risk-based capital requirements applicable to bank holding companies and depository institutions. The new minimum regulatory capital requirements established by the U.S. Basel III Capital Rules became effective for the Bank on January 1, 2015 and were fully phased in on January 1, 2019.

As fully phased in, Basel III requires financial institutions to maintain: (a) Common Equity Tier 1 (CET1) to risk-weighted assets ratio of at least 4.5%; (b) a minimum ratio of tier 1 capital to risk-weighted assets of at least 6.0%; (c) a minimum ratio of total (that is, tier 1 plus tier 2) capital to risk-weighted assets of at least 8.0%; and (d) a minimum leverage ratio of 3.0%, calculated as the ratio of tier 1 capital balance sheet exposures plus certain off-balance sheet exposures (computed as the average for each quarter of the month-end ratios for the quarter). However, unless the Bank maintains an additional 2.5% "capital conservation buffer" above the percentages stated above in (a) – (c), the Company may be unable to obtain capital distributions from it, which could negatively impact the Company's ability to pay dividends, service debt obligations or repurchase common stock. In addition, such a failure could result in a restriction on the Company's ability to pay certain cash bonuses to executive officers, negatively impacting the Company's ability to retain key personnel.

As of December 31, 2019, the Bank's current capital levels met the fully phased-in minimum capital requirements, including capital conservation buffer, as prescribed in the U.S. Basel III Capital Rules. See Note 16 of Notes to the Consolidated Financial Statements.

Interest Risk

Table 5, presented below, illustrates the maturity distribution of the Company's interest-sensitive assets and liabilities as of December 31, 2019. Earliest re-pricing opportunities for variable and adjustable rate products and scheduled maturities for fixed rate products have been placed in the appropriate column to compute the cumulative sensitivity ratio (ratio of interest-earning assets to interest-bearing liabilities). Securities with call features are treated as though the call date is the maturity date. Through one year, the cumulative sensitivity ratio is 0.38, indicating a liability-sensitive balance sheet, when measured on a static basis.

TABLE 5
MATURITY DISTRIBUTION

As of December 31, 2019
Remaining Maturity / Earliest Possible Repricing

(Dollars in thousands)	Within One Year	Over One Year But Within Five Years	Over Five Years	Total
Interest Earning Assets				
Interest bearing deposits	$ 1,067	$ 1,225	$ —	$ 2,292
Investment securities:				
Debt securities - taxable	—	14,970	5,950	20,920
Debt securities - tax-exempt	1,024	2,823	728	4,575
Mortgage-backed securities	—	—	185,191	185,191
Equities	—	—	1,144	1,144
Loans:				
Commercial, financial, and agricultural	25,087	14,549	12,149	51,785
Real estate - construction	24,942	18,201	3,316	46,459
Other loans	85,346	121,755	95,245	302,346
Total Interest Earning Assets	137,466	173,523	303,723	614,712
Interest Bearing Liabilities				
Demand deposits	150,157	—	—	150,157
Savings deposits	96,980	—	—	96,980
Certificates of deposit over $100,000	13,979	18,701	7,819	40,499
Time deposits	44,279	51,969	13,350	109,598
Short-term borrowings and repurchase agreements	13,129	—	—	13,129
Long-term debt	45,000	—	—	45,000
Other interest bearing liabilities	1,603	—	—	1,603
Total Interest Bearing Liabilities	365,127	70,670	21,169	456,966
Gap	$ (227,661)	$ 102,853	$ 282,554	$ 157,746
Cumulative Gap	$ (185,302)	$ (56,204)	$ 136,941	
Cumulative sensitivity ratio	0.38	0.71	1.35	
Commercial, financial and agricultural loans maturing after one year with:				
Fixed interest rates		$ 12,469	$ 9,873	$ 22,342
Variable interest rates		21,518	3,436	24,954
Total		$ 33,987	$ 13,309	$ 47,296
Certificates of Deposit of $100,000 or more				
Maturing within 3 months				$ 3,633
Maturing within 3 to 6 months				4,151
Maturing within 6 to 12 months				6,194
Maturing 1-5 years				18,702
Maturing after 5 years				7,819
				$ 40,499

Investment Portfolio Risk

Management considers its investment portfolio risk as the amount of appreciation or depreciation the investment portfolio will sustain when interest rates change. The securities portfolio will decline in value when interest rates rise and increase in value when interest rates decline. Securities with long maturities, excessive optionality (as a result of call features) and unusual indexes tend to produce the most market risk during interest rate movements. Rate shocks of minus 100 and plus 100, 200, 300 and 400 basis points were applied to the securities portfolio to determine how Tier 1 capital would be affected if the securities portfolio had to be liquidated and all gains and losses were recognized. The test revealed that, as of December 31, 2019, the risk-based capital ratio would remain adequate under these scenarios.

Economic Risk

Economic risk is the risk that the long-term or underlying value of the Company will change if interest rates change. Economic value of equity (“EVE”) represents the change in the value of the balance sheet without regard to business continuity. Rate shocks are applied to all financial assets and liabilities, using parallel and non-parallel rate shifts of 100 to 400 basis points to estimate the change in EVE under the various hypothetical scenarios. As of December 31, 2019, in a rising rate environment, the modeling results indicate that the Company's liabilities would increase in value slightly more than assets would lose value. A non-parallel 200 basis point increase shock in rates produced an estimated 6.8% increase in EVE, indicating a stable value well within Juniata's policy guidelines.

OFF-BALANCE SHEET ARRANGEMENTS

The Company has numerous off-balance sheet loan obligations that exist in order to meet the financing needs of its customers. These financial instruments include commitments to extend credit, unused lines of credit and letters of credit. Because many commitments are expected to expire without being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. These instruments involve, to varying degrees, elements of credit and interest rate risk that are not recognized in the consolidated financial statements. The Company does not expect that these commitments will have an adverse effect on its liquidity position.

Exposure to credit loss in the event of non-performance by the other party to the financial instrument for commitments to extend credit and financial guarantees written is represented by the contractual notional amount of those instruments. The Company uses the same credit policies in making these commitments as it does for on-balance sheet instruments.

The Company had outstanding loan origination commitments aggregating $97,037,000 and $72,755,000 at December 31, 2019 and 2018, respectively. In addition, the Company had $13,448,000 and $14,468,000 outstanding in unused lines of credit commitments extended to its customers at December 31, 2019 and 2018, respectively. The increase was mainly due to the acquisition of Liverpool's consumer lines of credit.

Letters of credit are instruments issued by the Company that guarantee payment by the Bank to the beneficiary in the event of default by the Company's customer in the non-performance of an obligation or service. Most letters of credit are extended for a one-year period. The credit risk involved in issuing letters of credit is essentially the same as that involved in extending loan facilities to customers. The Company holds collateral supporting those commitments for which collateral is deemed necessary. The amount of the liability as of December 31, 2019 and 2018 for guarantees under letters of credit issued is not material.

The maximum undiscounted exposure related to these guarantees at December 31, 2019 was $2,624,000, and the approximate value of underlying collateral upon liquidation that would be expected to cover this maximum potential exposure was $23,429,000.

In 2017, the Company executed renewal agreements for technology outsourcing services through two outside service bureaus. Both agreements provide for termination fees if the Company cancels the services prior to the end of the 7-year commitment period that runs through May 31, 2024. At December 31, 2019, termination fees are estimated to be approximately $1,369,000 and $1,253,000 on the two contracts. The termination fees would decrease by approximately 15% in each succeeding year through 2024. Since the Company does not expect to terminate these services with either vendor prior to the end of the commitment periods, no liability has been recorded as of December 31, 2019.

EFFECTS OF INFLATION

The performance of a bank is affected more by changes in interest rates than by inflation; therefore, the effect of inflation is normally not as significant to the Company as it is to other businesses and industries. During periods of high inflation, the money supply usually increases, and banks normally experience above average growth in assets, loans and deposits. A bank's operating expenses may increase during inflationary times as the price of goods and services increase.

A bank's performance is also affected during recessionary periods. In times of recession, a bank usually experiences a tightening on its earning assets and on its profits. A recession is usually an indicator of higher unemployment rates, which could mean an increase in the number of nonperforming loans because of continued layoffs and other deterioration of consumers' financial condition.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The following audited financial statements are set forth in this Annual Report on Form 10-K on the following pages:

REPORT ON MANAGEMENT'S ASSESSMENT OF INTERNAL CONTROL OVER FINANCIAL REPORTING

Management is responsible for the preparation, integrity and fair presentation of the consolidated financial statements included in this Annual Report on Form 10-K. The consolidated financial statements and notes included in this annual report have been prepared in conformity with accounting principles generally accepted in the United States of America, and as such, include some amounts that are based on management's best estimates and judgments.

The Company's management is responsible for establishing and maintaining effective internal control over financial reporting. The system of internal control over financial reporting, as it relates to the financial statements, is evaluated for effectiveness by management and tested for reliability through a program of internal audits and management testing and review. Actions are taken to correct potential deficiencies as they are identified. Any system of internal control, no matter how well designed, has inherent limitations, including the possibility that a control can be circumvented or overridden and misstatements due to error or fraud may occur and not be detected. Also, because of changes in conditions, internal control effectiveness may vary over time. Accordingly, even an effective system of internal control will provide only a reasonable assurance with respect to financial statement preparation.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework (2013)*.

Based on our assessment, management concluded that as of December 31, 2019, the Company's internal control over financial reporting was effective and met the criteria of the *Internal Control-Integrated Framework (2013)*.

The independent registered public accounting firm that audited the consolidated financial statements included in the annual report has issued an attestation report on the Company's internal control over financial reporting.

Marcie A. Barber
President and Chief Executive Officer

JoAnn N. McMinn
Chief Financial Officer

Crowe LLP
Independent Member Crowe Global

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Shareholders and the Board of Directors of Juniata Valley Financial Corp.
Mifflintown, Pennsylvania

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statement of financial condition of Juniata Valley Financial Corp. (the "Company") as of December 31, 2019, the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for the year ended December 31, 2019, and the related notes (collectively referred to as the "financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control – Integrated Framework: (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

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

Basis for Opinions

The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Assessment of Internal Controls Over Financial Reporting. Our responsibility is to express an opinion on the Company's financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audit of the financial statements 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 audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (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/ Crowe LLP

We have served as the Company's auditor since 2019.

Cleveland, Ohio
March 16, 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Juniata Valley Financial Corp.
Mifflintown, Pennsylvania

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statement of financial condition of Juniata Valley Financial Corp. (the "Company") as of December 31, 2018, the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for the year ended December 31, 2018, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018, and the results of its operations and its cash flows for the year ended December 31, 2018**,** in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our 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 the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ BDO USA, LLP

We served as the Company's auditor from 2013 to 2019.

Philadelphia, Pennsylvania
April 2, 2019

JUNIATA VALLEY FINANCIAL CORP. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION

(Dollars in thousands, except share data)	December 31, 2019	December 31, 2018
ASSETS		
Cash and due from banks	$ 12,658	$ 15,617
Interest bearing deposits with banks	82	110
Federal funds sold	—	729
Cash and cash equivalents	12,740	16,456
Interest bearing time deposits with banks	2,210	3,290
Equity securities	1,144	1,118
Debt securities available for sale	210,686	141,953
Restricted investment in bank stock	3,442	2,441
Total loans	400,590	417,631
Less: Allowance for loan losses	(2,961)	(3,034)
Total loans, net of allowance for loan losses	397,629	414,597
Premises and equipment, net	9,243	8,744
Other real estate owned	—	744
Bank owned life insurance and annuities	16,266	15,938
Investment in low income housing partnerships	3,904	4,545
Core deposit and other intangible assets	318	405
Goodwill	9,047	9,139
Mortgage servicing rights	180	200
Accrued interest receivable and other assets	3,823	5,666
Total assets	$ 670,632	$ 625,236
LIABILITIES AND STOCKHOLDERS' EQUITY		
Liabilities:		
Deposits:		
Non-interest bearing	$ 134,703	$ 126,057
Interest bearing	397,234	395,665
Total deposits	531,937	521,722
Short-term borrowings and repurchase agreements	13,129	14,511
Long-term debt	45,000	15,000
Other interest bearing liabilities	1,603	1,596
Accrued interest payable and other liabilities	5,256	5,029
Total liabilities	596,925	557,858
Commitments and contingent liabilities		
Stockholders' Equity:		
Preferred stock, no par value: Authorized - 500,000 shares, none issued	—	—
Common stock, par value $1.00 per share: Authorized 20,000,000 shares Issued - 5,141,749 shares at December 31, 2019; 5,134,249 shares at December 31, 2018 Outstanding - 5,099,729 shares at December 31, 2019; 5,092,048 shares at December 31, 2018	5,142	5,134
Surplus	24,898	24,821
Retained earnings	43,954	42,525
Accumulated other comprehensive income (loss)	516	(4,299)
Cost of common stock in Treasury: 42,020 shares at December 31, 2019; 42,201 shares at December 31, 2018	(803)	(803)
Total stockholders' equity	73,707	67,378
Total liabilities and stockholders' equity	$ 670,632	$ 625,236

See The Notes to Consolidated Financial Statements

JUNIATA FINANCIAL CORP. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF INCOME

(Dollars in thousands, except share data)	Year Ended December 31, 2019	2018
Interest and dividend income:		
Loans, including fees	$ 21,060	$ 20,060
Taxable securities	4,115	3,040
Tax-exempt securities	147	393
Other interest income	292	158
Total interest income	25,614	23,651
Interest expense:		
Deposits	3,706	3,068
Short-term borrowings and repurchase agreements	61	252
Long-term debt	899	276
Other interest bearing liabilities	42	39
Total interest expense	4,708	3,635
Net interest income	20,906	20,016
Provision for loan losses	(573)	337
Net interest income after provision for loan losses	21,479	19,679
Non-interest income:		
Customer service fees	1,717	1,779
Debit card fee income	1,349	1,280
Earnings on bank-owned life insurance and annuities	289	352
Trust fees	394	430
Commissions from sales of non-deposit products	272	259
Income/gain from unconsolidated subsidiary	—	296
Fees derived from loan activity	333	416
Mortgage banking income	68	70
Gain (loss) on sales and calls of securities	(43)	(188)
Change in value of equity securities	26	(1)
Other non-interest income	344	334
Total non-interest income	4,749	5,027
Non-interest expense:		
Employee compensation expense	8,257	7,822
Employee benefits	3,594	2,458
Occupancy	1,296	1,217
Equipment	881	818
Data processing expense	2,114	1,924
Director compensation	206	215
Professional fees	961	640
Taxes, other than income	567	498
FDIC Insurance premiums	108	274
Loss (gain) on sales of other real estate owned	(208)	(60)
Amortization of intangible assets	87	79
Amortization of investment in low-income housing partnerships	792	800
Merger and acquisition expense	—	884
Other non-interest expense	1,752	1,892
Total non-interest expense	20,407	19,461
Income before income taxes	5,821	5,245
Income tax provision (benefit)	(14)	(659)
Net income	$ 5,835	$ 5,904
Earnings per share		
Basic	$ 1.14	$ 1.18
Diluted	$ 1.14	$ 1.18

See The Notes to Consolidated Financial Statements

JUNIATA VALLEY FINANCIAL CORP. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(Dollars in thousands)	Year ended December 31, 2019		
	Pre-Tax Amount	Tax Effect	Net-of-Tax Amount
Net income	$ 5,821	$ 14	$ 5,835
Other comprehensive income:			
Available for sale securities:			
Unrealized holding gains arising during the period	3,961	(832)	3,129
Less reclassification adjustment for losses included in net income (1) (3)	43	(9)	34
Pension net loss	2,399	(504)	1,895
Pension loss due to change in assumptions	(1,478)	310	(1,168)
Amortization of pension net actuarial loss (2) (3)	1,276	(268)	1,008
Other comprehensive income	6,201	(1,303)	4,898
Total comprehensive income	$ 12,022	$ (1,289)	$ 10,733

	Year ended December 31, 2018		
	Pre-Tax Amount	Tax Effect	Net-of-Tax Amount
Net income	$ 5,245	$ 659	$ 5,904
Other comprehensive income (loss):			
Available for sale securities:			
Unrealized holding losses arising during the period	(1,216)	255	(961)
Unrealized holding gain from unconsolidated subsidiary	5	—	5
Less reclassification adjustment for losses included in net income (1) (3)	188	(39)	149
Pension net gain	(55)	11	(44)
Pension gain due to change in assumptions	601	(126)	475
Amortization of pension net actuarial loss (2) (3)	338	(71)	267
Other comprehensive income (loss)	(139)	30	(109)
Total comprehensive income	$ 5,106	$ 689	$ 5,795

(1) Amounts are included in gain (loss) on sales and calls of securities on the Consolidated Statements of Income as a separate element within total non-interest income.
(2) Amounts are included in the computation of net periodic benefit cost and are included in employee benefits expense on the Consolidated Statements of Income as a separate element within total non-interest expense.
(3) Income tax amounts are included in the income tax (benefit) provision on the Consolidated Statements of Income.

See The Notes to Consolidated Financial Statements

JUNIATA VALLEY FINANCIAL CORP. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(Dollars in thousands, except share data)	Year Ended December 31, 2019 Number of Shares Outstanding	Common Stock	Surplus	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Total Stockholders' Equity
Balance, January 1, 2019	5,092,048	$ 5,134	$ 24,821	$ 42,525	$ (4,299)	$ (803)	$ 67,378
Net income				5,835			5,835
Other comprehensive income					4,898		4,898
Reclassification for ASU 2018-02				83	(83)		—
Cash dividends at $0.88 per share				(4,489)			(4,489)
Stock-based compensation			113				113
Forfeiture of restricted stock	(800)						—
Purchase of treasury stock	(21,508)					(428)	(428)
Treasury stock issued for stock plans	22,489		(28)			428	400
Common stock issued for stock plans	7,500	8	(8)				—
Balance, December 31, 2019	5,099,729	$ 5,142	$ 24,898	$ 43,954	$ 516	$ (803)	$ 73,707

(Dollars in thousands, except share data)	Year Ended December 31, 2018 Number of Shares Outstanding	Common Stock	Surplus	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Stock	Total Stockholders' Equity
Balance, January 1, 2018	4,767,656	$ 4,811	$ 18,565	$ 40,876	$ (4,034)	$ (831)	$ 59,387
Net income (adjusted)				5,904			5,904
Other comprehensive loss					(109)		(109)
Reclassification for ASU 2016-01				156	(156)		—
Cash dividends at $0.88 per share				(4,411)			(4,411)
Stock-based compensation			82				82
Purchase of treasury stock	(3,416)					(70)	(70)
Treasury stock issued for stock plans	5,170		(8)			98	90
Common stock issued for stock plans	7,354	8	34				42
Common stock issued for acquisition	315,284	315	6,148				6,463
Balance, December 31, 2018	5,092,048	$ 5,134	$ 24,821	$ 42,525	$ (4,299)	$ (803)	$ 67,378

See The Notes to Consolidated Financial Statements

JUNIATA VALLEY FINANCIAL CORP. AND SUBSIDIARY
CONSOLIDATED STATEMENTS OF CASH FLOWS

(Dollars in thousands)	Year Ended December 31, 2019	Year Ended December 31, 2018
Operating activities:		
Net income	$ 5,835	$ 5,904
Adjustments to reconcile net income to net cash provided by operating activities:		
Provision for loan losses	(573)	337
Depreciation	801	815
Net amortization of securities premiums	817	540
Net amortization of loan origination fees	96	43
Deferred net loan origination costs	(437)	(348)
Amortization of intangibles	87	79
Amortization of investment in low income housing partnerships	792	800
Net amortization of purchase fair value adjustments	(187)	(102)
Net realized loss on sales and calls of available for sale securities	43	188
Change in value of equity securities	(26)	1
Net gain on sales of other real estate owned	(208)	(60)
Earnings on bank owned life insurance and annuities	(289)	(352)
Deferred income tax expense (benefit)	(782)	(96)
Income/gain from unconsolidated subsidiary, net of dividends of $0 and $75, respectively	—	194
Equity gain from acquisition of unconsolidated subsidiary	—	(415)
Stock-based compensation expense	113	82
Proceeds from mortgage loans sold to others	88	95
Mortgage banking income	(68)	(70)
Decrease (increase) in accrued interest receivable and other assets	1,872	(1,493)
Increase (decrease) in accrued interest payable and other liabilities	1,967	(821)
Net cash provided by operating activities	9,941	5,321
Investing activities:		
Purchases of:		
Securities available for sale	(125,422)	(20,610)
FHLB stock	(1,001)	—
Premises and equipment	(1,308)	(548)
Bank owned life insurance and annuities	(39)	(39)
Proceeds from:		
Sales of securities available for sale	21,777	10,461
Maturities of and principal repayments on securities available for sale	38,056	19,145
Redemption of FHLB stock	—	787
Sale of other real estate owned	952	352
Sale of fixed assets	7	—
Sale of other assets	13	22
Net cash received from acquisition	—	7,561
Investment in low income housing partnerships	(151)	(100)
Net decrease in interest bearing time deposits with banks	1,080	735
Net decrease (increase) in loans	18,068	(2,931)
Net cash (used in) provided by investing activities	(47,968)	14,835
Financing activities:		
Net increase in deposits	10,210	8,010
Net decrease in short-term borrowings and securities sold under agreements to repurchase	(1,382)	(7,258)
Issuance of long-term debt	45,000	—
Repayment of long-term debt	(15,000)	(10,000)
Cash dividends	(4,489)	(4,411)
Purchase of treasury stock	(428)	(70)
Treasury stock issued for employee stock plans	400	90
Common stock issued for employee stock plans	—	42
Net cash provided by (used in) financing activities	34,311	(13,597)
Net (decrease) increase in cash and cash equivalents	(3,716)	6,559
Cash and cash equivalents at beginning of year	16,456	9,897
Cash and cash equivalents at end of period	$ 12,740	$ 16,456

(Dollars in thousands)	Year Ended December 31, 2019	Year Ended December 31, 2018
Supplemental information:		
Interest paid	$ 4,524	$ 3,646
Income tax paid	243	(663)
Supplemental schedule of noncash investing and financing activities:		
Transfer of loans to other real estate owned	$ —	$ 681
Transfer of loans to repossessed vehicles	7	12
Right-of-Use assets obtained in exchange for lease obligations	556	—
Supplemental schedule of assets and liabilities in connection with merger:		
Assets acquired:		
Investment in time deposits with banks	$ —	$ 3,675
Loans	—	31,331
Premises and equipment	—	125
Accrued interest receivable	—	123
Core deposit and other intangible assets	—	289
Bank owned life insurance	—	632
FHLB stock	—	124
Other assets	—	267
	$ —	$ 36,566
Liabilities assumed:		
Deposits	—	36,052
Accrued interest payable and other liabilities	—	266
	$ —	$ 36,318

See The Notes to Consolidated Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016

1. NATURE OF OPERATIONS

Juniata Valley Financial Corp. ("Juniata" or the "Company") is a bank holding company operating in central Pennsylvania for the purpose of delivering financial services within its local market. Through its wholly-owned banking subsidiary, The Juniata Valley Bank (the "Bank"), Juniata provides retail and commercial banking and other financial services through 16 branch locations located in Juniata, Mifflin, Perry, McKean, Potter and Huntingdon Counties. Additionally, in Mifflin, Juniata and Centre Counties, the Company maintains three offices for loan production, trust services and wealth management sales. Each of the Company's lines of business are part of the same reporting segment, whose operating results are regularly reviewed and managed by a centralized executive management group. As a result, the Company has only one reportable segment for financial reporting purposes. The Bank provides a full range of banking services, including online and mobile banking, an automatic teller machine network, checking accounts, identity protection products for consumers, savings accounts, money market accounts, fixed rate certificates of deposit, club accounts, secured and unsecured commercial and consumer loans, construction and mortgage loans, safe deposit facilities and credit loans with overdraft checking protection. The Bank also provides a variety of trust services. The Company has a contractual arrangement with a broker-dealer to allow the offering of annuities, mutual funds, stock and bond brokerage services and long-term care insurance to its local market. The Bank operates under a state bank charter and is subject to regulation by the Pennsylvania Department of Banking and the Federal Deposit Insurance Corporation. Juniata is subject to regulation by the Board of Governors of the Federal Reserve Bank and the Pennsylvania Department of Banking and Securities.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accounting policies of Juniata Valley Financial Corp. and its wholly owned subsidiary conform to accounting principles generally accepted in the United States of America ("GAAP") and to general financial services industry practices. A summary of the more significant accounting policies applied in the preparation of the accompanying consolidated financial statements follows.

Principles of Consolidation
The consolidated financial statements include the accounts of Juniata Valley Financial Corp. and its wholly owned subsidiary, The Juniata Valley Bank. All significant intercompany transactions and balances have been eliminated.

Use of Estimates
The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Significant Group Concentrations of Credit Risk
Most of the Company's activities are with customers located within the Juniata Valley and the JVB Northern Tier regions. Note 6 discusses the types of securities in which the Company invests. Note 7 discusses the types of lending in which the Company engages.

As of December 31, 2019, credit exposure to lessors of non-residential buildings and dwellings represented 45% of capital, credit exposure to residential buildings and dwellings represented 32% of capital, credit exposure to hotels and motels represented 30% of capital, and credit exposure to continuing care retirement communities represented 26% of capital. Otherwise, there were no concentrations of credit to any particular industry equaling more than 10% of total capital. The Bank's business activities are geographically concentrated in the counties of Juniata, Mifflin, Perry, Huntingdon, Centre, Franklin, McKean, Potter and Snyder, Pennsylvania. The Bank has a diversified loan portfolio; however, a substantial portion of its debtors' ability to honor their obligations is dependent upon the economy in central Pennsylvania.

Revenue Recognition
The Company generally acts in a principal capacity, on its own behalf, in most contracts with customers. In such transactions, revenue and related costs to provide these services are recognized on a gross basis in the financial statements. In some cases, the Company acts in an agent capacity, deriving revenue through assisting other entities in transactions with its customers. In such transactions, revenue and the related costs to provide the services are recognized on a net basis in the financial statements. These transactions primarily relate to non-deposit product commissions and fees derived from customer's use of various interchange and ATM/debit card networks.

All of the Company's revenue from contracts with customers in the scope of ASC Topic 606, *Revenue from Contracts with Customers*, are recognized within non-interest income on the consolidated statements of income. Revenue streams not within the scope of ASC 606 included in non-interest income on the consolidated statements of income include earnings on bank-owned life insurance and annuities, income from unconsolidated subsidiary, fees derived from loan activity, mortgage banking income, gain/loss on sales and calls of securities, and the change in value of equity securities. Refer to Note 20 for a description of the Company's sources of revenue accounted for under ASC 606.

Cash Flows
For purposes of reporting cash flows, cash and cash equivalents include cash on hand, amounts due from banks, interest bearing demand deposits with banks and federal funds sold. Generally, federal funds are sold for one-day periods.

Interest Bearing Time Deposits with Banks
Interest-bearing time deposits with banks consist of certificates of deposits in other banks with original maturities of greater than 90 days. These time deposits all have maturities within five years.

Securities
Debt securities classified as available for sale are stated at fair value, with the unrealized gains and losses, net of tax, reported as a component of other comprehensive income (loss). Securities classified as available for sale are those securities that the Company intends to hold for an indefinite period of time but not necessarily to maturity. Interest and dividends are recognized as income when earned. Interest income includes amortization of purchase premium or discount. Premiums and discounts on securities are amortized on the level-yield method without anticipating prepayments, except for mortgage-backed securities where prepayments are anticipated. Gains and losses on sales are recorded on the trade date and determined using the specific identification method. The Company had no securities classified as held to maturity at December 31, 2019 and 2018.

Management evaluates debt securities for other-than-temporary impairment ("OTTI") on a quarterly basis, and more frequently when economic or market conditions warrant such an evaluation. For debt securities in an unrealized loss position, management considers the extent and duration of the unrealized loss, and the financial condition and near-term prospects of the issuer. Management also assesses whether it intends to sell, or it is more likely than not that it will be required to sell, a debt security in an unrealized loss position before recovery of its amortized cost basis. If either of the criteria regarding intent or requirement to sell is met, the entire difference between amortized cost and fair value is recognized as impairment through earnings. 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. 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.

As of January 1, 2018, upon the adoption of ASU 2016-01, all of the Company' equity securities are within the scope of ASC 321, *Investments – Equity Securities*, while debt securities remain under ASC 320, *Investments – Debt Securities*. ASC 321 requires all equity securities within its scope to be measured at fair value with changes in fair value recognized in net income.

Restricted Investment in Bank Stock
The Bank is a member of the FHLB system. Members are required to own a certain amount of stock based on the level of borrowings and other factors, and my invest in additional amounts. The Bank also owns restricted stock investments in the Atlantic Community Bankers Bank ("ACBB"). Both the FHLB and ACBB stock is carried at cost, classified as a

restricted security, and periodically evaluated for impairment based on ultimate recovery of par value. Both cash and stock dividends are reported as income.

Loans
Loans that the Company has the intent and ability to hold for the foreseeable future or until maturity are stated at the outstanding unpaid principal balances, net of any deferred fees or costs and the allowance for loan losses. Interest income on all loans, other than non-accrual loans, is accrued over the term of the loans based on the amount of principal outstanding.

The loan portfolio includes the following classes: (1) commercial, financial and agricultural, (2) real estate - commercial, (3) real estate - construction, (4) real estate – mortgage, (5) obligations of states and political subdivisions, and (6) personal loans.

Interest income on consumer, mortgage and commercial loans is discontinued and loans are placed on non-accrual status at the time the loan is 90 days delinquent unless the loan is well-secured and in process of collection. Loans are charged off to the extent principal or interest is deemed uncollectible. Past due status is based on the contractual terms of the loan. In all cases, loans are placed on non-accrual or charged off at an earlier date if collection of principal or interest is considered doubtful. Non-accrual loans and loans past due 90 days still on accrual include both homogeneous loans that are collectively evaluated for impairment and individually classified impaired loans.

Interest received on such loans is accounted for on the cash-basis or cost-recovery method, until qualifying for return to accrual. Under the cost-recovery method, interest income is not recognized until the loan principal balance is reduced to zero. Under the cash-basis method, interest income is recorded when the payment is received in cash. Loans are returned to accrual status when all the principal and interest amounts contractually due are brought current, the loan has performed in accordance with the contractual terms for a reasonable period of time and future payments are reasonably assured.

Loan Origination Fees and Costs
Loan origination fees and related direct origination costs for a given loan are deferred and amortized over the life of the loan on a level-yield basis as an adjustment to interest income over the contractual life of the loan. As of December 31, 2019, the amount of net unamortized origination costs carried as an adjustment to outstanding loan balances was $70,000. As of December 31, 2018, the amount of net unamortized origination fees carried as an adjustment to outstanding loan balances was $11,000.

Acquired Loans
Loans that Juniata acquires through business combinations are recorded at fair value with no carryover of the related allowance for loan losses. Some of these loans have shown evidence of credit deterioration since origination. These purchased credit impaired (“PCI”) loans are recorded at the amount paid, such that there is no carryover of the seller’s allowance for loan losses. After acquisition, losses are recognized by an increase in the allowance for loan losses.

Such purchased credit impaired loans are accounted for individually or aggregated into pools of loans based on common risk characteristics, such as credit score, loan type, and date of origination. Juniata estimates the amount and timing of expected cash flows for each loan or pool, and the expected cash flows in excess of amount paid is recorded as interest income over the remaining life of the loan or pool (accretable yield). The excess of the loan’s or pool’s contractual principal and interest over expected cash flows is not recorded (nonaccretable difference).

Over the life of the loan or pool, expected cash flows continue to be estimated. If the present value of expected cash flows is less than the carrying amount, a loss is recorded as a provision for loan losses. If the present value of expected cash flows is greater than the carrying amount, it is recognized as part of future interest income.

PCI loans that met the criteria for impairment or non-accrual of interest prior to the acquisition may be considered performing upon acquisition, regardless of whether the customer is contractually delinquent, if Juniata expects to fully collect the new carrying value (i.e. fair value) of the loans. As such, Juniata may no longer consider the loan to be non-accrual or nonperforming and may accrue interest on these loans, including the impact of any accretable discount. In addition, charge-offs on such loans would be first applied to the nonaccretable difference portion of the fair value adjustment.

Loans acquired through business combinations that do not meet the specific criteria of ASC 310-30, but for which a discount is attributable at least in part to credit quality, are also accounted for in accordance with this guidance. As a result, related discounts are recognized subsequently through accretion based on the contractual cash flows of the acquired loans.

Allowance for Loan Losses
The allowance for loan losses (“allowance”) represents management’s estimate of losses inherent in the loan portfolio as of the consolidated statement of financial condition date and is recorded as a reduction to loans. The allowance for loan losses is increased by the provision for loan losses, and decreased by charge-offs, net of recoveries. Loans deemed to be uncollectible are charged against the allowance for loan losses, and subsequent recoveries, if any, are credited to the allowance. The allowance for loan losses is a valuation allowance for probable incurred credit losses. Loan losses are charged against the allowance when management believes the loan balance is uncollectible. Subsequent recoveries, if any, are credited to the allowance. Management estimates the allowance balance required using past loan loss experience, the nature and volume of the portfolio, information about specific borrower situations and estimated collateral values, economic conditions, as well as other factors. Allocations of the allowance may be made for specific loans, but the entire allowance is available for any loan that, in management’s judgement, should be charged off.

For financial reporting purposes, the provision for loan losses charged to current operating income is based on management’s estimates, and actual losses may vary from estimates. These estimates are reviewed and adjusted at least quarterly and are reported in earnings in the periods in which they become known.

Loans included in any class are considered for charge-off when:

- principal or interest has been in default for 120 days or more and for which no payment has been received during the previous four months;
- all collateral securing the loan has been liquidated and a deficiency balance remains;
- a bankruptcy notice is received for an unsecured loan;
- a confirming loss event has occurred; or
- the loan is deemed to be uncollectible for any other reason.

There are two components of the allowance: (1) specific allowances allocated to loans evaluated for impairment under ASC Section 310-10-35; and (2) allowances calculated for pools of loans evaluated collectively for impairment under ASC Subtopic 450-20, *Contingencies*.

The allowance consists of specific and general components. The specific component relates to loans that are individually classified as impaired when, based on current information and events, it is probable that the Company will be unable to collect all amounts due according to the contractual terms of the loan agreement. Loans for which the terms have been modified resulting in a concession, and for which the borrower is experiencing financial difficulties, are considered troubled debt restructurings (“TDRs”) and classified as impaired.

Factors considered by management in determining impairment include payment status, collateral value and the probability of collecting scheduled principal and interest payments when due. Loans that experience insignificant payment delays and payment shortfalls generally are not classified as impaired. 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 loans 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. Impairment is measured on a loan by loan basis by the present value of expected future cash flows discounted at the loan’s effective interest rate, the loan’s observable market price or the fair value of the collateral if the loan is collateral dependent. If a loan is impaired, a portion of the allowance is allocated so that the loan is reported, net, at the present value of estimated future cash flows using the loan’s existing rate or at the fair value of collateral if repayment is expected solely from the collateral.

Impairment for substantially all of the Company's impaired loans is measured based on the estimated fair value of the loan's collateral. For real estate - commercial loans, estimated fair values are determined primarily through third-party appraisals. When a real estate secured loan becomes impaired, a decision is made regarding whether an updated certified appraisal of the real estate is necessary. This decision is based on various considerations, including the age of the most recent appraisal, the loan-to-value ratio based on the current appraisal and the condition of the property. Appraised values may be discounted to arrive at the estimated selling price of the collateral, which is considered to be the estimated fair value. The discounts also include the estimated costs to sell the property. For commercial, financial and agricultural, and obligations of states and political subdivision loans, estimated fair values are determined based on the borrower's financial statements, inventory reports, aging accounts receivable, equipment appraisals or invoices. Indications of value from these sources are generally discounted based on the age of the financial information or the quality of the assets. For such loans that are classified as impaired, an allowance is established when the discounted cash flows (or collateral value or observable market price) of the impaired loan is lower than the carrying value of that loan. The Company generally does not separately identify individual consumer segment loans for impairment analysis, unless such loans are subject to a restructuring agreement.

Troubled debt restructurings are individually evaluated for impairment and included in the separately identified impairment disclosures. Loans whose terms are modified are classified as troubled debt restructurings if the Company grants borrowers concessions and it is deemed that those borrowers are experiencing financial difficulty. Concessions granted under a troubled debt restructuring generally involve a below-market interest rate based on the loan's risk characteristics, an extension of a loan's stated maturity date or a significant delay in payment. Non-accrual troubled debt restructurings are restored to accrual status if principal and interest payments, under the modified terms, are current for a sustained period after modification. For TDRs that subsequently default, the Company determines the amount of the allowance on that loan in accordance with the accounting policy for the allowance for loan losses on loans individually identified as impaired. The Company incorporates recent historical experience related to TDRs, including the performance of TDRs that subsequently default, into the calculation of the allowance by loan portfolio class.

The general component of the allowance covers loans that are collectively evaluated for impairment. In accordance with ASC Subtopic 450-20, when measuring estimated credit losses, these loans are grouped into homogenous pools with similar characteristics and evaluated collectively considering both quantitative measures, such as historical loss, and qualitative measures, in the form of environmental adjustments.

Quantitative factor determination:
An average annual loss rate is calculated for each pool through an analysis of historical losses over a five-year look-back period. Using data for each loan, a loss emergence period is determined within each class pool. The loss emergence period reflects the approximate length of time from the point when a loss is incurred (the loss trigger event) to the point of loss confirmation (the date of eventual charge-off). The loss emergence period is applied to the average annual loss to produce the quantitative factor for each pooled class.

Qualitative factor determination:
Historical loss rates computed in the quantitative component reflects an estimate of the level of incurred losses in the portfolio based on historical experience. Management considers that the current conditions may deviate from those that prevailed over the historical look-back period. Thus, the quantitative rates are an imperfect estimate, necessitating an evaluation of qualitative considerations (i.e. environmental factors) to incorporate these risks.

Management considered qualitative, environmental risk factors including:

- National, regional and local economic and business conditions, and developments that affect the collectability of the portfolio, including the condition of various market segments;
- Changes in the volume and severity of past due loans, the volume of non-accrual loans, and the volume and severity of adversely classified loans;
- Changes in the nature and volume of the portfolio and terms of loans;
- Changes in the experience, ability and depth of lending and credit management and other relevant staff;
- Existence and effect of any concentrations of credit and changes in the level of such concentrations;
- Changes in the quality of the loan review system;

- Changes in lending policies and procedures including changes in underwriting standards and collection, charge-off and recovery practices;
- Changes in the value of underlying collateral for collateral-dependent loans; and
- Effect of external influences, including competition, legal and regulatory requirements.

Within each loan class, an analysis was performed over a ten-year look-back period to discover peak historical losses, and with this data, management established ranges of risk from minimal to very high, for each risk factor, to produce a supportable anchor for risk assignment. Based on the framework for risk factor evaluation and range of adjustments established through the anchoring process, a risk assessment and corresponding adjustment was assigned for each class as of December 31, 2019. Adjustments to the factors are supported through documentation of changes in conditions in a narrative accompanying the allowance for loan loss calculation.

The combination of quantitative and qualitative factors was applied to year-end balances in each class to establish the overall allowance.

Reserve for Unfunded Lending Commitments
The reserve for unfunded lending commitments represents management's estimate of probable incurred losses inherent in its unfunded lending commitments and is recorded in other liabilities on the consolidated statement of financial condition, when necessary. The amount of the reserve for unfunded lending commitments is not material to the consolidated financial statements.

Loans Held for Sale and Mortgage Servicing Rights
The Company has originated residential mortgage loans with the intent to sell. These individual loans were normally sold to the buyer immediately. The Company maintains servicing rights on these loans.

When mortgage loans are sold with servicing retained, servicing rights are initially recorded at fair value with the income statement effect recorded in gains on sales of loans. 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. Under the fair value measurement method, the Company measures servicing rights at fair value at each reporting date and reports changes in fair value of servicing assets in earnings in the period in which the changes occur, which are included with mortgage banking income on the income statement. The fair values of servicing rights are subject to fluctuations as a result of changes in estimated and actual prepayment speeds and default rates and losses. The carrying amount of mortgage servicing rights was $180,000 and $200,000 at December 31, 2019 and 2018, respectively.

Servicing fee income, which is reported on the income statement as mortgage banking income, is recorded for fees earned for servicing loans. The fees are based on a contractual percentage of the outstanding principal; or a fixed amount per loan and are recorded as income when earned. Servicing fees totaled $88,000 and $95,000 for the years ended December 31, 2019 and 2018, respectively. Late fees and ancillary fees related to loan servicing are not material.

Commercial, Financial and Agricultural Lending
The Company originates commercial, financial and agricultural loans primarily to businesses located in its primary market area and surrounding areas. These loans are used for various business purposes, which include short-term loans and lines of credit to finance machinery and equipment purchases, inventory and accounts receivable. Generally, the maximum term for loans extended on machinery and equipment is shorter and does not exceed the projected useful life of such machinery and equipment. Most business lines of credit are written with a five year maturity, subject to an annual review.

Commercial, financial and agricultural loans are generally secured with short-term assets; however, in many cases, additional collateral, such as real estate, is provided as additional security for the loan. Loan-to-value maximum values have been established by the Company and are specific to the type of collateral. Collateral values may be determined using invoices, inventory reports, accounts receivable aging reports, collateral appraisals, etc.

In underwriting commercial, financial and agricultural loans, an analysis of the borrower's capacity to repay the loan, the adequacy of the borrower's capital and collateral, as well as an evaluation of conditions affecting the borrower, is performed. Analysis of the borrower's past, present and future cash flows is also an important aspect of the Company's analysis.

Concentration analysis assists in identifying industry specific risk inherent in commercial, financial and agricultural lending. Mitigants include the identification of secondary and tertiary sources of repayment and appropriate increases in oversight.

Commercial, financial and agricultural loans generally present a higher level of risk than certain other types of loans, particularly during slow economic conditions.

Real Estate - Commercial Lending
The Company engages in real estate - commercial lending in its primary market area and surrounding areas. The Company's real estate - commercial portfolio is secured primarily by residential housing, commercial buildings, raw land and hotels. Generally, real estate - commercial loans have terms that do not exceed 20 years, have loan-to-value ratios of up to 80% of the appraised value of the property and are typically secured by personal guarantees of the borrowers.

As economic conditions deteriorate, the Company reduces its exposure in real estate loans with higher risk characteristics. In underwriting these loans, the Company performs a thorough analysis of the financial condition of the borrower, the borrower's credit history, and the reliability and predictability of the cash flow generated by the property securing the loan. Appraisals on properties securing real estate - commercial loans originated by the Company are performed by independent appraisers.

Real estate - commercial loans generally present a higher level of risk than certain other types of loans, particularly during slow economic conditions.

Real Estate - Construction Lending
The Company engages in real estate - construction lending in its primary market area and surrounding areas. The Company's real estate - construction lending consists of commercial and residential site development loans, as well as commercial building construction and residential housing construction loans.

The Company's commercial real estate - construction loans are generally secured with the subject property, and advances are made in conformity with a pre-determined draw schedule supported by independent inspections. Terms of construction loans depend on the specifics of the project, such as estimated absorption rates, estimated time to complete, etc.

In underwriting commercial real estate - construction loans, the Company performs a thorough analysis of the financial condition of the borrower, the borrower's credit history, the reliability and predictability of the cash flow generated by the project using feasibility studies, market data, etc. Appraisals on properties securing real estate - commercial loans originated by the Company are performed by independent appraisers.

Real estate - construction loans generally present a higher level of risk than certain other types of loans, particularly during slow economic conditions. The difficulty of estimating total construction costs adds to the risk as well.

Real Estate - Mortgage Lending
The Company's real estate - mortgage portfolio is comprised of one-to-four family residential mortgages and commercial loans secured by one-to-four family properties. One-to-four family residential mortgage loan originations, including home equity installment and home equity lines of credit loans, are generated by the Company's marketing efforts, its present customers, walk-in customers and referrals. These loans originate primarily within the Company's market area or with customers primarily from the market area.

The Company offers fixed-rate and adjustable rate real estate - mortgage loans with terms up to a maximum of 25 years for both permanent structures and those under construction. The Company's one-to-four family residential mortgage originations are secured primarily by properties located in its primary market area and surrounding areas. Most of the Company's residential real estate - mortgage loans originate with a loan-to-value of 80% or less. Home equity installment loans are secured by the borrower's primary residence with a maximum loan-to-value of 80% and a maximum term of

15 years. Home equity lines of credit are secured by the borrower's primary residence with a maximum loan-to-value of 90% and a maximum term of 20 years.

In underwriting one-to-four family residential real estate - mortgage loans, the Company evaluates the borrower's ability to make monthly payments, the borrower's repayment history and the value of the property securing the loan. The ability to repay is determined by the borrower's employment history, current financial conditions, and credit background. The analysis is based primarily on the customer's ability to repay and secondarily on the collateral or security. Most properties securing real estate - mortgage loans made by the Company are appraised by independent fee appraisers. The Company generally requires real estate - mortgage loan borrowers to obtain an attorney's title opinion or title insurance, and fire and property insurance (including flood insurance, if necessary) in an amount not less than the amount of the loan. The Company does not engage in sub-prime residential real estate - mortgage originations.

Residential real estate - mortgage loans and home equity loans generally present a lower level of risk than certain other types of consumer loans because they are secured by the borrower's primary residence. Risk is increased when the Company is in a subordinate position for the loan collateral.

Obligations of States and Political Subdivisions
The Company lends to local municipalities and other tax-exempt organizations. These loans are primarily tax-anticipation notes and, as such, carry little risk. Historically, the Company has never had a loss on any loan of this type.

Personal Lending
The Company offers a variety of secured and unsecured personal loans, including vehicle loans, mobile home loans and loans secured by savings deposits as well as other types of personal loans.

Personal loan terms vary according to the type and value of collateral and creditworthiness of the borrower. In underwriting personal loans, a thorough analysis of the borrower's willingness and financial ability to repay the loan as agreed is performed. The ability to repay is determined by the borrower's employment history, current financial conditions and credit background.

Personal loans may entail greater credit risk than do residential mortgage loans, particularly in the case of personal loans which are unsecured or are secured by rapidly depreciable assets, such as automobiles or recreational equipment. In such cases, any repossessed collateral for a defaulted personal loan may not provide an adequate source of repayment of the outstanding loan balance as a result of the greater likelihood of damage, loss or depreciation. In addition, personal loan collections are dependent on the borrower's continuing financial stability and, thus are more likely to be affected by adverse personal circumstances. Furthermore, the application of various federal and state laws, including bankruptcy and insolvency laws, may limit the amount which can be recovered on such loans.

Other Real Estate Owned
Assets acquired in settlement of mortgage loan indebtedness are recorded as other real estate owned ("OREO") at fair value less estimated costs to sell, establishing a new cost basis. Physical possession of residential real estate property collateralizing a consumer mortgage loan occurs when legal title is obtained upon completion of foreclosure or when the borrower conveys all interest in the property to satisfy the loan through completion of a deed in lieu of foreclosure or through a similar legal agreement. These assets are subsequently accounted for at lower of cost or fair value less estimated costs to sell. If fair value declines subsequent to foreclosure, a valuation allowance is recorded through expense. Operating costs after acquisition are expensed.

Goodwill and Other Intangibles
Goodwill arises from business combinations and is generally determined as the excess of the fair value of the consideration transferred, plus the fair value of any noncontrolling interest in the acquiree, over the fair value of the net assets acquired an liabilities assumed as of the acquisition date. Goodwill and intangible assets acquired in a purchase business combination and determined to have an indefinite useful life are not amortized but tested for impairment at least annually or more frequently if events and circumstances exists that indicate that a goodwill impairment test should be performed. Juniata has selected November 30 as the date to perform the annual impairment test. Intangible assets with definite useful

lives are amortized over their estimated useful lives to their estimated residual values. Goodwill is the only intangible asset with an indefinite life on our balance sheet.

Other intangible assets consist of core deposit intangible assets arising from whole bank acquisitions and are amortized on an accelerated method over their estimated useful lives.

There were no impairment losses recognized as a result of periodic impairment testing in the years ended December 31, 2019 and 2018.

Premises and Equipment
Premises and equipment are stated at cost less accumulated depreciation. Depreciation is computed principally using the straight-line method over the estimated useful lives of the related assets, which range from 3 to 10 years for furniture and equipment and 25 to 50 years for buildings. Expenditures for maintenance and repairs are charged against income as incurred. Costs of major additions and improvements are capitalized. Amortization of leasehold improvements is computed on a straight-line basis over the shorter of the assets' useful life or the related lease term.

Trust Assets and Revenues
Assets held in a fiduciary capacity are not assets of the Bank or the Bank's Trust Department and are, therefore, not included in the consolidated financial statements. Trust revenues are recorded on the accrual basis as the related obligations are satisfied.

Bank Owned Life Insurance, Annuities and Split-dollar Arrangements
The Company has purchased life insurance policies on certain key executives. Bank owned life insurance is recorded at the amount that can be realized under the insurance contract at the balance sheet date, which is the cash surrender value adjusted for other charges or other amounts due that are probable at settlement.

Juniata has promised a continuation of life insurance coverage to certain persons post-retirement. The estimated present value of future benefits to be paid was $1,117,000 and $1,081,000 as of December 31, 2019 and 2018, respectively, and is included in other liabilities. Related expenses for 2019 and 2018 were $36,000 and $38,000.

Investments in Low-income Housing Partnerships
Juniata has invested as a limited partner in two partnerships that provide low-income housing in Lewistown, Pennsylvania. The carrying value of the investment in the limited partnerships was $3,904,000 at December 31, 2019 and $4,545,000 at December 31, 2018. The decline in carrying value in 2019 was the result of amortization exceeding the draws taken for the completion of the phase II low-income housing project. The project is now fully funded as the final remaining draw occurred in 2019.

Income Taxes
The Company accounts for income taxes in accordance with income tax accounting guidance ASC Topic 740, *Income Taxes*.

Current income tax accounting guidance results in two components of income tax expense: current and deferred. Current income tax expense reflects taxes to be paid or refunded for the current period by applying the provisions of the enacted tax law to the taxable income or excess of deductions over revenues. The Company determines deferred income taxes using the liability (or balance sheet) method. Under this method, the net deferred tax asset or liability is based on the tax effects of the differences between the book and tax bases of assets and liabilities, and enacted changes in tax rates and laws are recognized in the period in which they occur.

Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. Deferred tax assets are reduced by a valuation allowance if, based on the weight of the evidence available, it is more likely than not that some portion or all of a deferred tax asset will not be realized.

The Company recognizes a benefit for uncertain tax positions if it is more likely than not, based on the technical merits, that the tax position will be realized or sustained upon examination. The term "more likely than not" means a likelihood of more than 50 percent; the terms "examined" and "upon examination" also include resolution of the related appeals or litigation processes, if any. A tax position that meets the more-likely-than-not recognition threshold is initially and subsequently measured as the largest amount of tax benefit that has a greater than 50 percent likelihood of being realized upon settlement with a taxing authority that has full knowledge of all relevant information. The determination of whether or not a tax position has met the more-likely-than-not recognition threshold considers the facts, circumstances and information available at the reporting date and is subject to management's judgment. The Company recognizes interest and penalties on income taxes, if any, as a component of income tax expense.

Advertising
The Company follows the policy of charging costs of advertising to expense as incurred. Advertising expenses were $312,000 and $294,000 in 2019 and 2018, respectively.

Off-balance Sheet Financial Instruments
In the ordinary course of business, the Bank has entered into off-balance sheet financial instruments consisting of commitments to extend credit and letters of credit. Such financial instruments are recorded on the consolidated statement of financial condition when they are funded.

Transfer of Financial Assets
Transfers of financial assets are accounted for as sales when control over the assets has been surrendered. Control over transferred assets is deemed to be surrendered when (1) the assets have been isolated from the Company, (2) the transferee obtains the right (free of conditions that constrain it from taking advantage of that right) to pledge or exchange the transferred assets, and (3) the Company does not maintain effective control over the transferred assets through an agreement to repurchase them before their maturity.

Earnings Per Common Share
Basic earnings per common share is net income divided by weighted average number of common shares outstanding during the period. All outstanding unvested share-based payment awards that contain rights to nonforfeitable dividends are considered participating securities for this calculation. Diluted earnings per common share includes the dilutive effect of additional potential common shares issuable under stock options.

Comprehensive Income (Loss)
Comprehensive income consists of net income and other comprehensive income (loss). Other comprehensive income (loss) includes changes in unrealized gains and losses on securities available for sale arising during the period and reclassification adjustments for realized gains and losses on securities available for sale included in net income. The Company has a defined benefit retirement plan which utilizes assumptions and methods to calculate the fair value of Plan assets and recognizing the funded status of the Plans on its consolidated balance sheet. Gains and losses on the Plan are recognized in other comprehensive income (loss), net of tax, until they are amortized, or immediately upon curtailment.

Loss Contingencies
Loss contingencies, including claims and legal actions arising in the ordinary course of business, are recorded as liabilities when the likelihood of loss is probable, and an amount or range of loss can be reasonably estimated. Management believes that there are no such matters that will have a material effect on the financial statements.

Dividend Restrictions
Banking regulations require maintaining certain capital levels and may limit the dividends paid by the Bank to the Company or by the Company to shareholders.

Fair Value of Financial Instruments
Fair values of financial instruments are estimated using relevant market information and other assumptions, as more fully disclosed in a separate footnote. Fair value estimates involve uncertainties and matters of significant judgment regarding interest rates, credit risk, prepayments, and other factors, especially in the absence of broad markets for particular items. Changes in assumptions or in market conditions could significantly affect these estimates.

Stock-based Compensation
The Company sponsors a stock compensation plan for certain key officers which allows, among other stock-based compensation methods, for stock options and restricted stock awards. Prior to 2016, stock options were used exclusively for long-term compensation. Beginning in 2016, restricted shares awards have been used. Compensation expense for stock options granted and restricted stock awarded is measured using the fair value of the award on the grant date and is recognized over the vesting period. The stock-based compensation expense amounts for stock options were derived based on the fair value of options using the Black-Scholes option-pricing model.

Segment Reporting
Management does not separately allocate expenses, including the cost of funding loan demand, between the commercial, retail and trust operations of the Company. As such, discrete financial information is not available, and segment reporting would not be meaningful.

Reclassifications
Some items in the prior year financial statements were reclassified to conform to the current presentation. Reclassifications had no effect on prior year net income or shareholders' equity.

3. RECENT ACCOUNTING STANDARDS UPDATE ("ASU")

New Accounting Standards Adopted in 2019

ASU 2016-02, Leases

Issued: February 2016

Summary: The new standard established a right-of-use ("ROU") model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases are to be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement.

The Company adopted ASU 2016-02 on January 1, 2019 using the optional transition method. The Company also elected the following practical expedients: the package of practical expedients, combining lease and nonlease components by class of underlying asset, and using hindsight in determining the lease terms. The adoption of this standard resulted in the recording of a ROU asset and lease liability of $556,000 as of January 1, 2019 for the Company's four operating lease obligations. The adoption of this standard did not have a material impact on the Company's operations, cash flows or capital ratios, nor did it cause the Company to no longer be well capitalized. Please refer to Note 14 for additional information.

Pending Accounting Standards

ASU 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments

Issued: June 2016

Summary: ASU 2016-13 requires credit losses on most financial assets to be measured at amortized cost and certain other instruments to be measured using an expected credit loss model (referred to as the current expected credit loss ("CECL") model). Under this model, entities will estimate credit losses over the entire contractual term of the instrument (considering estimated prepayments, but not expected extensions or modifications unless reasonable expectation of a troubled debt restructuring exists) from the date of initial recognition of that instrument.

The ASU also replaces the current accounting model for purchased credit impaired loans and debt securities. The allowance for credit losses for purchased financial assets with a more-than insignificant amount of credit deterioration since origination ("PCD financial assets"), should be determined in a similar manner to other financial assets measured on an amortized cost basis. However, upon initial recognition, the allowance for credit losses is added to the purchase price ("gross up approach") to determine the initial amortized cost basis. The subsequent accounting for PCD financial assets is the same expected loss model described above.

Further, the ASU made certain targeted amendments to the existing impairment model for available for sale (AFS) debt securities. For an AFS debt security for which there is neither the intent nor a more-likely-than-not requirement to sell, an entity will record credit losses as an allowance rather than a write-down of the amortized cost basis.

Effective Date: On October 16, 2019, the FASB voted and approved to delay the effective date of this ASU for smaller reporting companies until fiscal years beginning after December 15, 2022. Since the Company is a smaller reporting company, the approved delay by the FASB is applicable. While the Company's senior management is currently in the process of evaluating the impact of the amended guidance on its consolidated financial statements and disclosures, it expects the allowance for loan and lease losses ("ALLL") to increase upon adoption given that the allowance will be required to cover the full remaining expected life of the portfolio, rather than the incurred loss under current U.S. GAAP. The extent of this increase is still being evaluated and will depend on economic conditions and the composition of the Company's loan portfolio at the time of adoption. In preparation, the Company has taken steps to prepare for the implementation when it becomes effective by forming an internal taskforce, gathering pertinent data, participating in training courses, and partnering with a software provider that specializes in ALLL analysis, as well as assessing the sufficiency of data currently available through its core database.

4. MERGER

On April 30, 2018, the Company completed the acquisition of Liverpool Community Bank, a Pennsylvania state-chartered bank with one branch location in Liverpool, Perry County. Liverpool was merged with and into The Juniata Valley Bank. As of the merger date, Liverpool had assets of $45,360,000, loans of $32,091,000, and equity of $9,246,000.

Prior to the acquisition, Juniata owned 1,214, or 39.16%, of the 3,100 outstanding common shares of Liverpool. The merger was accounted for using the acquisition method of accounting, in accordance with the provisions of ASC 805, Business Combinations. Juniata obtained control over Liverpool in a step acquisition by acquiring the previously unowned interest in Liverpool. As such, Juniata was required to remeasure its previously held equity interest in Liverpool at its acquisition date fair value and recognize the resulting gain in earnings. The purchase price for the step acquisition was calculated as the aggregate of the consideration transferred for the newly acquired interest (Step Two - 60.84% interest) and the fair value of Juniata's previously held equity interest (Step One - 39.16% interest) in Liverpool.

On April 30, 2018, Juniata's Step One adjusted basis in Liverpool was $5,037,000, which included a $415,000 equity gain from the acquisition, in addition to Juniata's basis in Liverpool of $4,622,000 prior to the recording of the equity gain.

Liverpool shareholders (other than Juniata, whose Liverpool common stock owned of record or beneficially was cancelled) received either: (i) 202.6286 shares of common stock of Juniata or (ii) $4,050.00 in cash in exchange for each share of Liverpool common stock subject to the limitation that cash would be paid for no more than 20% and no less than 15% of Liverpool's outstanding common stock. As a result, Juniata issued 315,284 shares of common stock with an acquisition date fair value of approximately $6,463,000, based on Juniata's closing stock price of $20.50 on April 30, 2018, and cash of $1,362,000, including cash in lieu of fractional shares for a total Step Two purchase price consideration of $7,825,000. The total purchase price of the merger, including both the Step One adjusted basis and Step Two purchase price consideration, was $12,862,000.

The assets and liabilities of Liverpool were recorded on the consolidated balance sheet at their estimated fair value as of April 30, 2018, and its results of operations have been included in the consolidated income statement since such date.

The allocation of the purchase price is as follows:

(Dollars in thousands)	Recorded at April 30, 2018
Step One Purchase Price Consideration	
April 30, 2018 JUVF basis in LCB (before gain)	$ 4,622
Increase in Step One basis from equity gain in acquisition	415
Total Step One adjusted basis	5,037
Step Two Purchase Price Consideration	
Purchase price assigned to LCB common shares exchanged for 315,284 JUVF common shares	$ 6,463
Purchase price assigned to LCB common shares exchanged for cash including cash in lieu of fractional shares	1,362
Total Step Two purchase price consideration.	7,825
Total purchase price	12,862
LCB net assets acquired:	
Tangible common equity	9,246
Adjustments to reflect assets acquired and liabilities assumed at fair value:	
Total fair value adjustments	(95)
Associated deferred income taxes	20
Fair value adjustment to net assets acquired, net of tax	(75)
Total LCB net assets acquired	9,171
Goodwill resulting from the merger	$ 3,691

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed.

(Dollars in thousands)	Recorded at April 30, 2018
Total purchase price	$ 12,862
Net assets acquired:	
Cash and cash equivalents	8,923
Investments in time deposits with banks	3,675
Loans	31,331
Premises and equipment	125
Accrued interest receivable	123
Core deposit and other intangibles	289
Bank owned life insurance	632
FHLB stock	124
Other assets	267
Deposits	(36,052)
Accrued interest payable	(17)
Other liabilities	(249)
	9,171
Goodwill	$ 3,691

The purchase price included goodwill and a core deposit intangible of $3,691,000 and $289,000, respectively. The core deposit intangible will be amortized over a ten-year period using a sum of the year's digits basis. The goodwill will not be amortized but will be tested annually for impairment, or more frequently if circumstances require. ASC 805 allows for adjustments to the estimated fair value of assets and liabilities, and the resulting goodwill for a period of up to one year after the merger date for new information that becomes available reflecting circumstances at the merger date. During the first quarter of 2019, Juniata recorded a $92,000 credit to goodwill relating to the tax treatment of Liverpool's acquired net operating loss resulting in goodwill related to the Liverpool acquisition of $3,599,000.

The fair value of the financial assets acquired included loans receivable with a gross amortized cost basis of $32,091,000. The table below illustrates the fair value adjustments made to the amortized cost basis in order to present a fair value of the loans acquired.

(Dollars in thousands)

Gross amortized cost basis at April 30, 2018	$	32,091
Market rate adjustment		272
Credit fair value adjustment on pools of homogeneous loans		(496)
Credit fair value adjustment on purchased credit impaired loans		(622)
Reversal of existing deferred fees and premiums		86
Fair value of purchased loans at April 30, 2018	$	31,331

The market rate adjustment represents the movement in market interest rates, irrespective of credit adjustments, compared to the stated rates of the acquired loans. The credit adjustment made on pools of homogeneous loans represents the changes in credit quality of the underlying borrowers from the loan inception to the acquisition date. The credit adjustment on impaired loans is derived in accordance with ASC 310-30 and represents the portion of the loan balances that has been deemed uncollectible based on the Company's expectations of future cash flows for each respective loan.

Summarized below is the acquired Liverpool purchased credit impaired loan portfolio as of April 30, 2018.

(Dollars in thousands)

Contractually required principal and interest at acquisition	$	2,022
Contractual cash flows not expected to be collected (nonaccretable discount)		(1,273)
Expected cash flows at acquisition		749
Interest component of expected cash flows (accretable discount)		(177)
Fair value of acquired loans	$	572

The following table presents unaudited pro forma information as if the merger between Juniata and Liverpool had been completed on January 1, 2017. The pro forma information does not necessarily reflect the results of operations that would have occurred had Juniata merged with Liverpool at the beginning of 2017. Due to Juniata's former 39.16% ownership in Liverpool, the income previously recorded in 2018 attributable to the partial ownership of Liverpool has been excluded, in addition to merger-related costs incurred in 2018 and the resulting tax impacts. Supplemental pro forma earnings for the year ended December 31, 2018 were adjusted to exclude $296,000 from the income/gain from unconsolidated subsidiary, $884,000 in merger-related expenses, and the resulting tax benefit of $123,000, as well as the $406,000 tax credit. A 21% tax rate was assumed. The pro forma financial information does not include the impact of possible business model changes, nor does it consider any potential impacts of current market conditions or revenues, expense efficiencies or other factors.

(Dollars in thousands; except share data)	**Year Ended December 31, 2018**	
Net interest income after loan loss provision	$	20,629
Noninterest income		4,816
Noninterest expense		18,818
Net income available to common shareholders		6,996
Net income per common share		1.37

The Company no longer had an investment in an unconsolidated subsidiary following its acquisition of the remainder of the outstanding common stock of Liverpool on April 30, 2018. Prior to the acquisition, the Company owned 39.16% of the outstanding common stock of Liverpool, and the investment was accounted for under the equity method of accounting.

The following table illustrates the components of the income/gain from the unconsolidated subsidiary investment recorded for the year ended December 31, 2018. There was no income/gain from the unconsolidated subsidiary investment recorded in 2019 since the investment did not exist during the year.

(Dollars in thousands)		Year Ended December 31, 2018
Income from unconsolidated subsidiary (excluding merger-related adjustments)		
Dividend income	$	36
Equity income		45
Total income (excluding merger-related adjustments)		81
Merger-related adjustments for investment in unconsolidated subsidiary		
Adjustment to LCB book value at April 30, 2018		(239)
Special merger-related dividend		39
Fair value gain		415
Total merger-related adjustments		215
Total income/gain from unconsolidated subsidiary	$	296

5. RESTRICTIONS ON CASH AND DUE FROM BANKS

The Bank is required to maintain cash reserve balances with the Federal Reserve Bank if vault cash is insufficient to cover the reserve requirement. As of December 31, 2019 and 2018, respectively, no reserves were required to be held at the Federal Reserve Bank.

6. SECURITIES

Equity Securities

Equity securities owned by the Company consist of common stock of various financial services providers (“Bank Stocks”). On January 1, 2018, the Company adopted ASU 2016-01, Measurement of Financial Assets Instruments. Upon adoption, equity securities with readily determinable fair values are stated at fair value with realized and unrealized gains and losses reported in net income. The Company had $1,144,000 in equity securities recorded at fair value as of December 31, 2019, and $1,118,000 in equity securities recorded at fair value as of December 31, 2018.

During the years ended December 31, 2019 and 2018, the Company recorded a net gain of $26,000 and a net loss of $1,000, respectively, on the consolidated statements of income as a result of the change in fair value of the Company’s equity securities.

Debt Securities Available for Sale

The Company’s investment portfolio includes primarily mortgage-backed securities issued by U.S. Government sponsored agencies and backed by residential mortgages (approximately 88%), bonds issued by U.S. Government sponsored agencies (approximately 10%) and municipalities (approximately 2%) as of December 31, 2019. Most of the municipal bonds are general obligation bonds with maturities or pre-refunding dates within 5 years.

The amortized cost and fair value of debt securities available for sale as of December 31, 2019 and 2018, by contractual maturity, are shown below. Expected maturities may differ from contractual maturities because the securities may be called or prepaid with or without prepayment penalties.

(Dollars in thousands)	December 31, 2019			
Debt Securities Available for Sale	**Amortized Cost**	**Fair Value**	**Gross Unrealized Gains**	**Gross Unrealized Losses**
Type and Maturity				
Obligations of U.S. Government sponsored enterprises				
After one year but within five years	$ 14,998	$ 14,970	$ 1	$ (29)
After five years but within ten years	6,000	5,950	—	(50)
	20,998	20,920	1	(79)
Obligations of state and political subdivisions				
Within one year	1,020	1,024	4	—
After one year but within five years	2,810	2,823	13	—
After five years but within ten years	723	728	5	—
	4,553	4,575	22	—
Mortgage-backed securities	184,488	185,191	1,132	(429)
Total	$ 210,039	$ 210,686	$ 1,155	$ (508)

(Dollars in thousands)	December 31, 2018			
Debt Securities Available for Sale	**Amortized Cost**	**Fair Value**	**Gross Unrealized Gains**	**Gross Unrealized Losses**
Type and Maturity				
Obligations of U.S. Government sponsored enterprises				
After one year but within five years	$ 20,998	$ 20,355	$ —	$ (643)
After five years but within ten years	2,999	2,911	—	(88)
	23,997	23,266	—	(731)
Obligations of state and political subdivisions				
Within one year	826	826	—	—
After one year but within five years	14,751	14,686	13	(78)
After five years but within ten years	2,779	2,669	—	(110)
	18,356	18,181	13	(188)
Mortgage-backed securities	102,957	100,506	172	(2,623)
Total	$ 145,310	$ 141,953	$ 185	$ (3,542)

Certain obligations of the U.S. Government and state and political subdivisions are pledged to secure public deposits, securities sold under agreements to repurchase and for other purposes as required or permitted by law. The carrying value of the pledged assets was $50,365,000 and $50,157,000 at December 31, 2019 and 2018, respectively.

In addition to cash received from the scheduled maturities of securities, some investment securities available for sale are sold at current market values during the course of normal operations. Following is a summary of proceeds received from all investment securities transactions and the resulting realized gains and losses:

(Dollars in thousands)	Year Ended December 31, 2019	Year Ended December 31, 2018
Gross proceeds from sales and calls of securities	$ 21,777	$ 10,461
Securities available for sale:		
Gross realized gains from sold and called securities	$ 67	$ —
Gross realized losses from sold and called securities	(110)	(188)
Net losses from sales and calls of securities	$ (43)	$ (188)

The following table shows gross unrealized losses and fair values of debt securities available for sale, aggregated by category and length of time that individual securities have been in a continuous unrealized loss position, at December 31, 2019:

(Dollars in thousands)	Unrealized Losses at December 31, 2019								
	Less Than 12 Months			12 Months or More			Total		
	Number of Securities	Fair Value	Unrealized Losses	Number of Securities	Fair Value	Unrealized Losses	Number of Securities	Fair Value	Unrealized Losses
Obligations of U.S. Government sponsored enterprises	9	$ 16,919	$ (79)	—	$ —	$ —	9	$ 16,919	$ (79)
Mortgage-backed securities	13	47,466	(204)	16	22,049	(225)	29	69,515	(429)
Total temporarily impaired securities	22	$ 64,385	$ (283)	16	$ 22,049	$ (225)	38	$ 86,434	$ (508)

At December 31, 2019, nine U.S. Government and agency securities had unrealized losses that, in the aggregate, did not exceed 1% of amortized cost. None of these securities were in a continuous loss position for 12 months or more.

At December 31, 2019, there were no obligations of state and political subdivision bonds with unrealized losses.

At December 31, 2019, twenty-nine mortgage-backed securities had unrealized losses that, in aggregate, did not exceed 1% of amortized cost. Sixteen of these securities were in a continuous loss position for 12 months or more.

The mortgage-backed securities in the Company's portfolio are government sponsored enterprise ("GSE") pass-through instruments issued by the Federal National Mortgage Association ("FNMA"), which guarantees the timely payment of principal on these investments.

The unrealized losses noted above are considered to be temporary impairments. The decline in the values of the debt securities is due only to interest rate fluctuations, rather than erosion of issuer credit quality. As a result, the payment of contractual cash flows, including principal repayment, is not at risk. None of the debt securities are deemed to be other-than-temporarily impaired because the Company does not intend to sell the securities, does not believe it will be required to sell the securities before recovery and expects to recover the entire amortized cost basis.

The following table shows gross unrealized losses and fair values of securities available for sale, aggregated by category and length of time that individual securities had been in a continuous unrealized loss position, at December 31, 2018:

(Dollars in thousands)	Unrealized Losses at December 31, 2018								
	Less Than 12 Months			12 Months or More			Total		
	Number of Securities	Fair Value	Unrealized Losses	Number of Securities	Fair Value	Unrealized Losses	Number of Securities	Fair Value	Unrealized Losses
Obligations of U.S. Government sponsored enterprises	—	$ —	$ —	14	$ 23,267	$ (731)	14	$ 23,267	$ (731)
Obligations of state and political subdivisions	8	5,055	(10)	13	8,242	(178)	21	13,297	(188)
Mortgage-backed securities	3	6,726	(32)	43	77,170	(2,591)	46	83,896	(2,623)
Total temporarily impaired securities	11	$ 11,781	$ (42)	70	$ 108,679	$ (3,500)	81	$ 120,460	$ (3,542)

7. LOANS AND RELATED ALLOWANCE FOR LOAN LOSSES

Loan Portfolio Classification

The following table presents the loan portfolio by class at December 31, 2019 and 2018.

(Dollars in thousands)

	December 31, 2019	December 31, 2018
Commercial, financial and agricultural	$ 51,785	$ 46,563
Real estate - commercial	126,613	141,295
Real estate - construction	46,459	36,688
Real estate - mortgage	150,538	163,548
Obligations of states and political subdivisions	16,377	19,129
Personal	8,818	10,408
Total	$ 400,590	$ 417,631

The following tables summarize loans and the activity in the allowance for loan losses by loan class, segregated into the amount required for loans individually evaluated for impairment and the amount required for loans collectively evaluated for impairment as of and for the years ended December 31, 2019 and 2018:

(Dollars in thousands)

	Commercial, financial and agricultural	Real estate-commercial	Real estate-construction	Obligations of states and political subdivisions	Real estate-mortgage	Personal	Total
Year Ended							
December 31, 2019							
Balance, beginning of period	$ 275	$ 1,074	$ 558	$ 20	$ 1,035	$ 72	$ 3,034
Provision for loan losses	45	(619)	(135)	(3)	105	34	(573)
Charge-offs	(2)	(15)	—	—	(66)	(54)	(137)
Recoveries	3	314	295	—	7	18	637
Balance, end of period	$ 321	$ 754	$ 718	$ 17	$ 1,081	$ 70	$ 2,961
December 31, 2018							
Balance, beginning of period	$ 273	$ 1,022	$ 288	$ —	$ 1,285	$ 71	$ 2,939
Provision for loan losses	(8)	107	270	20	(79)	27	337
Charge-offs	—	(60)	—	—	(183)	(42)	(285)
Recoveries	10	5	—	—	12	16	43
Balance, end of period	$ 275	$ 1,074	$ 558	$ 20	$ 1,035	$ 72	$ 3,034

(Dollars in thousands)	Commercial, financial and agricultural	Real estate-commercial	Real estate-construction	Obligations of states and political subdivisions	Real estate-mortgage	Personal	Total
December 31, 2019							
Loans allocated by:							
individually evaluated for impairment	$ —	$ 1,206	$ —	$ —	$ 1,296	$ 14	$ 2,516
acquired with credit deterioration	—	366	—	—	704	—	1,070
collectively evaluated for impairment	51,785	125,041	46,459	16,377	148,538	8,804	397,004
	$ 51,785	$ 126,613	$ 46,459	$ 16,377	$ 150,538	$ 8,818	$ 400,590
Allowance for loan losses allocated by:							
individually evaluated for impairment	$ —	$ —	$ —	$ —	$ —	$ —	$ —
acquired with credit deterioration	—	—	—	—	—	—	—
collectively evaluated for impairment	321	754	718	17	1,081	70	2,961
	$ 321	$ 754	$ 718	$ 17	$ 1,081	$ 70	$ 2,961
December 31, 2018							
Loans allocated by:							
individually evaluated for impairment	$ —	$ 909	$ 27	$ —	$ 1,180	$ 17	$ 2,133
acquired with credit deterioration	—	544	—	—	971	—	1,515
collectively evaluated for impairment	46,563	139,842	36,661	19,129	161,397	10,391	413,983
	$ 46,563	$ 141,295	$ 36,688	$ 19,129	$ 163,548	$ 10,408	$ 417,631
Allowance for loan losses allocated by:							
individually evaluated for impairment	$ —	$ —	$ —	$ —	$ —	$ —	$ —
acquired with credit deterioration	—	—	—	—	—	—	—
collectively evaluated for impairment	275	1,074	558	20	1,035	72	3,034
	$ 275	$ 1,074	$ 558	$ 20	$ 1,035	$ 72	$ 3,034

The following tables summarize information regarding impaired loans by portfolio class as of December 31, 2019 and December 31, 2018:

(Dollars in thousands)	As of December 31, 2019			As of December 31, 2018		
	Recorded Investment	Unpaid Principal Balance	Related Allowance	Recorded Investment	Unpaid Principal Balance	Related Allowance
Impaired loans						
With no related allowance recorded:						
Real estate - commercial	$ 1,206	$ 1,304	$ —	$ 909	$ 1,303	$ —
Acquired with credit deterioration	366	395	—	544	592	—
Real estate – construction	—	1,054	—	27	1,123	—
Real estate - mortgage	1,296	2,006	—	1,180	1,912	—
Acquired with credit deterioration	704	840	—	971	1,061	—
Personal	14	14	—	17	17	—
Total:						
Real estate - commercial	$ 1,206	$ 1,304	$ —	$ 909	$ 1,303	$ —
Acquired with credit deterioration	366	395	—	544	592	—
Real estate - construction	—	1,054	—	27	1,123	—
Real estate – mortgage	1,296	2,006	—	1,180	1,912	—
Acquired with credit deterioration	704	840	—	971	1,061	—
Personal	14	14	—	17	17	—
	$ 3,586	$ 5,613	$ —	$ 3,648	$ 6,008	$ —

(Dollars in thousands)	Year Ended December 31, 2019			Year Ended December 31, 2018		
	Average Recorded Investment	Interest Income Recognized	Cash Basis Interest Income	Average Recorded Investment	Interest Income Recognized	Cash Basis Interest Income
Impaired Loans						
With no related allowance recorded:						
Commercial, financial and agricultural	$ 549	$ 22	$ 15	$ 234	$ —	$ —
Real estate - commercial	1,058	45	28	2,970	—	—
Acquired with credit deterioration	455	—	—	368	—	—
Real estate - construction	14	—	—	14	—	—
Real estate - mortgage	1,238	17	45	1,706	19	33
Acquired with credit deterioration	838	—	—	654	—	—
Personal	16	—	—	9	—	—
Total:						
Commercial, financial and agricultural	$ 549	$ 22	$ 15	$ 234	$ —	$ —
Real estate - commercial	1,058	45	28	2,970	—	—
Acquired with credit deterioration	455	—	—	368	—	—
Real estate - construction	14	—	—	14	—	—
Real estate - mortgage	1,238	17	45	1,706	19	33
Acquired with credit deterioration	838	—	—	654	—	—
Personal	16	—	—	9	—	—
	$ 4,168	$ 84	$ 88	$ 5,955	$ 19	$ 33

The recorded investment in loans excludes accrued interest receivable and loan origination fees, net due to immateriality. For purposes of this disclosure, the unpaid principal balance is not reduced for partial charge-offs.

The following table presents non-accrual loans by classes of the loan portfolio as of December 31, 2019 and December 31, 2018:

(Dollars in thousands)	December 31, 2019	December 31, 2018
Non-accrual loans:		
Real estate - commercial	$ 903	$ 908
Real estate - construction	—	29
Real estate - mortgage	902	753
Personal	14	17
Total	$ 1,819	$ 1,707

Interest income not recorded based on the original contractual terms of the loans for non-accrual loans was $130,000 and $311,000 in 2019 and 2018, respectively. The decline in unrecorded interest income on non-accrual loans in 2019 compared to 2018 was due to the payoff of a large non-accrual loan in April 2019 and the paydown of another large loan during the year ended December 31, 2019. These two loans combined for $175,000 of the total $311,000 in unrecorded interest income on non-accrual loans reported for 2018.

The performance and credit quality of the loan portfolio is also monitored by analyzing the age of the loans receivable as determined by the length of time a recorded payment is past due. The following table presents the classes of the loan portfolio summarized by the past due status as of December 31, 2019 and December 31, 2018:

(Dollars in thousands)	Current	30-59 Days Past Due(2)	60-89 Days Past Due	Greater than 89 Days	Total Past Due	Total Loans	Loans Past Due Greater than 89 Days and Accruing(1)
As of December 31, 2019							
Commercial, financial and agricultural	$ 51,725	$ 60	$ —	$ —	$ 60	$ 51,785	$ —
Real estate - commercial	126,180	19	—	48	67	126,247	—
Real estate - construction	46,172	287	—	—	287	46,459	—
Real estate - mortgage	148,366	348	149	971	1,468	149,834	359
Obligations of states and political subdivisions	16,377	—	—	—	—	16,377	—
Personal	8,725	55	—	38	93	8,818	24
Subtotal	397,545	769	149	1,057	1,975	399,520	383
Loans acquired with credit deterioration							
Real estate - commercial	366	—	—	—	—	366	—
Real estate - mortgage	330	371	—	3	374	704	3
Subtotal	696	371	—	3	374	1,070	3
	$ 398,241	$ 1,140	$ 149	$ 1,060	$ 2,349	$ 400,590	$ 386

(Dollars in thousands)	Current	30-59 Days Past Due(2)	60-89 Days Past Due	Greater than 89 Days	Total Past Due	Total Loans	Loans Past Due Greater than 89 Days and Accruing(1)
As of December 31, 2018							
Commercial, financial and agricultural	$ 46,557	$ 6	$ —	$ —	$ 6	$ 46,563	$ —
Real estate - commercial	139,890	—	—	1,214	1,214	141,104	306
Real estate - construction	36,627	32	—	29	61	36,688	—
Real estate - mortgage	161,651	824	561	175	1,560	163,211	23
Obligations of states and political subdivisions	19,129	—	—	—	—	19,129	—
Personal	10,352	24	15	17	56	10,408	—
Subtotal	414,206	886	576	1,435	2,897	417,103	329
Loans acquired with credit deterioration							
Real estate - commercial	51	140	—	—	140	191	—
Real estate - mortgage	71	259	—	7	266	337	7
Subtotal	122	399	—	7	406	528	7
	$ 414,328	$ 1,285	$ 576	$ 1,442	$ 3,303	$ 417,631	$ 336

(1) These loans are guaranteed, or well secured, and there is an effective means of collection in process.
(2) Loans are considered past due when the borrower is in arrears on two or more monthly payments.

Troubled Debt Restructurings

As of December 31, 2019 and 2018, the Company had a recorded investment in troubled debt restructurings of $703,000 and $445,000, respectively. There were no specific reserves for those loans at December 31, 2019 and 2018. There were also no commitments to lend additional amounts in December 31, 2019 and 2018.

The modification of the terms of the residential real estate - mortgage and real estate - commercial loans performed during the year ended December 31, 2019 included extensions to the maturity date of 1.2 and 5.5 years, respectively. The modification of the terms of the residential real estate - mortgage loan performed during the year ended December 31, 2018 included an extension of 5.3 years to the maturity date at a stated rate of interest lower than the current market rate.

As of December 31, 2019, one accruing restructured loan for $36,000 was in default because it was delinquent in excess of 30 days with respect to the terms of the restructuring. There were no defaults of troubled debt restructurings within 12 months of restructure during 2019 or 2018.

The following tables summarize loans whose terms were modified, resulting in troubled debt restructurings during 2019 and 2018.

(Dollars in thousands)	**Number of Contracts**	**Pre-Modification Outstanding Recorded Investment**	**Post-Modification Outstanding Recorded Investment**	**Recorded Investment**
Year ended December 31, 2019				
Accruing troubled debt restructurings:				
Real estate - commercial	1	$ 306	$ 326	$ 306
Real estate - mortgage	1	9	9	5
	2	$ 315	$ 335	$ 311

The troubled debt restructurings described above had no specific allowance for loan losses and resulted in charge-offs of $16,000 during the year ending December 31, 2019.

(Dollars in thousands)	**Number of Contracts**	**Pre-Modification Outstanding Recorded Investment**	**Post-Modification Outstanding Recorded Investment**	**Recorded Investment**
Year ended December 31, 2018				
Accruing troubled debt restructurings:				
Real estate - mortgage	1	$ 153	$ 153	$ 147
	1	$ 153	$ 153	$ 147

The troubled debt restructurings described above had no specific allowance for loan losses and resulted in no charge-offs during the year ending December 31, 2018.

Credit Quality Indicators

The Company categorizes loans into risk categories based on relevant information about the ability of borrowers to service their debt such as: current financial information, historical payment experience, credit documentation, public information, and current economic trends, among other factors. The Company analyzes loans individually by classifying the loans as to credit risk. This analysis includes loans to commercial customers with an aggregate loan exposure greater than $500,000 and for lines of credit in excess of $50,000. This analysis is performed on a continuing basis with all such loans reviewed annually. The Company uses the following definitions for risk ratings:

Special Mention. Loans classified as special mention have a potential weakness that deserves management's close attention. If left uncorrected, these potential weaknesses may result in deterioration of the repayment prospects for the loan or of the institution's credit position at some future date. Loans in this category are reviewed no less than quarterly.

Substandard. Loans classified as substandard are inadequately protected by the current net worth and paying capacity of the obligor or of the collateral pledged, if any. Loans so classified have a well-defined weakness or weaknesses that jeopardize the liquidation of the debt. They are characterized by the distinct possibility that the institution will sustain some loss if the deficiencies are not corrected. Loans in this category are reviewed no less than monthly.

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. Loans in this category are reviewed no less than monthly.

Loans not meeting the criteria above that are analyzed individually as part of the above described process are considered to be pass-rated loans.

The following table presents the classes of the loan portfolio summarized by the aggregate pass rating and the classified ratings of special mention, substandard and doubtful within the Company's internal risk rating system as of December 31, 2019 and December 31, 2018.

(Dollars in thousands) **As of December 31, 2019**	**Pass**	**Special Mention**	**Substandard**	**Doubtful**	**Total**
Commercial, financial and agricultural	$ 46,725	$ 4,080	$ 980	$ —	$ 51,785
Real estate - commercial	113,851	5,668	7,046	48	126,613
Real estate - construction	44,954	287	1,218	—	46,459
Real estate - mortgage	148,164	327	1,951	96	150,538
Obligations of states and political subdivisions	16,377	—	—	—	16,377
Personal	8,804	—	14	—	8,818
Total	$ 378,875	$ 10,362	$ 11,209	$ 144	$ 400,590

(Dollars in thousands) **As of December 31, 2018**	**Pass**	**Special Mention**	**Substandard**	**Doubtful**	**Total**
Commercial, financial and agricultural	$ 42,757	$ 2,992	$ 814	$ —	$ 46,563
Real estate - commercial	125,352	8,590	6,459	894	141,295
Real estate - construction	34,131	—	2,528	29	36,688
Real estate - mortgage	160,774	24	2,569	181	163,548
Obligations of states and political subdivisions	19,129	—	—	—	19,129
Personal	10,389	—	19	—	10,408
Total	$ 392,532	$ 11,606	$ 12,389	$ 1,104	$ 417,631

8. PLEDGED ASSETS

The Bank must maintain sufficient qualifying collateral with the FHLB in order to secure borrowings. Therefore, a Master Collateral Agreement has been entered into which pledges all mortgage related assets as collateral for future borrowings. Mortgage related assets could include loans or investment securities. As of December 31, 2019, the amount of loans included in qualifying collateral was $255,566,000, for a borrowing value of $183,790,000. As of December 31, 2018, the amount of loans included in qualifying collateral was $261,442,000, for a borrowing value of $187,818,000. No investment securities were included in qualifying collateral as of December 31, 2019 or 2018.

9. BANK OWNED LIFE INSURANCE AND ANNUITIES

The Company holds bank-owned life insurance ("BOLI") and deferred annuities with a combined cash value of $16,266,000 and $15,938,000 at December 31, 2019 and 2018, respectively. As annuitants retire, the deferred annuities may be converted to payout annuities to create payment streams that match certain post-retirement liabilities. The net increase in cash surrender value on the BOLI and annuities was $328,000 and $966,000 in 2019 and 2018, respectively; the net change resulting from the addition in 2018 of BOLI acquired through acquisition, proceeds from life insurance claim payments, premium payments and earnings recorded as non-interest income. The contracts are owned by the Bank in various insurance companies. The crediting rate on the policies varies annually based on the insurance companies' investment portfolio returns in their general fund and market conditions. Changes in cash value of BOLI and annuities in 2019 and 2018 are shown below:

(Dollars in thousands)	Life Insurance	Deferred Annuities	Total
Balance as of January 1, 2018	$ 14,510	$ 462	$ 14,972
Earnings	277	18	295
Premiums on existing policies	25	13	38
Annuity payments received	1	—	1
BOLI acquired through acquisition	632	—	632
Balance as of December 31, 2018	15,445	493	15,938
Earnings	270	19	289
Premiums on existing policies	26	13	39
Balance as of December 31, 2019	$ 15,741	$ 525	$ 16,266

10. PREMISES AND EQUIPMENT

Premises and equipment consist of the following:

(Dollars in thousands)	December 31, 2019	December 31, 2018
Land	$ 294	$ 1,158
Buildings and improvements	13,227	11,645
Furniture, computer software and equipment	6,630	6,217
	20,151	19,020
Less: accumulated depreciation	(10,908)	(10,276)
	$ 9,243	$ 8,744

Depreciation expense on premises and equipment charged to operations was $801,000 in 2019 and $815,000 in 2018.

The Company had no premises and equipment subject to lease agreements in which it acts as the lessor.

11. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

On September 8, 2006, the Company acquired a branch office in Richfield, PA. Goodwill associated with this transaction is carried at $2,046,000. On November 30, 2015, the Company acquired FNBPA and carries goodwill of $3,402,000 relating to the acquisition. On April 30, 2018, Juniata completed the acquisition of LCB and as a result, recorded goodwill of $3,691,000 at December 31, 2018. In the first quarter of 2019, an adjustment was made to the carrying value of the LCB goodwill, decreasing it to $3,599,000 as of December 31, 2019. Total goodwill at December 31, 2019 and December 31, 2018 was $9,047,000 and $9,139,000, respectively.

Intangible Assets
On November 30, 2015, a core deposit intangible in the amount of $303,000 associated with the FNBPA acquisition was recorded. On April 30, 2018, a core deposit intangible of $289,000 associated with the LCB acquisition was recorded. Both core deposit intangibles are being amortized over a ten-year period using a sum of the years' digits basis.

The following table shows the amortization schedule for each of the intangible assets recorded.

(Dollars in thousands)	**FNBPA Acquisition Core Deposit Intangible**	**LCB Acquisition Core Deposit Intangible**
Beginning Balance at Acquisition Date	$ 303	$ 289
Amortization expense recorded prior to December 31, 2017	108	—
Amortization expense recorded in Years ended:		
December 31, 2018	44	35
December 31, 2019	38	49
Unamortized balance as of December 31, 2019	$ 113	$ 205
Scheduled Amortization expense for years ended:		
December 31, 2020	33	44
December 31, 2021	27	39
December 31, 2022	22	33
December 31, 2023	16	28
December 31, 2024	10	23
After December 31, 2024	5	38

12. DEPOSITS

The aggregate amount of demand deposit overdrafts that were reclassified as loans were $70,000 at December 31, 2019, compared to $75,000 at December 31, 2018.

Deposits consist of the following:

(Dollars in thousands)	**December 31,**	
	2019	**2018**
Demand, non-interest bearing	$ 134,703	$ 126,057
Interest-bearing demand and money market	150,157	147,413
Savings	96,980	99,236
Time deposits, $250,000 or more	6,923	8,368
Other time deposits	143,174	140,648
	$ 531,937	$ 521,722

Aggregate amount of scheduled maturities of time deposits as of December 31, 2019 include the following:

(Dollars in thousands)	**Time Deposits**		
Maturing in:	**$250,000 or more**	**Other**	**Total Time Deposits**
2020	$ 3,647	$ 54,611	$ 58,258
2021	1,535	33,182	34,717
2022	—	14,645	14,645
2023	346	13,173	13,519
2024	656	7,133	7,789
Later	739	20,430	21,169
	$ 6,923	$ 143,174	$ 150,097

13. BORROWINGS

Short term borrowings, and the related maximum amounts outstanding at the end of any month in both of the years ended December 31, 2019 and 2018, are presented below.

(Dollars in thousands)	Years Ended December 31,		Maximum Outstanding at Any Month End	
	2019	2018	2019	2018
Repurchase agreements	$ 3,429	$ 2,911	$ 3,891	$ 4,620
Short-term borrowings with FHLB:				
Overnight advances	9,700	11,600	9,700	29,238
	$ 13,129	$ 14,511	$ 13,591	$ 33,858

The following table presents supplemental information related to short-term borrowings.

(Dollars in thousands)	Securities sold under agreements to repurchase		Short-term borrowings with Federal Home Loan Bank	
	2019	2018	2019	2018
Amount outstanding as of December 31	$ 3,429	$ 2,911	$ 9,700	$ 11,600
Weighted average interest rate as of December 31	1.09 %	2.13 %	1.81 %	2.62 %
Average amount outstanding during the year	3,246	4,177	1,022	9,906
Weighted average interest rate during the year	1.15 %	1.49 %	2.32 %	1.92 %

The Bank has repurchase agreements with some of its depositors, under which customers' funds are invested daily into an interest bearing account. These funds are carried by the Company as short-term debt. It is the Company's policy to completely collateralize repurchase agreements with U.S. Government securities. As of December 31, 2019, the securities that serve as collateral for securities sold under agreements to repurchase had a fair value of $9,029,000. The interest rate paid on these funds is variable and subject to change daily.

Long-term debt is comprised only of FHLB advances with an original maturity of one year or more. Outstanding balances were $45,000,000 as of December 31, 2019 and $15,000,000 as of December 31, 2018.

The following table summarizes the scheduled maturities of long-term debt as of December 31, 2019.

(Dollars in thousands) Year	Scheduled Maturities	Weighted Average Interest Rate
2020	$ —	— %
2021	—	—
2022	5,000	2.74
2023	5,000	2.75
2024	20,000	2.42
Thereafter	15,000	2.41
	$ 45,000	2.49 %

The advances outstanding at December 31, 2018 carried an average interest rate of 1.59% and were repaid at maturity in 2019.

The Bank's maximum borrowing capacity with the FHLB was $183,790,000, with a balance of $55,604,000 outstanding as of December 31, 2019. In order to borrow additional amounts, the FHLB would require the Bank to purchase additional FHLB Stock. The FHLB is a source of both short-term and long-term funding. The Bank must maintain sufficient qualifying collateral to secure all outstanding advances. Qualifying collateral is defined by the FHLB and includes outstanding balances of the Company's real estate loans, excluding loans with certain risk mitigants, including delinquencies and loans made to insiders, borrowers with low credit scores or loans with high loan-to-value ratios.

14. OPERATING LEASE OBLIGATIONS

A lease is defined as a contract, or part of a contract, that conveys the right to control the use of identified property, plant or equipment for a period in exchange for consideration. On January 1, 2019, the Company adopted ASU 2016-02, Leases (Topic 842), and all subsequent ASUs that modified Topic 842 using the optional transition method. The adoption of this standard resulted in the recording of a ROU asset and lease liability of $556,000 as of January 1, 2019 for the Company's four operating lease obligations in which the Company is the lessee.

The Company elected the package of practical expedients, which removed the requirements to reassess whether any expired or existing contracts contain leases, reassess the lease classification for any expired or existing leases, and reassess the initial direct costs for any existing leases. The Company also elected two other practical expedients allowing the combination of lease and nonlease components by class of underlying asset and using hindsight in determining the lease terms since most of the leases have an extension option.

The four operating leases, one of which is with a related party, are comprised of real estate property for branch and office space with terms extending through 2029. Operating leases were previously not recognized on the Company's consolidated statements of condition, but with the adoption of Topic 842, operating lease agreements are recognized on the consolidated statements of condition as a ROU asset and a corresponding lease liability. As of December 31, 2019, the Company had operating lease ROU assets totaling $464,000 included in other assets and operating lease liabilities totaling $469,000 included in other liabilities.

The calculated amount of the ROU assets and lease liabilities are impacted by the length of the lease term and the discount rate used to calculate the present value of the minimum lease payments. The Company's lease agreements often include one or more options to renew at the Company's discretion. If at lease inception, the Company considers the exercising of a renewal option to be reasonably certain, the Company will include the extended term in the calculation of the ROU asset and lease liability.

Topic 842 requires the use of the rate implicit in the lease as the discount rate if that rate is readily determinable. As this rate is rarely determinable, the Company utilized its incremental borrowing rate at lease inception, which is the rate the Company would have incurred to borrow on a collateralized basis over a similar term at an amount equal to the lease payments in a similar economic environment. Because the four operating leases existed prior to the adoption of Topic 842 on January 1, 2019, the incremental borrowing rate for the remaining lease term at January 1, 2019 was used.

As of December 31, 2019, the weighted-average remaining operating lease term was 6.8 years, and the weighted-average discount rate was 4.95%.

The Company elected, for the real estate class of underlying assets which is currently its only class, not to separate lease and nonlease components and to account for them as a single lease component. The Company has one operating lease agreement containing a monthly ATM surcharge, which is combined with the property rental payment as a result of electing the practical expedient. The Company's total operating lease cost for the years ended December 31, 2019 and 2018 were $120,000 and $109,000, respectively. During both of the years ended December 31, 2019 and 2018, total operating lease payments made to a related party totaled $23,000.

The future minimum payments for operating leases with initial or remaining terms of one year or more as of December 31, 2019 were as follows:

(Dollars in thousands) **Years ending December 31,**	**Lease Obligation**
2020	$ 117
2021	107
2022	50
2023	46
2024	47
2025 and beyond	206
Total Future Minimum Lease Payments	573
Amounts Representing Interest	(104)
Present Value of Net Future Minimum Lease Payments (Lease Liability)	$ 469

15. INCOME TAXES

The components of income tax (benefit) expense for the two years ended December 31 were:

(Dollars in thousands)	**Years Ended December 31,**	
	2019	**2018**
Current tax expense (benefit)	$ 768	$ (563)
Deferred tax expense (benefit)	(782)	(96)
Total tax expense (benefit)	$ (14)	$ (659)

Federal credits are available for ten years for Juniata's investment in two low income housing projects. Tax credits associated with phase I will continue through 2023. Phase II credits were initiated in the second half of 2017 and will run through 2027. The tax credits are included in the tax expense line item on the Consolidated Statements of Income. Amortization of the investments using the cost method is scheduled to occur over the same period as tax credits are earned. Juniata's maximum exposure to loss is limited to the carrying value of the investment at year-end.

The total tax benefit during the year ended December 31, 2019 was $14,000 compared to a total tax benefit of $659,000 during the year ended December 31, 2018. The greater tax benefit in 2018 was mainly due to the removal of a $406,000 deferred tax liability related to the previous 39.16% ownership in Liverpool.

A reconciliation of the statutory income tax (benefit) expense computed at 21% to the income tax expense included in the consolidated statements of income follows:

(Dollars in thousands)	Years Ended December 31, 2019	Years Ended December 31, 2018
Income before income taxes	$ 5,821	$ 5,245
Statutory tax rate	21 %	21 %
Federal tax at statutory rate	1,222	1,101
Tax-exempt interest	(261)	(271)
Net earnings on BOLI	(49)	(50)
Dividend from unconsolidated subsidiary	—	(10)
Stock-based compensation	(12)	19
Federal tax credits	(902)	(901)
Merger and acquisition expenses	—	33
Defined benefit prior year contribution, net of other PTR adjustments	—	(198)
Basis difference related to Liverpool investment prior to acquisition	—	(406)
Other permanent differences	(12)	24
Total tax expense (benefit)	$ (14)	$ (659)
Effective tax rate	(0.2)%	(12.6)%

Deductible temporary differences and taxable temporary differences gave rise to a net deferred tax asset for the Company as of December 31, 2019 and 2018. The components giving rise to the net deferred tax asset are detailed below:

(Dollars in thousands)	Years Ended December 31, 2019	Years Ended December 31, 2018
Deferred Tax Assets:		
Allowance for loan losses	$ 634	$ 494
Deferred directors' compensation	337	345
Employee and director benefits	288	309
Qualified pension liability	—	78
Unrealized losses on debt securities available for sale	—	655
Unrealized loss from securities impairment	—	34
Stock-based compensation	40	—
Investment in low income housing project	211	142
Fair value adjustments to acquired assets and liabilities	251	293
Tax credit carryforward	191	225
Net operating loss carryforward	29	—
Lease liability	98	—
Other	—	2
Total deferred tax assets	2,079	2,577
Deferred Tax Liabilities:		
Depreciation	(197)	(445)
Right of use asset	(97)	—
Loan origination fees and costs	(418)	(384)
Prepaid expenses	(52)	(229)
Unrealized gains on debt securities available for sale	(136)	—
Unrealized gain from securities impairment	(54)	—
Annuity earnings	(60)	(56)
Fair value of mortgage servicing rights	(38)	(42)
Intangible assets	(56)	(68)
Goodwill	(382)	(353)
Total deferred tax liabilities	(1,490)	(1,577)
Net deferred tax asset included in other assets	$ 589	$ 1,000

The Company has concluded that the deferred tax assets are realizable (on a more likely than not basis) through the combination of future reversals of existing taxable temporary differences, certain tax planning strategies and expected future taxable income.

It is the Company's policy to recognize interest and penalties on unrecognized tax benefits in income tax expense in the Consolidated Statements of Income. No significant income tax uncertainties were identified as a result of the Company's evaluation of its income tax position. Therefore, the Company recognized no adjustment for unrecognized income tax benefits for the years ended December 31, 2019 and 2018. The Company is no longer subject to examination by taxing authorities for years before 2016. Tax years 2016 through the present, with limited exception, remain open to examination.

16. STOCKHOLDERS' EQUITY AND REGULATORY MATTERS

The Company is authorized to issue 500,000 shares of preferred stock with no par value. The Board has the ability to fix the voting, dividend, redemption and other rights of the preferred stock, which can be issued in one or more series. No shares of preferred stock have been issued.

The Company has a dividend reinvestment and stock purchase plan. Under this plan, additional shares of Juniata Valley Financial Corp. stock may be purchased at the prevailing market prices through reinvested dividends and voluntary cash payments, within limits. To the extent that shares are not available in the open market, the Company has reserved common stock to be issued under the plan. Any adjustment in capitalization of the Company will result in a proportionate adjustment to the reserved shares for this plan. At December 31, 2019, 141,887 shares were available for issuance under the Dividend Reinvestment Plan.

The Company periodically repurchases shares of its common stock under a share repurchase program approved by the Board of Directors. Repurchases have typically been through open market transactions and have complied with all regulatory restrictions on the timing and amount of such repurchases. Shares repurchased have been added to treasury stock and accounted for at cost. These shares may be reissued for stock option exercises, stock awards, employee stock purchase plan purchases, to fulfill dividend reinvestment program needs and to supply shares needed for exchange in an acquisition. During 2019 and 2018, 21,508 and 3,416 shares, respectively, were repurchased in conjunction with this program. In 2019, 800 issued shares were transferred to treasury due to forfeitures of restricted stock awards. Remaining shares authorized in the program were 148,266 as of December 31, 2019.

The Bank is subject to risk-based capital standards by which banks are evaluated in terms of capital adequacy. These regulatory capital requirements are administered by the federal banking agencies. Failure to meet minimum capital requirements can result in certain mandatory and possibly additional discretionary actions by regulators that, if undertaken, could have a direct material effect on the consolidated financial statements. Under capital adequacy guidelines and the regulatory framework for prompt corrective action the Bank must meet specific capital guidelines that involve quantitative measures of the Bank's assets, liabilities, and certain off-balance sheet items as calculated under regulatory accounting practices. The Bank's capital amounts and classification are also subject to qualitative judgments by the regulators about components, risk weightings, and other factors.

Quantitative measures established by regulation to ensure capital adequacy require the Bank to maintain minimum amounts and ratios of various forms of capital. The requirements were revised and became effective on a phased-in basis beginning January 1, 2015 and included the establishment of a Common Equity Tier I level. The ratio of the Bank's Total, Tier I and Common Equity Tier I capital (as defined in the regulations) to risk-weighted assets (as defined in the regulations), and Tier I capital (as defined in the regulations) as a percentage of average assets (as defined in the regulations) are set forth in the table below. Amounts recorded to accumulated other comprehensive income are not included in regulatory capital. These risk-based capital rules require that banks and holding companies maintain a "capital conservation buffer" of 250 basis points in excess of the "minimum capital ratio". The minimum capital ratio is equal to the prompt corrective action adequately capitalized threshold ratio. The capital conservation buffer was fully phased in as of January 1, 2019. The maximum buffer for 2018 was 1.875% and was 2.5% for 2019 and thereafter. Failure to maintain the required capital conservation buffer will result in limitations on capital distributions and on discretionary bonuses to executive officers.

Management believes, as of December 31, 2019 and 2018, that the Bank met all capital adequacy requirements to which they were subject.

As of December 31, 2019, the most recent notification from the regulatory banking agencies categorized the Bank as well capitalized under the regulatory framework for prompt corrective action. To be categorized as "well capitalized", the Bank must maintain minimum Total risk-based, Tier I risk-based, Common Equity Tier I risk-based and Tier I leverage ratios as set forth in the table. To the knowledge of management, there are no conditions or events since these notifications that have changed the Bank's category. The table below provides a comparison of the Bank's risk-based capital ratios and leverage ratios to the minimum regulatory requirements as of the dates indicated.

The Juniata Valley Bank	**Actual**		**Minimum Requirement for Capital Adequacy Purposes**		**Minimum Capital Adequacy with Capital Buffer**		**Minimum Regulatory Requirements to be "Well Capitalized" under Prompt Corrective Action Provisions**	
(Dollars in thousands)	**Amount**	**Ratio**	**Amount**	**Ratio**	**Amount**	**Ratio**	**Amount**	**Ratio**
As of December 31, 2019:								
Total Capital (to Risk Weighted Assets)	$ 65,861	15.85 %	$ 33,244	8.00 %	$ 43,633	10.50 %	$ 41,555	10.00 %
Tier 1 Capital (to Risk Weighted Assets)	62,900	15.14 %	24,933	6.00 %	35,322	8.50 %	33,244	8.00 %
Common Equity Tier 1 Capital (to Risk Weighted Assets)	62,900	15.14 %	18,700	4.50 %	29,089	7.00 %	27,011	6.50 %
Tier 1 Capital (to Average Assets) Leverage	62,900	9.60 %	26,198	4.00 %	26,198	4.00 %	32,747	5.00 %
As of December 31, 2018:								
Total Capital (to Risk Weighted Assets)	$ 62,422	15.50 %	$ 32,222	8.00 %	$ 39,774	9.875 %	$ 40,278	10.00 %
Tier 1 Capital (to Risk Weighted Assets)	59,388	14.74 %	24,167	6.00 %	31,719	7.875 %	32,222	8.00 %
Common Equity Tier 1 Capital (to Risk Weighted Assets)	59,388	14.74 %	18,125	4.50 %	25,677	6.375 %	26,181	6.50 %
Tier 1 Capital (to Average Assets) Leverage	59,388	9.77 %	24,317	4.00 %	24,317	4.000 %	30,397	5.00 %

Certain regulatory restrictions exist regarding the ability of the Bank to transfer funds to the Company in the form of cash dividends, loans or advances. At December 31, 2019, $35,824,000 of undistributed earnings of the Bank, included in the consolidated stockholders' equity, was available for distribution to the Company as dividends without prior regulatory approval, subject to the regulatory capital requirements above.

17. EARNINGS PER SHARE

Basic earnings per share ("EPS") is computed by dividing net income by the weighted average number of common shares outstanding for the period. Diluted EPS reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock or resulted in the issuance of common stock that then shared in the earnings of the Company. Potential common shares that may be issued by the Company relate solely to outstanding stock options and are determined using the treasury stock method. Restricted stock is participating, and therefore, is included in the basic EPS calculation. The following table sets forth the computation of basic and diluted earnings per share:

(Dollars in thousands, except earnings per share)	**Year ended December 31, 2019**	**2018**
Net income	$ 5,835	$ 5,904
Weighted-average common shares outstanding	5,102	4,987
Basic earnings per share	$ 1.14	$ 1.18
Weighted-average common shares outstanding	5,102	4,987
Common stock equivalents due to effect of stock options	19	22
Total weighted-average common shares and equivalents	$ 5,121	$ 5,009
Diluted earnings per share	$ 1.14	$ 1.18

18. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The following tables show changes in accumulated other comprehensive income (loss) by component, net of tax, for the years ending December 31, 2019 and 2018:

(Dollars in thousands)

December 31, 2019	Unrealized Gains and Losses on Available for Sale Securities	Defined Benefit Pension Items	Total
Beginning balance, December 31, 2018	$ (2,647)	$ (1,652)	$ (4,299)
Current period other comprehensive income:			
Other comprehensive income before reclassification	3,129	634	3,763
Amounts reclassified from accumulated other comprehensive income	34	1,101	1,135
Net current period other comprehensive income	3,163	1,735	4,898
Reclassification for ASU 2018-02	—	(83)	(83)
Ending balance, December 31, 2019	$ 516	$ —	$ 516

(Dollars in thousands)

December 31, 2018	Unrealized Gains and Losses on Available for Sale Securities	Defined Benefit Pension Items	Total
Beginning balance, December 31, 2017	$ (1,684)	$ (2,350)	$ (4,034)
Current period other comprehensive income:			
Other comprehensive income before reclassification	(956)	564	(392)
Amounts reclassified from accumulated other comprehensive income	149	134	283
Net current period other comprehensive income	(807)	698	(109)
Reclassification for ASU 2016-01	(156)	—	(156)
Ending balance, December 31, 2018	$ (2,647)	$ (1,652)	$ (4,299)

The following table shows significant amounts reclassified out of each component of accumulated other comprehensive income (loss) for the year ending December 31, 2019:

(Dollars in thousands)

Details About Accumulated Other Comprehensive Income (Loss) Components	Amount Reclassified From Accumulated Other Comprehensive Income (Loss)	Affected Line Item in the Consolidated Statements of Income
Unrealized gains and losses on available for sale securities		
Realized losses on securities available for sale	$ (43)	Gain (loss) on sales and calls of securities
Total before tax	(43)	
Tax effect	9	Income tax provision (benefit)
Net of tax	(34)	
Amortization of defined benefit pension items		
Actuarial losses	(1,394)	Employee benefits
Reclassification for ASU 2018-02	105	
Total before tax	(1,289)	
Tax effect	271	Income tax provision (benefit)
Net of tax	(1,018)	
Total reclassifications for the period, net of tax	$ (1,052)	

The following table shows significant amounts reclassified out of each component of accumulated other comprehensive income (loss) for the year ending December 31, 2018:

(Dollars in thousands)

Details About Accumulated Other Comprehensive Income (Loss) Components	Amount Reclassified From Accumulated Other Comprehensive Income (Loss)	Affected Line Item in the Consolidated Statements of Income
Unrealized gains and losses on available for sale securities		
Realized losses on securities available for sale	$ (188)	Gain (loss) on sales and calls of securities
Reclassification for ASU 2016-01	197	
Total before tax	9	
Tax effect	(2)	Income tax provision (benefit)
Net of tax	7	
Amortization of defined benefit pension items		
Actuarial losses	(170)	Employee benefits
Total before tax	(170)	
Tax effect	36	Income tax provision (benefit)
Net of tax	(134)	
Total reclassifications for the period, net of tax	$ (127)	

19. FAIR VALUE MEASUREMENT

Fair value measurement and disclosure guidance defines fair value as the price that would be received to sell an asset or transfer a liability in an orderly transaction (that is, not a forced liquidation or distressed sale) between market participants at the measurement date under current market conditions. A fair value measurement assumes that the transaction to sell the asset or transfer the liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. The price in the principal (or most advantageous) market used to measure the fair value of the asset or liability is not adjusted for transaction costs. An orderly transaction is a transaction that assumes exposure to the market for a period prior to the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets and liabilities; it is not a forced transaction. Market participants are buyers and sellers in the principal market that are (i) independent, (ii) knowledgeable, (iii) able to transact and (iv) willing to transact. Additional guidance is provided on determining when the volume and level of activity for the asset or liability has significantly decreased. The guidance also includes guidance on identifying circumstances when a transaction may not be considered orderly.

Fair value measurement and disclosure guidance provides a list of factors that a reporting entity should evaluate to determine whether there has been a significant decrease in the volume and level of activity for the asset or liability in relation to normal market activity for the asset or liability. When the reporting entity concludes there has been a significant decrease in the volume and level of activity for the asset or liability, further analysis of the information from that market is needed, and significant adjustments to the related prices may be necessary to estimate fair value in accordance with fair value measurement and disclosure guidance.

This guidance clarifies that, when there has been a significant decrease in the volume and level of activity for the asset or liability, some transactions may not be orderly. In those situations, the entity must evaluate the weight of the evidence to determine whether the transaction is orderly. The guidance provides a list of circumstances that may indicate that a transaction is not orderly. A transaction price that is not associated with an orderly transaction is given little, if any, weight when estimating fair value.

The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets and liabilities. The income approach uses valuation techniques to convert future amounts, such as cash flows or earnings, to a single present amount on a discounted basis. The cost approach is based on the amount that currently would be required to replace the service capacity of an asset (replacement cost). Valuation techniques should be consistently applied. Inputs to valuation techniques refer to the assumptions that market participants would use in pricing the asset or liability. Inputs may be observable, meaning those that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from independent sources, or unobservable, meaning those that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances. In that regard, the guidance establishes a fair value hierarchy for valuation inputs that gives the highest priority to quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. The fair value hierarchy is as follows:

Level 1 Inputs – Unadjusted quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.

Level 2 Inputs – Significant other observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.

Level 3 Inputs – Significant unobservable inputs that reflect a company's own assumptions about the assumptions that market participants would use in pricing an asset or liability.

An asset's or liability's placement in the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement.

A description of the valuation methodologies used for instruments measured at fair value, as well as the general classification of such instruments pursuant to the valuation hierarchy, is set forth below.

In general, fair value is based upon quoted market prices, where available. If such quoted market prices are not available, fair value is based upon internally developed models that primarily use, as inputs, observable market-based parameters. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value. These adjustments may include amounts to reflect counterparty credit quality, the Company's creditworthiness, among other things, as well as unobservable parameters. Any such valuation adjustments are applied consistently over time. The Company's valuation methodologies may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. While management believes the Company's valuation methodologies are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

Equities Securities
The fair value of equity securities is based upon quoted prices in active markets and is reported using Level 1 inputs.

Debt Securities Available for Sale
Debt securities classified as available for sale are reported at fair value utilizing Level 2 inputs. For these securities, the Company obtains fair value measurement from an independent pricing service. The fair value measurements consider observable data that may include dealer quotes, market spreads, cash flows, the U.S. Treasury yield curve, live trading levels, trade execution data, market consensus prepayment speeds, credit information and the debt securities' terms and conditions, among other things.

Impaired Loans
Certain impaired loans are reported on a non-recurring basis at the fair value of the underlying collateral since repayment is expected solely from the collateral. Fair value is generally determined based upon independent third-party appraisals of the properties, or discounted cash flows based upon the expected proceeds. These assets are included in the Level 3 fair value classification, based upon the lowest level of input that is significant to the fair value measurements.

Other Real Estate Owned
Certain assets included in other real estate owned are carried at fair value as a result of impairment and accordingly are measured on a non-recurring basis as they are carried at the lower of cost or fair value. These assets are subsequently

accounted for at the lower of cost or fair value less estimated costs to sell. Values are estimated using Level 3 inputs, based on appraisals that consider the sales prices of property in the proximate vicinity less estimated costs to sell.

Mortgage Servicing Rights

The fair value of servicing assets is based on the present value of estimated future cash flows on pools of mortgages stratified by rate and maturity date and are considered Level 3 inputs.

The following tables summarize financial assets and financial liabilities measured at fair value as of December 31, 2019 and December 31, 2018, segregated by the level of the valuation inputs within the fair value hierarchy utilized to measure fair value.

(Dollars in thousands)	**December 31, 2019**	**(Level 1) Quoted Prices in Active Markets for Identical Assets**	**(Level 2) Significant Other Observable Inputs**	**(Level 3) Significant Other Unobservable Inputs**
Measured at fair value on a recurring basis:				
Debt securities available for sale:				
Obligations of U.S. Government agencies and corporations	$ 20,920	$ —	$ 20,920	$ —
Obligations of state and political subdivisions	4,575	—	4,575	—
Mortgage-backed securities	185,191	—	185,191	—
Equity securities	1,144	1,144	—	—
Mortgage servicing rights	180	—	—	180
Measured at fair value on a non-recurring basis:				
Impaired loans	$ 144	$ —	$ —	$ 144

(Dollars in thousands)	**December 31, 2018**	**(Level 1) Quoted Prices in Active Markets for Identical Assets**	**(Level 2) Significant Other Observable Inputs**	**(Level 3) Significant Other Unobservable Inputs**
Measured at fair value on a recurring basis:				
Debt securities available for sale:				
Obligations of U.S. Government agencies and corporations	$ 23,266	$ —	$ 23,266	$ —
Obligations of state and political subdivisions	18,181	—	18,181	—
Mortgage-backed securities	100,506	—	100,506	—
Equity securities	1,118	1,118	—	—
Mortgage servicing rights	200	—	—	200
Measured at fair value on a non-recurring basis:				
Impaired loans	$ 1,104	$ —	$ —	$ 1,104
Other real estate owned	149	—	—	149

Assets measured at fair value on a nonrecurring basis for which Level 3 inputs have been used to determine fair value are immaterial to the Company's consolidated financial statements.

Fair Value of Financial Instruments

Management uses its best judgment in estimating the fair value of the Company's financial instruments; however, there are inherent weaknesses in any estimation technique. Therefore, the fair value estimates herein are not necessarily indicative of the amounts the Company could have realized in sales transactions on the dates indicated. The estimated fair value amounts have been measured as of their respective year ends and have not been re-evaluated or updated for purposes of these consolidated financial statements subsequent to those respective dates. As such, the estimated fair values of these financial instruments subsequent to the respective reporting dates may be different from the amounts reported at each year end.

The information presented below should not be interpreted as an estimate of the fair value of the entire Company since a fair value calculation is provided only for a limited portion of the Company's assets and liabilities. Due to a wide range of valuation techniques and the degree of subjectivity used in making the estimates, comparisons between the Company's disclosures and those of other companies may not be meaningful.

The carrying amounts and estimated fair values of the Company's financial instruments are as follows:

(Dollars in thousands)	Financial Instruments			
	December 31, 2019		December 31, 2018	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Financial assets:				
Cash and due from banks	$ 12,658	$ 12,658	$ 15,617	$ 15,617
Interest bearing deposits with banks	82	82	110	110
Federal funds sold	—	—	729	729
Interest bearing time deposits with banks	2,210	2,210	3,290	3,290
Securities	211,830	211,830	141,953	141,953
Restricted investment in bank stock	3,442	N/A	2,441	N/A
Loans, net of allowance for loan losses	397,629	403,359	414,597	415,195
Accrued interest receivable	1,607	1,607	1,681	1,681
Financial liabilities:				
Non-interest bearing deposits	$ 134,703	$ 134,703	$ 126,057	126,057
Interest bearing deposits	397,234	399,848	395,665	395,226
Securities sold under agreements to repurchase	3,429	N/A	2,911	N/A
Short-term borrowings	9,700	9,700	11,600	11,600
Long-term debt	45,000	45,809	15,000	14,958
Other interest bearing liabilities	1,603	1,603	1,596	1,597
Accrued interest payable	473	473	289	289
Off-balance sheet financial instruments:				
Commitments to extend credit	$ —	$ —	$ —	$ —
Letters of credit	—	—	—	—

The following tables present the carrying amount, fair value and placement in the fair value hierarchy of the Company's financial instruments not previously disclosed as of December 31, 2019 and December 31, 2018. These tables exclude financial instruments for which the carrying amount approximates fair value.

(Dollars in thousands)	Carrying Amount	Fair Value	(Level 1) Quoted Prices in Active Markets for Identical Assets or Liabilities	(Level 2) Significant Other Observable Inputs	(Level 3) Significant Other Unobservable Inputs
December 31, 2019					
Financial instruments - Assets					
Interest bearing time deposits with banks	$ 2,210	$ 2,210	$ —	$ 2,210	$ —
Loans, net of allowance for loan losses	397,629	403,359	—	—	403,359
Financial instruments - Liabilities					
Interest bearing deposits	$ 397,234	$ 399,848	$ —	$ 399,848	$ —
Long-term debt	45,000	45,809	—	45,809	—
Other interest bearing liabilities	1,603	1,603	—	1,603	—

(Dollars in thousands)	Carrying Amount	Fair Value	(Level 1) Quoted Prices in Active Markets for Identical Assets or Liabilities	(Level 2) Significant Other Observable Inputs	(Level 3) Significant Other Unobservable Inputs
December 31, 2018					
Financial instruments - Assets					
Interest bearing time deposits with banks . . .	$ 3,290	$ 3,290	$ —	$ 3,290	$ —
Loans, net of allowance for loan losses.	414,597	415,195	—	—	415,195
Financial instruments - Liabilities					
Interest bearing deposits.	$ 395,665	$ 395,226	$ —	$ 395,226	$ —
Long-term debt	15,000	14,958	—	14,958	—
Other interest bearing liabilities.	1,596	1,597	—	1,597	—

20. REVENUE RECOGNITION

The Company adopted ASU 2014-09, *Revenue from Contracts with Customers* (Topic 606), as well as subsequent ASU's that modified ASC 606, on January 1, 2018. The Company elected to apply the ASU and all related ASU's using the modified retrospective approach applied to all contracts initiated on or after the effective date, and for contracts which have remaining obligations as of the effective date, while prior period results continue to be reported under legacy U.S. GAAP. Based on this assessment, the Company concluded that ASC 606 did not materially change the method by which the Company currently recognizes revenue for these revenue streams, which is by recognizing revenues as they are earned based upon contractual terms, as transactions occur, or as services are provided and collectability is reasonably assured.

The Company generally acts in a principal capacity, on its own behalf, in most contracts with customers. In such transactions, revenue and related costs to provide these services are recognized on a gross basis in the financial statements. In some cases, the Company acts in an agent capacity, deriving revenue through assisting other entities in transactions with its customers. In such transactions, revenue and the related costs to provide the services are recognized on a net basis in the financial statements. These transactions primarily relate to non-deposit product commissions and fees derived from customer's use of various interchange and ATM/debit card networks.

All of the Company's revenue from contracts with customers in the scope of ASC 606 are recognized within non-interest income on the consolidated statements of income. Revenue streams not within the scope of ASC 606 included in non-interest income on the consolidated statements of income include earnings on bank-owned life insurance and annuities, income from unconsolidated subsidiary, fees derived from loan activity, mortgage banking income, gain/loss on sales and calls of securities, and the change in value of equity securities.

A description of the Company's sources of revenue accounted for under ASC 606 are as follows:

Customer Service Fees – fees mainly represent fees from deposit customers for transaction based, account maintenance, and overdraft services. Transaction based fees include, but are not limited to, stop payment and overdraft fees. These fees are recognized at the time of the transaction when the performance obligation has been fulfilled. Account maintenance fees and account analysis fees are earned over the course of a month, representing the period of the performance obligation, and are recognized monthly.

Debit Card Fee Income – consists of interchange fees from cardholder transactions conducted through the card payment network. Cardholders use debit cards to conduct point-of-sale transactions that produce interchange fees. The Company acts in an agent capacity to offer processing services for debit cards to its customers. Fees are recognized with the processing of the transactions and netted against the related fees from such transactions.

Trust Fees – include asset management and estate fees. Asset management fees are generally based on a fee schedule, based upon the market value of the assets under management, and recognized monthly when the service obligation is completed. Trust fees recognized in 2019 and 2018 were $359,000 and $367,000, respectively. Fees for estate management services are based on a specified fee schedule and generally recognized as the following performance obligations are fulfilled: (i) 25% of total estate fee recognized when all estate assets are collected and debts paid, (ii) 50% of the total fee is recognized when the inheritance tax return is filed, and (iii) remaining 25% is recognized when the first and final account is confirmed, settling the estate. Estate fees recognized during 2019 and 2018 were $35,000 and $63,000, respectively.

Commissions From Sales Of Non-Deposit Products – include, but are not limited to, brokerage services, employer-based retirement solutions, individual retirement planning, insurance solutions, and fee-based investment advisory services. The Company acts in an agent capacity to offer these services to customers. Revenue is recognized, net of related fees, in the month in which the contract is fulfilled.

Other Non-Interest Income – includes certain revenue streams within the scope of ASC 606 comprised primarily of ATM surcharges, commissions on check orders, and wire transfer fees. ATM surcharges are the result of customers conducting ATM transactions that generate fee income. All of these fees, as well as wire transfer fees, are transaction based and are recognized at the time of the transaction. In addition, the Company acts in an agent capacity to offer checks to its customers and recognizes commissions, net of related fees, when the contract is fulfilled.

Gains/Losses On Sales Of Other Real Estate Owned – are recognized when control of the property transfers to the buyer, which generally occurs when the deed is executed.

Contract Balances
A contract asset balance occurs when an entity performs a service for a customer before the customer pays consideration (resulting in a contract receivable) or before payment is due (resulting in a contract asset). A contract liability balance is an entity's obligation to transfer a service to a customer for which the entity has already received payment (or payment is due from the customer). The company's non-interest revenue streams are largely based on transactional activity, or standard month-end revenue accruals such as asset management fees based on month-end market values. Consideration is often received immediately or shortly after the Company satisfies its performance obligation and revenue is recognized. The Company does not typically enter into longer-term revenue contracts with customer, and therefore, does not experience significant contract balances.

Contract Acquisition Costs
The Company expenses all contract acquisition costs as costs are incurred.

21. EMPLOYEE BENEFIT PLANS

Long-Term Incentive Plan
The Company maintains the 2016 Long-Term Incentive Plan (the "Plan"), that amended and restated the former 2011 Stock Option Plan (the "2011 Plan"). The Plan continues in effect for any outstanding awards under the 2011 Plan in accordance with the terms and conditions governing such awards immediately prior to the effective date of the Plan but expanded the types of awards authorized to include, among others, restricted stock. Under the provisions of the Plan, while active, awards may consist of grants of incentive stock options, nonqualified stock options, stock appreciation rights, restricted stock and performance shares to officers and key employees of the Company, as well as Directors.

Compensation expense for stock options granted and restricted stock awarded is measured using the fair value of the award on the grant date and is recognized over the vesting period. The Company recognized $113,000 and $82,000 of expense for the years ended December 31, 2019 and 2018, respectively, for stock-based compensation.

The Plan is administered by a committee of the Board of Directors. The Committee determines, among other things, which officers and key employees receive stock compensation, the number of shares to be subject to each award, the option price, the duration of the option and the restricted period, as appropriate. A recipient of the restricted shares will forfeit those shares in their entirety if employment is terminated prior to the vesting date for reasons other than retirement, death or disability. The maximum number of shares of common stock that may be issued under the Plan is 300,000 shares, and 158,455 shares were available for grant as of December 31, 2019. Shares of common stock issued under the Plan may be treasury shares or authorized but unissued shares.

During 2019 and 2018, certain officers and key employees were issued restricted stock awards of 7,500 and 5,220 shares, respectively. Each of the awards vest after three-years, with no interim vesting.

The following table presents compensation expense and related tax benefits for restricted stock awards recognized on the consolidated statement of income.

(Dollars in thousands)

	2019	2018
Compensation expense	$ 109	$ 77
Tax benefit	(23)	(16)
Net income effect	$ 86	$ 61

At December 31, 2019, there was $133,000 of unrecognized compensation cost related to all non-vested restricted stock awards. This cost is expected to be recognized through February 2022.

The following table presents a summary of non-vested restricted shares activity for 2019.

	Shares	Weighted Average Grant Date Fair Value
Non-vested at January 1, 2019	13,020	$ 18.78
Vested	(4,360)	18.05
Cancelled	—	—
Forfeited	(800)	19.62
Granted	7,500	20.00
Non-vested at December 31, 2019	15,360	19.54

No stock options were awarded in 2019. Options granted prior to 2019 vest over three to five years and are exercisable at the grant price, which is at least the fair market value of the stock on the grant date. The Plan provides that the option price per share is not to be less than the fair market value of the stock on the day the option was granted, but in no event less than the par value of such stock. Options granted under the Plan are exercisable no earlier than one year after the date of grant and expire ten years after the date of the grant. All options previously granted under the Plans are scheduled to expire through February 17, 2025.

Total options outstanding at December 31, 2019 have exercise prices between $17.65 and $18.00, with a weighted average exercise price of $17.78 and a weighted average remaining contractual life of 3.79 years.

As of December 31, 2019, there was less than $1,000 of total unrecognized compensation cost related to non-vested options granted under the Plan. That cost is expected to be recognized through 2020.

Cash received from option exercises under the Plans for the year ended December 31, 2019 was $364,000 and $90,000 for the year ended December 31, 2018.

A summary of the status of the outstanding stock options as of December 31, 2019 and 2018, and changes during the years ending on those dates is presented below:

	2019		2018	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Outstanding at beginning of year	113,756	$ 17.76	125,026	$ 17.91
Granted	—	—	—	—
Exercised	(20,609)	17.66	(5,170)	17.47
Forfeited	—	—	(6,100)	21.10
Outstanding at end of year	93,147	$ 17.78	113,756	$ 17.76
Options exercisable at year-end	92,147		110,911	
Weighted-average fair value of options granted during the year		$ —		$ —
Intrinsic value of options exercised during the year		$ 43,135		$ 15,240
Intrinsic value of options outstanding and exercisable at December 31, 2019		$ 144,656		

Defined Benefit Retirement Plans

The Company sponsored defined benefit retirement plan, JVB Plan, which covered substantially all its employees employed prior to December 31, 2007 was amended, January 1, 2008 to close the plan to new entrants. All active participants as of December 31, 2007 became 100% vested in their accrued benefit and, as long as they remained eligible, continued to accrue benefits until December 31, 2012. The benefits were based on years of service and the employee's compensation. Effective December 31, 2012, the JVB Plan was amended to cease future service accruals after that date (i.e., it was frozen).

As a result of the FNBPA acquisition, the Company assumed sponsorship of a second defined benefit retirement plan, the Retirement Plan for the First National Bank of Port Allegany ("FNB Plan"), as of November 30, 2015, which covered substantially all former FNBPA employees that were employed prior to September 30, 2008. The FNBPA Plan was amended as of December 31, 2015 to cease future service accruals to previously unfrozen participants and was considered to be "frozen". Effective December 31, 2016, the FNB Plan was merged into the JVB Plan, which was amended to provide the same benefits to the class of participants previously included in the FNB Plan.

In 2018, Juniata completed the second step of the strategy to reduce the liability associated with its defined benefit pension plan by making a lump sum payment offer to a small group of terminated vested participants in Juniata's defined benefit plan. This step further reduced Juniata's remaining pension liability by approximately 9%, which resulted in a pre-tax charge to earnings of $210,000 in the twelve months ended December 31, 2018. The pre-tax charge represented a further acceleration of pension expenses that would otherwise have impacted Juniata's future earnings. The Company also made a $1,350,000 contribution to the defined benefit pension plan during the third quarter of 2018.

Juniata's Board of Directors resolved to terminate the JVB Plan, effective November 30, 2018. All participants were properly notified. During the second quarter of 2019, JVB Plan participants elected preferences for receiving their vested benefit in the form of either lump sum payments or annuities. Those electing lump sums received payment in the second quarter of 2019, resulting in a pre-tax settlement charge of $278,000. In the third quarter of 2019, annuities were purchased to provide vested benefits to all remaining recipients, resulting in a pre-tax charge of $943,000. As of December 31, 2019, all obligations were satisfied and The JVB Plan was liquidated. Excess funds of $431,000 were transferred to fund the Company's 401(k) Safe Harbor Plan.

The following table illustrates the equity instruments, by fair value hierarchy, included in the JVB Plan's assets at fair value as of December 31, 2018. Due to the liquidation of the JVB Plan in the third quarter of 2019, no assets remained at December 31, 2019.

(Dollars in thousands)	December 31, 2018	(Level 1) Quoted Prices in Active Markets for Identical Assets	(Level 2) Significant Other Observable Inputs	(Level 3) Significant Other Unobservable Inputs
Measured at fair value on a recurring basis:				
Mutual funds	$ 11,891	$ 11,891	$ —	$ —
Money market funds	241	241	—	—
	$ 12,132	$ 12,132	$ —	$ —

The measurement date for the JVB Plan is December 31. Information pertaining to the activity in the defined benefit plan was as follows:

(Dollars in thousands)	Years ended December 31, 2019	2018
Change in projected benefit obligation ("PBO")		
PBO at beginning of year	$ 12,555	$ 15,554
Interest cost	299	521
Change in assumptions	1,477	(1,208)
Actuarial loss	(1,326)	(244)
Group annuity purchase	(9,021)	—
Settlement payments	(3,569)	(1,485)
Benefits paid	(415)	(583)
PBO at end of period	$ —	$ 12,555
Change in plan assets		
Fair value of plan assets at beginning of year	$ 12,182	$ 13,117
Actual return on plan assets, net of expenses	1,254	(217)
Employer contribution	—	1,350
Group annuity purchase	(9,021)	—
Settlement payments	(3,569)	(1,485)
Benefits paid	(415)	(583)
Benefits transferred to 401(k) Plan	(431)	—
Fair value of plan assets at end of period	$ —	$ 12,182
Funded status, included in other (liabilities) assets	$ —	$ (373)
Amounts recognized in accumulated comprehensive loss before income taxes consist of:		
Unrecognized actual loss	$ —	$ (884)
Accumulated benefit obligation	$ —	$ 12,555

For the year ended December 31, 2018, the mortality assumptions were derived using the Adjusted RP-2014 White Collar Mortality Table. Incorporated into the most recent table are rates projected generationally using Scale MP-2018 to reflect mortality improvement.

Pension expense for the JVB Plan included the following components for the years ended December 31:

(Dollars in thousands)	Year Ended December 31, 2019	Year Ended December 31, 2018
Components of net periodic pension cost:		
Interest cost	$ 299	$ 521
Expected return on plan assets	(182)	(690)
Recognized net actuarial loss	1,277	339
Net periodic pension cost	1,394	170
Total recognized in other comprehensive income	(2,197)	(884)
Total recognized in net periodic pension benefit and other comprehensive income	$ (803)	$ (714)

Assumptions used to determine benefit obligations were:

	2019	2018
Discount rate	— %	4.10 %
Rate of compensation increase	N/A	N/A

Assumptions used to determine the net periodic benefit cost were:

	2019	2018
Discount rate	— %	3.50 %
Expected long-term return on plan assets	—	4.20
Rate of compensation increase	N/A	N/A

Defined Contribution Plan

The Company has a Defined Contribution Plan under which employees, through payroll deductions, are able to defer portions of their compensation. The Company makes an annual non-elective fully vested contribution equal to 3% of compensation to each eligible participant. For the year ended December 31, 2019, the contribution amount totaled $250,000, which was credited to employee's accounts by January 31, 2020. This liability at December 31, 2018 totaled $238,000 and was credited to employee accounts by January 31, 2019. Expense incurred under this plan was $248,000 and $234,000 in 2019 and 2018, respectively. The Defined Contribution Plan also includes an employer matching contribution for employees that elect to defer compensation into this program. The matching contribution in 2019 and 2018 was $212,000 and $199,000, respectively.

Employee Stock Purchase Plan

The Company has an Employee Stock Purchase Plan under which employees, through payroll deductions, are able to purchase shares of Company stock annually. The option price of the stock purchases is between 95% and 100% of the fair market value of the stock on the offering termination date as determined annually by the Board of Directors. The maximum number of shares which employees may purchase under the Plan is 250,000; however, the annual issuance of shares may not exceed 5,000 shares plus any unissued shares from prior offerings. There were 1,880 shares issued in 2019 and 2,134 shares issued in 2018 under this plan. At December 31, 2019, there were 171,079 shares reserved for issuance under the Employee Stock Purchase Plan.

Supplemental Retirement Plans

The Company has non-qualified supplemental retirement plans for directors and key employees. At December 31, 2019 and 2018, the present value of the future liability associated with these plans was $166,000 and $215,000, respectively. For the years ended December 31, 2019 and 2018, $16,000 and $20,000, respectively, was charged to expense in connection with these plans. The Company offsets the cost of these plans through the purchase of bank-owned life insurance and annuities. See Note 9.

Deferred Compensation Plans

The Company has entered into deferred compensation agreements with certain directors to provide each director an additional retirement benefit, or to provide their beneficiary a benefit, in the event of pre-retirement death. At December 31, 2019 and 2018, the present value of the future liability was $1,603,000 and $1,602,000, respectively. For the years ended December 31, 2019 and 2018, $42,000 and $40,000, respectively, was charged to expense in connection with these plans. The Company offsets the cost of these plans through the purchase of bank-owned life insurance. See Note 9.

Salary Continuation Plans

The Company has non-qualified salary continuation plans for key employees. At December 31, 2019 and 2018, the present value of the future liability was $1,209,000 and $1,256,000, respectively. For the years ended December 31, 2019 and 2018 $57,000 and $103,000, respectively, was charged to expense in connection with these plans. The Company offsets the cost of these plans through the purchase of bank-owned life insurance. See Note 9.

22. FINANCIAL INSTRUMENTS WITH OFF-BALANCE SHEET RISK

The Company is a party to financial instruments with off-balance sheet risk in the normal course of business to meet the financing needs of its customers. These financial instruments may include commitments to extend credit and letters of credit. Because many commitments are expected to expire without being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. These instruments involve, to varying degrees, elements of credit risk that are not recognized in the consolidated financial statements.

Exposure to credit loss in the event of non-performance by the other party to the financial instrument for commitments to extend credit and letters of credit is represented by the contractual amount of those instruments. The Bank uses the same credit policies in making these commitments and conditional obligations as it does for on-balance sheet instruments. The Company controls the credit risk of its financial instruments through credit approvals, limits and monitoring procedures; however, it does not generally require collateral for such financial instruments since there is no principal credit risk.

A summary of the Company’s financial instrument commitments is as follows:

(Dollars in thousands)	**December 31,**	
	2019	**2018**
Commitments to grant loans	$ 97,037	$ 72,755
Unfunded commitments under lines of credit	13,448	14,468
Outstanding letters of credit	2,624	2,749

Commitments to extend credit are agreements to lend to a customer as long as there is no violation of any condition established in the contract. Commitments generally have fixed expiration dates or other termination clauses and may require payment of a fee. Since portions of the commitments are expected to expire without being drawn upon, the total commitment amounts do not necessarily represent future cash requirements. The Bank evaluates each customer’s creditworthiness on a case-by-case basis. The amount of collateral obtained by the Bank upon extension of credit is based on management’s credit evaluation of the counterparty. Collateral held varies but may include personal or commercial real estate, accounts receivable, inventory and equipment.

Outstanding letters of credit are instruments issued by the Bank that guarantee payment to the beneficiary by the Bank in the event of default by the Bank’s customer in the non-performance of an obligation or service. Most letters of credit are extended for one year periods. The credit risk involved in issuing letters of credit is essentially the same as that involved in extending loan facilities to customers. The Bank holds collateral supporting those commitments for which collateral is deemed necessary. The amount of the liability as of December 31, 2019 and 2018 for guarantees under letters of credit issued is not material.

The maximum undiscounted exposure related to these guarantees at December 31, 2019 was $2,624,000, and the approximate value of underlying collateral upon liquidation that would be expected to cover this maximum potential exposure was $23,429,000.

23. RELATED-PARTY TRANSACTIONS

The Bank has granted loans to certain of its executive officers, directors and their related interests. The aggregate dollar amount of these loans was $8,127,000 and $7,780,000 at December 31, 2019 and 2018, respectively. During 2019, $8,798,000 of new loans were made and repayments totaled $8,451,000. None of these loans were past due, in non-accrual status or restructured at December 31, 2019 or 2018.

Deposits and other funds from related parties held by Juniata amounted to $1,396,000 and $1,215,000 at December 31, 2019 and 2018, respectively.

24. COMMITMENTS AND CONTINGENT LIABILITIES

In 2017, the Company executed renewal agreements for technology outsourcing services through two outside service bureaus. Both agreements provide for termination fees if the Company cancels the services prior to the end of the 7-year commitment period that runs through May 31, 2024. At December 31, 2019, potential termination fees were estimated to be approximately $1,369,000 and $1,253,000 on the two contracts. The potential termination fees decrease by approximately 15% in each succeeding year through 2024. Since the Company does not expect to terminate these services with either vendor prior to the end of the commitment periods, no liability has been recorded as of December 31, 2019.

The Company, from time to time, may be a defendant in legal proceedings relating to the conduct of its banking business. Most of such legal proceedings are a normal part of the banking business and, in management's opinion, the consolidated financial condition and results of operations of the Company would not be materially affected by the outcome of such legal proceedings.

Additionally, the Company has sold qualifying residential mortgage loans to the FHLB as part of its Mortgage Partnership Finance Program ("Program"). Under the terms of the Program, there is limited recourse back to the Company for loans that do not perform in accordance with the terms of the loan agreement. Each loan sold under the Program is "credit enhanced" such that the individual loan's rating is raised to "BBB", as determined by the FHLB. The Program can be terminated by either the FHLB or the Company, without cause, by giving notice to the other party. The FHLB has no obligation to commit to purchase any mortgage through, or from, the Company.

25. SUBSEQUENT EVENT

In January 2020, the Board of Directors declared a dividend of $0.22 per share to shareholders of record on February 14, 2020, payable on February 28, 2020.

26. JUNIATA VALLEY FINANCIAL CORP. (PARENT COMPANY ONLY) FINANCIAL INFORMATION

CONDENSED BALANCE SHEETS

(Dollars in thousands)

	December 31, 2019	December 31, 2018
ASSETS		
Cash and cash equivalents	$ 80	$ 48
Investment in bank subsidiary	72,353	65,909
Equity securities	947	940
Debt securities available for sale	253	253
Other assets	99	641
TOTAL ASSETS	$ 73,732	$ 67,791
LIABILITIES		
Accounts payable and other liabilities	$ 25	$ 413
STOCKHOLDERS' EQUITY	73,707	67,378
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 73,732	$ 67,791

CONDENSED STATEMENTS OF INCOME AND COMPREHENSIVE INCOME

(Dollars in thousands)

	Years Ended December 31, 2019	Years Ended December 31, 2018
INCOME		
Interest and dividends on investment securities available for sale	$ 47	$ 44
Dividends from bank subsidiary	4,489	4,923
Income from unconsolidated subsidiary	—	296
Change in value of equity securities	8	26
TOTAL INCOME	4,544	5,289
EXPENSE		
Merger-related expenses	—	134
Other non-interest expense	176	155
TOTAL EXPENSE	176	289
INCOME BEFORE INCOME TAXES AND EQUITY IN UNDISTRIBUTED NET INCOME OF SUBSIDIARY	4,368	5,000
Income tax (benefit) expense	(35)	(347)
	4,403	5,347
Undistributed net income of subsidiary	1,432	557
NET INCOME	$ 5,835	$ 5,904

CONDENSED STATEMENTS OF CASH FLOWS

(Dollars in thousands)

	Years Ended December 31, 2019	Years Ended December 31, 2018
Cash flows from operating activities:		
Net income	$ 5,835	$ 5,904
Adjustments to reconcile net income to net cash provided by operating activities:		
Undistributed net income of subsidiary	(1,432)	(556)
Change in value of equity securities	(8)	(26)
Equity in earnings of unconsolidated subsidiary, net of dividends of $0 and $75	—	194
Equity gain from acquisition of unconsolidated subsidiary	—	(415)
Stock-based compensation expense	113	82
Decrease (increase) in other assets	429	(93)
Decrease in taxes payable	(402)	(402)
Increase (decrease) in accounts payable and other liabilities	14	(12)
Net cash provided by operating activities	4,549	4,676
Cash flows from investing activities:		
Net cash received from acquisition	—	(1,361)
Net cash used in investing activities	—	(1,361)
Cash flows from financing activities:		
Cash dividends	(4,489)	(4,411)
Purchase of treasury stock	(428)	(70)
Treasury stock issued for stock plans	400	90
Common stock issued for stock plans	—	42
Net cash used in financing activities	(4,517)	(4,349)
Net increase (decrease) in cash and cash equivalents	32	(1,034)
Cash and cash equivalents at beginning of year	48	1,082
Cash and cash equivalents at end of year	$ 80	$ 48

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

As previously reported by the Company on a Form 8-K, filed May 14, 2019, the Company appointed Crowe LLP ("Crowe") as the Company's new independent registered public accounting firm for and with respect to the year ending December 31, 2019, and dismissed BDO USA LLP ("BDO") from that role.

During the Company's fiscal year ended December 31, 2018 and 2017 and subsequent interim period through May 10, 2019, there were no disagreements (within the meaning of Item 304(a)(1)(iv) of Regulation S-K and the related instructions) with BDO on any matter of accounting principles or practices, financial statement disclosure or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of BDO, would have caused BDO to make reference thereto in its reports on the consolidated financial statements for such years. During the fiscal years ended December 31, 2018 and 2017 and through May 10, 2019, there were no reportable events (as defined in Item 304(a)(1)(v) of Regulation S-K).

ITEM 9A. CONTROLS AND PROCEDURES

Attached as exhibits to this Form 10-K are certifications of the Company's Chief Executive Officer (CEO) and Chief Financial Officer (CFO), which are required in accordance with Rule 13a-14 of the Securities Exchange Act of 1934, as amended (the Exchange Act). This "Controls and Procedures" section includes information concerning the controls and controls evaluation referred to in the certifications.

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

The Company's management, with the participation of its CEO and CFO, conducted an evaluation, as of December 31, 2019, of the effectiveness of the Company's disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e)). Based on this evaluation, the Company's CEO and CFO concluded that, as of the end of the period covered by this annual report, the Company's disclosure controls and procedures were effective in reaching a reasonable level of assurance that management is timely alerted to material events relating to the company during the period when the Company's periodic reports are being prepared.

Conclusion Regarding Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a – 15(f) promulgated under the Exchange Act. The Company's management, with the participation of the Company's Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our internal control over financial reporting based on the framework in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the evaluation under the framework in *Internal Control-Integrated Framework (2013)*, the Company's management concluded that internal control over financial reporting was effective as of December 31, 2019.

Management’s Report on Internal Control over Financial Reporting

Management is responsible for the preparation, integrity and fair presentation of the consolidated financial statements included in this Annual Report on Form 10-K. The consolidated financial statements and notes included in this annual report have been prepared in conformity with accounting principles generally accepted in the United States of America, and as such, include some amounts that are based on management’s best estimates and judgments.

The Company’s management is responsible for establishing and maintaining effective internal control over financial reporting. The system of internal control over financial reporting, as it relates to the financial statements, is evaluated for effectiveness by management and tested for reliability through a program of internal audits and management testing and review. Actions are taken to correct potential deficiencies as they are identified. Any system of internal control, no matter how well designed, has inherent limitations, including the possibility that a control can be circumvented or overridden and misstatements due to error or fraud may occur and not be detected. Also, because of changes in conditions, internal control effectiveness may vary over time. Accordingly, even an effective system of internal control will provide only a reasonable assurance with respect to financial statement preparation.

Management assessed the effectiveness of the Company’s internal control over financial reporting as of December 31, 2018. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework (2013)*.

Based on our assessment, management concluded that as of December 31, 2019, the Company’s internal control over financial reporting was effective and met the criteria of the *Internal Control-Integrated Framework (2013)*.

The independent registered public accounting firm that audited the consolidated financial statements included in the annual report has issued an attestation report on the Company’s internal control over financial reporting.

/s/ Marcie A. Barber
Marcie A. Barber, President and Chief Executive Officer

/s/ JoAnn N. McMinn
JoAnn N. McMinn, Chief Financial Officer

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Incorporated by reference herein is information appearing in the Proxy Statement for the Annual Meeting of Shareholders to be held on May 19, 2020 (the "Proxy Statement") under the captions "Directors of the Company", "Executive Officers of the Company", "Corporate Governance and Board Matters" and "Section 16(a) Beneficial Ownership Reporting Compliance". The Company has adopted a Code of Ethics that is applicable to the Company's Chief Executive Officer, Chief Financial Officer and Principal Accounting Officer and other designated senior officers, which can be found in the Investor Information – Governance Documents section of the Company's website at www.JVBonline.com. The Company will file its Proxy Statement on or before April 7, 2020.

ITEM 11. EXECUTIVE COMPENSATION

Incorporated by reference herein is the information contained in the Proxy Statement under the captions "Director's Compensation" and "Compensation Committee Interlocks and Insider Participation".

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Incorporated by reference herein is the information contained in the Proxy Statement under the caption "Stock Ownership by Management and Beneficial Owners". Additionally, the following table contains information regarding equity compensation plans approved by shareholders, which include a stock option plan for the Company's employees and an employee stock purchase plan. The Company has no equity compensation plans that were not approved by shareholders.

Equity Compensation Plan Information

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights a	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column a)
Equity compensation plans approved by security holders	81,547	$ 17.78	170,055
Equity compensation plans not approved by security holders	—	—	
Total	81,547	$ 17.78	170,055

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

Incorporated by reference herein is the information contained in the Proxy Statement under the caption "Related Party Transactions" and "Corporate Governance and Board Matters".

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Incorporated by reference herein is information contained in the Proxy Statement under the caption "Independent Registered Public Accounting Firm".

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a)(1) The following consolidated financial statements of the Company are filed as part of this Form 10-K:

- (i) Reports of Independent Registered Public Accounting Firm
- (ii) Consolidated Statements of Financial Condition as of December 31, 2019 and December 31, 2018
- (iii) Consolidated Statements of Income for the fiscal years ended December 31, 2019 and December 31, 2018
- (iv) Consolidated Statements of Comprehensive Income for the fiscal years ended December 31, 2019 and December 31, 2018
- (v) Consolidated Statements of Stockholders' Equity for the fiscal years ended December 31, 2019 and December 31, 2018
- (vi) Consolidated Statements of Cash Flows for the fiscal years ended December 31, 2019 and December 31, 2018
- (vii) Notes to Consolidated Financial Statements

(a)(2) Financial Statements Schedules. All financial statement schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission are not required under the related instructions or are inapplicable and have therefore been omitted.

(a)(3) Exhibits.

3.1 Amended and Restated Articles of Incorporation (incorporated by reference to Exhibit 3(i) to the Company's Form 8-K Current Report filed with the SEC on November 12, 2015)

3.2 Amended and Restated Bylaws (incorporated by reference to Exhibit 3.4 to the Company's Current Report on Form 8-K filed with the SEC on February 27, 2019)

4.1 Description of Registrant's Securities (incorporated by reference to the Company's Form 8-A filed with the SEC on September 13, 2011)

10.1 Form of 1999 Directors Deferred Compensation Agreement (incorporated by reference to Exhibit 10.1 to the Company's Annual Report on Form 10-K filed with the SEC on March 13, 2009)*

10.2 Form of Amendments to the 1999 Directors Deferred Compensation Agreement (incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K filed with the SEC on March 15, 2011)*

10.3 Form of Director Supplemental Life Insurance/ Split Dollar Plan (incorporated by reference to Exhibit 10.1 to the Company's Annual Report on Form 10-K filed with the SEC on March 13, 2009)*

10.4 Employee Annual Incentive Plan, (filed herewith)*■

10.5 Change of Control Severance Agreement with JoAnn N. McMinn (incorporated by reference to Exhibit 10 to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 8, 2005).*

10.6	Salary Continuation Agreement with JoAnn N. McMinn (incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K filed with the SEC on March 14, 2008)*
10.7	Salary Continuation Agreement with Marcie A. Barber (incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K filed with the SEC on March 14, 2008)*
10.8	Change of Control Severance Agreement with Marcie A. Barber (incorporated by reference to Exhibit 10.19 to the Company's Current Report on Form 8-K filed with the SEC on May 27, 2008)*
10.9	Long Term Incentive Plan of Juniata Valley Financial Corp. (incorporated by reference to Exhibit 10.1 to the Company's 2016 proxy statement filed with the SEC on April 8, 2016)*
10.10	Agreement and Plan of Merger, dated December 29, 2017 by and between Juniata Valley Financial Corp., The Juniata Valley Bank and Liverpool Community Bank (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on January 5, 2018)
21.1	Subsidiaries of Juniata Valley Financial Corp.
23.1	Consent of Crowe LLP
23.2	Consent of BDO USA, LLP
31.1	Rule 13a-4(d) Certification of Marcie A. Barber
31.2	Rule 13a-4(d) Certification of JoAnn N. McMinn
32.1	Section 1350 Certification of Marcie A. Barber
32.2	Section 1350 Certification of JoAnn N. McMinn
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase

* Denotes a compensatory plan.

■ Denotes that portions of such Plan have been omitted pursuant to a request for confidential treatment and such confidential information has been filed separately with the Securities Exchange Commission.

(b) Exhibits. The exhibits required to be filed as part of this report are submitted as a separate section of this report.

(c) Financial Statements Schedules. None Required.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities and Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

JUNIATA VALLEY FINANCIAL CORP. (REGISTRANT)
Date: March 16, 2020

/s/ Marcie A. Barber
By: Marcie A. Barber
Director, President and Chief Executive Officer

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/ Timothy I. Havice Timothy I. Havice Chairman	March 16, 2020
/s/ Philip E. Gingerich, Jr. Philip E. Gingerich, Jr. Vice Chairman	March 16, 2020
/s/ Marcie A. Barber Marcie A. Barber Director and Chief Executive Officer (Principal Executive Officer)	March 16, 2020
/s/ Martin L. Dreibelbis Martin L. Dreibelbis Director	March 16, 2020
/s/ Gary E. Kelsey Gary E. Kelsey Director	March 16, 2020
/s/ Michael A. Buffington Michael A. Buffington Director	March 16, 2020
/s/ Richard M. Scanlon Richard M. Scanlon, DMD Director	March 16, 2020
/s/ Bradley J. Wagner Bradley J. Wagner Director	March 16, 2020
/s/ JoAnn N. McMinn JoAnn N. McMinn Chief Financial Officer (Principal Accounting and Financial Officer)	March 16, 2020

JUNIATA VALLEY FINANCIAL CORP.
CORPORATE OFFICERS

Timothy I. Havice . . . . Chairman
Philip E. Gingerich, Jr.. . . . . Vice Chairman
Marcie A. Barber . . . . President and Chief Executive Officer
JoAnn N. McMinn . . . . . . Executive Vice President, Secretary, Treasurer and Chief Financial Officer

JUNIATA VALLEY FINANCIAL CORP. AND THE JUNIATA VALLEY BANK
BOARD OF DIRECTORS

Marcie A. Barber
President and Chief Executive Officer

Michael A. Buffington
Founder and President of
Buffington Property Management, LLC
and One-Stop Communications

Martin L. Dreibelbis
Retired, Petroleum Consultant

Philip E. Gingerich, Jr., Vice Chairman
President, Central Insurers Group, Inc.

Timothy I. Havice, Chairman
Owner, T.I. Havice, Developer

Gary E. Kelsey
Retired, Potter County, PA
Register of Wills and Recorder of Deeds

Richard M. Scanlon, DMD
Retired, Dentist and Dental Consultant to
Central PA Institute of Science and Technology

Bradly J. Wagner
Co-owner, Hoober Feeds,
President, Hegins Feed and Supply, Inc. and
Chief Operating Office and Vice President
of Manufacturing for The Wenger Group

THE JUNIATA VALLEY BANK
BUSINESS DEVELOPMENT BOARD MEMBERS

Kim E. Bomberger
R. Franklin Campbell
Steven R. Ehrenzeller
Mark S. Elsesser
Gregory J. Gordon
Donald R. Hartzler
Robert D. Hower
Daniel F. Lane, III

William Larson
Dennis A. Long
Jeffrey C. Moyer
Craig M. Rupert
William J. Rupp, Jr.
Richard A. Smeltz
Georgiana Snyder-Leitzel
Corey P. Wray

DIRECTORY OF OFFICERS OF JVB

EXECUTIVE

Marcie A. Barber . . . . President, Chief Executive Officer
JoAnn N. McMinn. . . . .Executive Vice President, Chief Financial Officer
Danyelle M. Pannebaker . . . . Executive Assistant

COMPLIANCE

Brock J. Glassford . . . . Vice President, Compliance Officer
Camie L. Harr . . . . BSA Officer

FINANCE

Cortney E. Wilbert . . . . Vice President, Controller
Kristi J. Burdge . . . . .Assistant Vice President, Accounting Manager
Renee D. Williamson . . . . Financial Information Manager

HUMAN RESOURCES

Tina J. Smith . . . . . Senior Vice President, Director of Human Resources
Carol A. Noland . . . . Payroll Manager and Benefits Administrator

MARKETING

Suzanne E. Booher . . . . Vice President, Director of Marketing

BUSINESS LENDING

Jeremiah J. Trout. . . . .Senior Vice President, Lending Division Manager
Joseph W. Lashway. . . . . . . Vice President, Northern Tier Senior Lender
William T. Campbell, Jr. . . . . Vice President, Relationship Manager
Jeffrey A. Herr. . . . . Vice President, Relationship Manager
Thomas P. O'Connell . . . . Vice President, Relationship Manager
Kelly A. Sherman. . . . . Vice President, Relationship Manager
H. Fred Wallace. . . . . Vice President, Relationship Manager
Pamela K. Parson . . . . Vice President, Collections Manager
Christine L. Burlew . . . . Vice President, Collections Officer
Lora J. Rankin . . . . Northern Tier Collections Officer

CONSUMER LENDING

Betty D. Ryan . . . . Vice President, Mortgage and Consumer Lending Manager

CREDIT ADMINISTRATION AND LOAN OPERATIONS

Lisa M. Snyder . . . Senior Vice President, Credit Administration Manager
Matthew J. Waddell . . . . Vice President, Portfolio Manager
Cathleen L. Miller . . . . Loan Operations Supervisor

INFORMATION TECHNOLOGY

Curtis M. Crouse. . . . . Vice President, IT Manager
Beverly M. McClellan . . . . Data Analyst

OPERATIONS

Karl M. Barry. . . . . Senior Vice President, Operations Division Manager
Dawn L. Barnes. . . . Deposit Operations Manager and Security Officer
S. Marlene Hubler. . . . . . Computer Operations and Facilities Manager
Kelly L. Yetter. . . . . Business Solutions Officer

TRUST AND INVESTMENT SERVICES

Donald E. Shawley . . . . .Senior Vice President, Trust and Investment Services Division Manager
Paul M. Grego . . . . Vice President, Trust Investment Officer
Jonathan F. King . . . . .Financial Services Representative
Adam E. Truitt . . . . Vice President, Financial Services Officer
Cynthia L. Williams. Vice President, Trust Officer

BRANCH ADMINISTRATION

Christopher J. Fitting . . . . Vice President, Branch Administrator
Lee Ellen Foose . . . . . . Vice President/Branch Operations Administrator
Laurie B. Blauvelt . . Vice President, Northern Tier Branch Administrator
Brenda A. Brubaker . . . . .Vice President, Director of Customer Care and Training
Lynne S. Ruffner . . . Vice President, Northern Tier Retail Sales Manager

BLAIRS MILLS AND PORT ROYAL OFFICES

Barbara I. Seaman . . . . Vice President, Community Office Manager and Relationship Manager
Lori A. Yocum . . . . Assistant Office Manager, Blairs Mills Office

BURNHAM OFFICE

Leann M. Fisher . . . . Vice President, Community Office Manager
Holly M. Laub . . . . Assistant Office Manager

COUDERSPORT OFFICE

Kelly L. Bruno . . . . Community Office Manager and Northern Tier Electronic Banking Coordinator
Diane S. Dynda . . . . Assistant Office Manager

GARDENVIEW OFFICE

Larry B. Cottrill, Jr. . . . . Vice President, Community Office Manager and Relationship Manager
Kelly L. Mayes . . . . Assistant Office Manager

McALISTERVILLE AND RICHFIELD OFFICES

Leslie A. Miller. . . . . Vice President, Community Office Manager
Amber N. Portzline . . . . Assistant Office Manager, Richfield Office

MIFFLINTOWN AND MOUNTAIN VIEW OFFICES

Jennifer L. Pennepacker . . . Vice President, Community Office Manager

MILLERSTOWN AND LIVERPOOL OFFICES

Diana S. Orwan . . . . Community Office Manager
Lisa M. Freet . . . . Assistant Office Manager, Millerstown Office

MONUMENT SQUARE, WATER STREET, & WAL-MART OFFICES

Christine L. Searer. . . . . Vice President, Market Manager, Southwest Lewistown
Shana K. Mateer. . . . . Assistant Office Manager, Wal-Mart Office
Stacey K. McMurtrie. .Assistant Office Manager, Monument Square Office
Amy J. Pitts . . . . .Assistant Office Manager, Water Street Office

PORT ALLEGANY AND LILLIBRIDGE OFFICES

Denise R. Russell . . . . Community Office Manager

JUNIATA VALLEY FINANCIAL CORP.

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