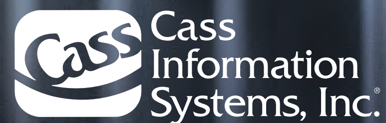
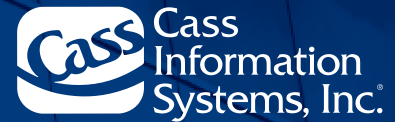
The Power To Deliver Solutions

Around the world, leading enterprises rely on Cass for our vertical expertise, processing power and global payment network to execute critical financial transactions while driving greater visibility, control and efficiency across business critical expenses.

2019 Annual Report and Form 10-K





2019 Annual Report

Cass Information Systems, Inc. (NASDAQ: CASS) **is a leading provider of integrated information and payment management solutions. Cass enables enterprises to achieve visibility, control and efficiency in their supply chains, communications networks, facilities and other operations.**

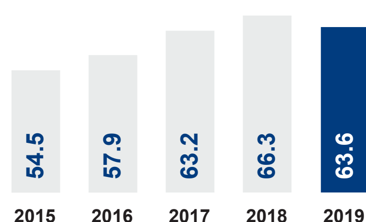
Disbursing over $60 billion annually on behalf of clients, and with total assets of $1.7 billion, Cass is uniquely supported by Cass Commercial Bank. Founded in 1906 and a wholly owned subsidiary, Cass Bank provides sophisticated financial exchange services to the parent organization and its clients. Cass is part of the Russell 2000®.

2019 Year in Review

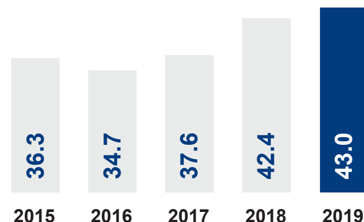
FOR THE YEAR ENDED DECEMBER 31,	2019	2018	% CHANGE
Total Net Revenue	$157,235,000	$148,266,000	6.05%
Net Income	$30,404,000	$30,268,000	0.45%
Basic Earnings per Common Share	$2.11	$2.06	2.43%
Diluted Earnings per Common Share	$2.07	$2.03	1.97%
Dividends Paid per Common Share	$1.05	$0.89	17.98%
Total Number of Transactions Processed	63,567,000	66,255,000	-4.06%
Total Dollar Volume of Invoices Processed and Paid	$42,973,242,000	$42,380,453,000	1.40%
Return on Average Total Shareholders' Equity	12.86%	13.55%	
Return on Average Assets	1.74%	1.85%	

AS OF DECEMBER 31,	2019	2018	% CHANGE
Total Assets	$1,764,243,000	$1,695,176,000	4.07%
Total Shareholders' Equity	$244,190,000	$229,848,000	6.24%
Book Value per Common Share	$16.82	$15.72	7.00%

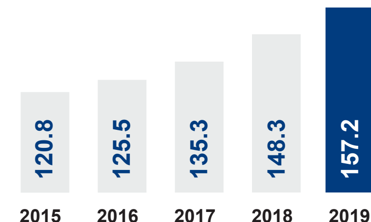
TOTAL TRANSACTIONS
in millions



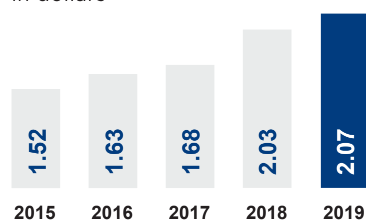
TOTAL INVOICE DOLLARS PAID
in billions of dollars



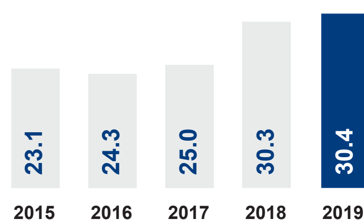
TOTAL NET REVENUES
in millions of dollars



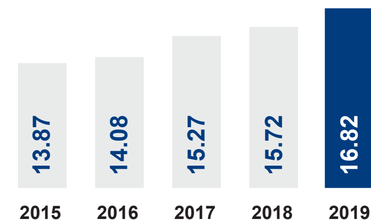
DILUTED EARNINGS PER COMMON SHARE
in dollars



NET INCOME
in millions of dollars

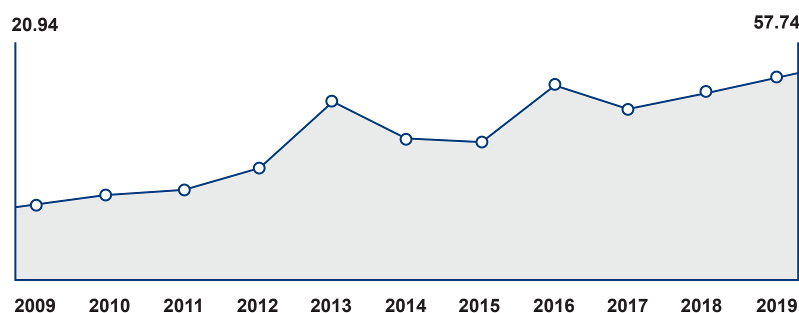


BOOK VALUE PER SHARE
in dollars



10-YEAR CLOSING SHARE STOCK PRICE PERFORMANCE
in dollars, as of 12/31

For a 10-year period starting in 2009, the Cass Information Systems, Inc. share price has nearly tripled in value, displaying an average annual growth rate of nearly 11% per year.



Dear Fellow Shareholders,

I am pleased to report that Cass delivered another year of solid financial performance.

A Letter from Cass Chairman, President and CEO, Eric Brunngraber

As we enter 2020, our 114th year in business, I am pleased to report that in 2019 Cass Information Systems, Inc. delivered another year of solid financial performance. Cass realized record revenue of $157.2 million in 2019, up 6% from 2018 and surpassing the $150 million milestone for the first time. Payment and processing fees also increased 6%, or $5.8 million, over the prior year. Driving the gains were a growing customer base and new fee-generating services. Net investment income, derived from returns on funding balances generated by our payment processing clients and from deposit balances at Cass Commercial Bank, was up 7% to $47.2 million.

Higher revenues and income helped us moderate headwinds that developed in the second half of the year. First, a production pull-back by our customers in the industrial sector caused transportation volume to contract. Second, our utility payment group experienced the loss of a high transaction volume client. Finally, recent actions by the Federal Reserve to lower interest rates have had a negative effect on interest income.

Total operating expenses in 2019 were $119.8 million, 7% higher than in 2018. Although some of this amount is attributable to the growth of our business, most of it represents our continuing strategic investment in the people, technology and infrastructure necessary to scale our information and payment processing activities. This includes the integration costs related to the recently acquired **Gyve on-line generosity platform**.

The Cass Portfolio of Solutions

TRANSPORTATION

Freight Audit and Payment

Cass helps companies understand, control, and optimize their transportation costs. Cass processes and pays invoices, delivers actionable business intelligence, and provides working capital programs for both clients and carriers.

ENERGY

Utility Bill Management

Cass processes and pays customers' invoices for electricity, gas and water, plus more than 50 other facility-related expenses. Cass excels at providing accurate data, lightning fast bill turnaround and flexible funding and general ledger integrations. Customers get unique visibility of their spend with the ExpenseSmart® data warehouse portal.

TELECOM

Telecom Expense Management

Cass helps global enterprises gain control of their fixed and mobile telecom assets, improving how they source, procure, manage and pay for communications and technology investments, delivering cost reductions, operational efficiency and global transparency. Other offerings include cloud expense management and "bring your own device" direct stipend reimbursement.

Cass realized record revenue of $157.2 million in 2019, up 6% from 2018.

For the year, the company earned $2.07 per diluted share, an increase of 2% over 2018. Net income was $30.4 million compared to $30.3 million in 2018.

Cass continued to generate strong profit metrics, posting a 1.7% return on average assets and a 12.9% return on average equity. These returns are noteworthy given the low interest rate environment and our strong liquidity and capital positions. Our year-end Tier 1 capital-to-assets ratio was 13.2%, a figure that far surpasses that of our peers and greatly exceeds all regulatory requirements.

A strong financial position, combined with the considerable cash flow generated by our operations, enables Cass to invest in strategic opportunities as they emerge and to reward shareholders. In 2019, Cass delivered more than $23 million in dividend payments and share repurchases to shareholders.

Business Group Summaries

Transportation Information Services

Despite economic uncertainty, Cass achieved respectable bill volumes and paid dollars in 2019 compared to the record levels of 2018. Volume declines in our base business due to lower manufacturing output and international trade tensions were largely offset by new accounts. We were pleased by the revenue gains achieved on the investments we have made for working capital programs for both customers and their carrier partners.

The application of improved **Optical Character Recognition** technology to our paper invoice processing system marked a significant step forward. Cass also formed a partnership with **The Global Supply Chain Institute** at the **University of Tennessee-Knoxville Haslam School of Business** and **Stifel Financial Corp.** to collaborate on the publication of our widely referenced transportation indexes. To sustain leadership in the freight, audit and payment space, Cass will continue to invest in its internal technology stack and in advanced levels of automation within its internal processing systems.

Telecom Expense Management

In 2019, Telecom Expense Management emerged as a recognized leader in its space, adding more than a dozen new clients, including several more Fortune 200 logos. Global client acquisition increasingly relies on the ability to satisfy complex data privacy requirements and Cass excels with systems and backend processes that satisfy not only GDPR, but provides the infrastructure to respond to changing global law. As a result, Cass set all-time highs for dollars processed and paid, while managing telecom and mobility spend with more than 1,800 vendors on six continents in 42 currencies.

As the market constantly undergoes vendor consolidation due to private equity acquisitions, Cass has established itself with enterprise customers and industry analysts (including **Gartner**), as a financially strong and globally capable partner with a single unified platform. We anticipate earnings growth as earlier investments in fixed costs to support global expansion come to maturity, new customer acquisition rates remain robust and our industry-leading customer retention rates are maintained.

ENVIRONMENTAL

Waste Expense Management

Cass drives durable expense reduction and improves sustainability practices for clients by leveraging its waste expertise, powerful WasteVision® technology platform and aggregate buying power.

B2B PAYMENTS

Integrated Financial Solutions

Companies rely on Cass as their behind-the-scenes payment management provider. Cass is able to move funds securely, consolidate payments and reduce cost and complexity.

BANKING

Commercial Banking

Cass Commercial Bank focuses on four primary target segments: St. Louis-area businesses, faith-based and not-for-profit organizations, and restaurant franchise owners. A Federal Reserve member bank, Cass provides safety, security and control in moving funds through the Cass electronic payments network.

Waste Expense Management
2019 proved to be a transformational year for the Waste Expense Management team as it sought to add Fortune 1000 companies to its core clientele in multi-family residential and healthcare. Central to that effort was the phased release of **WasteVision2**, a complete overhaul of internal business systems and external customer-facing portals. WasteVision2 is proving to be a key differentiator as we market to new targets. Additionally, Cass strengthened its high-level relationships with most major waste service vendors—a boon for clients going forward.

Utility Expense Management
For the second consecutive year, the Utility Expense group added a record number of new accounts to its portfolio—including several major takeaways from competitors. Spend under management jumped nearly $1 billion as Cass processed an average of 1.2 million bills per month. To support the payment of 30,000 unique vendors every year, Cass continues to augment its human data entry processes with increasing use of **robotic processing automation** and **machine learning**. Finally, the fourth quarter departure of a customer during a major merger posed a temporary setback that is being ameliorated by an active prospect pipeline.

Integrated Financial Solutions
The Integrated Financial Solutions team put together another solid year, adding several significant customers, boosting headcount in support of customer growth and continuing to efficiently increase dollars disbursed. A major initiative involved augmenting our system to handle virtual credit card transactions, leveraging the new status of Cass Commercial Bank as a direct credit card issuing institution. We also plan to significantly increase our application programming interface (API) library. These investments will help lift future fee revenue.

Information Technology
Keenly aware that the rate of innovation and security demands on technology are greater today than ever before, Cass inaugurated **Cass TechVision 2020** to meet these challenges head-on by strategically leveraging its technology investments.

Over the past 20 months, Cass has successfully centralized all information technology staff, budget and service management. This centralization has freed business groups from the burden of managing technology, permitting them to concentrate on achieving profit goals. Additionally, the delivery of technology services has improved as measured by speed, cost and security.

Cass Commercial Bank
As widely reported, Cass Commercial Bank retained its standing among the 10 top-performing financial institutions in the U.S. in 2019. Average loan balances grew by 6.9% with average deposit balances up 7.4%. The bank ended the year with zero non-performing loans.

In the first quarter, Cass Bank strengthened and rebranded its deposit account offerings by bundling packages of services to encourage use and improve efficiency and security. Overall, fee-based services revenue increased by 4%.

During the second quarter, Cass launched a new division focused on equipment leasing finance—a $1 trillion annual U.S. market in which the bank did not previously participate. The goal is to cultivate relationships with large public companies to build an equipment loan portfolio that replaces, at a higher yield, booked municipal securities as they mature.

In the third quarter, Cass acquired the **Gyve online generosity platform**. The U.S. market for Gyve is enormous—an estimated 340,000 churches and 1.12 million non-profit organizations with estimated annual gross revenue potential of $3 billion. The bank is marketing the service to its existing faith-based clients as well as new prospects. In December, Gyve processed $3.5 million in gifts.

Also in the third quarter, the bank became a principal member of the **VISA credit card network**, a move that promises to improve service quality, update client-facing technology and increase revenue.

Outlook and Acknowledgment

We look forward to 2020 with enthusiasm and optimism. While mindful of current profitability, we will continue to make the expenditures necessary to fund our investments for the future. We will embrace the challenges posed by a volatile business climate and declining interest rates and achieve an even stronger competitive position. And as we have done for the past 114 years, we will maintain our long-term perspective and relentlessly focus on our customers and their ever-changing needs.

On behalf of the Board of Directors and our leadership team, thank you for your continuing support and belief in the future success of Cass. I remain humbled and filled with gratitude for the blessings God has bestowed upon us and for His inspiration and guidance.

Eric H. Brunngraber
Chairman, President and
Chief Executive Officer
Cass Information Systems, Inc.

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

FORM 10-K/A
Amendment No. 1

(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

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

Commission file number 000-20827

CASS INFORMATION SYSTEMS, INC.
(Exact name of registrant as specified in its charter)

Missouri	43-1265338
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

12444 Powerscourt Drive, Suite 550, St. Louis, Missouri 63131		(314) 506-5500
(Address of principal executive offices)	(Zip Code)	(Telephone Number, incl. area code)

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value $0.50 per share	CASS	The Nasdaq Global Select Market

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

Title of each Class
None

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

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

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

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

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

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

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

The aggregate market value of the common stock held by non-affiliates of the Registrant was approximately $702,445,000 based on the closing price of the common stock of $48.48 on June 30, 2019, as reported by The Nasdaq Global Select Market. As of February 19, 2020, the Registrant had 14,552,402 shares outstanding of common stock.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information required for Part III of this report is incorporated by reference to the Registrant's Proxy Statement for the 2020 Annual Meeting of Shareholders.

EXPLANATORY NOTE

Cass Information Systems, Inc. (the "Company"), filed its Annual Report on Form 10-K for the fiscal year ended December 31, 2019 (the "Original Filing") with the United States Securities and Exchange Commission (the "SEC") on February 28, 2020. Due to a filing error, certain revisions to the Original Filing were not reflected in the as-filed version of the Original Filing. The Company is filing this Amendment No. 1 to the Original Filing ("Amendment No. 1") solely to reflect such revisions, which include, among other corrections, the following: (i) language variations in the description of certain of the factors that affected the Company's fiscal 2019 results of operations included in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations"; (ii) a correction of an inadvertent error to the amount of unappropriated retained earnings available to the Company's banking subsidiary for the declaration of dividends disclosed in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 2 to the consolidated financial statements; and (iii) corrections to inadvertent errors in footing the total net cash provided by operating activities for the year ended December 31, 2019 as reflected in the Company's consolidated statements of cash flows.

In addition, the exhibit list included in Item 15 of Part IV has been amended to contain a currently-dated consent of KPMG LLP and, pursuant to the rules of the SEC, currently-dated certifications from the Company's Principal Executive Officer and Principal Financial Officer, as required by Sections 302 and 906 of the Sarbanes-Oxley Act of 2002. Such consent and the certifications of the Company's Principal Executive Officer and Principal Financial Officer are attached as exhibits to this Amendment No. 1.

Except as described above, this Amendment No. 1 speaks as of the original filing date of the Original Filing and does not amend or update any other information contained in the Original Filing to reflect events that may have occurred subsequent to the original filing date. The Company has included a complete copy of the Original Filing, as amended per above, in this filing.

CASS INFORMATION SYSTEMS, INC.
FORM 10-K ANNUAL REPORT
TABLE OF CONTENTS

PART I.

Item 1.	BUSINESS	1
Item 1A.	RISK FACTORS	8
Item 1B.	UNRESOLVED STAFF COMMENTS	13
Item 2.	PROPERTIES	13
Item 3.	LEGAL PROCEEDINGS	14
Item 4.	MINE SAFETY DISCLOSURES	14

PART II.

Item 5.	MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES	15
Item 6.	SELECTED FINANCIAL DATA	16
Item 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	16
Item 7A.	QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	30
Item 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA	32
Item 9.	CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE	63
Item 9A.	CONTROLS AND PROCEDURES	63
Item 9B.	OTHER INFORMATION	65

PART III.

Item 10.	DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE	66
Item 11.	EXECUTIVE COMPENSATION	66
Item 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS	66
Item 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE	67
Item 14.	PRINCIPAL ACCOUNTANT FEES AND SERVICES	67

PART IV.

Item 15.	EXHIBITS AND FINANCIAL STATEMENT SCHEDULES	68
Item 16.	FORM 10-K SUMMARY	69
	SIGNATURES	70

Forward-looking Statements - Factors That May Affect Future Results

This report may contain or incorporate by reference forward-looking statements made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Although we believe that, in making any such statements, our expectations are based on reasonable assumptions, forward-looking statements are not guarantees of future performance and involve risks, uncertainties, and other factors beyond our control, which may cause future performance to be materially different from expected performance summarized in the forward-looking statements. These risks, uncertainties and other factors are discussed in the section Part I, Item 1A, "Risk Factors." We undertake no obligation to publicly update or revise any forward-looking statements to reflect changed assumptions, the occurrence of anticipated or unanticipated events, or changes to future results over time.

PART I.

ITEM 1. BUSINESS

Description of Business

Cass Information Systems, Inc. ("Cass" or the "Company") is a leading provider of payment and information processing services to large manufacturing, distribution and retail enterprises across the United States. The Company provides transportation invoice rating, payment processing, auditing, accounting and transportation information to many of the nation's largest companies. It is also a processor and payer of energy invoices, including electricity, gas, waste, and other facility related expenses. Further, Cass competes in the telecommunications expense management market which includes bill processing, audit and payment services for telephone, data line, wireless and communication equipment expense. Cass also provides both a B2B payment platform for clients that require an agile fintech partner and on-line generosity platform. The Company, through its wholly owned bank subsidiary, Cass Commercial Bank (the "Bank"), also provides commercial banking services. The Bank's primary focus is to support the Company's payment operations and provide banking services to its target markets, which include privately-owned businesses and faith-based ministries. Services include commercial and commercial real estate loans, checking, savings and time deposit accounts, and other cash management services.

Company Strategy and Core Competencies

Cass is an information services company with a primary focus on processing payables and payables-related transactions for large corporations located in the United States. Cass possesses four core competencies that encompass most of its processing services.

Data acquisition – This refers to the gathering of data elements from diverse, heterogeneous sources and the building of complete databases for our customers. Data is the raw material of the information economy. Cass gathers vital data from complex and diverse input documents, electronic media, proprietary databases and data feeds, including data acquired from vendor invoices as well as customer procurement and sales systems. Through its numerous methods of obtaining streams and pieces of raw data, Cass is able to assemble vital data into centralized data management systems and warehouses, thus producing an engine to create the power of information for managing critical corporate functions and processing systems.

Data management – Once data is assembled, Cass is able to utilize the power from derived information to produce significant savings and benefits for its clients. This information is integrated into customers' unique financial and accounting systems, eliminating the need for internal accounting processing and providing internal and external support for these critical systems. Information is also used to produce management and exception reporting for operational control, feedback, planning assistance and performance measurement.

Business Intelligence – Receiving information in the right place at the right time and in the required format is paramount for business survival. Cass' information delivery solutions provide reports, digital images, data files and retrieval capabilities through the internet or directly into customer internal systems. Cass' proprietary internet management delivery system is the foundation for driving these critical functions. Transaction, operational, control, status and processing exception information are all delivered through this system creating an efficient, accessible and highly reliable asset for Cass customers.

Financial exchange – Since Cass is unique among its competition in that it owns a commercial bank, it is also able to manage the movement of funds from its customers to their suppliers. This is a distinguishing factor, which clearly requires the processing capability, operating systems and financial integrity of a banking organization. Cass provides immediate, accurate, controlled and protected funds management and transfer system capabilities for all of its customers. Old and costly check processing and delivery mechanisms are replaced with more efficient electronic cash management and funds transfer systems.

Cass' core competencies allow it to perform the highest volumes of transaction processing in an integrated, efficient and systematic approach. Not only is Cass able to process the transaction, it is also able to collect the data defining the transaction and effect the financial payment governing its terms.

These core competencies, enhanced through shared business processes, drive Cass' strategic business units. Building upon these foundations, Cass continues to explore new business opportunities that leverage these competencies and processes.

Marketing, Customers and Competition

The Company, through its Transportation Information Services business unit, is one of the largest firms in the transportation bill processing and payment industry in the United States based on the total dollars of transportation bills paid and items processed. Competition consists of a few primary competitors and numerous small transportation bill audit firms located throughout the United States. While offering transportation payment services, few of these audit firms compete on a national basis. These competitors compete mainly on price, functionality and service levels. The Company, through its Expense Management business unit, also competes with other companies located throughout the United States that pay energy and waste

bills and provide management reporting. Available data indicates that the Company is one of the largest providers of energy information processing and payment services. Cass is unique among these competitors in that it is not exclusively affiliated with any one energy service provider ("ESP"). Various ESPs market the Company's services, adding value with their unique auditing, consulting and technological capabilities. Many of Cass' services are customized for the ESPs, providing a full-featured solution without any development costs to the ESP. The Company, through its Telecom Information Services business unit, is a leader in the growing telecom expense management market and competes with other companies located throughout the United States in this market. The Company, through its Waste Expense Management business competes against small expense management companies along with large national account programs of major haulers. The Company, with its recently completed acquisition of Gateway Giving, LLC, formed a new division known as Gyve Generosity Services ("Gyve"). Gyve uses an on-line platform to provide generosity services for faith-based and non-profit organizations, which is a complementary service offering to the Bank's faith-based customers. Also, the Company through its Integrated Payments business competes with providers of corporate payment solutions.

The Bank is organized as a Missouri trust company with banking powers and was founded in 1906. The Company was originally classified as a bank holding corporation due to its ownership of a federally-insured commercial bank and was originally organized in 1982 as Cass Commercial Corporation under the laws of Missouri. Approval by the Board of Governors of the Federal Reserve System was received in February 1983. The Company changed its name to Cass Information Systems, Inc. in January 2001. In December 2011, the Federal Reserve Bank ("FRB") of St. Louis approved the election of Cass Information Systems, Inc. to become a financial holding company. As a financial holding company, Cass may engage in activities that are financial in nature or incidental to a financial activity. The Bank encounters competition from numerous banks and financial institutions located throughout the St. Louis, Missouri metropolitan area and other areas in which the Bank competes. The Bank's principal competitors, however, are large bank holding companies that are able to offer a wide range of banking and related services through extensive branch networks. The Bank targets its services to privately held businesses located in the St. Louis, Missouri area and faith-based ministries located in St. Louis, Missouri, Orange County, California, Colorado Springs, Colorado, and other selected cities located throughout the United States.

The Company holds several trademarks for the payment and rating services it provides. These include: FreightPay®, Transdata®, Ratemaker®, Best Rate®, Rate Exchange®, CassPort®, Cass Freight Index®, Cass Truckload Linehaul Index®, Cass Intermodal Price Index® Expense$mart®, ExpenseSmart®, WasteVision™ and Direct2Carrier Payments™. The Company holds patents for methods and systems for managing employee-liable expenses and methods and systems for communicating expense management information. The Company and its subsidiaries are not dependent on any one customer for a significant portion of their businesses. The Company and its subsidiaries have a varied client base with no individual client exceeding 10% of total revenue.

Employees

The Company and its subsidiaries had 875 full-time and 247 part-time employees as of February 19, 2020. Of these employees, the Bank had 54 full-time and one part-time employees.

Supervision and Regulation

The Company and its bank subsidiary are extensively regulated under federal and state law. These laws and regulations are intended to primarily protect depositors, not shareholders. The Bank is subject to regulation and supervision by the Missouri Division of Finance, the FRB and the Federal Deposit Insurance Corporation (the "FDIC"). The Company is a financial holding company within the meaning of the Bank Holding Company Act of 1956, as amended (the "BHC Act"), and as such, it is subject to regulation, supervision and examination by the FRB. Significant elements of the laws and regulations applicable to the Company and the Bank are described below. The description is qualified in its entirety by reference to the full text of the statutes, regulations and policies that are described. Also, such statutes, regulations and policies are continually under review by Congress and state legislatures and federal and state regulatory agencies. A change in statutes, regulations or regulatory policies applicable to the Company and its subsidiaries could have a material effect on the business, financial condition and results of operations of the Company.

Bank Holding Company Activities – In general, the BHC Act limits the business of bank holding companies to banking, managing or controlling banks and other related activities. In addition, bank holding companies that qualify and elect to be financial holding companies, such as the Company, may engage in any activity, or acquire and retain the shares of a company engaged in any activity, that is either (i) financial in nature or incidental to such financial activity or (ii) complementary to a financial activity and does not pose a substantial risk to the safety and soundness of depository institutions or the financial system generally. Such permitted activities include securities underwriting and dealing, insurance underwriting and making merchant banking investments.

To maintain financial holding company status, a financial holding company and all of its depository institution subsidiaries must be "well capitalized" and "well managed." A depository institution subsidiary is considered to be "well capitalized" if it satisfies the requirements for this status discussed in the section "Prompt Corrective Action" below. A depository institution

subsidiary is considered “well managed” if it received a composite rating and management rating of at least “satisfactory” in its most recent examination. A financial holding company’s status will also depend upon it maintaining its status as “well capitalized” and “well managed’ under applicable FRB regulations. If a financial holding company ceases to meet these capital and management requirements, the FRB may impose limitations or conditions on the conduct of its activities during the non-compliance period, and the company may not commence any of the broader financial activities permissible for financial holding companies or acquire a company engaged in such financial activities without prior approval of the FRB. If the company does not return to compliance within 180 days, the FRB may require divestiture of the holding company’s depository institutions.

In order for a financial holding company to commence any new activity permitted by the BHC Act or to acquire a company engaged in any new activity permitted by the BHC Act, each insured depository institution subsidiary of the financial holding company must have received a rating of at least “satisfactory” in its most recent examination under the Community Reinvestment Act. See “Community Reinvestment Act” below.

The FRB has the power to order any bank holding company or its subsidiaries to terminate any activity or to terminate its ownership or control of any subsidiary when the FRB has reasonable grounds to believe that continuation of such activity or such ownership or control constitutes a serious risk to the financial soundness, safety or stability of any bank subsidiary of the bank holding company.

The BHC Act, the Bank Merger Act, and other federal and state statutes regulate acquisitions of banks and banking companies. The BHC Act requires the prior approval of the FRB for the direct or indirect acquisition by the Company of more than 5% of the voting shares or substantially all of the assets of a bank or bank holding company. Under the Bank Merger Act, the prior approval of the FRB or other appropriate bank regulatory authority is required for the Bank to merge with another bank or purchase the assets or assume the deposits of another bank. In reviewing acquisition applications, the bank regulatory authorities will consider, among other things, the competitive effect and public benefits of the transactions, the capital position of the combined organization, the risks to the stability of the U.S. banking or financial system, the applicant’s performance record under the Community Reinvestment Act and its compliance with fair housing laws.

The Dodd-Frank Act – The Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”), enacted in July 2010, significantly restructured the financial regulatory environment in the United States, affecting all bank holding companies and banks, including the Company and the Bank, some of which are described in more detail below. The impact of the Dodd-Frank Act on the Company and the Bank has been substantial.

Dividends and Stock Repurchases – Both the Company and the Bank are subject to various regulations that restrict their ability to pay dividends and the amount of dividends that they may pay. Under the Federal Deposit Insurance Corporation Improvement Act of 1991 (“FDICIA”), a depository institution, such as the Bank, may not pay dividends if payment would cause it to become undercapitalized or if it is already undercapitalized. The payment of dividends by the Company and the Bank may also be affected or limited by other factors, such as the requirement to maintain adequate capital and, under certain circumstances, the ability of federal regulators to prohibit dividend payments as an unsound or unsafe practice.

In July 2019, the federal bank regulators adopted final rules (the “Capital Simplifications Rules”) applicable to banks, like Cass, that are not subject to the advanced approaches capital framework that applies to large, internationally active banking organizations with at least $250 billion in total consolidated assets or at least $10 billion in total on-balance sheet foreign exposure. Among other things, the Capital Simplifications Rules eliminated the standalone Federal Reserve prior approval requirement in the Basel III Capital Rules for any repurchase of common stock. In certain circumstances, the Company’s repurchases of its common stock may be subject to a prior approval or notice requirement under other regulations, policies or supervisory expectations of the Federal Reserve Board.

Capital Requirements – As a bank holding company, the Company and the Bank are subject to capital requirements pursuant to the FRB’s capital guidelines which include (i) risk-based capital guidelines, which are designed to make capital requirements more sensitive to various risk profiles and account for off-balance sheet exposure; (ii) guidelines that consider market risk, which is the risk of loss due to change in value of assets and liabilities due to changes in interest rates; and (iii) guidelines that use a leverage ratio which places a constraint on the maximum degree of risk to which a financial holding company may leverage its equity capital base.

Effective July 2, 2013, the FRB approved final rules known as the “Basel III Capital Rules” that substantially revised the risk-based capital and leverage capital requirements applicable to bank holding companies and depository institutions, including the Company and the Bank. The Basel III Capital Rules implement aspects of the Basel III capital framework agreed upon by the Basel Committee and incorporate changes required by the Dodd-Frank Act.

The Basel III Capital Rules implemented common equity Tier 1 capital as a new capital measure, which is generally defined as common stockholders’ equity and retained earnings. Tier 1 capital is generally defined as common equity Tier 1 and Additional Tier 1 capital. Additional Tier 1 capital generally includes certain noncumulative perpetual preferred stock and related surplus and minority interests in equity accounts of consolidated subsidiaries. Total capital includes Tier 1 capital

(common equity Tier 1 capital plus Additional Tier 1 capital) and Tier 2 capital. Tier 2 capital is comprised of capital instruments and related surplus meeting specified requirements. Also included in Tier 2 capital is the allowance for loan losses limited to a maximum of 1.25% of risk-weighted assets and, for non-advanced approaches institutions like Cass that have exercised a one-time opt-out election regarding the treatment of Accumulated Other Comprehensive Income ("AOCI"), up to 45% of net unrealized gains on available-for-sale equity securities with readily determinable fair market values.

The calculation of all types of regulatory capital is subject to deductions and adjustments specified in the regulations. For instance, the Basel III Capital Rules and the Capital Simplification Rules provide for a number of deductions from and adjustments to common equity Tier 1 capital. These include, for example, the requirement that certain deferred tax assets and significant investments in non-consolidated financial entities be deducted from Tier 1 capital to the extent that any one such category exceeds 25% of common equity Tier 1 capital. Prior to the adoption of the Capital Simplification Rules, amounts were deducted from common equity Tier 1 capital to the extent that any one such category exceeded 10% of common equity Tier 1 capital or all such items, in the aggregate, exceeded 15% of common equity Tier 1 capital. The Capital Simplification Rules took effect for the Company and the Bank as of January 1, 2020.

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

Fully phased-in as of January 1, 2019, the Basel III Capital Rules require banking organizations, like Cass, to maintain:

- a minimum ratio of common equity Tier 1 capital to risk-weighted assets of at least 4.5%, plus a 2.5% capital conservation buffer;
- a minimum ratio of Tier 1 capital to risk-weighted assets of at least 6.0%, plus a 2.5% capital conservation buffer;
- a minimum ratio of total capital (that is, Tier 1 plus Tier 2 capital) to risk-weighted assets of at least 8.0%, plus the 2.5% capital conservation buffer; and
- a minimum leverage ratio of 4.0%, calculated as the ratio of Tier 1 capital to adjusted average consolidated assets.

The capital conservation buffer is designed to absorb losses during periods of economic stress. Banking institutions with a ratio of common equity Tier 1 capital to risk-weighted assets above the minimum but below the conservation buffer will face limitations on the payment of dividends, common stock repurchases and discretionary cash payments to executive officers based on the amount of the shortfall.

The FRB has authority to establish individual minimum capital requirements in appropriate cases upon a determination that an institution's capital level is or may become inadequate in light of the particular risks or circumstances. As of December 31, 2019, the Company and the Bank met all capital adequacy requirements under the Basel III Capital Rules.

In December 2017, the Basel Committee published standards that it described as the finalization of the Basel III post-crisis regulatory reforms (commonly referred to as "Basel IV"). Among other things, these standards revise the Basel Committee's standardized approach for credit risk (including by recalibrating risk weights and introducing new capital requirements for certain "unconditionally cancellable commitments," such as unused credit card lines of credit) and provides a new standardized approach for operational risk capital. Under the Basel framework, these standards will generally be effective on January 1, 2022, with an aggregate output floor phasing in through January 1, 2027. Under the current U.S. capital rules, operational risk capital requirements and a capital floor apply only to advanced approaches institutions, and not to the Company or the Bank. The impact of Basel IV on the Company will depend on the manner in which it is implemented by the federal bank regulators.

Source of Strength Doctrine – FRB and other regulations require bank holding companies to act as a source of financial and managerial strength to their subsidiary banks. Under this requirement, the Company is expected to commit resources to support the Bank. Any capital loans by a bank holding company to any of its subsidiary banks are subordinate in right of payment to depositors and to certain other indebtedness of such subsidiary banks. In the event of a bank holding company's bankruptcy, any commitment by the bank holding company to a federal bank regulatory agency to maintain the capital of a subsidiary bank will be assumed by the bankruptcy trustee and entitled to priority of payment.

Deposit Insurance – Substantially all of the deposits of the Bank are insured up to applicable limits by the Deposit Insurance Fund ("DIF") of the FDIC, and the Bank is subject to deposit insurance assessments to maintain the DIF. Deposit insurance assessments are based on average consolidated total assets minus average tangible equity. Under the FDIC's risk-based assessment system, insured institutions with less than $10 billion in assets, such as the Bank, are assigned to one of four risk categories based on supervisory evaluations, regulatory capital level, and certain other factors, with less risky institutions

paying lower assessments. An institution's assessment rate depends upon the category to which it is assigned and certain other factors.

In October 2010, the FDIC adopted a new DIF restoration plan to ensure that the DIF reserve ratio reaches 1.35% by September 30, 2020, as required by the Dodd-Frank Act. At least semi-annually, the FDIC will update its loss and income projections for the fund and, if needed, will increase or decrease assessment rates, following notice-and-comment rulemaking if required. FDIC insurance expense totaled approximately $108,700, $222,200 and $220,100 for the years ended December 31, 2019, 2018 and 2017, respectively.

The FDIC may terminate deposit insurance upon a finding that the institution has engaged in unsafe and unsound practices, is in an unsafe or unsound condition to continue operations, or has violated any applicable law, regulation, rule, order or condition imposed by the FDIC.

Prompt Corrective Action – The Basel III Capital Rules incorporate new requirements into the prompt correction action framework, described above. The Federal Deposit Insurance Act ("FDIA") requires that federal banking agencies take "prompt corrective action" against depository institutions that do not meet minimum capital requirements and includes the following five capital tiers: "well-capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized" and "critically undercapitalized." A depository institution's capital tier will depend upon how its capital levels compare with various relevant capital measures and certain other factors, as established by regulation.

A depository institution is deemed to be (i) "well-capitalized" if the institution has a total risk-based capital ratio of 10% or greater, a Tier 1 risk-based capital ratio of 8% or greater, a leverage ratio of 5% or greater, a common equity Tier 1 ratio of 6.5% or greater and is not subject to any regulatory order agreement or written directive to meet and maintain a specific capital level for any capital measure; (ii) "adequately capitalized" if the institution has a total risk-based capital ratio of 8% or greater, a Tier 1 risk-based capital ratio of 6% or greater, a leverage ratio of 4% or greater, a common equity Tier 1 ratio of 4.5% or greater and does not meet the definition of "well capitalized"; (iii) "undercapitalized" if the institution has a total risk-based capital ratio that is less than 8%, a Tier 1 risk-based capital ratio of less than 6%, a leverage ratio of less than 4% or a common equity Tier 1 ratio of less than 4.5%; (iv) "significantly undercapitalized" if the institution has a total risk-based capital ratio of less than 6%, a Tier 1 risk-based capital ratio of less than 4%, a leverage ratio of less than 3% or a common equity Tier 1 ratio of less than 3%; and (v) "critically undercapitalized" if the institution has a ratio of tangible equity (as defined in the regulations) to total assets that is equal to or less than 2%. An institution may be deemed to be in a capital category that is lower than indicated by its capital ratios if it is determined to be in an unsafe or unsound condition or if it receives an unsatisfactory examination rating with respect to certain matters. A bank's capital category is determined solely for the purpose of applying prompt corrective action regulations, and the capital category may not constitute an accurate representation of the bank's overall financial condition or prospects for other purposes.

Subject to a narrow exception, a receiver or conservator is required to be appointed for an institution that is "critically undercapitalized" within specified time frames. The regulations also provide that a capital restoration plan must be filed with the FRB within 45 days of the date an institution is deemed to have received notice that it is "undercapitalized," "significantly undercapitalized" or "critically undercapitalized." Compliance with the plan must be guaranteed by any parent holding company up to the lesser of 5% of the institution's total assets when it was deemed to be undercapitalized or the amount necessary to achieve compliance with applicable capital requirements. In addition, numerous mandatory supervisory actions become immediately applicable to an undercapitalized institution including, but not limited to, increased monitoring by regulators and restrictions on growth, capital distributions and expansion. The FRB could also take any one of a number of discretionary supervisory actions, including the issuance of a capital directive and the replacement of senior executive officers and directors. Significantly and critically undercapitalized institutions are subject to additional mandatory and discretionary measures.

As of December 31, 2019, the most recent notification from the regulatory agencies categorized the Company and the Bank as well-capitalized. For further information regarding the capital ratios and leverage ratio of the Company and the Bank, see Item 8, Note 2 of this report.

Safety and Soundness Regulations – In accordance with the FDIA, the federal banking agencies adopted guidelines establishing general standards relating to internal controls, information systems, internal audit systems, loan documentation, credit underwriting, interest rate risk exposure, asset growth, asset quality, earnings, compensation, fees and benefits. In general, the guidelines require that institutions maintain appropriate systems and practices to identify and manage the risks and exposures specified in the guidelines. The guidelines prohibit excessive compensation as an unsafe and unsound practice and describe compensation as excessive when the amounts paid are unreasonable or disproportionate to the services performed by an executive officer, employee, director or principal shareholder. In addition, regulations adopted by the federal banking agencies authorize the agencies to require that an institution that has been given notice that it is not satisfying any of such safety and soundness standards to submit a compliance plan. If the institution fails to submit an acceptable compliance plan or fails in any material respect to implement an accepted compliance plan, the agency must issue an order directing corrective actions and may issue an order directing other actions of the types to which an undercapitalized institution is subject under the "prompt

corrective action" provisions of FDIA. If the institution fails to comply with such an order, the agency may seek to enforce such order in judicial proceedings and to impose civil money penalties.

Loans-to-One-Borrower – The Bank generally may not make loans or extend credit to a single or related group of borrowers in excess of 15% of unimpaired capital and surplus. An additional amount may be loaned, up to 10% of unimpaired capital and surplus, if the loan is secured by readily marketable collateral, which generally does not include real estate. As of December 31, 2019, the Bank was in compliance with the loans-to-one-borrower limitations.

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

Community Reinvestment Act – The Community Reinvestment Act of 1977 ("CRA") requires depository institutions to assist in meeting the credit needs of their market areas consistent with safe and sound banking practice. Under the CRA, each depository institution is required to help meet the credit needs of its market areas by, among other things, providing credit to low- and moderate-income individuals and communities. Depository institutions are periodically examined for compliance with the CRA and are assigned ratings that must be publicly disclosed. In order for a financial holding company to commence any new activity permitted by the BHC Act, or to acquire any company engaged in any new activity permitted by the BHC Act, each insured depository institution subsidiary of the financial holding company must have received a rating of at least "satisfactory" in its most recent examination under the CRA. The Bank received a rating of "satisfactory" in its most recent CRA exam.

In December 2019, the FDIC and the Office of the Comptroller of the Currency jointly proposed rules that would significantly change existing CRA regulations. The proposed rules are intended to increase bank activity in low- and moderate-income communities where there is significant need for credit, more responsible lending, greater access to banking services, and improvements to critical infrastructure. The proposals focus on four improvement areas: (i) clarifying what activities qualify for CRA credit; (ii) updating assessment areas where activities count for CRA credit; (iii) providing a more objective method for measuring CRA performance; and (iv) improving the timeliness and transparency of record keeping and reporting. The Federal Reserve Board has not joined the proposed rulemaking. The Company will continue to evaluate the impact of any CRA regulatory changes on the Company's financial condition and results of operations.

Financial Privacy – Banks and other financial institutions are subject to regulations that limit their ability to disclose non-public information about consumers to nonaffiliated third parties. These limitations require disclosure of privacy policies to consumers and affect how consumer information is transmitted through diversified financial companies and conveyed to outside vendors.

The Bank is also subject to regulatory guidelines establishing standards for safeguarding customer information and maintaining information security programs. The standards set forth in the guidelines are intended to ensure the security and confidentiality of customer records and information, protect against any anticipated threats or hazards to the security or integrity of such records and protect against unauthorized access to or use of such records or information that could result in substantial harm or inconvenience to any customer.

Transactions with Affiliates – Transactions between the Bank and its affiliates are subject to regulations that limit the types and amounts of covered transactions engaged in by the Bank and generally require those transactions to be on an arm's-length basis. The term "affiliate" is defined to mean any company that controls or is under common control with the Bank and includes the Company and its non-bank subsidiaries. "Covered transactions" include a loan or extension of credit, as well as a purchase of securities issued by an affiliate, certain purchases of assets from the affiliate, certain derivative transactions that create a credit exposure to an affiliate, the acceptance of securities issued by the affiliate as collateral for a loan, and the issuance of a guarantee, acceptance or letter of credit on behalf of an affiliate. In general, these regulations require that any such transaction by the Bank (or its subsidiaries) with an affiliate must be secured by designated amounts of specified collateral and must be limited to certain thresholds on an individual and aggregate basis.

Federal law also limits the Bank's authority to extend credit to its directors, executive officers and 10% shareholders, as well as to entities controlled by such persons. Among other things, extensions of credit to insiders are required to be made on terms that are substantially the same as, and follow credit underwriting procedures that are not less stringent than, those prevailing for comparable transactions with unaffiliated persons. Also, the terms of such extensions of credit may not involve more than the normal risk of repayment or present other unfavorable features and may not exceed certain limitations on the amount of credit extended to such persons, individually and in the aggregate, which limits are based, in part, on the amount of the Bank's capital.

Federal Reserve System – FRB regulations require depository institutions to maintain cash reserves against their transaction accounts (primarily negotiable order of withdrawal and demand deposit accounts). A reserve of 3% is to be maintained against aggregate transaction accounts between $15.2 million and $110.2 million (subject to adjustment by the FRB) plus a reserve of 10% (subject to adjustment by the FRB between 8% and 14%) against that portion of total transaction accounts in excess of $110.2 million. The first $15.2 million of otherwise reservable balances (subject to adjustment by the FRB) is exempt from the reserve requirements. The Bank is in compliance with the foregoing requirements.

Cybersecurity – In March 2015, federal regulators issued two related statements regarding cybersecurity. One statement indicates that financial institutions should design multiple layers of security controls to establish lines of defense and to ensure that their risk management processes address the risk posed by compromised customer credentials, including security measures to reliably authenticate customers accessing internet-based services of the financial institution. The other statement indicates that a financial institution's management is expected to maintain sufficient business continuity planning processes to ensure the rapid recovery, resumption and maintenance of the institution's operations after a cyber-attack involving destructive malware. A financial institution is expected to develop appropriate processes to enable recovery of data and business operations and address rebuilding network capabilities and restoring data if the institution or its critical service providers fall victim to this type of cyber-attack. If the Company fails to observe the regulatory guidance, it could be subject to various regulatory sanctions, including financial penalties.

In the ordinary course of business, the Company relies on electronic communications and information systems to conduct operations and store sensitive data. The Company employs an in-depth, layered, defensive approach that leverages people, processes and technology to manage and maintain cybersecurity controls. The Company also employs a variety of preventative and detective tools to identify, protect, detect, respond, and recover against suspicious activity, as well as to report on any suspected advanced persistent threats. Notwithstanding the strength of the Company's defensive measures, the threat from cyber attacks is severe, attacks are sophisticated and increasing in volume, and attackers respond rapidly to changes in defensive measures. While the Company has not experienced a significant compromise to date, significant data loss or any material financial losses related to cybersecurity attacks, the Company's systems and those of its customers and third-party service providers are under constant threat and it is possible that the Company could experience a significant event in the future. Risks and exposures related to cybersecurity attacks are expected to remain high for the foreseeable future due to the rapidly evolving nature and sophistication of these threats, as well as due to the expanding use of internet banking, mobile banking and other technology-based products and services by the Company and its customers. See Item 1A, "Risk Factors" for a further discussion of risks related to cybersecurity.

Other Regulations – The operations of the Company and the Bank are also subject to:

- Truth-In-Lending Act, governing disclosures of credit terms to consumer borrowers;
- Fair Credit Reporting Act, governing the provision of consumer information to credit reporting agencies and the use of consumer information;
- Fair Debt Collection Act, governing the manner in which consumer debts may be collected by collection agencies;
- Electronic Funds Transfer Act, governing automatic deposits to and withdrawals from deposit accounts and customers' rights and liabilities arising from the use of automated teller machines and other electronic banking services.
- Real Estate Settlement Procedures Act, requiring that borrowers for mortgage loans for one- to four-family residential real estate receive various disclosures, including good faith estimates of settlement costs, lender servicing and escrow account practices, and prohibiting certain practices that increase the cost of settlement services;
- Equal Credit Opportunity Act, prohibiting discrimination on the basis of race, creed or other prohibited factors in extending credit;
- Check Clearing for the 21st Century Act (also known as "Check 21"), which gives "substitute checks," such as digital check images and copies made from that image, the same legal standing as the original paper check;
- The USA PATRIOT Act, which requires banks and savings institutions to establish broadened anti-money laundering compliance programs and due diligence policies and controls to ensure the detection and reporting of money laundering; and

- The Bank Secrecy Act, which requires U.S. financial institutions to collaborate with the U.S. government in cases of suspected money laundering and fraud.

Certain of these laws are consumer protection laws that extensively govern the Company's relationship with its customers. Violations of applicable consumer protection laws can result in significant potential liability from litigation brought by customers, including actual damages, restitution and attorneys' fees. Federal bank regulators, state attorneys general and state and local consumer protection agencies may also seek to enforce consumer protection requirements and obtain these and other remedies, including regulatory sanctions, customer rescission rights, action by the state and local attorneys general in each jurisdiction in which the Company operates and civil money penalties. Failure to comply with consumer protection requirements may also result in the Company's inability to pursue merger or acquisition transactions.

Website Availability of SEC Reports

Cass files annual, quarterly and current reports with the Securities and Exchange Commission (the "SEC"). Cass will, as soon as reasonably practicable after they are electronically filed with or furnished to the SEC, make available free of charge on its website each of its Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, all amendments to those reports, and its definitive proxy statements. The address of Cass' website is: www.cassinfo.com.

The reference to the Company's website address does not constitute incorporation by reference of the information contained on the website and should not be considered part of this report.

Statistical Disclosure by Bank Holding Companies

For the statistical disclosure by bank holding companies, refer to Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations."

ITEM 1A. RISK FACTORS

This section highlights specific risks that could affect the Company's business. Although this section attempts to highlight key factors, please be aware that other risks may prove to be important in the future. New risks may emerge at any time, and Cass cannot predict such risks or estimate the extent to which they may affect the Company's financial performance. In addition to the factors discussed elsewhere or incorporated by reference in this report, the identified risks that could cause actual results to differ materially include the following:

General political, economic or industry conditions may be less favorable than expected.

Local, domestic, and international economic, political and industry-specific conditions and governmental monetary and fiscal policies affect the industries in which the Company competes, directly and indirectly. Conditions such as inflation, recession, unemployment, volatile interest rates, tight money supply, real estate values, international conflicts and other factors outside of Cass' control may adversely affect the Company. Economic downturns could result in the delinquency of outstanding loans, which could have a material adverse impact on Cass' earnings.

Unfavorable developments concerning customer credit quality could affect Cass' financial results.

Although the Company regularly reviews credit exposure related to its customers and various industry sectors in which it has business relationships, default risk may arise from events or circumstances that are difficult to detect or foresee. Under such circumstances, the Company could experience an increase in the level of provision for credit losses, delinquencies, nonperforming assets, net charge-offs and allowance for credit losses.

The Company has lending concentrations, including, but not limited to, faith-based ministries located in selected cities and privately-held businesses located in or near St. Louis, Missouri, that could suffer a significant decline which could adversely affect the Company.

Cass' customer base consists, in part, of lending concentrations in several segments and geographical areas. If any of these segments or areas is significantly affected by weak economic conditions, the Company could experience increased credit losses, and its business could be adversely affected.

Fluctuations in interest rates could affect Cass' net interest income and balance sheet.

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. Prevailing economic conditions, the fiscal and monetary policies of the federal government and the policies of various regulatory agencies all affect market rates of interest, which in turn significantly affect financial institutions' net interest income. Fluctuations in

interest rates affect Cass' financial statements, as they do for all financial institutions. Volatility in interest rates can also result in disintermediation, which is the flow of funds away from financial institutions into direct investments, such as federal government and corporate securities and other investment vehicles, which, because of the absence of federal insurance premiums and reserve requirements, generally pay higher rates of return than financial institutions. As discussed in greater detail in Item 7A, "Quantitative and Qualitative Disclosures about Market Risk," a low level of interest rates would have a negative impact on the Company's net interest income.

The Company may be adversely impacted by the uncertainty regarding LIBOR as a reference rate.

The United Kingdom's Financial Conduct Authority announced in 2017 that after 2021 it would no longer persuade or require banks to submit the rates required to calculate the London Interbank Offered Rate ("LIBOR"). This announcement indicates that the continuation of LIBOR on the current basis cannot be guaranteed after 2021 and has resulted in uncertainty about the future of LIBOR and what may become accepted alternatives to LIBOR. At this time, the Company is not able to predict the effect of this uncertainty on the markets for LIBOR-indexed financial instruments.

Regulators, industry groups and certain committees (e.g., the Alternative Reference Rates Committee) have, among other things, published recommended fall-back language for LIBOR-linked financial instruments, identified recommended alternatives for certain LIBOR rates (e.g., the Secured Overnight Financing Rate as the recommended alternative to U.S. Dollar LIBOR), and proposed implementations of the recommended alternatives in floating rate instruments. At this time, it is not possible to predict whether these specific recommendations and proposals will be broadly accepted, whether they will continue to evolve, and what the effect of their implementation may be on the markets for floating-rate financial instruments.

Certain of Cass' loans and other financial instruments include attributes that are either directly or indirectly dependent on LIBOR. The transition from LIBOR could create considerable costs and additional risk. Since proposed alternative rates are calculated differently, payments under contracts referencing new rates will differ from those referencing LIBOR. The transition will change Cass' market risk profiles, requiring changes to risk and pricing models, valuation tools, product design and hedging strategies. Failure to adequately manage this transition process with our customers could adversely impact the Company's reputation. Although Cass is currently unable to assess what the ultimate impact of the transition from LIBOR will be, failure to adequately manage the transition could have a material adverse effect on the Company's business, financial condition and results of operations.

Operational difficulties or cyber-security problems could damage Cass' reputation and business.

In the ordinary course of business, the Company depends on the reliable operation of its computer operations and network connections from its clients to its systems. Any failure, interruption, or breach in security of these systems would cause Cass to be unable to process transactions for its clients, resulting in decreased revenues. The Company also relies on electronic communications and information systems to store sensitive customer data. Any failure, interruption, breach in security or loss of data, whatever the cause, could reduce client satisfaction with the Company's products and services and harm Cass' financial results. These types of threats may derive from human error, fraud or malice on the part of external or internal parties, or may result from accidental technological failure. Further, to access the Company's products and services, Cass' customers may use computers and mobile devices that are beyond the Company's security control systems. The Company's technologies, systems, networks and software, and those of other financial institutions have been, and are likely to continue to be, the target of cybersecurity threats and attacks, which may range from uncoordinated individual attempts to sophisticated and targeted measures directed at Cass. The risk of a security breach or disruption, particularly through cyber-attack or cyber intrusion, has increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. A material security problem affecting Cass could damage its reputation, deter prospects from purchasing its products and services, deter customers from using its products and services or result in liability to Cass.

Cloud technologies are also critical to the operation of our systems, and our reliance on cloud technologies is growing. Service disruptions in cloud technologies may lead to delays in accessing, or the loss of, data that is important to our businesses and may hinder our customers' access to our products and services.

Although the Company makes significant efforts to maintain the security and integrity of Cass' information systems and have implemented various measures to manage the risk of a security breach or disruption, there can be no assurance that Cass' security efforts and measures will be effective or that attempted security breaches or disruptions would not be successful or damaging. Even the most well protected information, networks, systems and facilities remain potentially vulnerable because attempted security breaches, particularly cyber-attacks and intrusions, or disruptions will occur in the future, and because the techniques used in such attempts are constantly evolving and generally are not recognized until launched against a target, and in some cases are designed not to be detected and, in fact, may not be detected. Accordingly, the Company may be unable to anticipate these techniques or to implement adequate security barriers or other preventative measures, and thus it is virtually impossible to entirely mitigate this risk. While specific "cyber" insurance coverage is maintained, which would apply in the event of various breach scenarios, the amount of coverage may not be adequate in any particular case. Furthermore, because cyber threat scenarios are inherently difficult to predict and can take many forms, some breaches may not be covered under

Cass' cyber insurance coverage. A security breach or other significant disruption of Cass' information systems or those related to customers, merchants and third party vendors, including as a result of cyber-attacks, could 1) disrupt the proper functioning of Cass' networks and systems and therefore operations and/or those of certain customers; 2) result in the unauthorized access to, and destruction, loss, theft, misappropriation or release of confidential, sensitive or otherwise valuable information of the Company or its customers; 3) result in a violation of applicable privacy, data breach and other laws, subjecting the Company to additional regulatory scrutiny and expose Cass to civil litigation, governmental fines and possible financial liability; 4) require significant management attention and resources to remedy the damages that result; or 5) harm Cass' reputation or cause a decrease in the number of customers that choose to do business with the Company. The occurrence of any of the foregoing could have a material adverse effect on Cass' business, financial condition and results of operations.

Cass must respond to rapid technological changes and these changes may be more difficult or expensive than anticipated.

If competitors introduce new products and services embodying new technologies, or if new industry standards and practices emerge, the Company's existing product and service offerings, technology and systems may become obsolete. Further, if Cass fails to adopt or develop new technologies or to adapt its products and services to emerging industry standards, Cass may lose current and future customers. Finally, Cass' ability to adopt these technologies can also be inhibited by intellectual property rights of third parties. Any of these could have a material adverse effect on its business, financial condition and results of operations. The payment processing and financial services industries are changing rapidly and in order to remain competitive, Cass must continue to enhance and improve the functionality and features of its products, services and technologies. These changes may be more difficult or expensive than the Company anticipates.

Operations of the Company's customer base are impacted by macro-economic factors such as a strong dollar and/or volatility in commodity prices. A reduction in its customers' operations could have a material adverse effect on Cass' results of operations.

A decline in the cost of oil worldwide can have a negative effect on both the number of freight transactions processed and the dollar amount of invoices processed. For example, lower oil prices can cause a significant drop in drilling supplies being transported to fracking operations by domestic railroads and trucks. Lower oil prices can also result in lower gas and fuel prices, negatively affecting the dollar amounts of the invoices that Cass processes for its freight and shipping customers. A decline in oil prices could have an adverse effect on the Company's revenues and could significantly impact its results of operations.

Methods of reducing risk exposures might not be effective.

Instruments, systems and strategies used to hedge or otherwise manage exposure to various types of credit, interest rate, market and liquidity, operational, regulatory/compliance, business risks and enterprise-wide risks could be less effective than anticipated. As a result, the Company may not be able to effectively mitigate its risk exposures in particular market environments or against particular types of risk.

Customer borrowing, repayment, investment, deposit, and payable processing practices may be different than anticipated.

The Company uses a variety of financial tools, models and other methods to anticipate customer behavior as part of its strategic and financial planning and to meet certain regulatory requirements. Individual, economic, political and industry-specific conditions and other factors outside of Cass' control could alter predicted customer borrowing, repayment, investment, deposit, and payable processing practices. Such a change in these practices could adversely affect Cass' ability to anticipate business needs, including cash flow and its impact on liquidity, and to meet regulatory requirements.

Cass' stock price can become volatile and fluctuate widely in response to a variety of factors.

The Company's stock price can fluctuate based on factors that can include actual or anticipated variations in Cass' quarterly results; new technology or services by competitors; unanticipated losses or gains due to unexpected events, including losses or gains on securities held for investment purposes; significant acquisitions or business combinations, strategic partnerships, joint ventures or capital commitments by or involving the Company or its competitors; changes in accounting policies or practices; failure to integrate acquisitions or realize anticipated benefits from acquisitions; or changes in government regulations.

General market fluctuations, industry factors and general economic and political conditions, such as economic slowdowns or recessions, governmental intervention, interest rate changes, credit loss trends, low trading volume or currency fluctuations also could cause Cass' stock price to decrease regardless of the Company's operating results.

The Company's allowance for loan losses is subject to continuing evaluation and may be insufficient.

The Company maintains an allowance for loan losses, which is a reserve established through a provision for loan losses charged to expense. The allowance, in the judgment of management, is necessary to reserve for estimated loan losses and risks inherent in the loan portfolio. Management uses a systematic, documented approach in determining the appropriate level of the

allowance for loan losses reserve, which represents management's best estimate of inherent losses that have been incurred within the existing portfolio of loans. These estimates are based upon a number of factors, such as review of industry concentrations; specific credit risks and financial conditions of specific borrowers; loan loss experience; current loan portfolio quality; present economic, political and regulatory conditions and unidentified losses inherent in the current loan portfolio. The determination of the appropriate level of the allowance for loan losses inherently involves a high degree of subjectivity and requires management to make estimates based on risks and trends that are subject to material change. Continuing deterioration in economic conditions affecting borrowers, new information regarding existing loans, identification of additional problem loans and other factors, some of which are outside of the Company's control, may require an increase in the allowance for loan losses. In addition, bank regulatory agencies periodically review the Company's allowance for loan losses and may require an increase in the provision for loan losses or the recognition of further loan charge-offs based on judgments different than those of management. If charge-offs in future periods exceed the allowance for loan losses, the Company will need additional provisions to increase the allowance for loan losses. Any increases in the allowance for loan losses will result in a decrease in net income and, possibly, capital, and may have a material adverse effect on the Company's business, financial condition and results of operations.

In addition, the adoption of Accounting Standards Update ("ASU") 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments,* as amended, on January 1, 2020 will impact the Company's methodology for estimating the allowance for loan losses.

See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Provision and Allowance for Loan Losses" and Item 8, "Financial Statements and Supplementary Data—Note 1" for additional information.

Competitive product and pricing pressure within Cass' markets may change.

The Company operates in a very competitive environment, which is characterized by competition from a number of other vendors and financial institutions in each market in which it operates. The Company competes with large payment processors and national and regional financial institutions and also smaller auditing companies and banks in terms of products and pricing. If the Company is unable to compete effectively in products and pricing in its markets, business could decline.

Management's ability to maintain and expand customer relationships may differ from expectations.

The industries in which the Company operates are very competitive. The Company not only competes for business opportunities with new customers, but also competes to maintain and expand the relationships it has with its existing customers. The Company continues to experience pressures to maintain these relationships as its competitors attempt to capture its customers.

The introduction, withdrawal, success and timing of business initiatives and strategies, including, but not limited to, the expansion of payment and processing activities to new markets, the expansion of products and services to existing markets and opening of new bank branches, may be less successful or may be different than anticipated. Such a result could adversely affect Cass' business.

The Company makes certain projections as a basis for developing plans and strategies for its payment processing and banking products. If the Company does not accurately determine demand for its products and services, it could result in the Company incurring significant expenses without the anticipated increases in revenue, which could result in an adverse effect on its earnings.

In addition, there are risks and uncertainties associated with the introduction of new products and services, including substantial investments of time and resources. The introduction and development of new products and services may not be achieved along expected timelines, or at all, and may not be successful as a result of factors beyond the Company's control, including regulatory, competition and external market factors. Failure to successfully manage these risks in the development and implementation of new products or services, and failure to integrate such new products and services into our existing system of internal controls, could have a material adverse effect on our business, financial condition and results of operations.

Management's ability to retain key officers and employees may change.

Cass' future operating results depend substantially upon the continued service of Cass' executive officers and key personnel. Cass' future operating results also depend in significant part upon Cass' ability to attract and retain qualified management, financial, technical, marketing, sales, and support personnel. Competition for qualified personnel is intense, and the Company cannot ensure success in attracting or retaining qualified personnel. There may be only a limited number of persons with the requisite skills to serve in these positions, and it may be increasingly difficult for the Company to hire personnel over time. Cass' business, financial condition and results of operations could be materially adversely affected by the loss of any of its key employees, by the failure of any key employee to perform in his or her current position, or by Cass' inability to attract and retain skilled employees.

The Company and the Bank are subject to extensive government regulation and supervision and possible enforcement or other legal actions that could detrimentally affect Cass' business.

The Company and the Bank are subject to extensive federal and state regulation and supervision, the primary focus of which is to protect customers, depositors, the deposit insurance fund and the safety and soundness of the banking system as a whole, and not shareholders. In addition, since the global financial crisis, financial institutions generally have been subject to increased scrutiny from regulatory authorities, with an increased focus on risk management and consumer compliance. This regulatory structure and heightened focus gives the regulatory authorities extensive discretion in connection with their supervisory and enforcement activities and examination policies, including policies with respect to capital levels, the timing and amount of dividend payments, the classification of assets and the establishment of adequate loan loss reserves for regulatory purposes. Failure to comply with applicable laws, regulations, policies or guidance could result in enforcement and other legal actions by federal and state authorities, including criminal and civil penalties, the loss of FDIC insurance, revocation of a banking charter, and other regulatory sanctions, as well as reputational damage, any of which could have a material adverse effect on the Company's business, financial condition and results of operations.

Congress and federal regulatory agencies continually review banking laws, regulations and policies for possible changes. The substance and impact of pending or future legislation or regulation, or the application thereof, cannot be predicted, although any change could impact the regulatory structure under which the Company or its competitors operate and may significantly increase costs, impede the efficiency of internal business processes, require an increase in regulatory capital, require modifications to the Company's business strategy, and/or limit its ability to pursue business opportunities in an efficient manner. A change in statutes, regulations or regulatory policies applicable to the Company or any of its subsidiaries could have a material, adverse effect on the Company's business, financial condition and results of operations.

See Item 1, "Business—Supervision and Regulation," and Item 8, Note 2 to the consolidated financial statements included elsewhere in this report for additional information.

The Company may need to raise additional capital or sell assets if it fails to meet regulatory capital requirements or meet commitments and liquidity needs. Such capital may not be available on favorable terms, or at all.

Fully phased in, the Basel III Capital rules implemented stricter capital requirements and leverage limits and methods for calculating risk-weighted assets, meaning the Company is required to hold more capital against such assets. Complying with these more stringent capital requirements could result in management modifying its business strategy and could limit the Company's ability to make distributions, including paying dividends, or buying back shares.

The Company may also need to raise additional capital in the future to provide it with sufficient capital resources and liquidity to meet commitments and business needs. The ability to raise additional capital, if needed, will depend on, among other things, conditions in the capital markets at that time and the Company's financial condition, as well as the need for other financial institutions to raise capital at the same time. Economic conditions and the loss of confidence in financial institutions may increase the cost of funding and limit access to certain customary sources of capital, including inter-bank borrowings, repurchase agreements and borrowings from the discount window of the Federal Reserve.

An inability to raise additional capital on acceptable terms when needed could have a materially adverse effect on the Company's business, financial condition and results of operations.

Legal and regulatory proceedings and related matters with respect to the financial services industry, including those directly involving the Company and its subsidiaries, could adversely affect Cass or the financial services industry in general.

The Company is subject to various legal and regulatory proceedings. It is inherently difficult to assess the outcome of these matters, and there can be no assurance that the Company will prevail in any proceeding or litigation. Any such matter could result in substantial cost and diversion of Cass' efforts, which by itself could have a material adverse effect on Cass' financial condition and operating results. Further, adverse determinations in such matters could result in actions by Cass' regulators that could materially adversely affect Cass' business, financial condition or results of operations. Please refer to Item 3, "Legal Proceedings."

The Company's accounting policies and methods are the basis of how Cass reports its financial condition and results of operations, and they require management to make estimates about matters that are inherently uncertain. In addition, changes in accounting policies and practices, as may be adopted by the regulatory agencies, the Financial Accounting Standards Board, or other authoritative bodies, could materially impact Cass' financial statements.

The Company's accounting policies and methods are fundamental to how Cass records and reports its financial condition and results of operations. Management must exercise judgment in selecting and applying many of these accounting policies and methods in order to ensure that they comply with generally accepted accounting principles and reflect management's judgment

as to the most appropriate manner in which to record and report Cass' financial condition and results of operations. In some cases, management must select the accounting policy or method to apply from two or more alternatives, any of which might be reasonable under the circumstances yet might result in the Company reporting materially different amounts than would have been reported under a different alternative.

Cass has identified one accounting policy as being "critical" to the presentation of its financial condition and results of operations because they require management to make particularly subjective and/or complex judgments about matters that are inherently uncertain and because of the likelihood that materially different amounts would be reported under different conditions or using different assumptions. More information on Cass' critical accounting policies is contained in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations."

From time to time, the regulatory agencies, the Financial Accounting Standards Board ("FASB"), and other authoritative bodies change the financial accounting and reporting standards that govern the preparation of the Company's financial statements. These changes can be hard to predict and can materially impact how management records and reports the Company's financial condition and results of operations.

The Company and the Bank are subject to liquidity risk.

The Company requires liquidity to meet deposit and accounts and drafts payable obligations as they come due. Access to funding sources in amounts adequate to finance the Company's commitments and business activities or on terms that are acceptable or favorable to the Company could be impaired by risks and uncertainties that are beyond the Company's control, including those described in this Item 1A, "Risk Factors" section.

The Company's access to deposits and accounts and drafts payable for liquidity purposes may also be adversely affected by the needs of the Company's depositors and customers. A failure to maintain adequate liquidity could have a material adverse effect on the Company's business, financial condition and results of operations.

Cass is subject to examinations and challenges by tax authorities, which, if not resolved in the Company's favor, could adversely affect the Company's financial condition and results of operations.

In the normal course of business, Cass and its affiliates are routinely subject to examinations and challenges from federal and state tax authorities regarding the amount of taxes due in connection with investments it has made and the businesses in which it is engaged. Recently, federal and state taxing authorities have become increasingly aggressive in challenging tax positions taken by financial institutions. These tax positions may relate to tax compliance, sales and use, franchise, gross receipts, payroll, property and income tax issues, including tax base, apportionment and tax credit planning. The challenges made by tax authorities may result in adjustments to the timing or amount of taxable income or deductions or the allocation of income among tax jurisdictions. If any such challenges are made and are not resolved in the Company's favor, they could have an adverse effect on Cass' financial condition and results of operations.

Certain events beyond the Company's control, such as severe weather, natural disasters, terrorist activities or other hostilities, may adversely affect the general economy, financial and capital markets, specific industries, and the Company.

Severe weather, natural disasters, acts of terrorism or other hostilities, and other adverse external events beyond the Company's control, could have a significant impact on the Company's ability to conduct business. Such events could disrupt Cass' operations or those of its customers, affect the stability of the Bank's deposit base, impair the ability of borrowers to repay outstanding loans, impair the value of collateral securing loans, cause significant property damage, result in loss of revenue and/or cause the Company to incur additional expenses. The occurrence of any such event in the future could have a material adverse effect on the Company's business, which, in turn, could have a material adverse effect on the Company's financial condition and results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

In September 2012, the Company entered into a 10-year lease for office space in St. Louis County, Missouri, to house the headquarters of the Company and the Bank. The Company's headquarters occupy 13,991 square feet in an office center at 12444 Powerscourt Drive along with 3,563 square feet in the same center at 12412 Powerscourt Drive. The Bank's headquarters occupy 10,564 square feet in the same center at 12412 Powerscourt Drive.

The Company owns approximately 61,500 square feet of office space at 13001 Hollenberg Drive in Bridgeton, Missouri where the Company's transportation processing activities are performed.

The Company owns a production facility of approximately 45,500 square feet located at 2675 Corporate Exchange Drive, Columbus, Ohio. Additional facilities are located in Greenville, South Carolina, Wellington, Kansas, Jacksonville, Florida and Columbus, Ohio. The Company has offices in Breda, Netherlands, Basingstoke, United Kingdom, and Singapore to service its multinational customers.

In addition, the Bank owns a banking facility near downtown St. Louis, Missouri, has an operating branch in the Bridgeton, Missouri location, and has additional leased facilities in Fenton, Missouri and Colorado Springs, Colorado.

Management believes that these facilities are suitable and adequate for the Company's operations.

ITEM 3. LEGAL PROCEEDINGS

The Company and its subsidiaries are not involved in any pending proceedings other than ordinary routine litigation incidental to their businesses. Management believes none of these proceedings, if determined adversely, would have a material effect on the business or financial conditions of the Company or its subsidiaries.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

The Company's common stock is quoted on The Nasdaq Global Select Market® under the symbol "CASS." As of February 19, 2020, there were approximately 4,053 holders of record of the Company's common stock.

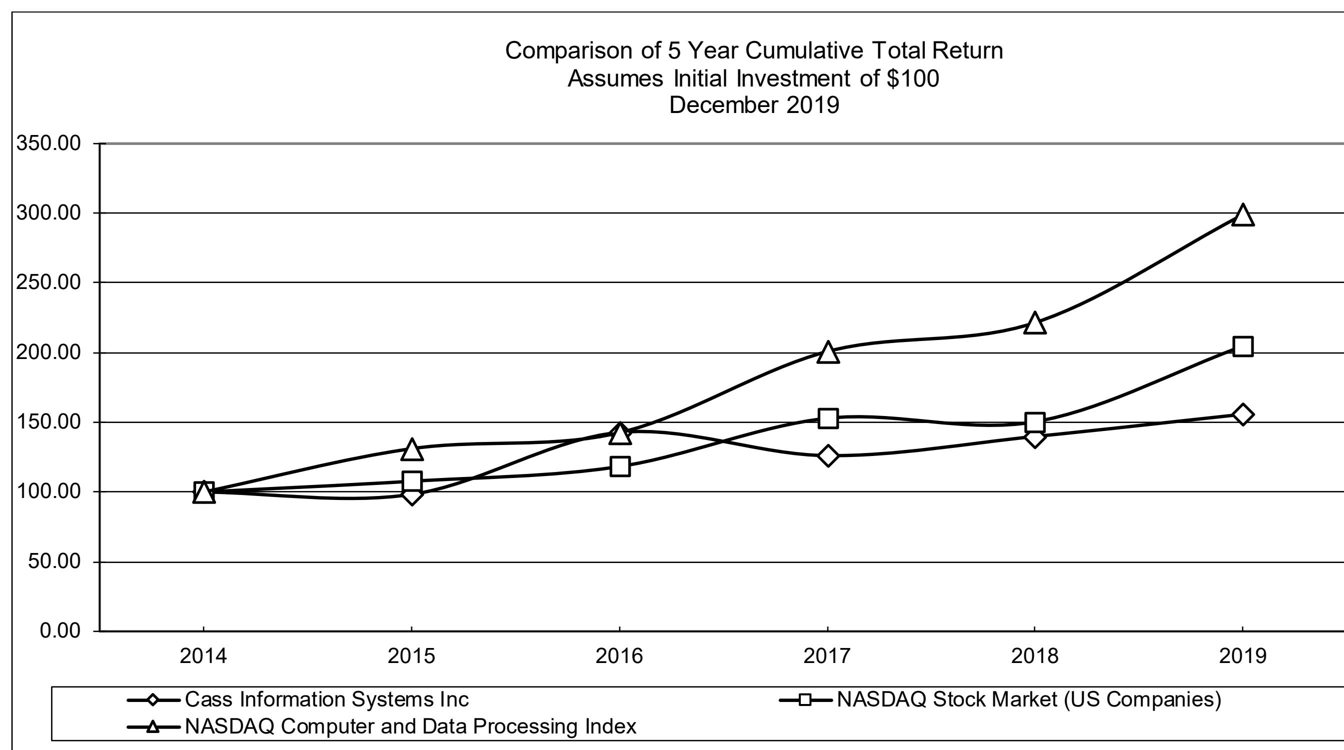
The Company has continuously paid regularly scheduled cash dividends since 1934 and expects to continue to pay quarterly cash dividends in the future. However, future dividend payments will depend on the Company's earnings, capital requirements, financial condition, applicable banking regulatory requirements and other factors considered relevant by the Company's Board of Directors.

The Company maintains a treasury stock buyback program pursuant to which the Board of Directors has authorized the repurchase of up to 500,000 shares of the Company's common stock. As restored by the Board of Directors in October 2019, the program provides that the Company may repurchase up to an aggregate of 500,000 shares of common stock and has no expiration date. The Company repurchased a total of 154,593 shares at an aggregate cost of $7,779,000 during the year ended December 31, 2019 and 169,143 shares at an aggregate cost of $8,838,000 during the year ended December 31, 2018. A portion of the repurchased shares may be used for the Company's employee benefit plans, and the balance will be available for other general corporate purposes. The pace of repurchase activity will depend on factors such as levels of cash generation from operations, cash requirements for investments, repayment of debt, current stock price, and other factors. The Company may repurchase shares from time to time on the open market or in private transactions, including structured transactions. The stock repurchase program may be modified or discontinued at any time.

During the three months ended December 31, 2019, the Company did not repurchase any shares of its common stock pursuant to its treasury stock buyback program.

Performance Quoted on The Nasdaq Stock Market for the Last Five Fiscal Years

The following graph compares the cumulative total returns over the last five fiscal years of a hypothetical investment of $100 in shares of common stock of the Company with a hypothetical investment of $100 in The Nasdaq Stock Market ("Nasdaq") and in the index of Nasdaq computer and data processing stocks. The graph assumes $100 was invested on December 31, 2014, with dividends reinvested. Returns are based on period end prices.



ITEM 6. SELECTED FINANCIAL DATA

The following table presents selected financial information for each of the five years ended December 31. The selected financial data should be read in conjunction with the Company's consolidated financial statements and accompanying notes included in Item 8 of this report.

(Dollars in thousands except per share data)	2019	2018	2017	2016	2015
Fee revenue and other income	$ 110,069	$ 104,076	$ 95,512	$ 86,136	$ 83,368
Interest and fees on loans	36,461	32,477	28,641	29,063	28,669
Interest income on debt and equity securities	10,336	11,167	10,993	9,801	9,498
Other interest income	5,812	4,282	2,343	1,066	543
Total interest income	52,609	47,926	41,977	39,930	38,710
Interest expense on deposits	5,191	3,736	2,187	2,029	2,111
Interest on short-term borrowings	2	—	—	—	—
Provision for loan losses	250	—	—	(1,500)	(850)
Net interest income after provision	47,166	44,190	39,790	39,401	37,449
Operating expense	119,769	111,919	100,403	93,473	89,783
Income before income tax expense	37,466	36,347	34,899	32,064	31,034
Income tax expense	7,062	6,079	9,885 [1]	7,716	7,978
Net income	$ 30,404	$ 30,268	$ 25,014	$ 24,348	$ 23,056
Diluted earnings per share	$ 2.07	$ 2.03	$ 1.68	$ 1.63	$ 1.52
Dividends per share	1.05	.89	.72	.68	.65
Dividend payout ratio	50.11 %	43.53 %	42.68 %	40.98 %	42.06 %
Average total assets	$ 1,749,574	$ 1,637,876	$ 1,568,112	$ 1,504,474	$ 1,439,511
Average net loans	749,710	700,631	653,459	667,158	659,109
Average investment securities	423,384	448,890	426,657	352,129	330,095
Average total deposits	671,144	624,877	602,490	614,975	579,752
Average total shareholders' equity	236,467	223,372	216,548	207,060	197,853
Return on average total assets	1.74 %	1.85 %	1.60 %	1.62 %	1.60 %
Return on average equity	12.86	13.55	11.55	11.76	11.65
Average equity to assets ratio	13.52	13.64	13.81	13.76	13.74
Equity to assets ratio at year-end	13.84	13.56	14.04	13.82	14.25
Tangible common equity to tangible assets	12.93	12.83	13.25	13.04	13.42
Tangible common equity to risk-weighted assets	17.78	18.85	20.23	20.13	21.19
Net interest margin	3.36	3.32	3.34	3.32	3.38
Allowance for loan losses to loans at year-end	1.37	1.42	1.49	1.53	1.77
Nonperforming assets to loans and foreclosed assets	—	—	—	.04	.48 [2]
Net loan (recoveries) charge-offs to average loans outstanding	(.01)	—	—	(.01)	(.09)

[1] Includes one-time, non-cash Tax Cuts and Jobs Act ("TCJA") charge of $1,824,000.

[2] In February 2016, one nonaccrual loan with a balance of $2,727,000 was paid in full. The percentage, as adjusted, would have been .06%

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

The following discussion and analysis provides information about the more significant factors that impacted the financial condition and results of operations of the Company for the years ended December 31, 2019, 2018 and 2017. This discussion and analysis should be read in conjunction with the Company's consolidated financial statements and accompanying notes and other selected financial data presented elsewhere in this report. Refer to Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in the Company's Annual Report on Form 10-K filed with the SEC on March 1, 2019 and incorporated herein by reference for a discussion and analysis of the more significant factors that affected periods prior to 2018.

Executive Overview

Cass provides payment and information processing services to large manufacturing, distribution and retail enterprises from its offices/locations in St. Louis, Missouri, Columbus, Ohio, Greenville, South Carolina, Wellington, Kansas, Jacksonville, Florida, Breda, Netherlands, Basingstoke, United Kingdom, and Singapore. The Company's services include freight invoice rating, payment processing, auditing, and the generation of accounting and transportation information. Cass also processes and pays energy invoices, which include electricity and gas as well as waste and telecommunications expenses, and is a provider of telecom expense management solutions. Cass provides a B2B payment platform for clients that require an agile fintech

partner. Additionally, the Company uses an on-line platform to provide generosity services for faith-based and non-profit organizations, which is a complementary service offering to the Bank's faith-based customers. The Company also, through Cass Commercial Bank, its St. Louis, Missouri-based bank subsidiary, provides banking services in the St. Louis metropolitan area, Orange County, California, Colorado Springs, Colorado, and other selected cities in the United States. In addition to supporting the Company's payment operations, the Bank provides banking services to its target markets, which include privately-owned businesses and faith-based ministries.

The specific payment and information processing services provided to each customer are developed individually to meet each customer's requirements, which can vary greatly. In addition, the degree of automation such as electronic data interchange, imaging, work flow, and web-based solutions varies greatly among customers and industries. These factors combine so that pricing varies greatly among the customer base. In general, however, Cass is compensated for its processing services through service fees and investment of account balances generated during the payment process. The amount, type, and calculation of service fees vary greatly by service offering, but generally follow the volume of transactions processed. Interest income from the balances generated during the payment processing cycle is affected by the amount of time Cass holds the funds prior to payment and the dollar volume processed. Both the number of transactions processed and the dollar volume processed are therefore key metrics followed by management. Other factors will also influence revenue and profitability, such as changes in the general level of interest rates, which have a significant effect on net interest income. The funds generated by these processing activities are invested in overnight investments, investment grade securities, and loans generated by the Bank. The Bank earns most of its revenue from net interest income, or the difference between the interest earned on its loans and investments and the interest paid on its deposits and other borrowings. The Bank also assesses fees on other services such as cash management services.

Industry-wide factors that impact the Company include the willingness of large corporations to outsource key business functions such as freight, energy, telecommunication and environmental payment and audit. The benefits that can be achieved by outsourcing transaction processing, and the management information generated by Cass' systems can be influenced by factors such as the competitive pressures within industries to improve profitability, the general level of transportation costs, deregulation of energy costs, and consolidation of telecommunication providers. Economic factors that impact the Company include the general level of economic activity that can affect the volume and size of invoices processed, the ability to hire and retain qualified staff, and the growth and quality of the loan portfolio. The general level of interest rates also has a significant effect on the revenue of the Company. As discussed in greater detail in Item 7A, "Quantitative and Qualitative Disclosures about Market Risk," a decline in the general level of interest rates can have a negative impact on net interest income and conversely, a rise in the general level of interest rates can have a positive impact on net interest income. The cost of fuel is another factor that has a significant impact on the transportation sector. As the price of fuel goes up or down, the Company's earnings increase or decrease with the dollar amount of transportation invoices.

In 2019, total fee revenue and other income increased $5,993,000, or 6%, net interest income after provision for loan losses increased $2,976,000, or 7%, total operating expenses increased $7,850,000, or 7%, and net income increased $136,000. This performance in 2019 was driven by new customer wins, increased business from existing customers, and the development and deployment of new revenue generating services, which overcame headwinds during the later part of the year caused by a slowdown in industrial economic activity, loss of a high transaction volume account, and lower interest rates. The increase in total operating expense was due mainly to the Company continuing to invest in technology and staff required to win new business and support service growth with existing clients, as well as integration costs related to the Gyve on-line generosity platform that was acquired in September 2019. The asset quality of the Company's loans and investments as of December 31, 2019 remained strong.

Currently, management views Cass' major opportunity as the continued expansion of its payment and information processing service offerings and customer base. Management intends to accomplish this by maintaining the Company's leadership position in applied technology, which when combined with the security and processing controls of the Bank, makes Cass unique in the industry.

Impact of New and Not Yet Adopted Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, *Leases (ASC Topic 842)*. The ASU improves financial reporting about leasing transactions. The ASU affects all companies and other organizations that lease assets such as real estate, airplanes, and manufacturing equipment. Consistent with current generally accepted accounting principles ("GAAP"), the recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee primarily will depend on its classification as a finance or operating lease. However, unlike current GAAP—which requires only capital leases to be recognized on the balance sheet—the new ASU requires both types of leases to be recognized on the balance sheet. The ASU also requires disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative requirements, providing additional information about the amounts recorded in the financial statements. The Company elected to apply ASU 2016-02 as of the beginning of the period of adoption (January 1, 2019) and has not restated comparative periods. The Company has elected to apply the package of practical expedients allowed by the new standard under which the Company need not reassess

(i) whether any expired or existing contracts are or contain leases, (ii) the lease classification for any expired or existing leases and (iii) initial direct costs for any existing leases. Adoption of the ASU on January 1, 2019 resulted in the recognition of lease liabilities totaling $7,808,000 and the right-of-use assets totaling $7,383,000. The initial balance sheet gross up upon adoption was related to operating leases of certain real estate properties. See Note 18 – Leases for additional disclosures related to leases.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. The ASU requires measurement and recognition of expected credit losses for financial assets held, which include allowances for losses expected to be incurred over the life of the portfolio, rather than incurred losses, which include allowances for current known and inherent losses within the portfolio. Under this standard, the Company will be required to hold an allowance equal to the expected life-of-loan losses on the loan portfolio. The standard is effective for fiscal periods beginning after December 15, 2019 and was adopted on January 1, 2020.

The Company formed a cross-functional working group under the direction of the Chief Financial Officer comprised of individuals from various functional areas including credit, risk management, finance, and accounting that addressed the adoption and implementation of the ASU. The Company currently expects the adoption of ASU 2016-13 will result in a one-time cumulative effect adjustment to retained earnings and an increase of up to 25% of the allowance for loan losses and the reserves for unfunded commitments. The expected increase is a result of changing from an incurred loss model, which encompasses allowances for current known and inherent losses within the portfolio, to an expected loss model, which encompasses allowances for losses expected to be incurred over the life of the portfolio. The ASU also requires an allowance to be established for expected credit losses for certain debt securities and other financial assets, however the Company does not expect these allowances to be significant.

Critical Accounting Policies

The Company has prepared the consolidated financial statements in this report in accordance with the FASB Accounting Standards Codification. In preparing the consolidated financial statements, management makes estimates and assumptions that affect the reported amount of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the reporting period. These estimates have been generally accurate in the past, have been consistent and have not required any material changes. There can be no assurances that actual results will not differ from those estimates. The accounting policy that requires significant management estimates and is deemed critical to the Company's results of operations or financial position has been discussed with the Audit Committee of the Board of Directors and is described below.

Allowance for Loan Losses. The Company performs periodic and systematic detailed reviews of its loan portfolio to assess overall collectability. The level of the allowance for loan losses reflects management's estimate of the collectability of the loan portfolio. Although these estimates are based on established methodologies for determining allowance requirements, actual results can differ significantly from estimated results. These policies affect both segments of the Company. The impact and associated risks related to these policies on the Company's business operations are discussed in the "Provision and Allowance for Loan Losses" section of this report. The Company's estimates have been materially accurate in the past, and accordingly, the Company has continued to utilize the present processes through 2019, after which current expected credit losses methodology will be adopted in 2020.

Summary of Results

	For the Years Ended December 31,			% Change	
(In thousands except per share data)	**2019**	**2018**	**2017**	**2019 v. 2018**	**2018 v. 2017**
Total processing volume	63,567	66,255	63,207	(4.1)%	4.8%
Total invoice dollars processed and paid	$42,973,242	$42,380,453	$37,597,035	1.4	12.7
Payment and processing fees	$107,953	$102,181	$93,322	5.6	9.5
Net interest income after provision for loan losses	$47,166	$44,190	$39,790	6.7	11.1
Total net revenue	$157,235	$148,266	$135,302	6.0	9.6
Average earning assets	$1,472,399	$1,403,748	$1,362,660	4.9	3.0
Net interest margin(1)	3.36%	3.32%	3.34%	—	—
Net income	$30,404	$30,268	$25,014	0.4	21.0
Diluted earnings per share	$2.07	$2.03	$1.68	2.0	20.8
Return on average assets	1.74%	1.85%	1.60%	—	—
Return on average equity	12.86%	13.55%	11.55%	—	—

(1) Presented on a tax-equivalent basis. The TCJA reduced the net interest margin by approximately 15 basis points in 2019 and 20 basis points in 2018.

The results of 2019 compared to 2018 include the following significant items:

Overall, the Company's performance increased slightly as a result of new customer wins, increased business from existing customers, and the development and deployment of new revenue generating services overcame the effects of a slowdown in industrial economic activity, loss of a high transaction volume account, and the impact of a lower interest rate environment. Payment and processing fees increased 6% and total processing volume decreased 4%, respectively. The development and deployment of new revenue generating services were more than able to offset the decrease in processing volume as a historically robust 2018 created a difficult comparison for transportation and the loss of a high transaction volume facility expense customer at the beginning of the fourth quarter of 2019. Total processing dollars increased 1% as high spend customer acquisitions were able to overcome the transaction shortfall.

Average earning assets increased 5% and net interest income after provision for loan losses increased 7% year over year. The increase in net interest income after provision for loan losses was due to higher average earning assets and a slightly higher net interest margin. There was a loan loss provision recorded of $250,000 in 2019 while no provision was recorded in 2018.

There were gains from the sale of securities in 2019 of $19,000 and $42,000 of losses on sales of securities in 2018. Operating expenses increased $7,850,000 or 7%, as the Company continued to invest in technology and staff required to win new business and support service growth with existing clients, as well as integration costs related to the Gyve on-line generosity platform that was acquired in September 2019.

Fee Revenue and Other Income

The Company's fee revenue is derived mainly from transportation and facility payment and processing fees. As the Company provides its processing and payment services, it is compensated by service fees which are typically calculated on a per-item basis, discounts received for services provided to carriers and by the accounts and drafts payable balances generated in the payment process which can be used to generate interest income. Processing volumes, fee revenue and other income were as follows:

	December 31,			**% Change**	
(In thousands)	**2019**	**2018**	**2017**	**2019 v. 2018**	**2018 v. 2017**
Transportation invoice transaction volume	36,042	37,542	35,546	(4.0)%	5.6%
Transportation invoice dollar volume	$28,090,514	$28,549,225	$24,801,733	(1.6)	15.1
Expense management transaction volume[1]	27,525	28,713	27,661	(4.1)	3.8
Expense management dollar volume[1]	$14,882,728	$13,831,228	$12,795,302	7.6	8.1
Payment and processing revenue	$107,953	$102,181	$93,322	5.6	9.5
Bank service fees	$1,386	$1,335	$1,349	3.8	(1.0)
Gains (losses) on sales of investment securities	$19	$(42)	—	(145.2)	—
Other	$711	$602	$841	18.1	(28.4)

[1]Includes energy, telecom and environmental

Fee revenue and other income in 2019 compared to 2018 include the following significant pre-tax components:

In the transportation sector, invoice transaction and dollar volume decreased 4% and 2%, respectively, as a historically robust 2018 created a difficult comparison for 2019. With manufacturing companies representing an important component of the transportation customer base, the widely reported 2019 contraction in this sector created year-over-year trials for the division. Expense management transaction volume decreased 4%, mainly due to the loss of a high transaction volume customer, while dollar volume increased 8% as new, high spend customer acquisitions overcame the transaction shortfall. There were gains from the sale of securities in 2019 of $19,000 and losses on sales of securities in 2018 of $42,000.

Net Interest Income

Net interest income is the difference between interest earned on loans, investments, and other earning assets and interest expense on deposits and other interest-bearing liabilities. Net interest income is a significant source of the Company's revenues. The following table summarizes the changes in tax-equivalent net interest income and related factors:

	December 31,			% Change	
(In thousands)	**2019**	**2018**	**2017**	**2019 v. 2018**	**2018 v. 2017**
Average earning assets	$1,472,399	$1,403,748	$1,362,660	4.9%	3.0%
Net interest income [(1)]	$49,501	$46,612	$45,480	6.2%	2.5%
Net interest margin [(1)]	3.36%	3.32%	3.34%		
Yield on earning assets [(1)]	3.71%	3.59%	3.50%		
Rate on interest bearing liabilities	1.32%	1.00%	.56%		

[(1)] Presented on a tax-equivalent basis using a tax rate of 21% in both 2019 and 2018 and 35% in 2017. The net interest margin and yield on earning assets are lower by approximately 15 basis points in 2019 and 20 basis points in 2018 and net interest income was lower by approximately $2,300,000 in 2019 and $2,700,000 in 2018 as a result of a lower tax-equivalent adjustment due to TCJA.

Net interest income in 2019 compared to 2018:

The increase in net interest income was primarily due to an increase in average earning assets and a slight increase in the net interest margin. More information is contained in the tables below and in Item 7A of this report.

Total average investment in securities and certificates of deposit decreased $30,169,000, or 7%. The investment portfolio will expand and contract over time as the Company manages its liquidity and interest rate position. Average interest bearing deposits in other financial institutions decreased $8,192,000, or 7%. Average federal funds sold and other short-term investments increased $57,705,000, or 51%.

Total average loans increased $49,307,000, or 7%, to $760,153,000. Loans have a positive effect on interest income and the net interest margin due to the fact that loans are one of the Company's highest yielding earning assets for any given maturity.

The Bank's total average interest-bearing deposits increased $22,892,000, or 6%, compared to the prior year. Average rates paid on interest-bearing liabilities increased from 1.00% to 1.32% as a result of overall market rate increases for deposits.

Distribution of Assets, Liabilities and Shareholders' Equity; Interest Rate and Interest Differential

The following table contains condensed average balance sheets for each of the periods reported, the tax-equivalent interest income and expense on each category of interest-earning assets and interest-bearing liabilities, and the average yield on such categories of interest-earning assets and the average rates paid on such categories of interest-bearing liabilities for each of the periods reported:

(In thousands)	2019 Average Balance	2019 Interest Income/ Expense	2019 Yield/ Rate	2018 Average Balance	2018 Interest Income/ Expense	2018 Yield/ Rate	2017 Average Balance	2017 Interest Income/ Expense	2017 Yield/ Rate
Assets [1]									
Earning assets									
Loans [2], [3]:									
Taxable	$760,153	$36,461	4.80 %	$709,280	$32,429	4.57 %	$658,791	$28,511	4.33 %
Tax-exempt [4]	—	—	—	1,566	60	3.83	4,862	199	4.09
Securities [5]:									
Taxable	103,473	2,465	2.38	86,164	2,007	2.33	23,172	472	2.04
Tax-exempt [4]	319,911	9,924	3.10	362,726	11,473	3.16	403,485	16,060	3.98
Certificates of deposit	1,573	32	2.03	6,236	97	1.56	6,970	82	1.18
Interest-bearing deposits in other financial institutions	115,909	2,286	1.97	124,101	2,338	1.88	100,401	1,036	1.03
Federal funds sold and other short-term investments	171,380	3,526	2.06	113,675	1,944	1.71	164,979	1,307	.79
Total earning assets	1,472,399	54,694	3.71	1,403,748	50,348	3.59	1,362,660	47,667	3.50
Non-earning assets									
Cash and due from banks	15,455			13,336			12,904		
Premises and equipment, net	21,319			22,355			21,299		
Bank owned life insurance	17,489			17,142			16,676		
Goodwill and other intangibles	15,433			14,354			14,464		
Other assets	217,922			177,156			150,303		
Allowance for loan losses	(10,443)			(10,215)			(10,194)		
Total assets	$1,749,574			$1,637,876			$1,568,112		
Liabilities and Shareholders' Equity [1]									
Interest-bearing liabilities									
Interest-bearing demand deposits	$311,434	$3,686	1.18 %	$302,816	$2,832	.94 %	$323,635	$1,610	.50 %
Savings deposits	10,285	103	1.00	11,451	109	.95	15,540	79	.51
Time deposits >=$250	17,634	281	1.59	16,639	210	1.26	16,022	150	.94
Other time deposits	55,490	1,121	2.02	41,045	585	1.43	38,279	348	.91
Total interest-bearing deposits	394,843	5,191	1.31	371,951	3,736	1.00	393,476	2,187	.56
Short-term borrowings	61	2	3.28	10	—	—	13	—	—
Total interest-bearing liabilities	394,904	5,193	1.32	371,961	3,736	1.00	393,489	2,187	.56
Noninterest-bearing liabilities									
Demand deposits	276,301			252,926			209,014		
Accounts and drafts payable	785,202			745,713			713,052		
Other liabilities	56,700			43,904			36,009		
Total liabilities	1,513,107			1,414,504			1,351,564		
Shareholders' equity	236,467			223,372			216,548		
Total liabilities and shareholders' equity	$1,749,574			$1,637,876			$1,568,112		
Net interest income [4]		$49,501			$46,612			$45,480	
Net interest margin [4]			3.36%			3.32%			3.34%
Interest spread			2.39%			2.59%			2.94%

[1] Balances shown are daily averages.

[2] For purposes of these computations, nonaccrual loans are included in the average loan amounts outstanding. Interest on nonaccrual loans is recorded when received as discussed further in Item 8, Note 1 of this report.

[3] Interest income on loans includes net loan fees of $650,000, $393,000, and $415,000 for 2019, 2018 and 2017, respectively.

[4] Interest income is presented on a tax-equivalent basis assuming a tax rate of 21% in both 2019 and 2018 and 35% in 2017. The tax-equivalent adjustment was approximately $2,085,000, $2,422,000, and $5,691,000 for 2019, 2018, and 2017, respectively. The TCJA reduced the yield/rate on tax-exempt securities by approximately 70 basis points and the yield on earning assets and net interest margin by approximately 15 basis points in 2019 and 20 basis points in 2018. Net interest income also decreased by approximately $2,300,000 in 2019 and $2,700,000 in 2018 as a result of TCJA.

[5] For purposes of these computations, yields on investment securities are computed as interest income divided by the average amortized cost of the investments.

Analysis of Net Interest Income Changes

The following table presents the changes in interest income and expense between years due to changes in volume and interest rates.

	2019 Over 2018			2018 Over 2017		
(In thousands)	Volume [1]	Rate [1]	Total	Volume[1]	Rate [1]	Total
Increase (decrease) in interest income:						
Loans [2], [3]:						
Taxable	$2,394	$1,638	$4,032	$2,256	$1,662	$3,918
Tax-exempt [4]	(60)	—	(60)	(127)	(12)	(139)
Securities:						
Taxable	411	47	458	1,458	77	1,535
Tax-exempt [4]	(1,332)	(217)	(1,549)	(1,512)	(3,075)	(4,587)
Certificates of deposit	(88)	23	(65)	(9)	24	15
Interest-bearing deposits in other financial institutions	(159)	107	(52)	289	1,013	1,302
Federal funds sold and other short-term investments	1,130	452	1,582	(506)	1,143	637
Total interest income	$2,296	$2,050	$4,346	$1,849	$832	$2,681
Interest expense on:						
Interest-bearing demand deposits	$83	$771	$854	$(110)	$1,332	$1,222
Savings deposits	(11)	5	(6)	(25)	55	30
Time deposits >=$250	13	58	71	6	54	60
Other time deposits	245	291	536	27	210	237
Short-term borrowings	—	2	2	—	—	—
Total interest expense	330	1,127	1,457	(102)	1,651	1,549
Net interest income	$1,966	$923	$2,889	$1,951	$(819)	$1,132

[1] The change in interest due to the combined rate/volume variance has been allocated in proportion to the absolute dollar amounts of the change in each.

[2] Average balances include nonaccrual loans.

[3] Interest income includes net loan fees.

[4] Interest income is presented on a tax-equivalent basis assuming a tax rate of 21% in both 2019 and 2018 and 35% in 2017. The TCJA reduced interest income on tax-exempt securities by approximately $2,300,000 in 2019 and $2,700,000 in 2018.

Loan Portfolio

Interest earned on the loan portfolio is a primary source of income for the Company. The loan portfolio was $772,638,000 and represented 44% of the Company's total assets as of December 31, 2019 and generated $36,461,000 in revenue during the year then ended. The Company had no sub-prime mortgage loans or residential development loans in its portfolio for any of the years presented. The following tables show the composition of the loan portfolio at the end of the periods indicated and remaining maturities for loans as of December 31, 2019.

Loans by Type	December 31,				
(In thousands)	2019	2018	2017	2016	2015
Commercial and industrial	$323,857	$277,091	$236,394	$214,767	$193,430
Real estate (commercial and faith-based):					
Mortgage	407,480	411,752	410,748	425,947	415,564
Construction	41,244	32,434	35,307	17,477	30,139
Industrial Revenue Bond	—	—	3,374	6,639	19,831
Other	57	310	408	36	91
Total loans	$772,638	$721,587	$686,231	$664,866	$659,055

Loans by Maturity

(At December 31, 2019)	One Year Or Less		Over 1 Year Through 5 Years		Over 5 Years		
(In thousands)	Fixed Rate	Floating Rate [(1)]	Fixed Rate	Floating Rate [(1)]	Fixed Rate	Floating Rate [(1)]	Total
Commercial and industrial	$ 11,774	$ 83,966	$ 132,551	$ 19,654	$ 55,340	$ 20,572	$ 323,857
Real Estate:							
Mortgage	48,224	11,304	273,893	7,113	54,055	12,891	407,480
Construction	13,373	805	2,878	22,555	—	1,633	41,244
Other	—	57	—	—	—	—	57
Total loans	$ 73,371	$ 96,132	$ 409,322	$ 49,322	$ 109,395	$ 35,096	$ 772,638

[(1)] Loans have been classified as having "floating" interest rates if the rate specified in the loan varies with the prime commercial rate of interest.

The Company has no concentrations of loans exceeding 10% of total loans, which are not otherwise disclosed in the loan portfolio composition table and as are discussed in Item 8, Note 4, of this report. As can be seen in the loan composition table above and as discussed in Item 8, Note 4, the Company's primary market niche for banking services is privately held businesses, franchises, and faith-based ministries.

Loans to commercial entities are generally secured by the business assets of the borrower, including accounts receivable, inventory, machinery and equipment, and the real estate from which the borrower operates. Operating lines of credit to these companies generally are secured by accounts receivable and inventory, with specific percentages of each determined on a customer-by-customer basis based on various factors including the type of business. Intermediate term credit for machinery and equipment is generally provided at some percentage of the value of the equipment purchased, depending on the type of machinery or equipment purchased by the entity. Loans secured exclusively by real estate to businesses and faith-based ministries are generally made with a maximum 80% loan to value ratio, depending upon the Company's estimate of the resale value and ability of the property to generate cash. The Company's loan policy requires an independent appraisal for all loans over $500,000 secured by real estate. Company management monitors the local economy in an attempt to determine whether it has had a significant deteriorating effect on such real estate loans. When problems are identified, appraised values are updated on a continual basis, either internally or through an updated external appraisal.

Loan portfolio changes from December 31, 2018 to December 31, 2019:

> Total loans increased $51,051,000, or 7%, to $772,638,000. Additional details regarding the types and maturities of loans in the loan portfolio are contained in the tables above and in Item 8, Note 4.

Provision and Allowance for Loan Losses (ALLL)

The Company recorded a provision of $250,000 in 2019 and no provision for loan losses in 2018 or 2017. The amount of the provisions for loan losses was derived from the Company’s quarterly analysis of the ALLL. The amount of the provision will fluctuate as determined by these quarterly analyses. The Company had net loan recoveries of $81,000 and $20,000 in 2019 and 2018, respectively. The ALLL was $10,556,000 at December 31, 2019 compared to $10,225,000 at December 31, 2018. The allowance represented 1.4% of outstanding loans at year-end 2019 and 2018. From December 31, 2017 to December 31, 2019, there were no nonperforming loans. Nonperforming loans are more fully explained in the section entitled “Nonperforming Assets.”

The ALLL has been established and is maintained to absorb reasonably estimated and probable losses in the loan portfolio. An ongoing assessment is performed to determine if the balance is adequate. Charges or credits are made to expense to cover any deficiency or reduce any excess, as required. The current methodology consists of two components: 1) estimated credit losses on individually evaluated loans that are determined to be impaired in accordance with FASB ASC 310, *Allowance for Credit Losses* and 2) estimated credit losses inherent in the remainder of the loan portfolio in accordance with FASB ASC 450, *Contingencies*. Estimated credit losses is an estimate of the current amount of loans that is probable the Company will be unable to collect according to the original terms.

For loans that are individually evaluated, the Company uses two impairment measurement methods: 1) the present value of expected future cash flows and 2) collateral value. For the remainder of the portfolio, the Company groups loans with similar risk characteristics into eight segments and applies historical loss rates to each segment based on a five fiscal-year look-back period. In addition, qualitative factors including credit concentration risk, national and local economic conditions, nature and volume of loan portfolio, legal and regulatory factors, downturns in specific industries including losses in collateral values, trends in credit quality at the Company and in the banking industry and trends in risk-rating agencies are also considered.

The Company also utilizes ratio analysis to evaluate the overall reasonableness of the ALLL compared to its peers and required levels of regulatory capital. Federal and state agencies review the Company’s methodology for maintaining the ALLL. These

agencies may require the Company to adjust the ALLL based on their judgments and interpretations about information available to them at the time of their examinations.

The following schedule summarizes activity in the ALLL and the allocation of the allowance to the Company's loan categories.

Summary of Loan Loss Experience

	December 31,				
(In thousands)	**2019**	**2018**	**2017**	**2016**	**2015**
Allowance at beginning of year	$10,225	$10,205	$10,175	$11,635	$11,894
Loans charged-off:					
Commercial and industrial	—	—	—	—	30
Real estate (commercial and faith-based):					
Mortgage	—	—	—	—	—
Construction	—	—	—	—	—
Other	—	—	—	—	—
Total loans charged-off	—	—	—	—	30
Recoveries of loans previously charged-off:					
Commercial and industrial	81	20	30	39	610
Real estate (commercial and faith-based):					
Mortgage	—	—	—	1	10
Construction	—	—	—	—	—
Other	—	—	—	—	1
Total recoveries of loans previously charged-off	81	20	30	40	621
Net loans recovered	(81)	(20)	(30)	(40)	(591)
Provision charged (credited) to expense	250	—	—	(1,500)	(850)
Allowance at end of year	$10,556	$10,225	$10,205	$10,175	$11,635
Loans outstanding:					
Average	$760,153	$710,846	$663,653	$678,061	$671,019
December 31	772,638	721,587	686,231	664,866	659,055
Ratio of allowance for loan losses to loans outstanding:					
Average	1.39%	1.44%	1.54%	1.50%	1.76%
December 31	1.37%	1.42%	1.49%	1.53%	1.77%
Ratio of net recoveries to average loans outstanding	(.01)%	—	—	(.01)%	(.09)%
Allocation of allowance for loan losses [1]:					
Commercial and industrial	$4,853	$4,179	$3,652	$3,261	$3,083
Real estate (commercial and faith-based):					
Mortgage	5,348	5,378	5,356	5,689	6,885
Construction	310	244	266	132	226
Industrial Revenue Bond	—	—	52	101	320
Other [2]	45	424	879	992	1,121
Total	$10,556	$10,225	$10,205	$10,175	$11,635
Percentage of categories to total loans:					
Commercial and industrial	41.9%	38.4%	34.4%	32.3%	29.3%
Real estate (commercial and faith-based):					
Mortgage	52.8%	57.1%	59.9%	64.1%	63.1%
Construction	5.3%	4.5%	5.1%	2.6%	4.6%
Industrial Revenue Bond	—%	—%	.59%	1.0%	3.0%
Other	—%	—%	.01%	—%	—%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

[1] Although specific allocations exist, the entire allowance is available to absorb losses in any particular loan category.
[2] Includes unallocated allowance of $45,000 and $423,000 at December 31, 2019 and 2018, respectively.

Nonperforming Assets

Nonperforming loans are defined as loans on non-accrual status and loans 90 days or more past due but still accruing. Nonperforming assets include nonperforming loans plus foreclosed real estate. Troubled debt restructurings are not included in nonperforming loans unless they are on non-accrual status or past due 90 days or more.

It is the policy of the Company to continually monitor its loan portfolio and to discontinue the accrual of interest on any loan for which collection is not probable. Subsequent payments received on such loans are applied to principal if collection of principal is not probable; otherwise, these receipts are recorded as interest income. There was no interest on nonaccrual loans for the years ended December 31, 2019 and 2018, respectively.

There were no nonaccrual loans or foreclosed assets at December 31, 2019 or December 31, 2018.

The Company does not have any foreign loans. The Company's loan portfolio does not include a significant amount of single family real estate mortgages, as the Company does not market its services to retail customers. Also, the Company had no sub-prime mortgage loans or residential development loans in its portfolio in any of the years presented.

The Company does not have any other interest-earning assets which would have been included in nonaccrual, past due or restructured loans if such assets were loans.

Summary of Nonperforming Assets

	December 31,				
(In thousands)	**2019**	**2018**	**2017**	**2016**	**2015**
Commercial and industrial:					
Nonaccrual	$—	$—	$—	$—	$—
Contractually past due 90 days or more and still accruing	—	—	—	—	—
Real estate – mortgage:					
Nonaccrual(1)	—	—	—	245	3,135
Contractually past due 90 days or more and still accruing	—	—	—	—	—
Total nonperforming loans	$—	$—	$—	$245	$3,135
Total foreclosed assets	—	—	—	—	—
Total nonperforming assets	$—	$—	$—	$245	$3,135

(1) In October 2017, one nonaccrual loan with a balance of $215,000 was paid in full. In February 2016, one nonaccrual loan with a balance of $2,727,000 was paid in full.

Operating Expenses

Operating expenses in 2019 compared to 2018 include the following significant pre-tax components:

Salaries and employee benefits expense increased $5,202,000, or 6%, to $91,083,000 as the Company invested in staff and technology development to win new business and support service growth with existing clients. Outside service expense increased $1,202,000, or 15%, for new services and continual technology advancements to support customers. Equipment expense increased $530,000, or 9%, to $6,140,000 primarily due to depreciation of internally developed software.

Income Tax Expense

Income tax expense in 2019 totaled $7,062,000 compared to $6,079,000 in 2018. When measured as a percent of pre-tax income, the Company’s effective tax rate was 19% in 2019 and 17% in 2018. The increase in 2019 compared to 2018 tax expense was primarily the result of three items:

- a decrease in tax-exempt interest from municipal bonds,
- an increase in state tax expense and
- a prior year reduction of tax expense recorded from the final analysis and measurement of the TCJA.

Investment Portfolio

Investment portfolio changes from December 31, 2018 to December 31, 2019:

State and political subdivision securities decreased $10,270,000, or 3%, to $324,447,000. U.S. government agency securities decreased $7,104,000 to $97,718,000. The investment portfolio provides the Company with a significant source of earnings, secondary source of liquidity, and mechanisms to manage the effects of changes in loan demand and interest rates. Therefore, the size, asset allocation and maturity distribution of the investment portfolio will vary over time depending on management’s assessment of current and future interest rates, changes in loan demand, changes in the Company’s sources of funds and the economic outlook. During this period, the Company didn’t purchase any additional securities as the 2017 passage of the TCJA has made tax-exempt interest less attractive.

There was no single issuer of securities in the investment portfolio at December 31, 2019 for which the aggregate amortized cost exceeded 10% of total shareholders' equity.

Investments by Type

(In thousands)	December 31, 2019	2018	2017
State and political subdivisions	$ 324,447	$ 334,717	$ 417,032
U.S. government agencies	97,718	104,822	45,500
Certificates of deposit	500	1,995	7,991
Total investments	$ 422,665	$ 441,534	$ 470,523

Investment Securities by Maturity
(At December 31, 2019)

(In thousands)	Within 1 Year	Over 1 to 5 Years	Over 5 to 10 Years	Over 10 Years	Yield
State and political subdivisions	$ 5,966	$ 83,930	$ 219,112	$ 15,439	2.98%[(1)]
U.S. government agencies	45,019	16,249	14,177	22,273	2.37%
Certificates of deposit	500	—	—	—	2.40%
Total investments	$ 51,485	$ 100,179	$ 233,289	$ 37,712	2.83%
Weighted average yield [(1)]	2.50%	2.81%	3.01%	2.30%	2.83%

[(1)] Yields are presented on a tax-equivalent basis assuming a tax rate of 21% in both 2019 and 2018 and 35% in 2017. The TCJA reduced the yield by approximately 70 basis points.

Deposits and Accounts and Drafts Payable

Noninterest-bearing demand deposits increased 12% from December 31, 2018 to $351,091,000 at December 31, 2019. The average balances of these deposits increased 9% in 2019 to $276,301,000. These balances are primarily maintained by commercial customers, faith-based ministries, and new payment and information processing relationships and can fluctuate on a daily basis.

Interest-bearing deposits decreased $2,623,000, or 1%, to $406,045,000 at December 31, 2019. The average balances of these deposits increased 6% to $394,843,000 in 2019 from $371,951,000 in 2018.

Accounts and drafts payable generated by the Company in its payment processing operations decreased $10,065,000, or 1%, to $684,295,000 at December 31, 2019. The average balance of these funds increased $39,489,000, or 5%, to $785,202,000 in 2019. This increase was the result of continued growth in the customer base. Due to the Company's payment processing cycle, average balances are much more indicative of the underlying activity than period-end balances since point-in-time comparisons can be misleading if the comparison dates fall on different days of the week.

The composition of average deposits and the average rates paid on those deposits is represented in the table entitled "Distribution of Assets, Liabilities and Shareholders' Equity; Interest Rate and Interest Differential" which is included earlier in this discussion. The Company does not have any significant deposits from foreign depositors.

Maturities of Certificates of Deposit as of December 31, 2019

(In thousands)	$100 or Less	$100 to Less Than $250	$250 or More	Total
Three months or less	$ 3,805	$ 17,314	$ 1,533	$ 22,652
Three to six months	290	15,799	2,516	18,605
Six to twelve months	490	1,372	4,762	6,624
Over twelve months	342	13,868	8,876	23,086
Total	$ 4,927	$ 48,353	$ 17,687	$ 70,967

Liquidity

The discipline of liquidity management as practiced by the Company seeks to ensure that funds are available to fulfill all payment obligations relating to invoices processed as they become due and meet depositor withdrawal requests and borrower credit demands while at the same time maximizing profitability. This is accomplished by balancing changes in demand for funds with changes in supply of funds. Primary liquidity to meet demand is provided by short-term liquid assets that can be converted to cash, maturing securities and the ability to obtain funds from external sources. The Company's Asset/Liability Committee ("ALCO") has direct oversight responsibility for the Company's liquidity position and profile. Management considers both on-balance sheet and off-balance sheet items in its evaluation of liquidity.

The balances of liquid assets consist of cash and cash equivalents, which include cash and due from banks, interest-bearing deposits in other financial institutions, federal funds sold, and money market funds, totaled $203,954,000 at December 31, 2019, a decrease of $26,979,000, or 12%, from December 31, 2018. At December 31, 2019, these assets represented 12% of

total assets. Cash and cash equivalents are the Company's and its subsidiaries' primary source of liquidity to meet future expected and unexpected loan demand, depositor withdrawals or reductions in accounts and drafts payable.

Secondary sources of liquidity include the investment portfolio and borrowing lines. Total investment in debt securities available-for-sale at fair value was $422,665,000 at December 31, 2019, a decrease of $18,869,000, or 4%, from December 31, 2018. These assets represented 24% of total assets at December 31, 2019 and were primarily state and political subdivision and treasury securities. Of the total portfolio, 12% mature in one year or less, 24% mature after one year through five years and 64% mature after five years.

As of December 31, 2019, the Bank had unsecured lines of credit at correspondent banks to purchase federal funds up to a maximum of $83,000,000 at the following banks: US Bank, $20,000,000; UMB Bank $20,000,000; Wells Fargo Bank, $15,000,000; PNC Bank, $12,000,000; Frost National Bank, $10,000,000; and JPM Chase Bank, $6,000,000. As of December 31, 2019, the Bank had secured lines of credit with the Federal Home Loan Bank ("FHLB") of $192,045,000 collateralized by commercial mortgage loans. At December 31, 2019, the Company had lines of credit from UMB Bank of $50,000,000 and First Tennessee Bank of $50,000,000 collateralized by state and political subdivision securities. There was $18,000,000 outstanding under the lines of credit discussed above at December 31, 2019 and no amounts outstanding for 2018. The amount outstanding at the end of the 2019 was borrowed on December 31, 2019 and repaid on January 2, 2020.

The deposits of the Company's banking subsidiary have historically been stable, consisting of a sizable volume of core deposits related to customers that utilize many other commercial products of the Bank. The accounts and drafts payable generated by the Company have also historically been a stable source of funds.

Net cash flows provided by operating activities for the years 2019, 2018 and 2017 were $42,126,000, $48,335,000, and $38,890,000, respectively. Net income plus depreciation and amortization accounts for most of the operating cash provided. Net cash flows from investing and financing activities fluctuate greatly as the Company actively manages its investment and loan portfolios and customer activity influences changes in deposit and accounts and drafts payable balances. Further analysis of the changes in these account balances is discussed earlier in this report. Due to the daily fluctuations in these account balances, management believes that the analysis of changes in average balances, also discussed earlier in this report, can be more indicative of underlying activity than the period-end balances used in the statements of cash flows. Management anticipates that cash and cash equivalents, maturing investments, cash from operations, and borrowing lines will continue to be sufficient to fund the Company's operations and capital expenditures in 2020. The Company anticipates the annual capital expenditures for 2020 should range from $4 million to $6 million. Capital expenditures in 2020 are expected to consist of equipment and software related to the payment and information processing services business.

There are several trends and uncertainties that may impact the Company's ability to generate revenues and income at the levels that it has in the past. In addition, these trends and uncertainties may impact available liquidity. Those that could significantly impact the Company include the general levels of interest rates, business activity, and energy costs as well as new business opportunities available to the Company.

As a financial institution, a significant source of the Company's earnings is generated from net interest income. Therefore, the prevailing interest rate environment is important to the Company's performance. A major portion of the Company's funding sources are the noninterest-bearing accounts and drafts payable generated from its payment and information processing services. Accordingly, higher levels of interest rates will generally allow the Company to earn more net interest income. Conversely, a lower interest rate environment will generally tend to depress net interest income. The Company actively manages its balance sheet in an effort to maximize net interest income as the interest rate environment changes. This balance sheet management impacts the mix of earning assets maintained by the Company at any point in time. For example, in a low interest rate environment, short-term relatively lower rate liquid investments may be reduced in favor of longer term relatively higher yielding investments and loans. If the primary source of liquidity is reduced in a low interest rate environment, a greater reliance would be placed on secondary sources of liquidity including borrowing lines, the ability of the Bank to generate deposits, and the investment portfolio to ensure overall liquidity remains at acceptable levels.

The overall level of economic activity can have a significant impact on the Company's ability to generate revenues and income, as the volume and size of customer invoices processed may increase or decrease. Lower levels of economic activity decrease both fee income (as fewer invoices are processed) and balances of accounts and drafts payable generated (as fewer invoices are processed) from the Company's transportation customers.

The relative level of energy costs can impact the Company's earnings and available liquidity. Lower levels of energy costs will tend to decrease transportation and energy invoice amounts resulting in a corresponding decrease in accounts and drafts payable. Decreases in accounts and drafts payable generate lower interest income and reduce liquidity.

New business opportunities are an important component of the Company's strategy to grow earnings and improve performance. Generating new customers allows the Company to leverage existing systems and facilities and grow revenues faster than

expenses. During 2019, new business was added in both the transportation and facility expense management operations, driven by both successful marketing efforts and the solid market leadership position held by Cass.

Capital Resources

One of management's primary objectives is to maintain a strong capital base to warrant the confidence of customers, shareholders, and bank regulatory agencies. A strong capital base is needed to take advantage of profitable growth opportunities that arise and to provide assurance to depositors and creditors. The Company and its banking subsidiary continue to exceed all regulatory capital requirements, as evidenced by the capital ratios at December 31, 2019 as shown in Item 8, Note 2 of this report.

In 2019, cash dividends paid were $1.05 per share for a total of $15,234,000, an increase of $2,057,000, or 16%, compared to $.89 per share for a total of $13,177,000 in 2018. The increase is attributable to the per-share amount paid and the increase in outstanding shares as a result of the stock dividend that occurred in December 2018.

Shareholders' equity was $244,190,000, or 14% of total assets, at December 31, 2019, an increase of $14,342,000 over the balance at December 31, 2018. This increase resulted primarily from net income of $30,404,000 and a decrease in other comprehensive loss of $4,952,000. This increase was partially offset by cash dividends of $15,234,000 and the repurchase of treasury shares of $7,799,000.

Dividends from the Bank are a source of funds for payment of dividends by the Company to its shareholders. The only restrictions on dividends are those dictated by regulatory capital requirements, state corporate laws and prudent and sound banking principles. As of December 31, 2019, unappropriated retained earnings of $42,487,000 were available at the Bank for the declaration of dividends to the Company without prior approval from regulatory authorities.

The Company maintains a treasury stock buyback program pursuant to which the Board of Directors has authorized the repurchase of up to 500,000 shares of the Company's common stock. The Company repurchased 154,593 shares at an aggregate cost of $7,799,000 during the year ended December 31, 2019 and 169,143 shares at an aggregate cost of $8,838,000 during the year ended December 31, 2018. As of December 31, 2019, 500,000 shares remained available for repurchase under the program. In October 2019, the Board restored the capacity of the buyback program to 500,000 shares. A portion of the repurchased shares may be used for the Company's employee benefit plans, and the balance will be available for other general corporate purposes. The stock repurchase authorization does not have an expiration date and the pace of repurchase activity will depend on factors such as levels of cash generation from operations, cash requirements for investments, repayment of debt, current stock price, and other factors. The Company may repurchase shares from time to time on the open market or in private transactions, including structured transactions. The stock repurchase program may be modified or discontinued at any time.

Commitments, Contractual Obligations and Off-Balance Sheet Arrangements

In the normal course of business, the Company is party to activities that involve credit, market and operational risk that are not reflected in whole or in part in the Company's consolidated financial statements. Such activities include traditional off-balance sheet credit-related financial instruments and commitments under operating and capital leases. These financial instruments include commitments to extend credit, commercial letters of credit and standby letters of credit. The Company's maximum potential exposure to credit loss in the event of nonperformance by the other party to the financial instrument for commitments to extend credit, commercial letters of credit and standby letters of credit is represented by the contractual amounts of those instruments. At December 31, 2019, no amounts have been accrued for any estimated losses for these instruments.

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. Commercial and standby letters of credit are conditional commitments issued by the Company or its subsidiaries to guarantee the performance of a customer to a third party. These off-balance sheet financial instruments generally have fixed expiration dates or other termination clauses and may require payment of a fee. At December 31, 2019, the balance of loan commitments, standby and commercial letters of credit were $197,799,000, $13,288,000 and $2,755,000, respectively. Since some of the financial instruments may expire without being drawn upon, the total amounts do not necessarily represent future cash requirements. Commitments to extend credit and letters of credit are subject to the same underwriting standards as those financial instruments included on the consolidated balance sheets. The Company evaluates each customer's credit worthiness on a case-by-case basis. The amount of collateral obtained, if deemed necessary upon extension of the credit, is based on management's credit evaluation of the borrower. Collateral held varies, but is generally accounts receivable, inventory, residential or income-producing commercial property or equipment. In the event of nonperformance, the Company or its subsidiaries may obtain and liquidate the collateral to recover amounts paid under its guarantees on these financial instruments.

The following table summarizes contractual cash obligations of the Company related to operating lease commitments and time deposits at December 31, 2019:

	Amount of Commitment Expiration per Period				
(In thousands)	**Total**	**Less than 1 Year**	**1-3 Years**	**3-5 Years**	**Over 5 Years**
Time deposits	$ 70,967	$ 47,881	$ 21,397	$ 1,689	$ —
Operating lease commitments	8,121	1,864	3,277	1,009	1,971
Total	$ 79,088	$ 49,745	$ 24,674	$ 2,698	$ 1,971

During 2019, the Company made a contribution of $6,900,000 to its noncontributory defined benefit pension plan. In determining pension expense, the Company makes several assumptions, including the discount rate and long-term rate of return on assets. These assumptions are determined at the beginning of the plan year based on interest rate levels and financial market performance.

For 2019, these assumptions were as follows:

Assumption	Rate
Weighted average discount rate	4.30%
Rate of increase in compensation levels	(a)
Expected long-term rate of return on assets	6.50%

(a) 6.00% graded down to 3.25% over the first seven years of service.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Sensitivity

The Company faces market risk to the extent that its net interest income and its fair market value of equity are affected by changes in market interest rates. The asset/liability management discipline as applied by the Company seeks to limit the volatility, to the extent possible, of both net interest income and the fair market value of equity that can result from changes in market interest rates. This is accomplished by limiting the maturities of fixed rate investments, loans, and deposits; matching fixed rate assets and liabilities to the extent possible; and optimizing the mix of fees and net interest income. However, as discussed below, the Company's asset/liability position often differs significantly from most other financial holding companies with significant positive cumulative "gaps" shown for each time horizon presented. This asset sensitive position is caused primarily by the operations of the Company, which generate large balances of accounts and drafts payable. These balances, which are noninterest bearing, contribute to the Company’s historical high net interest margin but cause the Company to become susceptible to changes in interest rates, with a decreasing net interest margin and fair market value of equity in periods of declining interest rates and an increasing net interest margin and fair market value of equity in periods of rising interest rates.

The Company’s ALCO measures the Company's interest rate risk sensitivity on a quarterly basis to monitor and manage the variability of earnings and fair market value of equity in various interest rate environments. The ALCO evaluates the Company's risk position to determine whether the level of exposure is significant enough to hedge a potential decline in earnings and value or whether the Company can safely increase risk to enhance returns. The ALCO uses gap reports, 12-month net interest income simulations, and fair market value of equity analyses as its main analytical tools to provide management with insight into the Company's exposure to changing interest rates.

Management uses a gap report to review any significant mismatch between the re-pricing points of the Company’s rate sensitive assets and liabilities in certain time horizons. A negative gap indicates that more liabilities re-price in that particular time frame and, if rates rise, these liabilities will re-price faster than the assets. A positive gap would indicate the opposite. Gap reports can be misleading in that they capture only the re-pricing timing within the balance sheet, and fail to capture other significant risks such as basis risk and embedded options risk. Basis risk involves the potential for the spread relationship between rates to change under different rate environments and embedded options risk relates to the potential for the alteration of the level and/or timing of cash flows given changes in rates.

Another measurement tool used by management is net interest income simulation, which forecasts net interest income during the coming 12 months under different interest rate scenarios in order to quantify potential changes in short-term accounting income. Management has set policy limits specifying acceptable levels of interest rate risk given multiple simulated rate movements. These simulations are more informative than gap reports because they are able to capture more of the dynamics within the balance sheet, such as basis risk and embedded options risk. A table containing simulation results as of December 31, 2019, from an immediate and sustained parallel change in interest rates is shown below.

While net interest income simulations do an adequate job of capturing interest rate risk to short term earnings, they do not capture risk within the current balance sheet beyond 12 months. The Company uses fair market value of equity analyses to help identify longer-term risk that may reside on the current balance sheet. The fair market value of equity is represented by the present value of all future income streams generated by the current balance sheet. The Company measures the fair market value of equity as the net present value of all asset and liability cash flows discounted at forward rates suggested by the current U.S. Treasury curve plus appropriate credit spreads. This representation of the change in the fair market value of equity under different rate scenarios gives insight into the magnitude of risk to future earnings due to rate changes. Management has set policy limits relating to declines in the market value of equity. The table below contains the analysis, which illustrates the effects of an immediate and sustained parallel change in interest rates as of December 31, 2019:

Change in Interest Rates	% Change in Net Interest Income	% Change in Fair Market Value of Equity
+200 basis points	11%	13%
+100 basis points	6%	7%
Stable rates	—	—
-100 basis points	(3%)	(7%)
-200 basis points	(8%)	(13%)

Interest Rate Sensitivity Position

The following table presents the Company's interest rate risk position at December 31, 2019 for the various time periods indicated:

(In thousands)	Variable Rate	0-90 Days	91-180 Days	181-364 Days	1-5 Years	Over 5 Years	Total
Earning assets:							
Loans:							
Taxable	$ 180,864	$ 23,465	$ 12,943	$ 36,649	$ 409,322	$ 109,395	$ 772,638
Tax-exempt	—	—	—	—	—	—	—
Securities [1]:							
Tax-exempt	—	1,006	—	4,960	83,930	234,551	324,447
U.S. government agencies	—	—	—	—	1,266	36,450	37,716
Treasuries	—	10,005	9,995	25,019	14,983		60,002
Certificates of deposit	—	—	250	250	—	—	500
Investments in the FHLB and FRB	1,346	—	—	—	—	—	1,346
Federal funds sold and other short-term investments	185,878	—	—	—	—	—	185,878
Total earning assets	$ 368,088	$ 34,476	$ 23,188	$ 66,878	$ 509,501	$ 380,396	$ 1,382,527
Interest-sensitive liabilities:							
Money market accounts	$ 244,874	$ —	$ —	$ —	$ —	$ —	$ 244,874
Now accounts	77,153	—	—	—	—	—	77,153
Savings deposits	13,051	—	—	—	—	—	13,051
Time deposits:							
$250K and more	—	1,533	2,516	4,762	8,876	—	17,687
Less than $250K	—	21,119	16,089	1,862	14,210	—	53,280
Federal funds purchased and other short-term borrowing	18,000	—	—	—	—	—	18,000
Total interest-bearing liabilities	$ 353,078	$ 22,652	$ 18,605	$ 6,624	$ 23,086	$ —	$ 424,045
Interest sensitivity gap:							
Periodic	$ 15,010	$ 11,824	$ 4,583	$ 60,254	$ 486,415	$ 380,396	$ 958,482
Cumulative	15,010	26,834	31,417	91,671	578,086	958,482	958,482
Ratio of interest-bearing assets to interest-bearing liabilities:							
Periodic	1.04	1.52	1.25	10.10	22.07	—	3.26
Cumulative	1.04	1.07	1.08	1.23	2.36	3.26	3.26

[1] Balances shown reflect earliest re-pricing date.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

CASS INFORMATION SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

(In thousands except share and per share data)	December 31, 2019	December 31, 2018
Assets		
Cash and due from banks	$ 18,076	$ 15,042
Interest-bearing deposits in other financial institutions	172,422	179,281
Federal funds sold and other short-term investments	13,456	36,610
Cash and cash equivalents	203,954	230,933
Securities available-for-sale, at fair value	422,665	441,534
Loans	772,638	721,587
Less allowance for loan losses	10,556	10,225
Loans, net	762,082	711,362
Payments in excess of funding	206,158	160,777
Premises and equipment, net	20,527	22,031
Investments in bank-owned life insurance	17,599	17,384
Goodwill	14,262	12,569
Other intangible assets, net	4,281	1,554
Other assets	112,715	97,032
Total assets	$ 1,764,243	$ 1,695,176
Liabilities and Shareholders' Equity		
Liabilities:		
Deposits		
Noninterest-bearing	$ 351,091	$ 313,258
Interest-bearing	406,045	408,668
Total deposits	757,136	721,926
Accounts and drafts payable	684,295	694,360
Short-term borrowings	18,000	—
Other liabilities	60,622	49,042
Total liabilities	1,520,053	1,465,328
Shareholders' Equity:		
Preferred stock, par value $.50 per share; 2,000,000 shares authorized and no shares issued	—	—
Common stock, par value $.50 per share; 40,000,000 shares authorized, 15,505,772 shares issued at December 31, 2019 and 2018.	7,753	7,753
Additional paid-in capital	205,397	205,770
Retained earnings	90,341	75,171
Common shares in treasury, at cost (991,406 and 894,486 shares at December 31, 2019 and 2018, respectively)	(45,381)	(39,974)
Accumulated other comprehensive loss	(13,920)	(18,872)
Total shareholders' equity	244,190	229,848
Total liabilities and shareholders' equity	$ 1,764,243	$ 1,695,176

See accompanying notes to consolidated financial statements.

CASS INFORMATION SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME

(In thousands except per share data)	For the Years Ended December 31, 2019	2018	2017
Fee Revenue and Other Income:			
Information services payment and processing revenue	$ 107,953	$ 102,181	$ 93,322
Bank service fees	1,386	1,335	1,349
Gains (losses) on sales of securities	19	(42)	—
Other	711	602	841
Total fee revenue and other income	110,069	104,076	95,512
Interest Income:			
Interest and fees on loans	36,461	32,477	28,641
Interest and dividends on securities:			
Taxable	2,497	2,104	554
Exempt from federal income taxes	7,839	9,063	10,439
Interest on federal funds sold and other short-term investments	5,812	4,282	2,343
Total interest income	52,609	47,926	41,977
Interest Expense:			
Interest on deposits	5,191	3,736	2,187
Interest on short-term borrowings	2	—	—
Total interest expense	5,193	3,736	2,187
Net interest income	47,416	44,190	39,790
Provision for loan losses	250	—	—
Net interest income after provision for loan losses	47,166	44,190	39,790
Total net revenue	157,235	148,266	135,302
Operating Expense:			
Personnel	91,083	85,881	77,339
Occupancy	3,918	3,723	3,480
Equipment	6,140	5,610	5,071
Amortization of intangible assets	563	442	427
Other operating	18,065	16,263	14,086
Total operating expense	119,769	111,919	100,403
Income before income tax expense	37,466	36,347	34,899
Income tax expense	7,062	6,079	9,885
Net income	$ 30,404	$ 30,268	$ 25,014
Basic Earnings Per Share	$ 2.11	$ 2.06	$ 1.70
Diluted Earnings Per Share	2.07	2.03	1.68

See accompanying notes to consolidated financial statements.

CASS INFORMATION SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In thousands)	For the Years Ended December 31, 2019	2018	2017
Comprehensive Income:			
Net income	$ 30,404	$ 30,268	$ 25,014
Other comprehensive income (loss):			
Net unrealized gain (loss) on securities available-for-sale	13,429	(7,534)	6,637
Tax effect	(3,196)	1,793	(2,465)
Reclassification adjustments for (gains) losses included in net income	(19)	42	–
Tax effect	5	(10)	–
FASB ASC 715 pension adjustment	(6,903)	341	(1,311)
Tax effect	1,643	(81)	487
Foreign currency translation adjustments	(7)	(103)	161
Other comprehensive income (loss)	4,952	(5,552)	3,509
Total comprehensive income	$ 35,356	$ 24,716	$ 28,523

See accompanying notes to consolidated financial statements.

CASS INFORMATION SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the Years Ended December 31,		
(In thousands)	**2019**	**2018**	**2017**
Cash Flows From Operating Activities:			
Net income	$ 30,404	$ 30,268	$ 25,014
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	10,939	11,238	11,341
Net (gains) losses on sales of securities	(19)	42	—
Stock-based compensation expense	3,144	3,006	2,339
Provision for loan losses	250	—	—
Deferred income tax expense (benefit)	1,247	(3,521)	3,997
(Decrease) increase in current income tax liability	(1,838)	3,746	(3,026)
(Decrease) increase in pension liability	(1,916)	4,641	8,008
Decrease (increase) in accounts receivable	988	4,709	(4,656)
Other operating activities, net	(1,073)	(5,794)	(4,127)
Net cash provided by operating activities	42,126	48,335	38,890
Cash Flows From Investing Activities:			
Proceeds from sales of securities available-for-sale	4,648	58,520	—
Proceeds from maturities of securities available-for-sale	21,502	38,116	44,156
Purchase of securities available-for-sale	—	(82,022)	(124,777)
Net increase in loans	(50,970)	(35,336)	(21,335)
Increase in payments in excess of funding	(45,381)	(21,674)	(33,756)
Purchases of premises and equipment, net	(2,723)	(4,399)	(4,127)
Asset acquisition of Gateway Giving, LLC	(2,833)	—	—
Net cash used in investing activities	(75,757)	(46,795)	(139,839)
Cash Flows From Financing Activities:			
Net increase in noninterest-bearing demand deposits	37,833	31,717	66,885
Net decrease in interest-bearing demand and savings deposits	(1,133)	(7,838)	(7,472)
Net (decrease) increase in time deposits	(1,490)	19,959	(3,286)
Net (decrease) increase in accounts and drafts payable	(22,400)	(19,595)	19,601
Net increase in short-term borrowings	18,000	—	—
Cash dividends paid	(15,234)	(13,177)	(10,675)
Purchase of common shares for treasury	(7,799)	(8,838)	(2,270)
Other financing activities, net	(1,125)	(945)	(467)
Net cash provided by financing activities	6,652	1,283	62,316
Net (decrease) increase in cash and cash equivalents	(26,979)	2,823	(38,633)
Cash and cash equivalents at beginning of year	230,933	228,110	266,743
Cash and cash equivalents at end of year	$ 203,954	$ 230,933	$ 228,110
Supplemental information:			
Cash paid for interest	$ 5,181	$ 3,701	$ 2,178
Cash paid for income taxes	7,604	6,723	7,677

See accompanying notes to consolidated financial statements.

CASS INFORMATION SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(In thousands except per share data)	Common Stock	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total
Balance, December 31, 2016	$ 5,966	$ 128,455	$ 118,363	$ (30,206)	$ (14,543)	$ 208,035
Net income			25,014			25,014
Cash dividends ($.72 per share)			(10,675)			(10,675)
Stock dividend	558	75,108	(75,674)			(8)
Issuance of 29,378 common shares pursuant to stock-based compensation plan, net		(821)		273		(548)
Exercise of SARs		(451)		142		(309)
Stock-based compensation expense		2,340				2,340
Purchase of 50,215 common shares				(2,270)		(2,270)
Other comprehensive income					3,509	3,509
Other comprehensive income reclassification for ASU 2018-02			2,286		(2,286)	—
Balance, December 31, 2017	$ 6,524	$ 204,631	$ 59,314	$ (32,061)	$ (13,320)	$ 225,088
Net income			30,268			30,268
Cash dividends ($.89 per share)			(13,177)			(13,177)
Stock dividend	1,229		(1,234)			(5)
Issuance of 33,039 common shares pursuant to stock-based compensation plan, net		(991)		624		(367)
Exercise of SARs		(876)		301		(575)
Stock-based compensation expense		3,006				3,006
Purchase of 169,143 common shares				(8,838)		(8,838)
Other comprehensive loss					(5,552)	(5,552)
Balance, December 31, 2018	$ 7,753	$ 205,770	$ 75,171	$ (39,974)	$ (18,872)	$ 229,848
Net income			30,404			30,404
Cash dividends ($1.05 per share)			(15,234)			(15,234)
Issuance of 34,810 common shares pursuant to stock-based compensation plan, net		(1,417)		1,358		(59)
Exercise of SARs		(2,100)		1,034		(1,066)
Stock-based compensation expense		3,144				3,144
Purchase of 154,593 common shares				(7,799)		(7,799)
Other comprehensive income					4,952	4,952
Balance, December 31, 2019	$ 7,753	$ 205,397	$ 90,341	$ (45,381)	$ (13,920)	$ 244,190

See accompanying notes to consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1
Summary of Significant Accounting Policies

Summary of Operations Cass Information Systems, Inc. (the "Company") provides payment and information services, which include processing and payment of transportation, energy, telecommunications and environmental invoices. These services include the acquisition and management of data, information delivery and financial exchange. The consolidated balance sheet captions, "Accounts and drafts payable" and "Payments in excess of funding," represent the Company's resulting financial position related to the payment services that are performed for customers. The Company also provides a full range of banking services to individual, corporate and institutional customers through Cass Commercial Bank (the "Bank"), its wholly owned bank subsidiary.

Basis of Presentation The accounting and reporting policies of the Company and its subsidiaries conform to U.S. generally accepted accounting principles ("GAAP"). The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries after elimination of intercompany transactions. Certain amounts in the 2018 and 2017 consolidated financial statements have been reclassified to conform to the 2019 presentation. Such reclassifications have no effect on previously reported net income or shareholders' equity.

Use of Estimates In preparing the consolidated financial statements, Company management is required to make estimates and assumptions which significantly affect the reported amounts in the consolidated financial statements.

Cash and Cash Equivalents For purposes of the consolidated statements of cash flows, the Company considers cash and due from banks, interest-bearing deposits in other financial institutions, federal funds sold and other short-term investments as segregated in the accompanying consolidated balance sheets to be cash equivalents.

Investment in Debt Securities The Company classifies its debt marketable securities as available-for-sale. Securities classified as available-for-sale are carried at fair value. Unrealized gains and losses, net of the related tax effect, are excluded from earnings and reported in accumulated other comprehensive income, a component of shareholders' equity. A decline in the fair value of any available-for-sale security below cost that is deemed other than temporary results in a charge to earnings and the establishment of a new cost basis for the security. To determine whether impairment is other than temporary, the Company considers guidance provided in the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 320, *Investments – Debt and Equity Securities*. When determining whether a debt security is other-than-temporarily impaired, the Company assesses whether it has the intent to sell the security and whether it is more likely than not that the Company will be required to sell prior to recovery of the amortized cost basis. Evidence considered in this assessment includes the reasons for impairment, the severity and duration of the impairment, changes in value subsequent to year-end and forecasted performance of the investee. Premiums and discounts are amortized or accreted to interest income over the estimated lives of the securities using the level-yield method. Interest income is recognized when earned. Gains and losses are calculated using the specific identification method.

Allowance for Loan Losses ("ALLL") The ALLL is increased by provisions charged to expense and is available to absorb charge-offs, net of recoveries. Management utilizes a systematic, documented approach in determining the appropriate level of the ALLL. Management's approach provides for estimated credit losses on individually evaluated loans in accordance with FASB ASC 310, *Allowance for Credit Losses* ("ASC 310"). These estimates are based upon a number of factors, such as payment history, financial condition of the borrower, expected future cash flows and discounted collateral exposure.

Estimated credit losses inherent in the remainder of the portfolio are estimated in accordance with FASB ASC 450, *Contingencies*. These loans are segmented into groups based on similar risk characteristics. Historical loss rates for each risk group, which are updated quarterly, are generally quantified using all recorded loan charge-offs and recoveries over a prescribed look-back period. These historical loss rates for each risk group are used as the starting point to determine the level of the allowance. The Company's methodology incorporates an estimated loss emergence period for each risk group. The loss emergence period is the period of time from when a borrower experiences a loss event and when the actual loss is recognized in the financial statements, generally at the time of initial charge-off of the loan balance. The Company's methodology also includes qualitative risk factors that allow management to adjust its estimates of losses based on the most recent information available and to address other limitations in the quantitative component that is based on historical loss rates. Such risk factors are generally reviewed and updated quarterly, as appropriate, and are adjusted to reflect changes in national and local economic conditions and developments, the volume and severity of delinquent and internally classified loans, loan concentrations, assessment of trends in collateral values, assessment of changes in borrowers' financial stability, and changes in lending policies and procedures, including underwriting standards and collections, charge-off and recovery practices.

Management believes the ALLL is adequate to absorb probable losses in the loan portfolio. Additionally, various regulatory agencies, as an integral part of their examination process, periodically review the Company's ALLL. Such agencies may require

the Company to increase the ALLL based on their judgments and interpretations about information available to them at the time of their examinations.

Premises and Equipment Premises and equipment are stated at cost less accumulated depreciation and amortization. Depreciation is computed over the estimated useful lives of the assets, or the respective lease terms for leasehold improvements, using straight-line and accelerated methods. Estimated useful lives do not exceed 40 years for buildings, the lesser of 10 years or the life of the lease for leasehold improvements and range from 3 to 7 years for software, equipment, furniture and fixtures. Maintenance and repairs are charged to expense as incurred.

Intangible Assets Cost in excess of fair value of net assets acquired has resulted from business acquisitions. Goodwill and intangible assets with indefinite useful lives are not amortized, but instead are tested for impairment at least annually. Intangible assets with definite useful lives are amortized on a straight-line basis over their respective estimated useful lives.

Periodically, the Company reviews intangible assets for events or changes in circumstances that may indicate that the carrying amount of the assets may not be recoverable. Based on those reviews, adjustments of recorded amounts have not been required.

Non-marketable Equity Investments The Company accounts for non-marketable equity investments, in which it holds less than a 20% ownership, under the cost method. Under the cost method of accounting, investments are carried at cost and are adjusted only for other than temporary declines in fair value, distributions of earnings and additional investments. The Company periodically evaluates whether any declines in fair value of its investments are other than temporary. In performing this evaluation, the Company considers various factors including any decline in market price, where available, the investee's financial condition, results of operations, operating trends and other financial ratios. Non-marketable equity investments are included in other assets on the consolidated balance sheets.

Foreclosed Assets Real estate acquired as a result of foreclosure is initially recorded at fair value less estimated selling costs. Fair value is generally determined through the receipt of appraisals. Any write down to fair value at the time the property is acquired is recorded as a charge-off to the allowance for loan losses. Any decline in the fair value of the property subsequent to acquisition is recorded as a charge to non-interest expense.

Treasury Stock Purchases of the Company’s common stock are recorded at cost. Upon reissuance, treasury stock is reduced based upon the average cost basis of shares held.

Comprehensive Income Comprehensive income consists of net income, changes in net unrealized gains (losses) on available-for-sale securities and pension liability adjustments and is presented in the accompanying consolidated statements of shareholders' equity and consolidated statements of comprehensive income.

Loans Interest on loans is recognized based upon the principal amounts outstanding. It is the Company’s policy to discontinue the accrual of interest when there is reasonable doubt as to the collectability of principal or interest. Subsequent payments received on such loans are applied to principal if there is any doubt as to the collectability of such principal; otherwise, these receipts are recorded as interest income. The accrual of interest on a loan is resumed when the loan is current as to payment of both principal and interest and/or the borrower demonstrates the ability to pay and remain current. Loan origination and commitment fees on originated loans, net of certain direct loan origination costs, are deferred and amortized to interest income using the level-yield method over the estimated lives of the related loans.

Impairment of Loans A loan is considered impaired when it is probable that a creditor will be unable to collect all amounts due, both principal and interest, according to the contractual terms of the loan agreement. When measuring impairment, the expected future cash flows of an impaired loan are discounted at the loan's effective interest rate. Alternatively, impairment could be measured by reference to an observable market price, if one exists, or the fair value of the collateral for a collateral-dependent loan. Regardless of the historical measurement method used, the Company measures impairment based on the fair value of the collateral when the Company determines foreclosure is probable. Additionally, impairment of a restructured loan is measured by discounting the total expected future cash flows at the loan's effective rate of interest as stated in the original loan agreement. The Company uses its nonaccrual methods as discussed above for recognizing interest on impaired loans.

Information Services Revenue A majority of the Company’s revenues are attributable to fees for providing services. These services include transportation invoice rating, payment processing, auditing, and the generation of accounting and transportation information. The Company also processes, pays and generates management information from electric, gas, telecommunications, environmental, and other invoices. The specific payment and information processing services provided to each customer are developed individually to meet each customer’s specific requirements. The Company enters into service agreements with customers typically for fixed fees per transaction that are invoiced monthly. Revenues are recognized in the period services are rendered and earned under the service agreements, as long as collection is reasonably assured.

Income Taxes Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. Deferred tax assets are reduced if necessary, by a

deferred tax asset valuation allowance. In the event that management determines it is more likely than not that it will not be able to realize all or part of net deferred tax assets in the future, the Company adjusts the recorded value of deferred tax assets, which would result in a direct charge to income tax expense in the period that such determination is made. Likewise, the Company will reverse the valuation allowance when realization of the deferred tax asset is expected. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. The Company and its subsidiaries file U.S. federal and certain state income tax returns on a consolidated basis. In addition, certain state jurisdictions are filed on a separate company basis by the Company or its subsidiaries.

The Company recognizes and measures income tax benefits using a two-step model: 1) a tax position must be more likely than not to be sustained based solely on its technical merits in order to be recognized; and 2) the benefit must be measured as the largest dollar amount of that position that is more likely than not to be sustained upon settlement. The difference between the benefit recognized for a tax position in this model and the tax benefit claimed on a tax return is treated as an unrecognized tax benefit. The Company recognizes income tax related interest and penalties in income tax expense.

Earnings Per Share Basic earnings per share is computed by dividing net income by the weighted average number of common shares outstanding. Diluted earnings per share is computed by dividing net income by the sum of the weighted average number of common shares outstanding and the weighted average number of potential common shares outstanding.

Stock-Based Compensation The Company follows FASB ASC 718, *Accounting for Stock Options and Other Stock-based Compensation* ("ASC 718"), which requires that all stock-based compensation be recognized as an expense in the financial statements and that such cost be measured at the fair value of the award. FASB ASC 718 also requires that excess tax benefits related to stock option exercises and restricted stock awards be reflected as financing cash inflows instead of operating cash inflows.

Pension Plans The amounts recognized in the consolidated financial statements related to pension are determined from actuarial valuations. Inherent in these valuations are assumptions including expected return on plan assets, discount rates at which the liabilities could be settled at December 31, 2019, rate of increase in future compensation levels and mortality rates. These assumptions are updated annually and are disclosed in Note 10. The Company follows FASB ASC 715 - *Compensation – Retirement Benefits* ("ASC 715"), which requires companies to recognize the overfunded or underfunded status of a defined benefit postretirement plan as an asset or liability in its consolidated balance sheet and to recognize changes in that funded status in the year in which the changes occur through comprehensive income. The funded status is measured as the difference between the fair value of the plan assets and the projected benefit obligation as of the date of its fiscal year-end.

Fair Value Measurements The Company follows the provisions of FASB ASC 820 - *Fair Value Measurements and Disclosures*, which defines fair value, establishes a framework for measuring fair value in GAAP, and outlines disclosures about fair value measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. A three-level hierarchy for valuation techniques is used to measure financial assets and financial liabilities at fair value. This hierarchy is based on whether the valuation inputs are observable or unobservable. Financial instrument valuations are considered Level 1 when they are based on quoted prices in active markets for identical assets or liabilities. Level 2 financial instrument valuations use 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. Financial instrument valuations are considered Level 3 when they are determined using pricing models, discounted cash flow methodologies or similar techniques and at least one significant model assumption or input is unobservable, and when determination of the fair value requires significant management judgment or estimation. The Company records securities available for sale at their fair values on a recurring basis using Level 2 valuations. Additionally, the Company records impaired loans and other real estate owned at their fair value on a nonrecurring basis. The nonrecurring fair value adjustments typically involve application of lower-of-cost-or-market accounting or impairment write-downs of individual assets.

Impact of New and Not Yet Adopted Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, *Leases (ASC Topic 842)*. The ASU improves financial reporting about leasing transactions. The ASU affects all companies and other organizations that lease assets such as real estate, airplanes, and manufacturing equipment. Consistent with current generally accepted accounting principles ("GAAP"), the recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee primarily will depend on its classification as a finance or operating lease. However, unlike current GAAP—which requires only capital leases to be recognized on the balance sheet—the new ASU requires both types of leases to be recognized on the balance sheet. The ASU also requires disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative requirements, providing additional information about the amounts recorded in the financial statements. The Company elected to apply ASU 2016-02 as of the beginning of the period of adoption (January 1, 2019) and has not restated comparative periods. The Company has elected to apply the package of practical expedients allowed by the new standard under which the Company need not reassess (i) whether any expired or existing contracts are or contain leases, (ii) the lease classification for any expired or existing leases

and (iii) initial direct costs for any existing leases. Adoption of the ASU on January 1, 2019 resulted in the recognition of lease liabilities totaling $7,808,000 and the right-of-use assets totaling $7,383,000. The initial balance sheet gross up upon adoption was related to operating leases of certain real estate properties. See Note 18 – Leases for additional disclosures related to leases.

Note 2
Capital Requirements and Regulatory Restrictions

The Company and the Bank are subject to various regulatory capital requirements 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 Company's consolidated financial statements. Under capital adequacy guidelines, the Company and the Bank must meet specific capital guidelines that involve quantitative measures of assets, liabilities and certain off-balance sheet items as calculated under regulatory accounting practices. The Company's and the Bank's capital amounts and classifications are also subject to qualitative judgments by the regulators about components, risk weightings and other factors.

Quantitative measures established by regulators to ensure capital adequacy require the Company and the Bank to maintain minimum amounts and ratios of total and Tier I capital and common equity Tier I capital to risk-weighted assets, and of Tier I capital to average assets. Management believes that as of December 31, 2019 and 2018, the Company and the Bank met all capital adequacy requirements to which they are subject.

Effective July 2, 2013, the Federal Reserve Board approved final rules known as the "Basel III Capital Rules" that substantially revised the risk-based capital and leverage capital requirements applicable to bank holding companies and depository institutions, including the Company and the Bank. The Basel III Capital Rules implement aspects of the Basel III capital framework agreed upon by the Basel Committee and incorporate changes required by the Dodd-Frank Wall Street Reform and Consumer Protection Act. Among other things, the Basel III Capital Rules establish stricter capital requirements and calculation standards, as well as more restrictive risk weightings for certain loans and facilities. The Basel III Capital Rules were effective for the Company and the Bank on January 1, 2015, subject to a phase-in period that ended on December 31, 2019.

The Bank is also subject to the regulatory framework for prompt corrective action. As of December 31, 2019, the most recent notification from the regulatory agencies categorized the Bank as well-capitalized. To be categorized as well-capitalized, the Bank must maintain minimum total risk-based, common equity Tier I risk-based, Tier I risk-based, and Tier I leverage ratios as set forth in the table below. There are no conditions or events since that notification that management believes have changed the Bank's category.

The Company has traditionally paid a quarterly cash dividend to its shareholders. Subsidiary dividends can be a significant source of funds for payment of dividends by the Company to its shareholders. Banking regulations may limit the amount of dividends that may be paid. Approval by regulatory authorities is required if the effect of dividends declared would cause the regulatory capital of the Bank to fall below specified minimum levels. Approval is also required if dividends declared exceed the net profits for that year combined with the retained net profits for the preceding two years. Under the foregoing dividend restrictions and while maintaining its "well capitalized" status, at December 31, 2019, unappropriated retained earnings of $42,487,000 were available at the Bank for the declaration of dividends to the Company without prior approval from regulatory authorities. In addition to regulatory requirements and considerations, any payment of dividends in the future will depend on the Company's earnings, financial condition and other factors considered relevant by the Company's Board of Directors.

There were no restricted funds on deposit used to meet regulatory reserve requirements at December 31, 2019 and 2018.

The Company's and the Bank's actual and required capital amounts and ratios are as follows:

	Actual		Capital Requirements		Requirement to be Well-Capitalized	
(In thousands)	**Amount**	**Ratio**	**Amount**	**Ratio**	**Amount**	**Ratio**
At December 31, 2019						
Total capital (to risk-weighted assets)						
Cass Information Systems, Inc.	$ 249,954	19.70%	$ 101,530	8.00%	$ N/A	N/A%
Cass Commercial Bank	154,011	19.32	63,778	8.00	79,722	10.00
Common Equity Tier I Capital (to risk-weighted assets)						
Cass Information Systems, Inc.	239,398	18.86	57,110	4.50	N/A	N/A
Cass Commercial Bank	145,673	18.27	35,875	4.50	51,819	6.50
Tier I capital (to risk-weighted assets)						
Cass Information Systems, Inc.	239,398	18.86	76,147	6.00	N/A	N/A
Cass Commercial Bank	145,673	18.27	47,833	6.00	63,778	8.00
Tier I capital (to average assets)						
Cass Information Systems, Inc.	239,398	13.24	72,329	4.00	N/A	N/A
Cass Commercial Bank	145,673	16.64	35,012	4.00	43,765	5.00

At December 31, 2018						
Total capital (to risk-weighted assets)						
Cass Information Systems, Inc.	$ 244,660	21.38%	$ 91,550	8.00%	$ N/A	N/A%
Cass Commercial Bank	137,894	18.31	60,257	8.00	75,321	10.00
Common Equity Tier I Capital (to risk-weighted assets)						
Cass Information Systems, Inc.	234,435	20.49	51,497	4.50	N/A	N/A
Cass Commercial Bank	130,037	17.26	33,895	4.50	48,959	6.50
Tier I capital (to risk-weighted assets)						
Cass Information Systems, Inc.	234,435	20.49	68,662	6.00	N/A	N/A
Cass Commercial Bank	130,037	17.26	45,193	6.00	60,257	8.00
Tier I capital (to average assets)						
Cass Information Systems, Inc.	234,435	13.89	67,500	4.00	N/A	N/A
Cass Commercial Bank	130,037	15.35	33,884	4.00	42,354	5.00

Note 3
Investment in Securities

Investment securities available-for-sale are recorded at fair value on a recurring basis. The Company's investment securities available-for-sale at December 31, 2019 and 2018 are measured at fair value using Level 2 valuations. The market evaluation utilizes several sources which include "observable inputs" rather than "significant unobservable inputs" and therefore falls into the Level 2 category. The table below presents the balances of securities available-for-sale measured at fair value on a recurring basis. The amortized cost, gross unrealized gains, gross unrealized losses and fair value of debt and equity securities are summarized as follows:

	December 31, 2019			
(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
State and political subdivisions	$ 310,720	$ 13,727	$ —	$ 324,447
U.S. government agencies	97,380	507	169	97,718
Certificates of deposit	500	—	—	500
Total	$ 408,600	$ 14,234	$ 169	$ 422,665

	December 31, 2018			
(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
State and political subdivisions	$ 332,732	$ 3,791	$ 1,806	$ 334,717
U.S. government agencies	106,153	86	1,417	104,822
Certificates of deposit	1,995	—	—	1,995
Total	$ 440,880	$ 3,877	$ 3,223	$ 441,534

The fair values of securities with unrealized losses are as follows:

	December 31, 2019					
	Less than 12 months		12 months or more		Total	
(In thousands)	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses	Estimated Fair value	Unrealized Losses
State and political subdivisions	$ —	$ —	$ —	$ —	$ —	$ —
U.S. government agencies	3,801	12	17,593	157	21,394	169
Certificates of deposit	—	—	—	—	—	—
Total	$ 3,801	$ 12	$ 17,593	$ 157	$ 21,394	$ 169

	December 31, 2018					
	Less than 12 months		12 months or more		Total	
(In thousands)	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses	Estimated Fair value	Unrealized Losses
State and political subdivisions	$ 91,248	$ 556	$ 60,546	$ 1,250	$ 151,794	$ 1,806
U.S. government agencies	30,409	130	38,005	1,287	68,414	1,417
Certificates of deposit	—	—	—	—	—	—
Total	$ 121,657	$ 686	$ 98,551	$ 2,537	$ 220,208	$ 3,223

There were 9 securities, or 3% of the total (7 greater than 12 months), in an unrealized loss position as of December 31, 2019 compared to 136 securities, or 43% (61 greater than 12 months), in an unrealized loss position as of December 31, 2018. All unrealized losses are reviewed to determine whether the losses are other than temporary. Management believes that all unrealized losses are temporary since they are market driven, the Company does not have the intent to sell the security, and it is more likely than not that the Company will not be required to sell prior to recovery of the amortized basis.

The amortized cost and fair value of debt and equity securities by contractual maturity are shown in the following table. Expected maturities may differ from contractual maturities because borrowers have the right to prepay obligations with or without prepayment penalties.

	December 31, 2019	
(In thousands)	**Amortized Cost**	**Fair Value**
Due in 1 year or less	$ 51,219	$ 51,485
Due after 1 year through 5 years	97,799	100,179
Due after 5 years through 10 years	222,143	233,289
Due after 10 years	37,439	37,712
No stated maturity	—	—
Total	$ 408,600	$ 422,665

The premium related to the purchase of state and political subdivisions was $6,408,000 and $6,857,000 in 2019 and 2018, respectively.

There were no securities pledged to secure public deposits and for other purposes at December 31, 2019.

Proceeds from sales of debt securities classified as available-for-sale were $4,648,000 in 2019, $58,520,000 in 2018, and $0 in 2017. Gross realized gains on the sales in 2019, 2018, and 2017 were $19,000, $180,000, and $0, respectively. Gross realized losses on sales in 2019, 2018, and 2017 were $0, $222,000, and $0, respectively.

Loans
Note 4

The Company originates commercial, industrial and real estate loans to businesses and faith-based ministries throughout the metropolitan St. Louis, Missouri area, Orange County, California, Colorado Springs, Colorado and other selected cities in the United States. The Company does not have any particular concentration of credit in any one economic sector; however, a substantial portion of the commercial and industrial loans is extended to privately-held commercial companies and franchises in these market areas and are generally secured by the assets of the business. The Company also has a substantial portion of real estate loans secured by mortgages that are extended to faith-based ministries in its market area and selected cities in the United States.

A summary of loan categories is as follows:

	December 31,	
(In thousands)	**2019**	**2018**
Commercial and industrial	$ 323,857	$ 277,091
Real estate		
Commercial:		
Mortgage	101,654	95,605
Construction	25,299	11,858
Faith-based:		
Mortgage	305,826	316,147
Construction	15,945	20,576
Other	57	310
Total loans	$ 772,638	$ 721,587

The following table presents the aging of loans by loan categories at December 31, 2019:

(In thousands)	Performing			Nonperforming		
	Current	30-59 Days	60-89 Days	90 Days and Over	Non-accrual	Total Loans
Commercial and industrial	$ 323,857	$ —	$ —	$ —	$ —	$ 323,857
Real estate						
Commercial:						
Mortgage	101,654	—	—	—	—	101,654
Construction	25,299	—	—	—	—	25,299
Faith-based:						
Mortgage	305,826	—	—	—	—	305,826
Construction	15,945	—	—	—	—	15,945
Other	57	—	—	—	—	57
Total	$ 772,638	$ —	$ —	$ —	$ —	$ 772,638

The following table presents the aging of loans by loan categories at December 31, 2018:

(In thousands)	Performing			Nonperforming		
	Current	30-59 Days	60-89 Days	90 Days and Over	Non-accrual	Total Loans
Commercial and industrial	$ 277,091	$ —	$ —	$ —	$ —	$ 277,091
Real estate						
Commercial:						
Mortgage	95,605	—	—	—	—	95,605
Construction	11,858	—	—	—	—	11,858
Faith-based:						
Mortgage	316,147	—	—	—	—	316,147
Construction	20,576	—	—	—	—	20,576
Other	310	—	—	—	—	310
Total	$ 721,587	$ —	$ —	$ —	$ —	$ 721,587

The following table presents the credit exposure of the loan portfolio by internally assigned credit grade as of December 31, 2019:

(In thousands)	Loans Subject to Normal Monitoring[1]	Performing Loans Subject to Special Monitoring[2]	Nonperforming Loans Subject to Special Monitoring[2]	Total Loans
Commercial and industrial	$ 321,554	$ 2,303	$ —	$ 323,857
Real estate				
Commercial:				
Mortgage	100,346	1,308	—	101,654
Construction	25,299	—	—	25,299
Faith-based:				
Mortgage	304,513	1,313	—	305,826
Construction	15,945	—	—	15,945
Other	57	—	—	57
Total	$ 767,714	$ 4,924	$ —	$ 772,638

[1] Loans subject to normal monitoring involve borrowers of acceptable-to-strong credit quality and risk, who have the apparent ability to satisfy their loan obligation.

[2] Loans subject to special monitoring possess some credit deficiency or potential weakness which requires a high level of management attention.

The following table presents the credit exposure of the loan portfolio by internally assigned credit grade as of December 31, 2018:

(In thousands)	Loans Subject to Normal Monitoring[1]	Performing Loans Subject to Special Monitoring [2]	Nonperforming Loans Subject to Special Monitoring [2]	Total Loans
Commercial and industrial	$ 275,308	$ 1,783	$ —	$ 277,091
Real estate				
Commercial:				
Mortgage	95,447	158	—	95,605
Construction	11,858	—	—	11,858
Faith-based:				
Mortgage	314,940	1,207	—	316,147
Construction	20,576	—	—	20,576
Other	310	—	—	310
Total	$ 718,439	$ 3,148	$ —	$ 721,587

[1] Loans subject to normal monitoring involve borrowers of acceptable-to-strong credit quality and risk, who have the apparent ability to satisfy their loan obligation.

[2] Loans subject to special monitoring possess some credit deficiency or potential weakness which requires a high level of management attention.

Impaired loans consist primarily of nonaccrual loans, loans greater than 90 days past due and still accruing interest and troubled debt restructurings, both performing and non-performing. Troubled debt restructuring involves the granting of a concession to a borrower experiencing financial difficulty resulting in the modification of terms of the loan, such as changes in payment schedule or interest rate. There was no ALLL related to impaired loans at both December 31, 2019 and 2018. There were no non-accrual loans at December 31, 2019 and 2018. There were no loans delinquent 90 days or more and still accruing interest at both December 31, 2019 and 2018. At December 31, 2019 and 2018, there were no loans classified as troubled debt restructuring. The average balances of impaired loans during 2019, 2018 and 2017 were $0, $0, and $166,000, respectively. Income that would have been recognized on non-accrual loans under the original terms of the contract was $0, $0, and $24,000 for 2019, 2018, and 2017, respectively. Income that was recognized on nonaccrual loans was $0, $0, and $17,000, for 2019, 2018, and 2017 respectively. There were no foreclosed assets as of December 31, 2019 or 2018.

The Company does not record loans at fair value on a recurring basis. Once a loan is identified as impaired, management measures impairment in accordance with FASB ASC 310. At December 31, 2019 and 2018, there were no impaired loans. The fair value of the collateral is based upon an observable market price or current appraised value and therefore, the Company classifies these assets as nonrecurring Level 3.

A summary of the activity in the allowance for loan losses for the period ended December 31, 2019 is as follows:

(In thousands)	December 31, 2018	Charge-Offs	Recoveries	Provision	December 31, 2019
Commercial and industrial	$ 4,179	$ —	$ 81	$ 593	$ 4,853
Real estate					
Commercial:					
Mortgage	1,417	—	—	105	1,522
Construction	89	—	—	101	190
Faith-based:					
Mortgage	3,961	—	—	(135)	3,826
Construction	155	—	—	(35)	120
Other	424	—	—	(379)	45
Total	$ 10,225	$ —	$ 81	$ 250	$ 10,556

A summary of the activity in the allowance for loan losses for the period ended December 31, 2018 is as follows:

(In thousands)	December 31, 2017	Charge-Offs	Recoveries	Provision	December 31, 2018
Commercial and industrial	$ 3,652	$ —	$ 20	$ 507	$ 4,179
Real estate					
Commercial:					
Mortgage	1,394	—	—	23	1,417
Construction	70	—	—	19	89
Faith-based:					
Mortgage	3,962	—	—	(1)	3,961
Construction	196	—	—	(41)	155
Industrial Revenue Bond	52	—	—	(52)	—
Other	879	—	—	(455)	424
Total	$ 10,205	$ —	$ 20	$ —	$ 10,225

As of December 31, 2019 and 2018, there were loans totaling $167,429 and $278,153, respectively, to affiliates of executive officers or directors.

Note 5
Premises and Equipment

A summary of premises and equipment is as follows:

(In thousands)	December 31, 2019	December 31, 2018
Land	$ 873	$ 873
Buildings	14,763	14,684
Leasehold improvements	1,843	2,537
Furniture, fixtures and equipment	12,104	16,332
Purchased software	3,973	5,043
Internally developed software	18,780	17,428
	52,336	56,897
Less accumulated depreciation	31,809	34,866
Total	$ 20,527	$ 22,031

Total depreciation charged to expense in 2019, 2018 and 2017 amounted to $4,227,000, $3,954,000, and $3,624,000, respectively.

Note 6
Acquired Intangible Assets

The Company accounts for intangible assets in accordance with FASB ASC 350, *Goodwill and Other Intangible Assets* ("ASC 350"), which requires that intangibles with indefinite useful lives be tested annually for impairment and those with finite useful lives be amortized over their useful lives.

In September 2019, the Company acquired the assets of Gateway Giving, LLC and recorded intangible assets of $4,983,000. Those intangible assets were valued at $2,610,000 for software, $1,693,000 for goodwill, $490,000 for the customer list, and $190,000 for the trade name. The amounts for these intangible assets were originally recorded on a provisional basis and have been adjusted upon the completion of a valuation. The goodwill is deductible for tax purposes over 15 years, starting in 2019. The intangible assets and results of Gyve are included in the Banking Services operating segment.

The purchase price of the acquisition consisted of a cash payment of $3,000,000 and a potential earnout of $4,000,000. The Company recorded the earnout component to be $1,983,000. The fair value of the contingent consideration was estimated on the acquisition date as the present value of the expected future contingent payments which were determined using a scenario-based model. Any changes in the estimated fair value of the contingent earn-out consideration, up to the contracted amount, will be reflected in the results of operations in future periods as they are identified.

Details of the Company's intangible assets are as follows:

(In thousands)	December 31, 2019 Gross Carrying Amount	December 31, 2019 Accumulated Amortization	December 31, 2018 Gross Carrying Amount	December 31, 2018 Accumulated Amortization
Assets eligible for amortization:				
Customer lists	$ 4,778	$ (3,463)	$ 4,288	$ (3,071)
Patent	72	(20)	72	(16)
Non-compete agreements	332	(332)	332	(326)
Software	2,844	(358)	234	(234)
Trade Name	190	(3)	—	—
Other	500	(259)	500	(225)
Unamortized intangible assets:				
Goodwill [1]	14,489	(227)	12,796	(227)
Total intangible assets	$ 23,205	$ (4,662)	$ 18,222	$ (4,099)

[1]Amortization through December 31, 2001 prior to adoption of FASB ASC 350.

The customer lists are amortized over 7 and 10 years; the patents over 18 years, the non-compete agreements over 2 and 5 years, software over 3 years and 7 years, the trade name over 20 years and other intangible assets over 15 years. Amortization of intangible assets amounted to $563,000, $442,000, and $427,000 for the years ended December 31, 2019, 2018 and 2017, respectively. Estimated future amortization of intangibles is $859,000 in both 2020 and 2021, $540,000 in both 2022 and 2023, and $498,000 in 2024.

Note 7
Interest-Bearing Deposits

Interest-bearing deposits consist of the following:

(In thousands)	December 31, 2019	December 31, 2018
Interest-bearing demand deposits	$ 322,027	$ 322,709
Savings deposits	13,051	13,502
Time deposits:		
Less than $100	4,927	4,862
$100 to less than $250	48,353	51,658
$250 or more	17,687	15,937
Total	$ 406,045	$ 408,668
Weighted average interest rate	1.32%	1.00%

Interest on deposits consists of the following:

(In thousands)	December 31, 2019	December 31, 2018	December 31, 2017
Interest-bearing demand deposits	$ 3,686	$ 2,832	$ 1,611
Savings deposits	103	109	79
Time deposits:			
Less than $100	905	433	234
$100 to less than $250	216	152	114
$250 or more	281	210	149
Total	$ 5,191	$ 3,736	$ 2,187

The scheduled maturities of time deposits are summarized as follows:

(In thousands)	December 31, 2019 Amount	December 31, 2019 Percent of Total	December 31, 2018 Amount	December 31, 2018 Percent of Total
Due within:				
One year	$ 47,881	67.5%	$ 51,154	70.6%
Two years	15,813	22.3	18,262	25.2
Three years	5,584	7.8	140	0.2
Four years	1,689	2.4	983	1.4
Five years	—	—	1,918	2.6
Total	$ 70,967	100.0%	$ 72,457	100.0%

Note 8
Unused Available Lines of Credit

As of December 31, 2019, the Bank had unsecured lines of credit at correspondent banks to purchase federal funds up to a maximum of $83,000,000 at the following banks: US Bank, $20,000,000; UMB Bank $20,000,000; Wells Fargo Bank, $15,000,000; PNC Bank, $12,000,000; Frost National Bank, $10,000,000; and JPM Chase Bank, $6,000,000. As of December 31, 2019, the Bank had secured lines of credit with the Federal Home Loan Bank of $192,045,000 collateralized by commercial mortgage loans. At December 31, 2019, the Company had lines of credit from UMB Bank of $50,000,000 and First Tennessee Bank of $50,000,000 collateralized by state and political subdivision securities. There was $18,000,000 outstanding under the lines of credit discussed above at December 31, 2019 and no amounts outstanding at December 31, 2018. The amount outstanding at the end of the 2019 was borrowed on December 31, 2019 and repaid on January 2, 2020.

Note 9
Common Stock and Earnings per Share

The table below shows activity in the outstanding shares of the Company's common stock during 2019.

	2019
Shares outstanding at January 1	14,611,286
Issuance of common stock:	
Employee restricted stock grants	18,121
Employee SARs exercised	27,274
Directors' compensation	12,278
Shares repurchased	(154,593)
Shares outstanding at December 31	14,514,366

Basic earnings per share is computed by dividing net income by the weighted average number of common shares outstanding. Diluted earnings per share is computed by dividing net income by the sum of the weighted average number of common shares outstanding and the weighted average number of potential common shares outstanding. Under the treasury stock method, stock appreciation rights ("SARs") are dilutive when the average market price of the Company's common stock, combined with the effect of any unamortized compensation expense, exceeds the SAR price during a period. Anti-dilutive shares are those SARs with prices in excess of the current market value.

The calculations of basic and diluted earnings per share are as follows:

	December 31,		
(In thousands except share and per share data)	2019	2018	2017
Basic:			
Net income	$ 30,404	$ 30,268	$ 25,014
Weighted average common shares outstanding	14,434,445	14,675,136	14,700,558
Basic earnings per share	$ 2.11	$ 2.06	$ 1.70
Diluted:			
Net income	$ 30,404	$ 30,268	$ 25,014
Weighted average common shares outstanding	14,434,445	14,675,136	14,700,558
Effect of dilutive restricted stock, performance based restricted stock ("PBRS"), and SARs	257,480	239,066	215,332
Weighted average common shares outstanding assuming dilution	14,691,925	14,914,202	14,915,890
Diluted earnings per share	$ 2.07	$ 2.03	$ 1.68

Note 10
Employee Benefit Plans

Defined Benefit Plan
The Company has a noncontributory defined-benefit pension plan (the "Plan"), which covers eligible employees. Effective December 31, 2016, the Plan was closed to all new participants. The Company accrues and makes contributions designed to fund normal service costs on a current basis using the projected unit credit with service proration method to amortize prior service costs arising from improvements in pension benefits and qualifying service prior to the establishment of the Plan over a period of approximately 30 years.

A summary of the activity in the Plan's projected benefit obligation, assets, funded status and amounts recognized in the Company's consolidated balance sheets is as follows:

(In thousands)	2019	2018
Projected benefit obligation:		
Balance, January 1	$ 96,401	$ 98,790
Service cost	3,554	4,017
Interest cost	4,103	3,703
Actuarial loss (gain)	18,334	(7,768)
Benefits paid	(2,565)	(2,341)
Balance, December 31	$ 119,827	$ 96,401
Plan assets:		
Fair value, January 1	$ 74,580	$ 81,427
Actual return	15,719	(4,506)
Employer contribution	6,900	—
Benefits paid	(2,565)	(2,341)
Fair value, December 31	$ 94,634	$ 74,580
Funded status:		
Accrued pension liability	$ (25,192)	$ (21,821)

The following represent the major assumptions used to determine the projected benefit obligation of the Plan. For 2019 and 2018, the Plan's expected benefit cash flows were discounted using the FTSE Above Median Double-A Curve while in 2017, the Plan's expected benefit cash flows were discounted using the Citibank Above Median Curve. For 2019, the Pri-2012 Mortality Table and MP-2019 Mortality Improvement Scale were used. For 2018, the RP-2014 Mortality Table and the MP-2018 Mortality Improvement Scale were used. For 2017, the RP-2014 Mortality Table and MP-2017 Mortality Improvement Scale were used.

	2019	2018	2017
Weighted average discount rate	3.30%	4.30%	3.75%
Rate of increase in compensation levels	(a)	(a)	(a)

(a) 6.0% graded down to 3.25% over the first seven years of service.

The accumulated benefit obligation was $103,736,000 and $83,724,000 as of December 31, 2019 and 2018, respectively. During 2019, the Company made a contribution of $6,900,000 to the Plan. The Company has not determined if it will make a contribution to the Plan in 2020. The following pension benefit payments, which reflect expected future service, as appropriate, are expected to be paid by the Plan:

	Amount
2020	$3,098,000
2021	3,367,000
2022	3,766,000
2023	4,196,000
2024	4,488,000
2025-2029	27,343,000

The Plan's pension cost included the following components:

	For the Year Ended December 31,		
(In thousands)	2019	2018	2017
Service cost – benefits earned during the year	$ 3,555	$ 4,017	$ 3,733
Interest cost on projected benefit obligations	4,103	3,703	3,621
Expected return on plan assets	(4,753)	(5,202)	(4,681)
Net amortization and deferral	1,559	1,522	1,382
Net periodic pension cost	$ 4,464	$ 4,040	$ 4,055

The following represent the major assumptions used to determine the net pension cost of the Plan:

	2019	2018	2017
Weighted average discount rate	4.30%	3.75%	4.25%
Rate of increase in compensation levels	(a)	(a)	(a)
Expected long-term rate of return on assets	6.50%	6.50%	6.50%

(a) 6.0% graded down to 3.25% over the first seven years of service

For 2019, the RP-2014 Mortality Table and the MP-2018 Mortality Improvement Table were used. For 2018, the RP-2014 Mortality Table and the MP-2017 Mortality Improvement Table were used. For 2017, the RP-2014 Mortality Table and the MP-2016 Mortality Improvement Table were used.

The investment objective for the Plan is to maximize total return with a tolerance for average risk. Asset allocation is a balance between fixed income and equity investments, with a target allocation of approximately 51% fixed income, 19% U.S. equity and 30% non-U.S. equity. Due to volatility in the market, this target allocation is not always desirable and asset allocations can fluctuate between acceptable ranges. The fixed income component is invested in pooled investment grade securities. The equity components are invested in pooled large cap, small/mid cap and non-U.S. stocks. The expected one-year nominal returns and annual standard deviations are shown by asset class below:

Asset Class	% of Total Portfolio	One-Year Nominal Return	Annual Standard Deviation
Core Fixed Income	51%	3.78%	3.90%
Large Cap U.S. Equities	14%	6.55%	15.30%
Small Cap U.S. Equities	5%	7.58%	19.00%
International (Developed)	25%	7.86%	17.22%
International (Emerging)	5%	10.24%	25.05%

Applying appropriate correlation factors between each of the asset classes the long-term rate of return on assets is estimated to be 6.50%.

A summary of the fair value measurements by type of asset is as follows:

	Fair Value Measurements as of December 31,					
	2019			2018		
(In thousands)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)
Cash	$462	$462	$ —	$423	$423	$ —
Equity securities						
U.S. Small/Mid Cap Growth	4,491	—	4,491	3,405	—	3,405
Non-U. S. Core	23,975	—	23,975	18,398	—	18,398
U.S. Large Cap Passive	13,523	—	13,523	10,471	—	10,471
Emerging Markets	4,559	—	4,559	3,217	—	3,217
Fixed Income						
U.S. Core	27,046	—	27,046	10,609	—	10,609
U.S. Passive	15,255	—	15,255	23,827	—	23,827
Opportunistic	5,323	—	5,323	4,230	—	4,230
Total	$94,634	$462	$94,172	$74,580	$423	$74,157

Supplemental Executive Retirement Plan

The Company also has an unfunded supplemental executive retirement plan ("SERP") which covers key executives of the Company whose benefits are limited by the Internal Revenue Service under the Company's qualified retirement plan. The SERP is a noncontributory plan in which the Company's subsidiaries make accruals designed to fund normal service costs on a current basis using the same method and criteria as the Plan.

A summary of the activity in the SERP's projected benefit obligation and amounts recognized in the Company's consolidated balance sheets is as follows:

	December 31,	
(In thousands)	2019	2018
Benefit obligation:		
Balance, January 1	$ 10,097	$ 10,094
Service cost	97	92
Interest cost	408	348
Benefits paid	(262)	(260)
Actuarial loss (gain)	1,372	(177)
Balance, December 31	$ 11,712	$ 10,097

The following represent the major assumptions used to determine the projected benefit obligation of the SERP. For 2019 and 2018, the SERP's expected benefit cash flows were discounted using the FTSE Above Median Double-A Curve. For 2017, the Citigroup Above Median Curve was used.

	2019	2018	2017
Weighted average discount rate	3.00%	4.10%	3.50%
Rate of increase in compensation levels	(a)	(a)	(a)

(a) 6.00% graded down to 3.25% over the first seven years of service.

The accumulated benefit obligation was $10,485,000 and $8,830,000 as of December 31, 2019 and 2018, respectively. Since this is an unfunded plan, there are no plan assets. Benefits paid were $262,000 in 2019, $260,000 in 2018, and $247,000 in 2017. Expected future benefits payable by the Company over the next ten years are as follows:

	Amount
2020	$291,000
2021	344,000
2022	752,000
2023	829,000
2024	826,000
2025-2029	4,055,000

The SERP's pension cost included the following components:

	For the Year Ended December 31,		
(In thousands)	2019	2018	2017
Service cost – benefits earned during the year	$ 97	$ 92	$ 143
Interest cost on projected benefit obligations	408	348	360
Net amortization and deferral	276	581	324
Net periodic pension cost	$ 781	$ 1,021	$ 827

The pretax amounts in accumulated other comprehensive loss as of December 31 were as follows:

	The Plan		SERP	
(In thousands)	2019	2018	2019	2018
Prior service cost	$ —	$ —	$ —	$ —
Net actuarial loss	29,387	23,580	2,724	1,629
Total	$ 29,387	$ 23,580	$ 2,724	$ 1,629

The estimated pretax prior service cost and net actuarial loss in accumulated other comprehensive loss at December 31, 2019 expected to be recognized as components of net periodic benefit cost in 2020 for the Plan are $0 and $1,890,000, respectively. The estimated pretax prior service cost and net actuarial loss in accumulated other comprehensive loss at December 31, 2019 expected to be recognized as components of net periodic benefit cost in 2020 for the SERP are $0 and $112,000, respectively.

The Company also maintains a noncontributory profit sharing program, which covers most of its employees. Employer contributions are calculated based upon formulas which relate to current operating results and other factors. Profit sharing expense recognized in personnel expense in the consolidated statements of income in 2019, 2018, and 2017 was $ 6,841,000, $6,810,000, and $5,799,000, respectively.

The Company also sponsors a defined contribution 401(k) plan to provide additional retirement benefits to substantially all employees. Contributions under the 401(k) plan for 2019, 2018 and 2017 were $1,378,000, $1,109,000, and $925,000, respectively.

Note 11
Stock-based Compensation

The Amended and Restated Omnibus Stock and Performance Compensation Plan (the "Omnibus Plan") provides incentive opportunities for key employees and non-employee directors and to align the personal financial interests of such individuals with those of the Company's shareholders. The Omnibus Plan permits the issuance of up to 1,500,000 shares of the Company's common stock in the form of stock options, SARs, restricted stock, restricted stock units and performance awards.

Restricted Stock
Restricted shares granted prior to April 16, 2013 are amortized to expense over the three-year vesting period. Beginning on April 16, 2013, restricted shares granted to Company employees are amortized to expense over the three-year annual vesting period whereas restricted shares granted to members of the Board of Directors are amortized to expense over a one-year service period, with the exception of those shares granted in lieu of cash payment for retainer fees which are expensed in the period earned. Beginning on February 2, 2017, restricted shares granted to Company employees are amortized to expense over the three-year cliff vesting period.

Changes in restricted shares outstanding for the year ended December 31, 2019 were as follows:

	Shares	**Weighted Average Grant Date Fair Value**
Balance at December 31, 2018	99,724	$45.48
Granted	36,812	49.30
Vested	(13,264)	39.76
Balance at December 31, 2019	123,272	$47.24

During 2018 and 2017, 35,000 and 31,277 shares, respectively, were granted with weighted average per share market values at date of grant of $49.79 in 2018 and $49.55 in 2017. The fair value of such shares are based on the market price on the date of grant. Amortization of the restricted stock bonus awards totaled $1,551,000 for 2019, $1,571,000 for 2018 and $1,743,000 for 2017. As of December 31, 2019, the total unrecognized compensation expense related to non-vested restricted stock awards was $1,438,000 and the related weighted average period over which it is expected to be recognized is approximately 1.07 years. The total fair value of shares vested during the years ended December 2019, 2018, and 2017 was $527,000, $1,112,000, and $1,389,000, respectively.

Performance-Based Restricted Stock

In February 2017, the Company granted three-year PBRS awards which are contingent upon the Company's achievement of pre-established financial goals over the period from January 1, 2017 through December 31, 2019. The PBRS awards cliff vest on the three year anniversary of their grant date at levels ranging from 0% to 150% of the target opportunity based on the actual achievement of financial goals for the three-year performance period. The aggregate target number of PBRS shares granted was 30,388 with an average grant date fair value of $49.33 per share. The 2019 expense related to these grants totaled $583,000 and is based on the grant date fair value of the awards and the Company's achievement of 118% of the target financial goals. The estimated expense for 2019 and each future period through the vesting date is subject to prospective adjustment based upon changes in the expected achievement of the financial goals.

In each of February and July 2018, the Company granted three-year PBRS awards which are contingent upon the Company's achievement of pre-established financial goals over the period from January 1, 2018 through December 31, 2020. The PBRS awards cliff vest on the three-year anniversary of their grant date at levels ranging from 0% to 150% of the target opportunity based on the actual achievement of financial goals for the three-year performance period. The aggregate target number of PBRS shares granted was 35,602 with an average grant date fair value of $49.04 per share. The 2019 expense related to these grants totaled $674,000 and is based on the grant date fair value of the awards and the Company's achievement of 117% of the target financial goals. The estimated expense for 2019 and each future period through the vesting date is subject to prospective adjustment based upon changes in the expected achievement of the financial goals.

In each of February and June 2019, the Company granted three-year PBRS awards which are contingent upon the Company's achievement of pre-established financial goals over the period from January 1, 2019 through December 31, 2021. The PBRS awards cliff vest on the three-year anniversary of their grant date at levels ranging from 0% to 150% of the target opportunity based on the actual achievement of financial goals for the three-year performance period. The aggregate target number of PBRS shares granted was 36,801 with an average grant date fair value of $49.06 per share. The 2019 expense related to these grants totaled $593,000 and is based on the grant date fair value of the awards and the Company's achievement of 108% of the target financial goals. The estimated expense for 2019 and each future period through the vesting date is subject to prospective adjustment based upon changes in the expected achievement of the financial goals.

SARs

During 2019, there were no SARs granted and no expense recognized. As of December 31, 2019, there was no unrecognized compensation expense related to SARs.

Changes in SARs outstanding for the year ended December 31, 2019 were as follows:

	SARs	Weighted Average Exercise Price
Balance at December 31, 2018	237,121	$29.86
Exercised	(81,829)	24.71
Forfeited	—	—
Balance at December 31, 2019	155,292	32.58
Exercisable at December 31, 2019	155,292	$32.58

The total intrinsic value of SARs exercised during 2019 and 2018 was $2,022,000 and $1,110,000, respectively. The average remaining contractual term for SARs outstanding as of December 31, 2019 was 2.92 years, and the aggregate intrinsic value was $3,908,000. The average remaining contractual term for SARs exercisable as of December 31, 2018 was 3.50 years, and the aggregate intrinsic value was $5,468,000.

The total compensation cost for share-based payment arrangements was $3,144,000, $3,006,000, and $2,340,000, in 2019, 2018, and 2017, respectively.

Note 12
Other Operating Expense

Details of other operating expense are as follows:

	For the Years Ended December 31,		
(In thousands)	**2019**	**2018**	**2017**
Postage and supplies	$ 1,875	$ 2,180	$ 2,087
Promotional expense	3,838	3,344	2,557
Professional fees	2,388	2,170	1,650
Outside service fees	5,529	4,909	4,424
Data processing services	1,283	919	897
Telecommunications	748	778	749
Other	2,404	1,963	1,722
Total other operating expense	$ 18,065	$ 16,263	$ 14,086

Note 13
Income Taxes

The components of income tax expense (benefit) are as follows:

	For the Years Ended December 31,		
(In thousands)	**2019**	**2018**	**2017**
Current:			
Federal	$ 4,423	$ 8,557	$ 4,250
State	1,392	1,043	1,638
Deferred:			
Federal	1,097	(3,404)	4,256
State	150	(117)	(259)
Total income tax expense	$ 7,062	$ 6,079	$ 9,885

A reconciliation of expected income tax expense (benefit), computed by applying the effective federal statutory rate of 21% for each of 2019 and 2018 and 35% for 2017 to income before income tax expense is as follows:

	For the Years Ended December 31,		
(In thousands)	**2019**	**2018**	**2017**
Expected income tax expense	$ 7,868	$ 7,633	$ 12,214
(Reductions) increases resulting from:			
Tax-exempt income	(1,755)	(2,009)	(3,868)
State taxes, net of federal benefit	1,218	732	896
Share-based compensation adjustment	(281)	(286)	(376)
Adjustment of deferred tax asset or liability for TCJA	—	(74)	1,824
Other, net	12	83	(805)
Total income tax expense	$ 7,062	$ 6,079	$ 9,885

Income tax expense in 2019 totaled $7,062,000 compared to $6,079,000 and $9,885,000 in 2018 and 2017, respectively. When measured as a percent of pre-tax income, the Company's effective tax rate was 19% in 2019, 17% in 2018, and 28% in 2017. The increase in 2019 tax expense was primarily the result of the decrease in the amount of tax-exempt income from municipal

bonds, an increase in state tax expense, and a prior year reduction of tax expense recorded from the final analysis and measurement of the TCJA.

The tax effects of temporary differences which give rise to significant portions of the deferred tax assets and deferred tax liabilities are presented below:

	December 31,	
(In thousands)	**2019**	**2018**
Deferred tax assets:		
Allowance for loan losses	$ 2,452	$ 2,376
ASC 715 pension funding liability	7,642	6,000
Net operating loss carryforward [1]	27	50
Supplemental executive retirement plan accrual	2,087	1,968
Stock compensation	1,987	1,673
Total deferred tax assets	$ 14,195	$ 12,067
Deferred tax liabilities:		
Premises and equipment	(2,821)	(1,937)
Pension	(974)	(409)
Intangible assets	(1,379)	(1,212)
Unrealized gain on investment in securities available-for-sale	(3,348)	(156)
Other	(196)	(80)
Total deferred tax liabilities	$ (8,718)	$ (3,794)
Net deferred tax assets	$ 5,477	$ 8,273

[1] As of December 31, 2019, the Company had approximately $128,000 of net operating loss carry forwards as a result of the acquisition of Franklin Bancorp. The utilization of the net operating loss carry forward is subject to Section 382 of the Internal Revenue Code and limits the Company's use to approximately $122,000 per year during the carry forward period, which expires in 2024.

A valuation allowance would be provided on deferred tax assets when it is more likely than not that some portion of the assets will not be realized. The Company has not established a valuation allowance at December 31, 2019 or 2018, due to management's belief that all criteria for recognition have been met, including the expectation of projected future taxable income sufficient to support the realization of deferred tax assets.

The reconciliation of the beginning unrecognized tax benefits balance to the ending balance is presented in the following table:

(In thousands)	**2019**	**2018**	**2017**
Balance at January 1	$1,403	$1,632	$1,623
Changes in unrecognized tax benefits as a result of tax positions taken during a prior year	56	(135)	(15)
Changes in unrecognized tax benefits as a result of tax position taken during the current year	171	192	263
Reductions to unrecognized tax benefits as a result of a lapse of the applicable statute of limitations	(331)	(286)	(239)
Balance at December 31	$1,299	$1,403	$1,632

At December 31, 2019, 2018 and 2017, the balances of the Company's unrecognized tax benefits which would, if recognized, affect the Company's effective tax rate were $1,184,000, $1,272,000 and $1,464,000, respectively. These amounts are net of the offsetting benefits from other taxing jurisdictions.

As of December 31, 2019, 2018 and 2017, the Company had $151,000, $136,000 and $139,000, respectively, in accrued interest related to unrecognized tax benefits.

The Company believes it is reasonably possible that the total amount of unrecognized tax benefits will decrease by approximately $315,000 over the next 12 months. The reduction primarily relates to the anticipated lapse in the statute of limitations. The unrecognized tax benefits relate primarily to apportionment of taxable income among various state tax jurisdictions.

The Company is subject to income tax in the U.S. federal jurisdiction, numerous state jurisdictions, and a foreign jurisdiction. The Company's federal income tax returns for tax years 2016 through 2018 remain subject to examination by the Internal Revenue Service. In addition, the Company is subject to state tax examinations for the tax years 2015 through 2018. The Company is currently under audit from the Internal Revenue Service for the 2017 tax year.

Note 14
Disclosures about Fair Value of Financial Instruments

The Company is 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 include commitments to extend credit, commercial letters of credit and standby letters of credit. The Company's maximum potential exposure to credit loss in the event of nonperformance by the other party to the financial instrument for commitments to extend credit, commercial letters of credit and standby letters of credit is represented by the contractual amounts of those instruments. At December 31, 2019 and 2018, no amounts have been accrued for any estimated losses for these instruments.

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. Commercial and standby letters of credit are conditional commitments issued by the Company to guarantee the performance of a customer to a third party. These off-balance sheet financial instruments generally have fixed expiration dates or other termination clauses and may require payment of a fee. The approximate remaining terms of commercial and standby letters of credit range from less than one to five years. Since these financial instruments may expire without being drawn upon, the total amounts do not necessarily represent future cash requirements. Commitments to extend credit and letters of credit are subject to the same underwriting standards as those financial instruments included on the consolidated balance sheets. The Company evaluates each customer's credit-worthiness on a case-by-case basis. The amount of collateral obtained, if deemed necessary upon extension of the credit, is based on management's credit evaluation of the borrower. Collateral held varies, but is generally accounts receivable, inventory, residential or income-producing commercial property or equipment. In the event of nonperformance, the Company may obtain and liquidate the collateral to recover amounts paid under its guarantees on these financial instruments.

The following table shows conditional commitments to extend credit, standby letters of credit and commercial letters:

	December 31,	
(In thousands)	**2019**	**2018**
Conditional commitments to extend credit	$ 197,799	$ 144,010
Standby letters of credit	13,288	11,368
Commercial letters of credit	2,755	3,486

The fair value of commitments to extend credit and standby letters of credit is estimated using the fees currently charged to enter into similar agreements, taking into account the remaining terms of the agreements, the likelihood of the counterparties drawing on such financial instruments and the present credit worthiness of such counterparties. The Company believes such commitments have been made at terms which are competitive in the markets in which it operates; however, no premium or discount is offered thereon.

Following is a summary of the carrying amounts and fair values of the Company's financial instruments:

	December 31,			
	2019		**2018**	
(In thousands)	**Carrying Amount**	**Fair Value**	**Carrying Amount**	**Fair Value**
Balance sheet assets:				
Cash and cash equivalents	$ 203,954	$ 203,954	$ 230,933	$ 230,933
Investment in securities	422,665	422,665	441,534	441,534
Loans, net	762,082	776,653	711,362	711,090
Accrued interest receivable	6,706	6,706	7,069	7,069
Total	$ 1,395,407	$ 1,409,978	$ 1,390,898	$ 1,390,626
Balance sheet liabilities:				
Deposits	$ 757,136	$ 757,790	$ 721,926	$ 722,018
Accounts and drafts payable	684,295	684,295	694,360	694,360
Accrued interest payable	103	103	91	91
Total	$ 1,441,534	$ 1,442,188	$ 1,416,377	$ 1,416,469

The following methods and assumptions were used to estimate the fair value of each class of financial instruments for which it is practicable to estimate that value:

Cash and Cash Equivalents The carrying amount approximates fair value.

Investment in Securities The fair value is measured on a recurring basis using Level 2 valuations. Refer to Note 3, "Investment in Securities," for fair value and unrealized gains and losses by investment type.

Loans The fair value is estimated using present values of future cash flows discounted at risk-adjusted interest rates for each loan category designated by management and is therefore a Level 3 valuation. Management believes that the risk factor embedded in the interest rates along with the allowance for loan losses results in a fair valuation.

Impaired loans are valued using the fair value of the collateral which is based upon an observable market price or current appraised value and therefore, the fair value is a nonrecurring Level 3 valuation.

Accrued Interest Receivable The carrying amount approximates fair value.

Deposits The fair value of demand deposits, savings deposits and certain money market deposits is the amount payable on demand at the reporting date. The fair value of fixed-maturity certificates of deposit is estimated using the rates currently offered for deposits of similar remaining maturities and therefore, is a Level 2 valuation. The fair value estimates above do not include the benefit that results from the low-cost funding provided by the deposit liabilities compared to the cost of borrowing funds in the market or the benefit derived from the customer relationship inherent in existing deposits.

Accounts and Drafts Payable The carrying amount approximates fair value.

Accrued Interest The carrying amount approximates fair value.

Limitations Fair value estimates are based on existing on- and off-balance sheet financial instruments without attempting to estimate the value of anticipated future business and the value of assets and liabilities that are not considered financial instruments. Other significant assets or liabilities that are not considered financial assets or liabilities include premises and equipment and the benefit that results from the low-cost funding provided by the deposit liabilities compared to the cost of borrowing funds in the market (core deposit intangible). In addition, tax ramifications related to the realization of the unrealized gains and losses can have a significant effect on fair value estimates and have not been considered in any of the estimates.

Note 15
Contingencies

The Company and its subsidiaries are not involved in any pending proceedings other than ordinary routine litigation incidental to their businesses. Management believes none of these proceedings, if determined adversely, would have a material effect on the business or financial condition of the Company or its subsidiaries.

Note 16
Revenue from Contracts with Customers

On January 1, 2018, the Company adopted FASB ASC 606 and selected the modified retrospective transition method. The adoption of this new standard did not impact the Company's results of operations or balance sheet and there was no cumulative effect of initially applying this new revenue standard to the opening balance of retained earnings. Since interest income on loans and securities are both excluded from this topic, a significant portion of the Company's revenues are not subject to the new guidance. The services that fall within the scope of FASB ASC 606 are presented within fee revenue and other income in the consolidated statements of income and are recognized as revenue as the performance obligation to the customer is satisfied. Services within the scope of FASB ASC 606 include invoice processing and payment fees, bank service fees, and OREO.

Invoice processing fees – The Company earns fees on a per-item or monthly basis for the invoice processing services rendered on behalf of customers. Per-item fees are recognized at the point in time when the performance obligation is satisfied. Monthly fees are earned over the course of a month, representing the period over which the performance obligation is satisfied. The Company also earns interest income from the balances generated during the payment cycle for the invoices processed, which is an integral component of the Company's compensation for invoice processing services but is out-of-scope of FASB ASC 606. The contracts have no significant impact related to variable consideration and no significant financing components.

Invoice payment fees – The Company earns fees on a transaction level basis for invoice payment services when making customer payments. Fees are recognized at the point in time when the payment transactions are made, which is when the performance obligation is satisfied. The contracts have no significant impact related to variable consideration and no significant financing components.

Bank service fees – Revenue from service fees consists of service charges and fees on deposit accounts under depository agreements with customers to provide access to deposited funds. Service charges on deposit accounts are transaction based fees that are recognized at the point in time when the performance obligation is satisfied. Service charges are recognized on a monthly basis representing the period over which the performance obligation is satisfied. The contracts have no significant impact related to variable consideration and no significant financing components.

OREO – The Company currently does not have any OREO and has not in recent years. Net gains or losses would be recorded when other real estate is sold to a third party and substantially all of the consideration for the transfer of property is received.

(In thousands)	For the Years Ended December 31, 2019	2018	2017
Fee revenue and other income			
In-scope of *FASB ASC 606*			
Invoice processing fees	$ 81,329	$ 78,461	$ 72,961
Invoice payment fees	26,624	23,720	20,361
Information services payment and processing revenue	107,953	102,181	93,322
Bank service fees	1,386	1,335	1,349
Fee revenue (in-scope of *FASB ASC 606*)	109,339	103,516	94,671
Other income (out-of-scope of *FASB ASC 606*)	730	560	841
Total fee revenue and other income	110,069	104,076	95,512
Net interest income after provision for loan losses (out-of-scope of *FASB ASC 606*)	47,166	44,190	39,790
Total net revenue	$ 157,235	$ 148,266	$ 135,302

Note 17
Industry Segment Information

The services provided by the Company are classified into two reportable segments: Information Services and Banking Services. Each of these segments provides distinct services that are marketed through different channels. They are managed separately due to their unique service and processing requirements.

The Information Services segment provides transportation, energy, telecommunication, and environmental invoice processing and payment services to large corporations. The Banking Services segment provides banking services primarily to privately held businesses and faith-based ministries, including on-line generosity services, as well as supporting the banking needs of the Information Services segment.

The Company's accounting policies for segments are the same as those described in Note 1 of this report. Management evaluates segment performance based on tax-equivalized (as defined in the footnote to the chart on the following table) pre-tax income after allocations for corporate expenses. Transactions between segments are accounted for at what management believes to be fair value.

Substantially all revenue originates from, and all long-lived assets are located within the United States, and no revenue from any customer of any segment exceeds 10% of the Company's consolidated revenue.

Funding sources represent average balances and deposits generated by Information Services and Banking Services and there is no allocation methodology used. Segment interest income is a function of the relative share of average funding sources generated by each segment multiplied by the following rates:

- Information Services – one or more fixed rates depending upon the specific characteristics of the funding source, and
- Banking Services – a variable rate that is based upon the overall performance of the Company's earning assets.

Any difference between total segment interest income and overall total Company interest income is included in Corporate, Eliminations, and Other. Certain amounts in the table below for 2018 and 2017 have been reclassified to conform to the 2019 presentation.

Summarized information about the Company's operations in each industry segment for the years ended December 31, 2019, 2018 and 2017, is as follows:

(In thousands)	Information Services	Banking Services	Corporate, Eliminations and Other	Total
2019				
Fee income from customers	$ 108,882	$ 1,660	$ (473)	$ 110,069
Interest income*	25,616	30,646	(1,568)	54,694
Interest expense	—	5,193	—	5,193
Intersegment income (expense)	—	2,107	(2,107)	—
Depreciation and amortization	4,659	131	—	4,790
Tax-equivalized pre-tax income*	28,542	13,048	(2,040)	39,550
Goodwill	12,433	1,829	—	14,262
Other intangible assets, net	1,142	3,139	—	4,281
Total Assets	844,483	915,341	4,419	1,764,243
Funding Sources	676,068	592,905	—	1,268,973
2018				
Fee income from customers	$ 102,839	$ 1,307	$ (70)	$ 104,076
Interest income*	25,074	27,770	(2,496)	50,348
Interest expense	—	3,736	—	3,736
Intersegment income (expense)	—	1,880	(1,880)	—
Depreciation and amortization	4,254	142	—	4,396
Tax-equivalized pre-tax income*	27,763	13,571	(2,566)	38,768
Goodwill	12,433	136	—	12,569
Other intangible assets, net	1,554	—	—	1,554
Total Assets	826,201	886,291	(17,316)	1,695,176
Funding Sources	642,733	572,653	—	1,215,386
2017				
Fee income from customers	$ 93,484	$ 1,547	$ 481	$ 95,512
Interest income*	23,813	27,376	(3,522)	47,667
Interest expense	—	2,187	—	2,187
Intersegment income (expense)	—	1,362	(1,362)	—
Depreciation and amortization	3,902	149	—	4,051
Tax-equivalized pre-tax income*	28,168	15,460	(3,039)	40,589
Goodwill	12,433	136	—	12,569
Other intangible assets, net	1,996	—	—	1,996
Total Assets	854,214	830,672	(27,677)	1,603,209
Funding Sources	604,493	598,986	—	1,203,479

* Presented on a tax-equivalent basis assuming a tax rate of 21% for 2019 and 2018 and 35% for 2017. The tax-equivalent adjustment was approximately $2,084,000 for 2019, $2,422,000 for 2018, and $5,691,000 for 2017.

Note 18
Leases

On January 1, 2019, the Company adopted ASU 2016-02. The Company leases certain premises under operating leases. As of December 31, 2019, the Company had lease liabilities of $6,682,000 and right-of-use assets of $5,848,000. Lease liabilities and right-of-use assets are reflected in other liabilities and other assets, respectively. Included in occupancy expense on the consolidated statements of income for 2019 was operating lease cost of $1,675,000, short-term lease cost of $145,000, and there was no variable lease cost. The Company paid cash of $1,531,000 for operating lease amounts included in the measurement of lease liabilities for the year ended December 31, 2019. No right-of-use assets were obtained in exchange for lease liabilities during the year ended December 31, 2019.

For the year ended December 31, 2019, the weighted average remaining lease term for the operating leases was 6.4 years and the weighted average discount rate used in the measurement of operating lease liabilities was 5.5%. Certain of the Company's

leases contain options to renew the lease; however, these renewal options are not included in the calculation of the lease liabilities as they are not reasonably certain to be exercised. There has been no significant change in the Company's expected future minimum lease payments since December 31, 2018.

A maturity analysis of operating lease liabilities and undiscounted cash flows as of December 31, 2019 was as follows:

(In thousands)		**December 31, 2019**
Lease payments due		
Less than 1 year	$	1,748
1-2 years		1,613
2-3 years		1,538
3-4 years		614
4-5 years		392
Over 5 years		1,972
Total undiscounted cash flows		7,877
Discount on cash flows		1,195
Total lease liability	$	6,682

There were no sale and leaseback transactions, leveraged leases, or lease transactions with related parties during the year ended December 31, 2019. At December 31, 2019, the Company had one lease that had not yet commenced, but is expected to create approximately $800,000 of additional lease liabilities and right-of-use assets for the Company. This lease is anticipated to commence in 2020.

Note 19
Subsequent Events

In accordance with FASB ASC 855 - *Subsequent Events*, the Company has evaluated subsequent events after the consolidated balance sheet date of December 31, 2019, and there were no events identified that would require additional disclosures to prevent the Company's consolidated financial statements from being misleading.

Note 20
Condensed Financial Information of Parent Company

Following are the condensed balance sheets of the Company (parent company only) and the related condensed statements of income and cash flows.

	Condensed Balance Sheets December 31,			
(In thousands)		**2019**		**2018**
Assets				
Cash and due from banks	$	17,032	$	35,735
Short-term investments		3,223		35,201
Securities available-for-sale, at fair value		422,665		441,534
Loans, net		45,187		20,188
Payments in excess of funding		206,158		160,777
Investments in subsidiaries		145,400		130,231
Premises and equipment, net		19,940		21,358
Other assets		137,226		117,374
Total assets	$	996,831	$	962,398
Liabilities and Shareholders' Equity				
Liabilities:				
Accounts and drafts payable	$	683,485	$	693,026
Short-term borrowings		18,000		—
Other liabilities		50,987		39,362
Total liabilities		752,472		732,388
Total shareholders' equity		244,359		230,010
Total liabilities and shareholders' equity	$	996,831	$	962,398

(In thousands)	Condensed Statements of Income For the Years Ended December 31, 2019	2018	2017
Income from subsidiaries – management fees	$ 2,599	$ 2,668	$ 2,172
Information services revenue	106,198	100,628	93,133
Net interest income after provision	15,713	14,159	13,217
Gain (loss) on sales of investment securities	19	(42)	—
Other income	518	456	483
Total income	125,047	117,869	109,005
Expenses:			
Salaries and employee benefits	81,432	77,946	70,409
Other expenses	26,136	23,442	20,333
Total expenses	107,568	101,388	90,742
Income before income tax and equity in undistributed income of subsidiaries	17,479	16,481	18,263
Income tax expense	2,860	1,788	4,394
Income before undistributed income of subsidiaries	14,619	14,693	13,869
Equity in undistributed income of subsidiaries	15,785	15,575	11,145
Net income	$ 30,404	$ 30,268	$ 25,014

(In thousands)	Condensed Statements of Cash Flows For the Years Ended December 31, 2019	2018	2017
Cash flows from operating activities:			
Net income	$ 30,404	$ 30,268	$ 25,014
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Equity in undistributed income of subsidiaries	(15,785)	(15,575)	(11,145)
Net change in other assets	(6,289)	(1,012)	(7,257)
Net change in other liabilities	9,474	3,829	10,118
Stock-based compensation expense	3,144	2,583	1,743
Other, net	6,104	10,242	9,219
Net cash provided by operating activities	27,052	30,335	27,692
Cash flows from investing activities:			
Net decrease (increase) in securities	26,150	14,615	(80,621)
Net (increase) decrease in loans	(24,999)	(7,949)	34,944
Net increase in payments in excess of funding	(45,381)	(21,674)	(33,756)
Purchases of premises and equipment, net	(2,637)	(4,211)	(4,020)
Asset acquisition of Gateway Giving, LLC	(2,833)	—	—
Net cash used in investing activities	(49,700)	(19,219)	(83,453)
Cash flows from financing activities:			
Net (decrease) increase in accounts and drafts payable	(21,875)	(22,316)	20,397
Short-term borrowings	18,000	—	—
Cash dividends paid	(15,234)	(13,177)	(10,675)
Purchase of common shares for treasury	(7,799)	(8,838)	(2,270)
Other financing activities, net	(1,125)	(635)	(267)
Net cash (used in) provided by financing activities	(28,033)	(44,966)	7,185
Net decrease in cash and cash equivalents	(50,681)	(33,850)	(48,576)
Cash and cash equivalents at beginning of year	70,936	104,786	153,362
Cash and cash equivalents at end of year	$ 20,255	$ 70,936	$ 104,786

Note 21
SUPPLEMENTARY FINANCIAL INFORMATION
(Unaudited)

(In thousands except per share data)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	YTD
2019					
Fee revenue and other income	$ 27,013	$ 27,372	$ 28,262	$ 27,422	$ 110,069
Interest income	12,897	13,327	13,666	12,719	52,609
Interest expense	1,290	1,305	1,392	1,206	5,193
Net interest income	11,607	12,022	12,274	11,513	47,416
Provision for loan losses	250	—	—	—	250
Operating expense	28,462	29,971	30,563	30,773	119,769
Income tax expense	1,745	1,739	1,787	1,791	7,062
Net income	$ 8,163	$ 7,684	$ 8,186	$ 6,371	$ 30,404
Net income per share:					
Basic earnings per share	$ .56	$ .53	$ .57	$ .44	$ 2.11
Diluted earnings per share	.55	.52	.56	.43	2.07
2018					
Fee revenue and other income	$ 25,374	$ 25,640	$ 26,435	$ 26,627	$ 104,076
Interest income	11,288	11,513	12,215	12,910	47,926
Interest expense	679	794	1,029	1,234	3,736
Net interest income	10,609	10,719	11,186	11,676	44,190
Provision for loan losses	—	—	—	—	—
Operating expense	26,182	27,463	28,530	29,744	111,919
Income tax expense	1,709	1,387	1,481	1,502	6,079
Net income	$ 8,092	$ 7,509	$ 7,610	$ 7,057	$ 30,268
Net income per share:					
Basic earnings per share	$ .55	$ .51	$ .52	$ .48	$ 2.06
Diluted earnings per share	.54	.50	.51	.47	2.03

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Cass Information Systems, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Cass Information Systems, Inc. and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, cash flows, and shareholders' equity for each of the years in the three year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 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, and our report dated February 28, 2020 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Assessment of qualitative factor adjustments to the allowance for loan losses

As discussed in Notes 1 and 4 to the consolidated financial statements, the Company's allowance for loan losses related to loans collectively evaluated for impairment (ALLL) represented the total allowance for loan losses of $10.6 million as of December 31, 2019, or 1.37% of total loans. The Company estimates the ALLL using a methodology that first uses a quantitative component, which groups loans with similar risk characteristics and develops historical loss rates using recorded charge-offs and recoveries over a historical period. The Company's methodology also includes qualitative risk factors that allow management to adjust its estimates of losses based on the most recent information available and to address other limitations in the quantitative component of the ALLL model.

We identified the assessment of qualitative risk factors as a critical audit matter. The qualitative component represented a significant percentage of the overall ALLL. This is due to the fact that given the current credit environment and the low level of actual losses incurred in recent years, the quantitative component is not capturing all the risk of loss in the portfolio. As a result, the assessment of the qualitative risk factors required complex and subjective auditor judgment, including knowledge and experience in the industry, in order to evaluate the qualitative framework and related risk factors. Specifically, the qualitative risk factors included concentrations of credit risk, economic conditions, underlying collateral values within the Company's portfolio, and the effect of other legal and regulatory factors. In addition, auditor judgment was required to evaluate the sufficiency of audit evidence obtained.

The primary procedures we performed to address the critical audit matter included the following. We tested certain internal controls over the (1) development and approval of the overall ALLL methodology, (2) development of the qualitative framework and evaluation of the related risk factors, (3) determination of the qualitative risk factor adjustments, and (4) analysis of the ALLL results, trends, and ratios. We tested the Company's process to assess the qualitative factors and related adjustments used to develop the ALLL estimate by:

- assessing the maximum qualitative factor adjustment,
- evaluating the metrics, including the relevance of sources of data and assumptions, used to allocate the qualitative factor adjustments,
- analyzing the determination of each qualitative factor adjustment, and
- evaluating trends in the total ALLL, including the qualitative factor adjustments, for consistency with trends in loan portfolio growth (attrition) and credit performance.

In addition, we involved credit risk professionals with industry knowledge and experience who assisted in evaluating:

- the Company's overall ALLL methodology, which included the qualitative framework and related risk factors, for compliance with U.S. generally accepted accounting principles, and
- the resulting qualitative risk factors and their relationship to the quantitative model and how they address recent information available not captured in that quantitative model.

We evaluated the collective results of the procedures performed to assess the sufficiency of the audit evidence obtained related to the Company's ALLL.

/s/ KPMG LLP

We have served as the Company's auditor since 1983.

St. Louis, Missouri
February 28, 2020

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of December 31, 2019. Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of December 31, 2019.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentations.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under this framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2019.

There have not been changes in our internal control over financial reporting that occurred during our fourth fiscal quarter that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by KPMG LLP, our independent registered public accounting firm. KPMG LLP's report, which expresses an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2019, is included below.

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Cass Information Systems, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Cass Information Systems, Inc. and subsidiaries' (the Company) 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. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, cash flows, and shareholders' equity for each of the years in the three-year period ended December 31, 2019 and the related notes (collectively, the consolidated financial statements), and our report dated February 28, 2020 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

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

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ KPMG LLP

St. Louis, Missouri
February 28, 2020

ITEM 9B. <u>OTHER INFORMATION</u>

None.

PART III.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Certain information required by this Item 10 is incorporated herein by reference to the following sections of the Company's definitive Proxy Statement for its 2020 Annual Meeting of Shareholders ("2020 Proxy Statement"), a copy of which will be filed with the SEC no later than 120 days after the close of the fiscal year: "Election of Directors – Proposal 1," "Executive Compensation and Related Information," and "Beneficial Ownership of Securities."

The Company has adopted a Code of Conduct and Business Ethics policy, applicable to all Company directors, executive officers and employees. The policy is publicly available and can be viewed on the Company's website at www.cassinfo.com. The Company intends to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding the amendment to, or a waiver of, a provision of this policy that applies to the Company's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, and that relates to any element of the code of ethics definition enumerated in Item 406(b) of Regulation S-K by posting such information on its website.

There were no material changes to the procedures by which shareholders may recommend nominees to the Board during the fourth quarter of fiscal 2019.

ITEM 11. EXECUTIVE COMPENSATION

Certain information required pursuant to this Item 11 is incorporated herein by reference to the sections entitled "Election of Directors – Proposal 1" and "Executive Compensation and Related Information" of the Company's 2020 Proxy Statement, a copy of which will be filed with the SEC no later than 120 days after the close of the fiscal year.

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

Information required pursuant to this Item 12 is incorporated herein by reference to the section entitled "Beneficial Ownership of Securities" of the Company's 2020 Proxy Statement, a copy of which will be filed with the SEC no later than 120 days after the close of the fiscal year.

Securities Authorized for Issuance under Equity Compensation Plans

The following information is as of December 31, 2019:

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 (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders [1][2]	377,946	$42.37	441,366
Equity compensation plans not approved by security holders	–	–	–
Total	377,946	$42.37	441,366

[1] Amount disclosed relates to the Amended and Restated Omnibus Stock and Performance Compensation Plan (the "Omnibus Plan").
[2] Includes restricted stock units, restricted stock, SARs, and performance-based stock. Performance-based stock is included assuming 100% attainment of the targets. The actual number of shares of performance-based stock to be awarded at the end of applicable performance periods ranges from 0% to 150% of the target amount awarded depending on the Company's achievement of pre-established financial goals.

Refer to Note 11 to the consolidated financial statements for information concerning the Omnibus Plan.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by this Item 13 is incorporated herein by reference to the section entitled "Election of Directors – Proposal 1" of the Company's 2020 Proxy Statement, a copy of which will be filed with the SEC no later than 120 days after the close of the fiscal year.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information concerning our principal accountant's fees and services is incorporated herein by reference to the section entitled "Ratification of Appointment of Independent Registered Public Accounting Firm – Proposal 3" of the Company's 2020 Proxy Statement, a copy of which will be filed with the SEC no later than 120 days after the close of the fiscal year.

PART IV.

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are incorporated by reference in or filed as an exhibit to this report:

(1) and (2) Financial Statements and Financial Statement Schedules
Included in Item 8 of this report.

(3) Exhibits listed under (b) of this Item 15.

(b) Exhibits

3.1	Restated Articles of Incorporation of Registrant, incorporated by reference to Exhibit 4.1 to Form S-8 Registration Statement No. 333-44499, filed with the SEC on January 20, 1998.
3.2	Amendment to Restated Articles of Incorporation, incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on April 19, 2013.
3.3	Articles of Merger of Cass Commercial Corporation, incorporated by reference to Exhibit 3.1 to the quarterly report on Form 10-Q for the quarter ended September 30, 2006.
3.4	Second Amended and Restated Bylaws of Registrant, incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on July 21, 2016.
4.1	Description of the Registrant's securities, incorporated by reference to Exhibit 4.1 to the annual report on Form 10-K for the year ended December 31, 2019.
10.1	Form of Directors' Indemnification Agreement, incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q for the quarter ended March 31, 2003.*
10.2	Amended and Restated Omnibus Stock and Performance Compensation Plan, incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on April 19, 2013.*
10.3	Amendment and Restatement of the Supplemental Executive Retirement Plan, incorporated by reference to Exhibit 10.2 to the quarterly report on Form 10-Q for the quarter ended September 30, 2007.*
10.4	Form of Stock Appreciation Rights Award Agreement, incorporated by reference to Exhibit 10.4 to the quarterly report on Form 10-Q for the quarter ended September 30, 2007.*
10.5	Form of Restricted Stock Award Agreement, incorporated by reference to Exhibit 10.8 to the annual report on Form 10-K for the year ended December 31, 2016.*
10.6	Form of Restricted Stock Unit Agreement, incorporated by reference to Exhibit 10.9 to the annual report on Form 10-K for the year ended December 31, 2016.*
10.7	Description of Cass Information Systems, Inc. Profit Sharing Program, incorporated by reference to Exhibit 10.7 to the annual report on For 10-K for the year ended December 31, 2018.*
21	Subsidiaries of registrant, incorporated by reference to Exhibit 21 to the annual report on Form 10-K for the year ended December 31, 2019.
23	Consent of Independent Registered Public Accounting Firm.
31.1	Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

32 .1	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32 .2	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
104	Cover Page Interactive Data File

*Management contract or compensatory plan arrangement

(c) None.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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.

CASS INFORMATION SYSTEMS, INC.

Date: March 6, 2020

By /s/ Eric H. Brunngraber
Eric H. Brunngraber
Chairman, President and Chief Executive Officer
(Principal Executive Officer)

Date: March 6, 2020

By /s/ P. Stephen Appelbaum
P. Stephen Appelbaum
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

This page intentionally left blank.

Shareholder Information

CORPORATE HEADQUARTERS
Cass Information Systems, Inc.
12444 Powerscourt Drive, Suite 550
Saint Louis, Missouri 63131
314-506-5500
cass@cassinfo.com
www.cassinfo.com

COMMON STOCK
The company's common stock trades on the NASDAQ stock market under the symbol CASS.

ANNUAL MEETING
The annual meeting of shareholders will be held April 21, 2020 at 8:30 a.m. at the Cass office at 13001 Hollenberg Drive, Bridgeton, Missouri 63044.

No presentations are planned.

INVESTOR RELATIONS
Security analysts, investment managers and others seeking financial information about the Company should contact:

Investor Relations Department
Cass Information Systems, Inc.
12444 Powerscourt Drive, Suite 550
Saint Louis, Missouri 63131
314-506-5500

INDEPENDENT AUDITORS
KPMG LLP
10 South Broadway, Suite 900
Saint Louis, Missouri 63102

TRANSFER AGENT
Shareholder correspondence should be mailed to:
Computershare
P.O. Box 505000
Louisville, KY 40233

Overnight correspondence should be mailed to:
Computershare
462 South 4th Street, Suite 1600
Louisville, KY 40202

SHAREHOLDER WEBSITE:
www.computershare.com/investor

SHAREHOLDER ONLINE INQUIRIES:
https://www-us.computershare.com/investor/Contact

TOLL-FREE PHONE:
866-323-8170

Board of Directors

Eric H. Brunngraber
Chairman, President and Chief Executive Officer

Ralph W. Clermont
Retired Managing Partner, KPMG LLP, Saint Louis, Missouri

Robert A. Ebel
Retired Chief Executive Officer, Universal Printing Company

Benjamin F. (Tad) Edwards, IV
Chairman, Chief Executive Officer and President, Benjamin F. Edwards & Company

James J. Lindemann
Retired Executive Vice President, Emerson

Sally H. Roth
Retired Area President — Upper Midwest, Regions Bank

Joseph D. Rupp
Lead Director and Retired Chairman, President and Chief Executive Officer, Olin Corporation

Randall L. Schilling
Chief Executive Officer, OPO Startups, LLC

Franklin D. Wicks, Jr., Ph.D.
Retired Executive Vice President and President, Applied Markets, Sigma-Aldrich

Executive Officers

Eric H. Brunngraber
Chairman, President and Chief Executive Officer

P. Stephen Appelbaum
Executive Vice President and Chief Financial Officer

Mark A. Campbell
President, Transportation Information Services

James M. Cavellier
Executive Vice President and Chief Information Officer

Dwight D. Erdbruegger
President, Cass Commercial Bank

Gary B. Langfitt
President, Expense Management Services

12444 Powerscourt Drive, Suite 550
Saint Louis, Missouri 63131
314-506-5500
www.cassinfo.com