

PERFORMING & TRANSFORMING

2018 ANNUAL REPORT



PERFORMING & TRANSFORMING

Sterling Bancorp (NYSE: STL) (“Sterling”) is a regional bank holding company whose principal subsidiary, Sterling National Bank, specializes in the delivery of financial services and solutions to business owners, their families and consumers within the communities it serves through teams of dedicated and experienced relationship managers. Pursuing its strategic goal of building a high-performing company, Sterling is sharply focused on delivering a superior client experience, increasing shareholder value, serving its communities, and creating a workplace where talent and initiative can thrive.

For more information, visit the Sterling Bancorp website at www.sterlingbancorp.com.

TO OUR SHAREHOLDERS:



JACK L. KOPNISKY
PRESIDENT + CEO

I am pleased to report that 2018 was a year of strong performance and solid progress for Sterling. Among our many accomplishments: we delivered record adjusted net income and EPS available to common stockholders; met the needs of our customers, as reflected in strong commercial loan and deposit growth; completed the integration of Astoria Financial; made great strides in transforming our balance sheet; and reaffirmed our commitment to shareholder value by expanding our share buyback program.

In all of these initiatives, we continued to be guided by a well-defined strategic purpose: to create a high-performing regional bank focused on the Greater New York metropolitan area. This purpose gives the company a clear reason for being, unites our team members in pursuing shared objectives, and ensures that we have a sustainable vision for the way we want to serve our customers, stockholders and communities.

RECORD FINANCIAL PERFORMANCE

Our operating and financial performance in 2018 reflected record profitability, positive operating leverage, and increasingly strong returns on equity and assets. Net income available to common stockholders on a GAAP basis was \$439.3 million, or \$1.95 per diluted share, compared to \$91.0 million, or \$0.58 per diluted share, for 2017. Our adjusted net income available to common stockholders was a record \$449.6 million and adjusted diluted earnings per share available to common stockholders was \$2.00. Adjusted earnings and diluted earnings per share rose 102.5% and 42.9%, respectively, over the prior year. Our profitability metrics continued to strengthen in 2018, with adjusted returns on average tangible assets of 1.55% and average tangible common equity of 18.29%.

Sterling's performance continues to be driven by our determined focus on creating positive operating leverage. In 2018, adjusted total net revenues grew

by \$425.1 million—nearly three times faster than the increase in adjusted non-interest expenses of \$145.7 million. Our adjusted efficiency ratio for 2018 was 38.8%, improving from 41.8% a year earlier.

We generated strong commercial loan growth in 2018, with total commercial loans of \$16.2 billion at year-end, up 11.1% from December 31, 2017. The largest increases were in the traditional C&I, equipment finance, factoring and public finance categories, as we continued to meet the needs of small to mid-sized business in our region, as well as state, municipal and local governments nationally.

Total deposits were \$21.2 billion at 2018 year-end, rising \$675.9 million from the prior year. Sterling continues to enjoy a stable and cost-efficient funding base of core deposits, which represented 94.3% of total deposit balances at December 31, 2018.

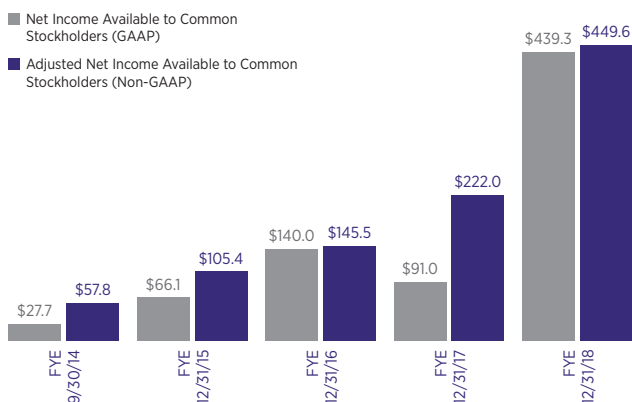
Credit quality has remained strong, despite concerns that the banking industry may be entering the later stages of the credit cycle. Non-performing loans as a percentage of total loans were 0.88%, and the allowance for loan losses was 56.7% of non-performing loans at 2018 year-end. Due to the Astoria merger, a significant portion of our loan portfolio does not carry an allowance for loan losses, as the acquired loans were recorded at their estimated fair value on the acquisition date.

Our capital base is robust, with ample capital and liquidity to support our continued growth and the execution of our strategy. Sterling Bancorp's tangible common equity to tangible assets ratio was 8.60% and Tier 1 leverage ratio was 9.50% at December 31, 2018. At Sterling National Bank, the Tier 1 leverage ratio was 9.94%.

INTEGRATING THE ASTORIA MERGER

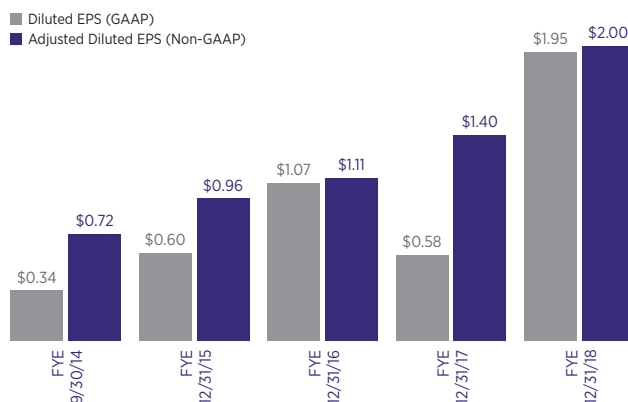
"Execution is key," is an often-heard phrase at Sterling. Certainly, our team's successful execution of the

NET INCOME AVAILABLE TO COMMON STOCKHOLDERS¹
(\$ in millions)



¹See reconciliation of as reported net income (GAAP) to as adjusted net income (non-GAAP) on page 24 of Form 10-K.

DILUTED EARNINGS PER SHARE²



²See reconciliation of as reported diluted earnings per share (GAAP) to as adjusted diluted earnings per share (non-GAAP) on page 24 of Form 10-K.

integration process for the Astoria Financial merger has been a key to our strong performance—and our future potential. Despite the challenges of merging two organizations with a combined \$30+ billion in total assets, the integration was completed by the third quarter of 2018, less than one year after the effective date of the merger. Among the many milestones in the process were the sale of Astoria’s Lake Success headquarters for a gain of \$11.8 million, conversion of Astoria core deposit systems to one integrated technology platform, and consolidation of 22 financial centers and two back-office locations. Significantly, we are achieving cost savings in excess of our expectations at the time of the merger. We appreciate the efforts of all our colleagues who worked tirelessly to make the integration a success.

With the integration accomplished, we go forward as one of the premier banks in our region. We have the ability to serve customers in a dynamic market that spans New York City, Westchester County, the Hudson Valley, Long Island, and northern New Jersey, in addition to our national commercial lending capabilities. And, we have the talented people, range of financial solutions, earnings power, operating leverage and capital strength to continue to advance our purpose of becoming a high-performing organization.

TRANSITIONING THE BALANCE SHEET

At the time we announced the Astoria merger, we set a critical goal of transitioning the resulting balance sheet to a more optimal mix, including a balanced and diverse loan portfolio with a substantial commercial loan component. We were successful in that

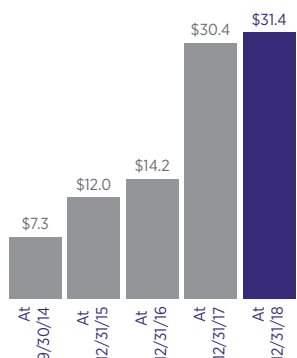
regard in 2018, and continuing into 2019. We acquired Advantage Funding Management, a provider of commercial vehicle and transportation financing services, early in 2018, adding more than \$450 million in total outstanding loans and leases and providing access to a client base across various industry sectors and geographic markets nationwide. In December 2018, we announced plans to sell approximately \$1.6 billion of fixed-rate residential mortgage loans acquired with Astoria. And in the first quarter of 2019, we purchased a \$504 million portfolio of asset-based and equipment finance loans from Woodforest National Bank, which will add significant origination capabilities in the Midwest and Southwest regions to Sterling’s established national commercial lending platform, including a direct lending equipment finance sales and originations team.

The balance sheet repositioning provides several important strategic benefits. We are exiting low-yielding mortgage loans and working to replace them with relationship-oriented, higher-yielding commercial lending assets. The result will be an improved net interest margin, reduced interest rate risk, and higher liquidity.

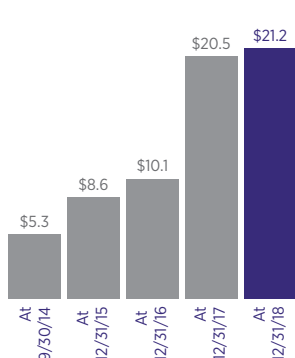
RETURNING CAPITAL TO SHAREHOLDERS

Reflecting our commitment to enhance shareholder value, Sterling’s Board of Directors increased the amount of shares authorized to be repurchased under our existing Repurchase Program to 20,000,000 shares of common stock. This represents approximately 8.9% of the common shares issued by the company, excluding treasury stock. The Board

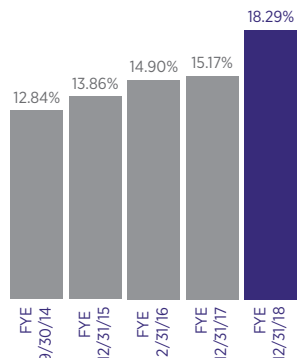
TOTAL ASSETS
(\$ in billions)



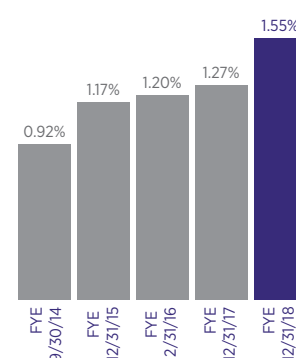
TOTAL DEPOSITS
(\$ in billions)



RETURN ON AVERAGE TANGIBLE COMMON EQUITY, ADJUSTED³



RETURN ON AVERAGE TANGIBLE ASSETS, ADJUSTED⁴



³See reconciliation of as reported return on average tangible common equity (GAAP) to as adjusted return on average tangible common equity (non-GAAP) on page 24 of Form 10-K.

⁴See reconciliation of as reported return on average tangible assets (GAAP) to as adjusted return on average tangible assets (non-GAAP) on page 25 of Form 10-K.

previously authorized the repurchase of up to 10,000,000 shares of common stock in February 2018.

Through the end of December 2018, the company had repurchased approximately 9.1 million shares under the Repurchase Program. We will continue to execute on the approved share buyback program, depending on market conditions as well as our opportunities to deploy our capital to support the growth of our business.

CONTINUOUS TRANSFORMATION BY INVESTING IN INNOVATION

Customers are increasingly asking banks to do more, through the use of technology, to make banking more convenient, self-directed and personalized. At the same time, advances such as data analytics and machine learning can help financial institutions become more responsive, efficient and cost-effective. We are making the shift to a more technology-forward enterprise, by investing in technology to better serve customers in a changing marketplace, and to ensure that our systems, processes and information security are ready for the challenges and opportunities of a digital business environment.

Our technology investments are focused on four key goals. First, we are transitioning to an “always on” mode of IT operation, as today’s bank customers demand that financial institutions provide services without interruption in a safe, secure and resilient manner. Second, we are working to advance our digital capabilities to the next level. For example, we have launched our proprietary digital experience,

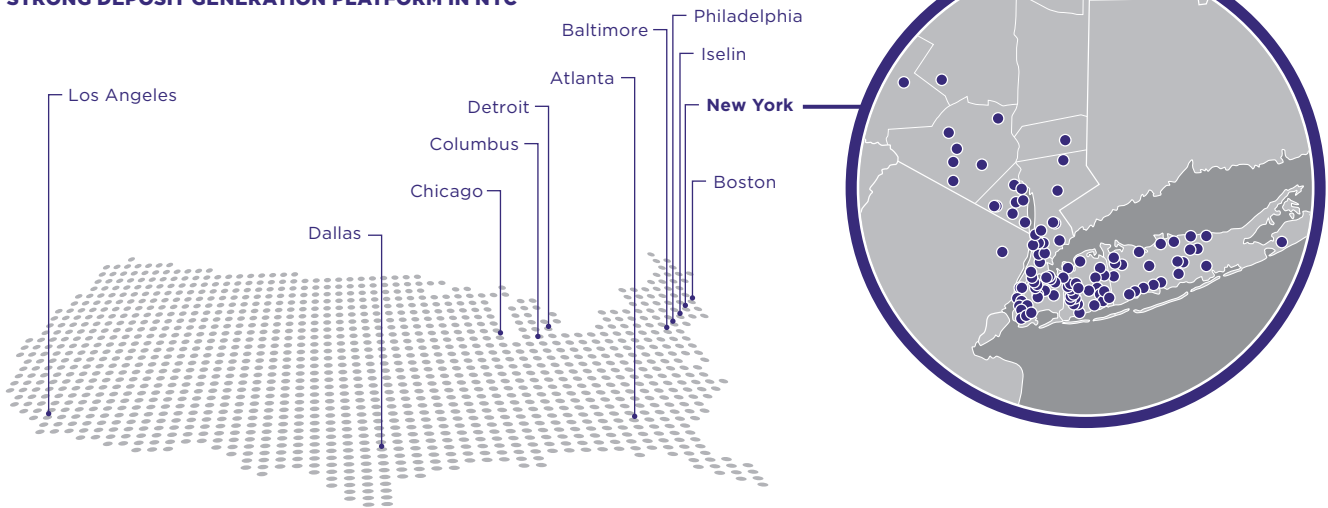
Sterling Connect, which brings together a range of solutions in a unified way, and will be the foundation for our future digital and mobile offerings. Third, we are creating a technology ecosystem based on the application of data analytics, using our data as a strategic asset to improve the customer experience. And, finally, we are working to automate several operational functions through the use of robotics and artificial intelligence, which has exciting potential to make our business more efficient, reduce cycle times, and be more responsive to users.

ENGAGING WITH OUR COMMUNITIES

Living our purpose by becoming a high-performing bank also inspires us to perform on behalf of our communities—ensuring that they are healthy, thriving and inclusive. Accordingly, Sterling is active in community reinvestment efforts aimed at increasing the availability of affordable housing, supporting neighborhood economic development, and lending to small businesses that create jobs.

In the past year, Sterling provided more than \$737 million in funding—including loans and qualified investments—for community development. Among our major initiatives, we provided financing for the LinkNYC kiosks that provide free public Wi-Fi and communications services, supported Neighborhood Housing Services’ program for lower-income, first-time home buyers in New York City, and helped finance a homeless shelter in Long Island City. Loans from Sterling also enabled the development of 1,981 units of affordable housing.

NATIONAL ASSET ORIGINATIONS SUPPORTED BY STRONG DEPOSIT GENERATION PLATFORM IN NYC



Our Sterling colleagues volunteered more than 4,600 hours with community service organizations such as Junior Achievement; Habitat for Humanity in Rockland, Westchester and Suffolk counties; Neighborhood Housing Services programs in NYC and Queens; Food Bank Westchester; the Long Island Housing Partnership; Year Up; and Big Brothers Big Sisters.

We also established the Sterling National Bank Charitable Foundation to make a difference in the communities we serve, by supporting worthy organizations that share our commitment to revitalize underserved communities and help underprivileged populations. Through direct grants and matching gifts, the Foundation reflects the caring nature of Sterling and its people. In 2018, the Foundation funded a total of \$1.14 million through 79 awards to various organizations across the communities in which we operate. The Foundation also matched colleague donations totaling more than \$57,000.

PLATFORM FOR PERFORMANCE

Since late 2011, when the current management team joined the company, Sterling has been guided by a clear strategic vision of what it means to be a high-performing regional bank. We have worked diligently to make that vision a reality and the results of that effort are clear. From 2011 to the end of 2018, total assets have increased from \$3.1 billion to \$31.4 billion, total loans have gone from \$1.7 billion to \$19.2 billion, and total deposits have risen from \$2.3 billion to \$21.2 billion. Adjusted earnings have increased from \$9.4 million to \$449.6 million and adjusted diluted EPS went from \$0.25 to \$2.00. ROATA and

ROATE have improved to levels achieved by the highest performing banks in the U.S.

We are confident that we can expand further on these accomplishments and continue on our high-performing journey. Sterling’s long-term performance—and shareholder value—will be built on a solid platform:

- Our success in driving growth through both organic means and strategic acquisitions;
- The ability to further generate positive operating leverage, including the potential for expense reductions from planned branch consolidations and the benefits of the systems conversion;
- A stable, cost-effective funding base of core deposits;
- The capital flexibility to support profitable growth and enhance shareholder value;
- Growing investments in digital initiatives; and
- A team of extremely talented, dedicated and highly motivated people who understand that “Execution is key.”

I would like to thank our colleagues for their hard work and engagement, our clients for their loyalty, our shareholders for their confidence in Sterling, and our Board of Directors for their sound guidance. We look forward to rewarding your support through our continued focus on creating a high-performing company that can deliver on its exciting promise and potential.

Jack L. Kopnisky
President and Chief Executive Officer

The background is a grayscale aerial photograph of a city with numerous high-rise buildings. Overlaid on this are several large, overlapping, semi-transparent circles. In the upper-left quadrant, there is a white line graph with several data points and arrows indicating trends. The text 'PERFORMING & TRANSFORMING' is printed in a clean, white, sans-serif font in the upper right area.

PERFORMING & TRANSFORMING

2018 FORM 10-K

The logo consists of a stylized white 'S' shape inside a dark square.

**STERLING
BANCORP**

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

FORM 10-K

Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

For the fiscal year ended December 31, 2018

Commission File Number: 001-35385

STERLING BANCORP

(Exact name of Registrant as Specified in its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

400 Rella Blvd., Montebello, New York
(Address of Principal Executive Office)

80-0091851
(IRS Employer
Identification Number)

10901
(Zip Code)

(845) 369-8040

(Registrant's Telephone Number including Area Code)

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

<u>Title of Each Class</u>	<u>Name of Each Exchange On Which Registered</u>
Common Stock, par value \$0.01 per share	New York Stock Exchange
Depository Shares, each representing a 1/40th interest in a share of 6.50% Non-Cumulative Perpetual Preferred Stock, Series A	New York Stock Exchange

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

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act YES NO

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 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 twelve 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 and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for shorter period that the Registrant was required to submit and post such files). YES NO

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	(Do not check if a smaller reporting company)	
		Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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 voting stock held by non-affiliates of the Registrant, computed by reference to the closing price of the common stock as of June 30, 2018, was \$5,298,550,969.

As of February 26, 2019, there were 212,705,340 outstanding shares of the Registrant's common stock.

DOCUMENT INCORPORATED BY REFERENCE

Proxy Statement for the Annual Meeting of Stockholders (Part III) to be filed within 120 days after the end of the Registrant's year ended December 31, 2018.

STERLING BANCORP
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PART I

ITEM 1. Business

The disclosures set forth in this item are qualified by Item 1A. Risk Factors and the section captioned “Forward-Looking Statements” in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this report and other cautionary statements set forth elsewhere in this report.

Sterling Bancorp

Sterling Bancorp (the “Company,” “we,” “our,” “ours,” or “us”) is a Delaware corporation, bank holding company and financial holding company founded in 1998 that owns all of the outstanding shares of common stock of its principal subsidiary, Sterling National Bank (the “Bank”). At December 31, 2018, we had, on a consolidated basis, \$31.4 billion in assets, \$21.2 billion in deposits, stockholders’ equity of \$4.4 billion and 216,227,852 shares of common stock outstanding. Our financial condition and results of operations are discussed herein on a consolidated basis with the Bank.

As you review the following disclosures about our business you should be aware of the following recent significant transactions and events, which are discussed below:

Transfer of residential mortgage loans from portfolio loans to loans held for sale

At December 31, 2018, the Company transferred residential mortgage loans with an unpaid principal balance of \$1.6 billion from portfolio loans to loans held for sale, which represent substantially all of the remaining 15-year and 30-year fixed rate residential mortgage loans acquired in the Astoria Merger. These loans were subject to purchase accounting discounts and were transferred to loans held for sale at the lower of cost or market which approximates their carrying value. We anticipate these loans will be sold in the first quarter of 2019.

Repurchase of common stock

As more fully described in Note 17 “Stockholders’ Equity”, in December 2018, the Board of Directors approved an increase in the amount of shares authorized to be repurchased under the existing stock repurchase program to 20,000,000 shares of common stock. In the fourth quarter of 2018, the Company repurchased 9,114,771 shares of common stock in the open market at a weighted average price of \$17.54 per share, for total consideration of \$159.9 million. The Company anticipates completing the common stock repurchase program in the first half of 2019, including repurchasing approximately 5.0 million shares in the first quarter of 2019, depending on market conditions.

Acquisition of Advantage Funding Management Co., Inc. (“Advantage Funding”)

On April 2, 2018, the Bank acquired 100% of the outstanding common stock of Advantage Funding (the “Advantage Funding Acquisition”). The total consideration was \$502.1 million and was paid in cash on the closing date. Advantage Funding was a provider of commercial vehicle and transportation financing services based in Lake Success, New York. Advantage Funding had total outstanding loans and leases of \$457.6 million on the acquisition date consisting mainly of fixed rate loans. The Bank paid a premium on the gross loans and leases receivable of 4.5% or \$20.3 million. In the second quarter of 2018, we recorded a \$4.4 million restructuring charge consisting mainly of professional fees, retention and severance compensation, systems integration expense and facilities consolidation. This charge is included in charge for asset write-downs, systems integration, severance and retention on the consolidated income statements. The Advantage Funding Acquisition is consistent with our strategy of growing commercial loans and increasing the proportion of commercial loans in our loan portfolio. The Advantage Funding operations were fully integrated into our equipment finance business operations in 2018.

Acquisition of Astoria Financial Corporation

On October 2, 2017, we completed the acquisition of Astoria Financial Corporation (“Astoria”), which we refer to as the “Astoria Merger.” The Astoria Merger was a stock-for-stock transaction valued at \$2.2 billion based on the closing price of our common stock on September 29, 2017, which was \$24.65 per share. Under the terms of the Astoria Merger, Astoria shareholders received 0.875 of a share of our common stock for each share of Astoria common stock. The Astoria Merger has furthered our strategy of growing in the greater New York metropolitan region by providing us with a significant presence and deposit market share in Long Island, New York. Additionally, the integration of Astoria’s business and operations has allowed us to realize significant operating expense savings. See additional disclosure regarding the Astoria Merger in Note 2. “Acquisitions” in the notes to consolidated financial statements.

Preferred Stock Issuance

On October 2, 2017, in connection with the Astoria Merger, we registered and issued 5,400,000 depository shares (the “Depository Shares”), which represented an aggregate issuance of \$135.0 million in preferred equity. Each Depository Share represents a

1/40th interest in our 6.50% Non-Cumulative Perpetual Preferred Stock, Series A, par value \$0.01 per share, with a liquidation preference of \$1,000 per share (the “Company Preferred Stock”). Each share of Astoria’s 6.50% Non-Cumulative Perpetual Preferred Stock, Series C, par value \$1.00 per share, with a liquidation preference of \$1,000 per share, issued and outstanding immediately prior to the effective time of the Astoria Merger was converted into the right to receive one share of our Company Preferred Stock. Dividends are payable January 15, April 15, July 15 and October 15 of each year and began October 15, 2017. Holders of the Depositary Shares will be entitled to all proportional rights and preferences of the Company Preferred Stock (including dividend, voting, redemption and liquidation rights). The Company Preferred Stock is redeemable in whole or in part from time to time, on October 15, 2022 or any dividend payment date thereafter. Under the terms of the Company Preferred Stock, our ability to pay dividends on, make distributions with respect to or repurchase, redeem or otherwise acquire shares of our common stock or any preferred stock ranking on parity with or junior to the Company Preferred Stock will be subject to restrictions in the event that we do not declare and either pay or set aside a sum sufficient for payment of dividends on the Company Preferred Stock for the immediately preceding dividend period.

November 2016 Common Equity Capital Raise

On November 22, 2016, we issued 4,370,000 shares of our common stock in a public offering at \$20.95 per share. We received proceeds net of underwriting discounts, commissions and expenses of \$91.0 million. The net proceeds were used for general corporate purposes and to support growth in interest earning assets, including loan originations and purchases of investment securities.

Acquisition of Restaurant Franchise Financing Loan Portfolio

On September 9, 2016, the Bank acquired a restaurant franchise financing loan portfolio from GE Capital with an unpaid principal balance of approximately \$169.8 million. Total cash paid for the portfolio was \$163.3 million, which included a discount to the balance of gross loans receivable of 4.00%, or \$6.8 million, plus accrued interest receivable. As the acquired assets did not constitute a business, the transaction was accounted for as an asset purchase.

Acquisition of NewStar Business Credit LLC

On March 31, 2016, we acquired 100% of the outstanding equity interests of NewStar Business Credit LLC (“NSBC”), which we refer to as the “NSBC Acquisition.” NSBC’s loans had a fair value of \$320.4 million on the acquisition date. We paid a premium on the balance of gross loans receivable acquired of 5.90%, or \$18.9 million. The NSBC Acquisition was an all cash transaction with a value of \$346.7 million; the transaction doubled the size of our asset-based lending portfolio and expanded the geographic footprint of our asset-based lending business. See Note 2. “Acquisitions” in the notes to consolidated financial statements for additional information.

Sterling National Bank

The Bank is a full-service regional bank founded in 1888. Headquartered in Montebello, New York, the Bank specializes in the delivery of services and solutions to business owners, their families and consumers within the communities we serve through teams of dedicated and experienced relationship managers. The Bank offers a complete line of commercial, business, and consumer banking products and services. As of December 31, 2018, the Bank had \$31.4 billion in assets, \$21.2 billion in deposits and 1,907 full-time equivalent employees (“FTEs”).

Subsidiaries

We conduct substantially all of our operations through the Bank. The Bank has a number of wholly-owned subsidiaries, including a company that originates loans to municipalities and governmental entities and acquires securities issued by state and local governments, a real estate investment trust that holds real estate mortgage loans, several subsidiaries that hold foreclosed properties acquired by the Bank, and other subsidiaries that have an immaterial impact on our financial condition or results of operations.

Available Information

We file reports with the Securities and Exchange Commission (the “SEC”). Our website (www.sterlingbancorp.com) contains a direct link to our filings with the SEC, without charge, including copies of annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these filings, registration statements on Form S-3 and Form S-4, as well as ownership reports on Forms 3, 4 and 5 filed by our directors and executive officers. Copies may also be obtained, without charge, by written request to Sterling Bancorp, 400 Rella Boulevard, Montebello, New York 10901, Attention: Investor Relations. The SEC also maintains an Internet site that contains reports, proxy, and information statements and other information regarding issuers at <http://www.sec.gov>. Our website is not part of this annual report on Form 10-K.

Strategy

The Bank operates as a regional bank providing a broad offering of deposit, lending and wealth management products to commercial, consumer and municipal clients in our market area. We focus mainly on delivering products and services to small and middle market commercial businesses and affluent consumers. We believe that this is a client segment that is underserved by larger bank competitors in our market area.

Our primary strategic objective is to drive positive operating leverage which will allow us to generate sustainable growth in revenues and earnings over time. We define operating leverage as the ratio of growth in adjusted total revenue divided by growth in adjusted total operating expenses. To achieve this goal, we focus on the following initiatives:

- Target specific “high value” client segments and geographic markets in which we have competitive advantages.
- Deploy a single point of contact, relationship-based distribution strategy through our commercial banking teams and financial centers.
- Continuously expand and refine our delivery and distribution channels by rationalizing our investments in businesses that do not meet our risk-adjusted return targets and re-allocating our capital and resources to hiring commercial banking teams and growing businesses that are in-line with our commercial banking strategy.
- Maximize efficiency through a technology enabled, low-cost operating platform and by controlling operating costs.
- Create a high productivity culture through differentiated compensation programs based on a pay-for-performance philosophy.
- Maintain strong risk management systems and proactively manage enterprise risk.

The Bank targets the following geographic markets: (i) the New York Metro Market, which includes Manhattan and Long Island; and (ii) the New York Suburban Market, which includes Rockland, Orange, Sullivan, Ulster, Putnam and Westchester Counties in New York and Bergen County in New Jersey. The Bank also originates loans and deposits in select markets nationally through our asset-based lending, payroll finance, warehouse lending, factored receivables, equipment finance and public sector finance businesses. We believe the Bank operates in an attractive footprint that presents us with significant opportunities to execute our strategy of targeting small and middle market commercial clients and affluent consumers.

We focus on building client relationships that allow us to gather low cost, core deposits and originate high quality loans. We maintain a disciplined pricing strategy on deposits that allows us to compete for loans while maintaining an appropriate spread over funding costs. We offer diverse loan products to commercial businesses, real estate owners, real estate developers and consumers. We have continued to emphasize growth in our commercial loan balances and, as a result, we believe that we have a high quality, diversified loan portfolio with a favorable mix of loan types, maturities and yields.

We deploy a team-based distribution strategy in which clients are served by a focused and experienced group of relationship managers who are responsible for all aspects of the client relationship and delivery of our products and services. Since 2012, we have consolidated a significant amount of financial centers and other consumer businesses that did not fit our strategy or meet our risk-adjusted return hurdles, such as our residential mortgage originations business, trust division and title insurance business. We expect that we will continue to reduce our total number of financial centers in 2019, and will reallocate a portion of the operating expense savings from these consolidations into new commercial banking teams, growing our commercial finance businesses and selectively investing in commercial and retail banking technologies. As of December 31, 2018, we had 35 commercial banking teams; we anticipate adding three to five teams in 2019. We anticipate we will generate substantial growth in loans and deposits through our existing teams and new teams.

We are continuing to reposition our balance sheet to increase the proportion of commercial loans to total portfolio loans. To that end, we reclassified \$1.6 billion of residential mortgage loans from portfolio loans to loans held for sale and anticipate selling these loans in the first quarter of 2019. Additionally, in January 2019, we announced that we had entered into a definitive agreement to acquire approximately \$500 million in asset-based and equipment finance loans from Woodforest National Bank. We believe these actions will be accretive to our net interest margin and earnings over time.

We augment organic growth with opportunistic acquisitions of banks and other financial services businesses. For the periods presented, we completed the following acquisitions: the NSBC Acquisition on March 31, 2016; the restaurant franchise financing loan portfolio from GE Capital on September 9, 2016; the Astoria Merger on October 2, 2017; and the acquisition of Advantage Funding on April 2, 2018. These acquisitions have supported our expansion into attractive markets and have diversified our business lines. See additional disclosure of our acquisitions in Note 2. “Acquisitions” in the notes to consolidated financial statements.

Competition

The greater New York metropolitan region is a highly competitive market area with a concentration of financial institutions, many of which are significantly larger institutions with greater financial resources than us, and many of which are our competitors to varying degrees. Our competition for loans comes principally from commercial banks, savings banks, mortgage banking companies, credit unions, insurance companies and other financial services companies. Our most direct competition for deposits has historically come from commercial banks, savings banks and credit unions. We face additional competition for deposits from non-depository competitors such as mutual funds, securities and brokerage firms and insurance companies. We have emphasized relationship banking and the advantage of local decision-making in our banking business. We do not rely on any individual, group, or entity for a material portion of our deposits. Net interest income could be adversely affected should competitive pressures cause us to increase the interest rates paid on deposits in order to maintain our market share.

Employees

As of December 31, 2018, we had 1,907 full-time equivalent employees. The employees are not represented by a collective bargaining unit and we consider our relationship with our employees to be good.

Supervision and Regulation

General

We and the Bank are subject to extensive regulation under federal and state laws, significant elements of which are described below. This description is qualified in its entirety by reference to the full text of the statutes, regulations and policies referenced. 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 various policies applicable to us and our subsidiaries could have a material effect on our business, financial condition and results of operations.

Regulatory Agencies

We are a legal entity separate and distinct from the Bank and its other subsidiaries. As a bank and a financial holding company, we are regulated under the Bank Holding Company Act of 1956, as amended (the “BHC Act”), and our subsidiaries are subject to inspection, examination and supervision by the Federal Reserve Board (the “FRB”) as our primary federal regulator.

As a national bank, the Bank is principally subject to the supervision, examination and reporting requirements of the Office of the Comptroller of the Currency (the “OCC”), as its primary federal regulator, as well as the Federal Deposit Insurance Corporation (the “FDIC”). Further, because the Bank’s total assets exceed \$10 billion, it is also subject to Consumer Financial Protection Bureau (the “CFPB”) supervision. Insured banks, including the Bank, are subject to extensive regulations that relate to, among other things: (i) the nature and amount of loans that may be made by the Bank and the rates of interest that may be charged; (ii) types and amounts of other investments; (iii) branching; (iv) permissible activities; (v) reserve requirements; and (vi) dealings with officers, directors and affiliates.

Bank Holding Company Activities

In general, the BHC Act limits the business of bank holding companies to banking, managing or controlling banks and other activities that the FRB has determined to be closely related thereto. In addition, bank holding companies that qualify and elect to be financial holding companies such as us 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 (as determined by the FRB in consultation with the Secretary of the Treasury) 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 (as solely determined by the FRB), without prior approval of the FRB.

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 captioned “Prompt Corrective Action.” 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 also depends 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’s regulations provide that the financial holding company must enter into an agreement with the FRB to comply with all applicable capital and management requirements. Until the financial holding company returns to compliance, the FRB may impose limitations or conditions on the conduct of its activities, 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.

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 us 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 applications seeking approval of merger and acquisition transactions, the bank regulatory authorities will consider, among other things, the competitive effect and public benefits of the transactions, the capital position of the combined organization, the risks to the stability of the U.S. banking or financial system, the applicant's performance record under the Community Reinvestment Act of 1977 (the "CRA") and fair housing laws and the effectiveness of the subject organizations in combating money laundering activities.

Capital Requirements

We are required to comply with applicable capital adequacy standards established by the FRB, and the Bank is required to comply with applicable capital adequacy standards established by the OCC. The current risk-based capital standards applicable to us and the Bank are based on the December 2010 capital standards, known as Basel III, of the Basel Committee on Banking Supervision.

Under the Basel III Capital Rules, the minimum capital ratios are:

- 4.5% Common Equity Tier 1 ("CET1") to risk-weighted assets;
- 6.0% Tier 1 capital (that is, CET1 plus Additional Tier 1 capital) to risk-weighted assets;
- 8.0% Total Capital (that is, Tier 1 capital plus Tier 2 capital) to risk-weighted assets; and
- 4.0% Tier 1 capital to average consolidated assets as reported on consolidated financial statements (known as the "leverage ratio").

In addition, the Basel III Capital Rules have a "capital conservation buffer," composed entirely of CET1, on top of these minimum risk-weighted asset ratios. The implementation of the capital conservation buffer was phased in over time until reaching 2.5% on January 1, 2019. The fully phased-in Basel III Capital Rules require us and the Bank to maintain minimum ratios of (i) CET1 to risk-weighted assets of at least 7%, (ii) Tier 1 capital to risk-weighted assets of at least 8.5%, and (iii) Total capital to risk-weighted assets of at least 10.5%; and a minimum leverage ratio of 4%. Banking institutions with a ratio of CET1 to risk-weighted assets below the effective minimum (7%) will face constraints on dividends, equity repurchases and compensation based on the amount of the shortfall.

In addition, under the general risk-based capital rules, the effects of accumulated other comprehensive income items included in capital were excluded for the purposes of determining regulatory capital ratios. Under the Basel III Capital Rules, we and the Bank were able to make a one-time permanent election to continue to exclude these items and did so. Under the Basel III Capital Rules, trust preferred securities no longer included in our Tier 1 capital may nonetheless be included as a component of Tier 2 capital on a permanent basis without phase-out.

The Basel III Capital Rules prescribe a standardized approach for risk weighting that expanded the risk-weighting categories from the general risk-based capital rules to a much larger and more risk-sensitive number of categories, depending on the nature of the assets, generally ranging from 0% for U.S. government and agency securities, to 600% for certain equity exposures, and resulting in higher risk weights for a variety of asset categories.

With respect to the Bank, the Basel III Capital Rules also revise the "prompt corrective action" regulations pursuant to Section 38 of the Federal Deposit Insurance Act, as amended (the "FDIA") as discussed in the section captioned "Prompt Corrective Action."

Management believes that we and the Bank met all capital adequacy requirements under the Basel III Capital Rules as of December 31, 2018 and would have met all such requirements on a fully phased-in basis as if such requirements had been in effect.

Prompt Corrective Action

The FDIA requires among other things, the federal banking agencies to take “prompt corrective action” in respect of depository institutions that do not meet minimum capital requirements. The FDIA 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. The relevant capital measures reflecting the Basel III Capital Rules are the total capital ratio, the CET1 capital ratio, the Tier 1 capital ratio, the leverage ratio and the ratio of tangible equity to average quarterly tangible assets.

A bank will be (i) “well capitalized” if the institution has a total risk-based capital ratio of 10.0% or greater, a CET1 risk-based capital ratio of 6.5% or greater, a Tier 1 risk-based capital ratio of 8.0% or greater, and a Tier 1 leverage ratio of 5.0% or greater, and is not subject to any order or written directive by any such regulatory authority 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 8.0% or greater, a CET1 risk-based capital ratio of 4.5% or greater, a Tier 1 risk-based capital ratio of 6.0% or greater, and a Tier 1 leverage ratio of 4.0% or greater and is not “well capitalized;” (iii) “undercapitalized” if the institution has a total risk-based capital ratio that is less than 8.0%, a CET1 risk-based capital ratio less than 4.5%, a Tier 1 risk-based capital ratio of less than 6.0% or a Tier 1 leverage ratio of less than 4.0% and is not “significantly undercapitalized” or “critically undercapitalized;” (iv) “significantly undercapitalized” if the institution has a total risk-based capital ratio of less than 6.0%, a CET1 risk-based capital ratio less than 3.0%, a Tier 1 risk-based capital ratio of less than 4.0% or a Tier 1 leverage ratio of less than 3.0% and is not “critically undercapitalized;” and (v) “critically undercapitalized” if the institution’s tangible equity is equal to or less than 2.0% of average quarterly tangible assets. An institution may be downgraded to, or 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.

The FDIA generally prohibits a depository institution from making any capital distributions (including payment of a dividend) or paying any management fee to its parent holding company if the depository institution would thereafter be “undercapitalized.” “Undercapitalized” institutions are subject to growth limitations and are required to submit a capital restoration plan. The aggregate liability of the parent holding company in such a situation is limited to the lesser of (i) an amount equal to 5.0% of the depository institution’s total assets at the time it became undercapitalized and (ii) the amount which is necessary (or would have been necessary) to bring the institution into compliance with all capital standards applicable with respect to such institution as of the time it fails to comply with the plan. If a depository institution fails to submit an acceptable plan, it is treated as if it is “significantly undercapitalized.” “Significantly undercapitalized” depository institutions may be subject to a number of requirements and restrictions, including orders to sell sufficient voting stock to become “adequately capitalized,” requirements to reduce total assets, and cessation of receipt of deposits from correspondent banks. “Critically undercapitalized” institutions are subject to the appointment of a receiver or conservator.

We believe that as of December 31, 2018, the Bank was “well capitalized” based on the aforementioned ratios. For further information regarding the capital ratios and leverage ratio of us and the Bank, please see the discussion in the section captioned “Liquidity and Capital Resources” included in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and Note 17. “Stockholders’ Equity - Regulatory Capital Requirements” in the notes to consolidated financial statements all of which are included elsewhere in this report.

Dividend Restrictions

We depend on funds maintained or generated by our subsidiaries, principally the Bank, for our cash requirements. Various legal restrictions limit the extent to which the Bank can pay dividends or make other distributions to us. All national banks are limited in the payment of dividends without the approval of the OCC to an amount not to exceed the net profits (as defined by OCC regulations) for that year-to-date combined with its retained net profits for the preceding two calendar years, less any required transfers to surplus. Federal law also prohibits national banks from paying dividends that would be greater than the bank’s undivided profits after deducting statutory bad debt in excess of the bank’s allowance for loan losses. Under the foregoing restrictions, and while maintaining its “well capitalized” status, as of December 31, 2018, the Bank could pay dividends of approximately \$276.0 million to us without obtaining regulatory approval. This is not necessarily indicative of amounts that may be paid or are available to be paid in future periods.

Under the Federal Deposit Insurance Corporation Improvement Act of 1991 (the “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 us and the Bank may also be affected or limited by other factors, such as the requirement to maintain adequate capital.

The appropriate federal regulatory authorities have indicated that paying dividends that deplete a banking organization's capital base to an inadequate level would be an unsafe and unsound banking practice and that banking organizations should generally pay dividends only out of current operating earnings.

Source of Strength Doctrine

FRB policy and federal law require bank holding companies to act as a source of financial and managerial strength to their subsidiary banks. Under this requirement, we are expected to commit resources to support the Bank, including at times when we may not be in a financial position to provide such resources. 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.

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. The deposit insurance provided by the FDIC per account owner is \$250,000 for all types of accounts.

As insurer, the FDIC is authorized to conduct examinations of, and to require reporting by, DIF-insured institutions. It also may prohibit any DIF-insured institution from engaging in any activity the FDIC determines by regulation or order to pose a serious threat to the DIF. The FDIC also has the authority to take enforcement actions against insured institutions. Under the FDIA, 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.

Under the FDIC's risk-based assessment system, insured institutions are assigned to one of four risk categories based upon supervisory evaluations, regulatory capital level, and certain other factors, with less risky institutions paying lower assessments. The range of current assessment rates is now 1.5 to 40 basis points. As the DIF reserve ratio grows, the rate schedule will be adjusted downward. The FDIC has the authority to raise or lower assessment rates, subject to limits, and to impose special additional assessments. The Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") increased the minimum target DIF ratio from 1.15% of estimated insured deposits to 1.35% of estimated insured deposits. On November 28, 2018, the FDIC announced that at September 30, 2018 the DIF ratio reached 1.36%, exceeding the statutorily required minimum reserve ratio of 1.35% ahead of the September 30, 2020 deadline required under the Dodd-Frank Act. Accordingly the surcharge applicable to institutions with assets of \$10 billion or more, which includes the Bank, will cease.

FDIC deposit insurance expense totaled \$16.7 million for the year ended December 31, 2018, \$9.0 million for the year ended December 31, 2017, and \$6.4 million for the year ended December 31, 2016. FDIC deposit insurance expense includes deposit insurance assessments and Financing Corporation ("FICO") assessments related to outstanding bonds issued by FICO in the late 1980s to recapitalize the now defunct Federal Savings & Loan Insurance Corporation. The FICO assessments will continue until the bonds mature in September 2019.

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, among other things, 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, after being so notified, 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 the FDIA. If the institution fails to comply with such an order, the agency may seek to enforce such order in judicial proceedings and impose civil monetary penalties.

Incentive Compensation

The Dodd-Frank Act requires the federal bank regulatory agencies and the SEC to establish joint regulations or guidelines prohibiting incentive-based payment arrangements at specified regulated entities, such as us and the Bank, having at least \$1 billion in total assets, that encourage inappropriate risks by providing an executive officer, employee, director or principal shareholder with excessive compensation, fees, or benefits or that could lead to material financial loss to the entity. In addition, these regulators were required to

establish regulations or guidelines requiring enhanced disclosure to regulators of incentive-based compensation arrangements. The agencies proposed an initial version of such regulations in April 2011 and a revised version in May 2016, which largely retained the provisions from the April 2011 version, but the regulations have not been finalized and are still under review by the agencies. If the regulations are adopted in the revised form proposed in May 2016, they will impose limitations on the manner in which we may structure compensation for our executives.

In June 2010, the FRB, OCC and FDIC issued comprehensive final guidance on incentive compensation policies intended to ensure that the incentive compensation policies of banking organizations do not undermine the safety and soundness of such organizations by encouraging excessive risk-taking. The guidance, which covers all employees that have the ability to materially affect the risk profile of an organization, either individually or as part of a group, is based upon the key principles that a banking organization's incentive compensation arrangements should (i) provide incentives that do not encourage risk-taking beyond the organization's ability to effectively identify and manage risks, (ii) be compatible with effective internal controls and risk management, and (iii) be supported by strong corporate governance, including active and effective oversight by the organization's board of directors. These three principles are incorporated into the proposed joint compensation regulations under the Dodd-Frank Act, discussed above.

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

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, 2018, the Bank was in compliance with the loans-to-one-borrower limitations.

Community Reinvestment Act

The 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. Furthermore, banking regulators take into account CRA ratings when considering approval of certain applications. The Bank received a rating of "satisfactory" in its most recent CRA exam.

Financial Privacy

The federal banking regulators have adopted rules that limit the ability of banks and other financial institutions to disclose non-public information about consumers to nonaffiliated third parties. These limitations require disclosure of privacy policies to consumers and, in some circumstances, allow consumers to prevent disclosure of certain personal information to a nonaffiliated third party. These regulations 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. These guidelines describe the federal banking agencies' expectations for the creation, implementation and maintenance of an information security program, which would include administrative, technical and physical safeguards appropriate to the size and complexity of the institution and the nature and scope of its activities.

Anti-Money Laundering and the USA Patriot Act

A major focus of governmental policy on financial institutions in recent years has been aimed at combating money laundering and terrorist financing. The USA PATRIOT Act of 2001 (the "USA Patriot Act") substantially broadened the scope of United States anti-money laundering laws and regulations by imposing significant new compliance and due diligence obligations on financial institutions, creating new crimes and penalties, and expanding the extra-territorial jurisdiction of the United States. Failure of a

financial institution to maintain and implement adequate programs to combat money laundering and terrorist financing, or to comply with all of the relevant laws or regulations, could have serious legal and reputational consequences for the institution, including causing applicable bank regulatory authorities not to approve merger or acquisition transactions when regulatory approval is required or to prohibit such transactions even if approval is not required.

Stress Testing

The Dodd-Frank Act originally mandated company-run stress tests for FDIC-insured state non-member banks and bank holding companies with between \$10 billion and \$50 billion in assets. We and the Bank became subject to stress testing beginning January 1, 2017. Such tests assess the potential impact of different scenarios on the consolidated earnings and capital of that bank and its holding company and certain related items over a nine-quarter forward-looking planning horizon, taking into account all relevant exposures and activities. The Company and the Bank were additionally required to report the results of such stress tests to the FRB and FDIC, and the Company and the Bank released their Annual Company-Run Dodd-Frank Act Stress Test (“DFAST”) disclosure results on October 17, 2017. Effective May 24, 2018, the Economic Growth, Regulatory Relief, and Consumer Protection Act, immediately upon enactment, exempted bank holding companies with under \$100 billion in assets from these requirements to perform stress tests. Therefore, the Company and the Bank are no longer required to perform such stress testing.

Volcker Rule

The Dodd-Frank Act amended the BHC Act to require the federal bank regulatory agencies to adopt rules that prohibit banks and their affiliates from engaging in proprietary trading and investing in and sponsoring certain unregistered investment companies (defined as hedge funds and private equity funds), commonly referred to as the “Volcker Rule”. The Volcker Rule also requires covered banking entities, including us and the Bank, to implement certain compliance programs, and the complexity and rigor of such programs is determined based on the asset size and complexity of the business of the covered company. We are subject to heightened compliance requirements as a covered banking entity with over \$10 billion in assets.

Durbin Amendment

The Dodd-Frank Act included provisions which restrict interchange fees to those which are “reasonable and proportionate” for certain debit card issuers and limits the ability of networks and issuers to restrict debit card transaction routing. This statutory provision is known as the “Durbin Amendment.” The Federal Reserve issued final rules implementing the Durbin Amendment on June 29, 2011. In the final rules, interchange fees for debit card transactions were capped at \$0.21 plus five basis points in order to be eligible for a safe harbor such that the fee is conclusively determined to be reasonable and proportionate. The interchange fee restrictions contained in the Durbin Amendment, and the rules promulgated thereunder, only apply to debit card issuers with \$10 billion or more in total consolidated assets, which includes the Bank.

Transactions with Affiliates

Transactions between the Bank and its affiliates are regulated by the FRB under sections 23A and 23B of the Federal Reserve Act and related FRB regulations. These regulations 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 us and our non-bank subsidiaries. “Covered transactions” include a loan or extension of credit, as well as a purchase of securities issued by an affiliate, a purchase of assets (unless otherwise exempted by the FRB) 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 Home Loan Bank System

The Bank is a member of the Federal Home Loan Bank System, which consists of 12 regional Federal Home Loan Banks. The Federal Home Loan Bank System provides a central credit facility primarily for member institutions. As a member of the Federal Home Loan Bank of New York (“FHLB”), the Bank is required to acquire and hold shares of capital stock of the FHLB in an amount at least equal to the sum of the membership stock purchase requirement, determined on an annual basis at the end of each calendar year, and the

activity-based stock purchase requirement, determined on a daily basis. As of December 31, 2018, the Bank was in compliance with the minimum stock ownership requirement.

Federal Reserve System

FRB regulations require depository institutions to maintain cash reserves against their transaction accounts (primarily interest bearing demand deposit accounts and non-interest bearing demand deposit accounts). In 2018, a reserve of 3% was to be maintained against aggregate transaction accounts between \$16.0 million and \$122.3 million (subject to adjustment by the FRB) up from between \$15.5 million and \$115.1 million in 2017, 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 \$122.3 million. The first \$16.0 million of otherwise reservable balances (subject to adjustment by the FRB) is exempt from the reserve requirements. The FRB reviews the cash reserve requirement annually, and the FRB has announced a reserve of 3% will have to be maintained against aggregate transactions accounts between \$16.3 million and \$124.2 million in 2019. The Bank is in compliance with the foregoing requirements.

Consumer Protection Regulations

The Bank is subject to federal consumer protection statutes and regulations promulgated under those laws, including, but not limited to, the following:

- The Truth-In-Lending Act and Regulation Z, governing disclosures of credit terms to consumer borrowers;
- The Home Mortgage Disclosure Act and Regulation C, requiring financial institutions to provide certain information about home mortgage and refinanced loans;
- The Equal Credit Opportunity Act and Regulation B, prohibiting discrimination on the basis of race, creed, or other prohibited factors in extending credit;
- The Fair Credit Reporting Act and Regulation V, governing the provision of consumer information to credit reporting agencies and the use of consumer information; and
- The Fair Debt Collection Act, governing the manner in which consumer debts may be collected by collection agencies.

Deposit operations are also subject to:

- The Truth in Savings Act and Regulation DD, which requires disclosure of deposit terms to consumers;
- Regulation CC, which relates to the availability of deposit funds to consumers;
- The Right to Financial Privacy Act, which imposes a duty to maintain the confidentiality of consumer financial records and prescribes procedures for complying with administrative subpoenas of financial records; and
- The Electronic Funds Transfer Act and Regulation E, 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.

In addition, the Bank may be subject to certain state laws and regulations designed to protect consumers.

Consumer Financial Protection Bureau

Created under the Dodd-Frank Act, and given extensive implementation and enforcement powers over all banks with over \$10 billion in assets, including the Bank, the CFPB has broad rulemaking authority for a wide range of consumer financial laws that apply to all banks including, among other things, the authority to prohibit "unfair, deceptive, or abusive" acts and practices. The CFPB has the authority to investigate possible violations of federal consumer financial law, hold hearings and commence civil litigation. The CFPB can issue cease-and-desist orders against banks and other entities that violate consumer financial laws. The CFPB may also institute a civil action against an entity in violation of federal consumer financial law in order to impose a civil penalty or an injunction.

ITEM 1A. Risk Factors

We are subject to extensive regulatory oversight.

We and our subsidiaries are subject to extensive supervision and regulation. We are supervised and regulated by the Federal Reserve System (the "Federal Reserve") and the Bank is supervised and regulated by the OCC, as its primary federal regulator, by the FDIC, as the insurer of its deposits, and by the CFPB, which has broad authority to regulate financial service providers and financial products. The application and administration of laws, rules and regulations may vary by such regulators. In addition, we are subject to consolidated capital requirements and must serve as a source of strength to the Bank.

As a result, we are limited in the manner in which we conduct our business, undertake new investments and activities and obtain financing. This regulatory structure is designed primarily for the protection of the DIF and our depositors, as well as other consumers, and not to benefit our shareholders. This regulatory structure also 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, all of which can have a material adverse effect on our financial condition, results of operations and our ability to pay dividends or repurchase shares. Our regulators have also intensified their focus on bank lending criteria and controls, and on the USA Patriot Act's anti-money laundering and the Bank Secrecy Act compliance requirements, and there is increased scrutiny of our compliance with the rules enforced by the Office of Foreign Assets Control. In order to comply with laws, rules, regulations, guidelines and examination procedures in the anti-money laundering area, we have been required to adopt new policies and procedures and to install new systems. We cannot be certain that the policies, procedures and systems we have in place to ensure compliance are without error, and there is no assurance that in every instance we are in full compliance with these requirements. In addition, emerging technologies, such as cryptocurrencies, could limit our ability to maintain compliance with applicable requirements to track the movement of funds.

Our failure to comply with applicable laws, rules and regulations could result in a range of sanctions, legal proceedings and enforcement actions, including the imposition of civil monetary penalties, formal agreements and cease and desist orders. In addition, the OCC and the FDIC have specific authority to take "prompt corrective action," depending on our capital levels. For example, currently, we are considered "well-capitalized" for prompt corrective action purposes. If we were to be designated by the OCC as "adequately capitalized," we would become subject to additional restrictions and limitations, such as limits on the Bank's ability to take brokered deposits. If we were to be designated by the OCC in one of the lower capital levels (such as "undercapitalized," "significantly undercapitalized" or "critically undercapitalized"), we would be required to raise additional capital and be subject to progressively more severe restrictions on our operations, and management, including the possible replacement of senior executive officers and directors, capital distributions, and, if we became "critically undercapitalized," to the appointment of a conservator or receiver.

Changes in laws, government rules and regulations and monetary policy may have a material effect on our results of operations.

Financial institutions are subject to significant laws, rules and regulations and may be subject to further additional legislation, rulemaking or regulation in the future, none of which is within our control. Significant new laws, rules or regulations or changes in, or repeals of, existing laws, rules or regulations, including, but not limited to, those with respect to federal and state taxation and the Dodd-Frank Act, may cause our results of operations to differ materially. In addition, the costs and burden of compliance with such laws, rules and regulations continue to increase and could adversely affect our ability to operate profitably. Further, federal monetary policy significantly affects credit conditions for the Bank, as well as for our borrowers, particularly as implemented through the Federal Reserve, primarily through open market operations in U.S. government securities, the discount rate for bank borrowings and reserve requirements. A material change in any of these conditions could have a material impact on the Bank or our borrowers, and, as a result, our results of operations.

Legislative and regulatory initiatives to support the financial services industry have been coupled with numerous restrictions and requirements that could detrimentally affect our business.

We are subject to extensive regulation, supervision, and legal requirements that govern almost all aspects of our operations, see Item 1 "Business-Supervision and Regulation." One example of this type of federal regulation is the Dodd-Frank Act and the rules and regulations promulgated thereunder which have had, and will continue to have, significant impact on the United States bank regulatory structure and the lending, deposit, investment, trading and operating activities of financial institutions and their holding companies.

The Dodd-Frank Act significantly impacted various consumer protection laws, rules and regulations applicable to financial institutions including subjecting the Bank to: (1) the CFPB, which supervises financial institutions such as the Bank that have assets in excess of \$10 billion, and (2) state consumer protection laws in each state where we do business. CFPB supervision includes compliance with the principal federal consumer protection laws, such as the Truth in Lending Act, the Equal Credit Opportunity Act, the Real Estate Settlement Procedures Act and the Truth in Savings Act, among others. The Dodd-Frank Act and its implementing regulations, and other similar laws and regulations, also impose various additional requirements on bank holding companies with \$10 billion or more in total assets, including prescribing minimum capital requirements, requiring annual stress testing and limiting the business activities the Bank may engage in (*e.g.*, the Volker Rule) and dividends or distribution the Bank can pay to the Company, among others.

Compliance with laws and regulations can be difficult and costly, and changes to laws and regulations often impose additional compliance costs, including hiring additional compliance or other personnel and designing and implementing additional internal controls. Further, we may incur compliance-related costs and our regulators may also consider our level of compliance with these regulatory requirements when examining our operations generally or considering any request for regulatory approval we may make, even requests for approvals on unrelated matters. Further, changes in laws, regulations or regulatory policies could adversely affect the operating environment for the Company in substantial and unpredictable ways, increase our cost of doing business, impose new

restrictions on the way in which we conduct our operations or add significant operational constraints that might impair our profitability. We cannot predict whether new legislation will be enacted and, if enacted, the effect that it, or any implementing regulations, would have on our business, financial condition or results of operations.

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

The Federal Reserve, the FDIC and the OCC adopted final rules for the Basel III capital framework that substantially amended the regulatory risk-based capital rules applicable to us. The rules phased in over time, and became fully effective on January 1, 2019. The rules apply to us, as well as to the Bank, and require us to have a CET1 to risk-weighted assets ratio of 7%, a Tier 1 to risk-weighted assets ratio of 8.5%, and a total capital to risk-weighted assets ratio of 10.5%. Failure to satisfy any of these three capital requirements will result in limits on our ability to pay dividends, engage in share repurchases and pay discretionary bonuses. These rules also establish a maximum percentage of eligible retained income that can be utilized for such actions.

Our outstanding debt obligations and preferred stock, and our level of indebtedness could adversely affect our ability to raise additional capital and to meet our obligations under our existing indebtedness.

We have approximately \$5.4 billion in outstanding indebtedness and obligations related to outstanding preferred stock. Our existing debt, together with any future incurrence of additional indebtedness, and outstanding preferred stock, could have important consequences for our creditors and stockholders. For example, it could:

- limit our ability to obtain additional financing for working capital, capital expenditures, debt service requirements, acquisitions, and general corporate or other purposes;
- restrict us from making strategic acquisitions or cause us to make non-strategic divestitures;
- restrict us from paying dividends to our stockholders; and
- increase our vulnerability to general economic and industry conditions.

An inadequate allowance for loan losses would negatively impact our results of operations.

We are exposed to the risk that our customers will be unable to repay their loans according to their terms and that any collateral securing the payment of their loans will not be sufficient to avoid losses. Credit losses are inherent in the lending business and could have a material adverse effect on our results of operations. Volatility and deterioration in the broader economy may also increase our risk of credit losses. The determination of an appropriate level of allowance for loan losses is an inherently uncertain process and is based on numerous assumptions. The amount of future losses is susceptible to changes in economic, operating and other conditions, including changes in interest rates, that may be beyond our control, and charge-offs may exceed current estimates. We evaluate the collectability of our loan portfolio and provide an allowance for loan losses that we believe is adequate based upon various factors, including, but not limited to: the risk characteristics of various classifications of loans; previous loan loss experience; specific loans that have loss potential; delinquency trends; the estimated fair market value of the collateral; current economic conditions; the views of our regulators; and geographic and industry loan concentrations. If any of our evaluations are incorrect and/or borrower defaults result in losses exceeding our allowance for loan losses, our results of operations could be significantly and adversely affected. We cannot assure you that our allowance for loan losses will be adequate to cover probable loan losses inherent in our portfolio.

The need to account for assets at market prices may adversely affect our results of operations.

We report certain assets, including investments and securities, at fair value. Generally, for assets that are reported at fair value, we use quoted market prices, when available, or valuation models that utilize market data inputs to estimate fair value. Because we carry these assets on our books at their fair value, we may incur losses even if the assets in question present minimal credit risk. In addition, we may be required to recognize other-than-temporary impairments in future periods with respect to securities in our portfolio. The amount and timing of any impairment recognized will depend on the severity and duration of the decline in fair value of the securities and our estimation of the anticipated recovery period.

Changes in the value of goodwill and intangible assets could reduce our earnings.

We account for goodwill and other intangible assets in accordance with U.S. generally accepted accounting principles (“GAAP”), which, in general, requires that goodwill not be amortized, but rather that it be tested for impairment at least annually at the reporting unit level, which requires us to recognize an impairment loss if the carrying value of the net assets assigned to the reporting unit exceeds the fair value of the reporting unit. Testing for impairment of goodwill and intangible assets is performed annually and involves the identification of reporting units and the estimation of fair values. The estimation of fair values involves a high degree of judgment and subjectivity in the assumptions used. Changes in the local and national economy, the federal and state legislative and regulatory environments for financial institutions, the stock market, interest rates and other external factors (such as natural disasters

or significant world events) may occur from time to time, often with great unpredictability, and may materially impact the fair value of publicly traded financial institutions, such as us, and could result in an impairment charge at a future date.

Commercial real estate, commercial & industrial and ADC (as defined below) loans expose us to increased risk and earnings volatility.

We consider our commercial real estate loans, commercial & industrial loans and acquisition, development & construction (“ADC”) loans to be higher risk categories in our loan portfolio. These loans are particularly sensitive to economic conditions. At December 31, 2018, our portfolio of commercial real estate loans, including multi-family loans, totaled \$9.4 billion, or 48.9% of portfolio loans, our commercial & industrial loans (including traditional commercial & industrial, asset-based lending, payroll finance, warehouse lending, factored receivables, equipment finance and public sector finance) totaled \$6.5 billion, or 34.0% of portfolio loans, and our ADC loans totaled \$267.8 million, or 1.39% of portfolio loans. We plan to continue to emphasize the origination of these types of loans, other than ADC loans, where we have ceased originations of land acquisition and development loans. We continue to make construction loans on an exception basis.

Commercial real estate loans generally involve a higher degree of credit risk than residential loans because they typically have larger balances and are more affected by adverse conditions in the economy. Because payments on loans secured by commercial real estate often depend on the successful operation and management of the businesses that hold the loans, repayment of such loans may be affected by factors outside the borrower’s control, such as adverse conditions in the real estate market or the economy or changes in government regulation. In the case of commercial & industrial loans, although we strive to maintain high credit standards and limit exposure to any one borrower, the collateral for these loans often consists of accounts receivable, inventory and equipment. This type of collateral typically does not yield substantial recovery in the event we need to foreclose on it and may rapidly deteriorate, disappear, or be misdirected in advance of foreclosure. This adds to the potential that our charge-offs will be more volatile than we have experienced in the past, which could significantly negatively affect our earnings in any quarter. In addition, some of our ADC loans pose higher risk levels than the levels expected at origination, as projects may stall or sell at prices lower than expected. In addition, many of our borrowers also have more than one commercial real estate or ADC loan outstanding with us. Consequently, an adverse development with respect to one loan or one credit relationship may expose us to significantly greater risk of loss.

Loans in our residential mortgage loan portfolio include interest only loans and loans that have recently converted to principal amortization status.

At December 31, 2018, included in our residential mortgage loan portfolio were \$292.3 million of interest only loans and other residential mortgage loans that converted to principal amortization status within the past 24 months. After conversion to principal amortization status, a borrower’s monthly payment may increase substantially and the borrower may not be able to afford the increased debt service, which could result in increased delinquencies and, accordingly, potentially adversely affect our operating results. At December 31, 2018, there were \$12.4 million of loans that are interest only or were interest only within the past 24 months that were in non-accrual status.

Our continuing concentration of loans in our primary market area may increase our risk.

Our success depends primarily on the general economic conditions in the counties in which we conduct most of our business. The economic conditions in these counties may be different from, and in some instances worse than, the economic conditions in the United States as a whole. Most of our loans and deposits are generated from customers primarily in the New York Metro Market, which includes Manhattan, the boroughs and Long Island, and certain portions of the New York Suburban Market including Rockland, Westchester and Orange Counties in New York. We also have a presence in Ulster, Sullivan and Putnam Counties in New York and in Bergen County, New Jersey, as well as other counties in northern New Jersey. Our expansion into New York City and continued growth in Westchester County and Bergen County has helped us diversify our geographic concentration with respect to our lending activities but deterioration in economic conditions in our market area would still adversely affect our results of operations and financial condition.

Environmental liability associated with our lending activities could result in losses.

In the course of business, we may acquire, through foreclosure, properties securing loans that are in default. Particularly in commercial real estate lending, there is a risk that material environmental violations could be discovered on these properties. In this event, we might be required to remedy these violations at the affected properties at our sole cost and expense. The cost of remedial action could substantially exceed the value of affected properties, we may not have adequate remedies against the prior owner or other responsible parties and we could find it difficult or impossible to sell the affected properties. These events could have an adverse effect on our financial condition and results of operations.

Changes in market interest rates could adversely affect our financial condition and results of operations.

Our financial condition and results of operations are significantly affected by changes in market interest rates. Our results of operations substantially depend on our net interest income, which is the difference between the interest income that we earn on our interest-earning assets and the interest expense that we pay on our interest-bearing liabilities. In general, our balance sheet is more asset sensitive because our assets mature or re-price at a faster pace than our liabilities. If interest rates continue at existing levels or decline, net interest income would be adversely affected as asset yields would be expected to decline at faster rates than deposit or borrowing costs. A decline in net interest income may also occur if competitive market pressures limit our ability to maintain or lag deposit costs. Wholesale funding costs may also increase at a faster pace than asset re-pricing.

We also are subject to reinvestment risk associated with changes in interest rates. Changes in interest rates may affect the average life of loans and securities. Decreases in interest rates often result in increased prepayments of loans and securities, as borrowers refinance their loans to reduce borrowings costs. Under these circumstances, we are subject to reinvestment risk to the extent that we are unable to reinvest the cash received from such prepayments in loans or other investments that have interest rates that are comparable to the interest rates on existing loans and securities. Additionally, increases in interest rates may decrease loan demand and/or may make it more difficult for borrowers to repay adjustable rate loans.

Changes in interest rates also affect the value of our interest earning assets and, in particular, our securities portfolio. The Federal Reserve raised the federal funds rate four times in fiscal year 2018. Generally, the value of our securities fluctuates inversely with changes in interest rates. As of December 31, 2018, our available for sale securities portfolio totaled \$3.9 billion. Decreases in the fair value of securities available for sale could have an adverse effect on stockholders' equity and comprehensive income.

Our ability to pay dividends is subject to regulatory limitations and other limitations, which may affect our ability to pay dividends to our stockholders or to repurchase our common stock.

We are a separate legal entity from our subsidiary, the Bank, and we do not have significant operations of our own. The availability of dividends from the Bank is limited by various statutes and regulations. It is possible, depending upon the financial condition of the Bank and other factors, that the Bank's regulators could assert that payment of dividends or other payments may result in an unsafe or unsound practice. In addition, we are subjected to consolidated capital requirements and must serve as a source of strength to the Bank. If the Bank is unable to pay dividends to us or we are required to retain capital or contribute capital to the Bank, we may not be able to pay dividends on our common stock or to repurchase shares of common stock.

We are subject to laws regarding the privacy, information security and protection of personal information and any violation of these laws or another incident involving personal, confidential or proprietary information of individuals could damage our reputation and otherwise adversely affect our operations and financial condition.

Our business requires the collection and retention of large volumes of customer data, including personally identifiable information in various information systems that we maintain and in those maintained by third parties with whom we contract to provide data services. We are subject to complex and evolving laws and regulations governing the privacy and protection of personal information of individuals (including customers, employees, suppliers and other third parties). For example, our business is subject to the Gramm-Leach-Bliley Act which, among other things: (i) imposes certain limitations on our ability to share nonpublic personal information about our customers with nonaffiliated third parties; (ii) requires that we provide certain disclosures to customers about our information collection, sharing and security practices and afford customers the right to "opt out" of any information sharing by us with nonaffiliated third parties (with certain exceptions); and (iii) requires that we develop, implement and maintain a written comprehensive information security program containing appropriate safeguards based on our size and complexity, the nature and scope of our activities, and the sensitivity of customer information we process, as well as plans for responding to data security breaches. Various state and federal banking regulators and states have also enacted data security breach notification requirements with varying levels of individual, consumer, regulatory or law enforcement notification in certain circumstances in the event of a security breach. Ensuring that our collection, use, transfer and storage of personal information complies with all applicable laws and regulations can increase our costs. Furthermore, we may not be able to ensure that all of our customers, suppliers, counterparties and other third parties have appropriate controls in place to protect the confidentiality of the information that they exchange with us, particularly where such information is transmitted by electronic means. If personal, confidential or proprietary information of customers or others were to be mishandled or misused, we could be exposed to litigation or regulatory sanctions under personal information laws and regulations. Concerns regarding the effectiveness of our measures to safeguard personal information, or even the perception that such measures are inadequate, could cause us to lose customers or potential customers for our products and services and thereby reduce our revenues. Accordingly, any failure or perceived failure to comply with applicable privacy or data protection laws and regulations may subject us to inquiries, examinations and investigations that could result in requirements to modify or cease certain operations or practices or in significant liabilities, fines or penalties, and could damage our reputation and otherwise adversely affect our operations and financial condition.

A breach, failure or interruption of information security, including as a result of cyber-attacks or other cyber incidents, could negatively affect our earnings or otherwise harm our business.

Increasingly, we depend upon data processing, communication and information exchange on a variety of computing platforms and networks, and over the Internet from both internal sources and external, third-party vendors. We devote significant resources and management focus to ensuring the integrity of our systems through information security and business continuity programs, but we may be required to spend significant capital and other resources to protect against the threat of security breaches and computer viruses, or to alleviate problems caused by external or internal security breaches, acts of vandalism, viruses, misplaced or lost data, programming or human errors or other similar events, all of which could have an adverse effect on our results of operations.

Information security risks for financial institutions like us continue to increase in part because of new technologies, the use of the Internet and telecommunications technologies (including mobile devices) to conduct financial and other business transactions and the increased sophistication and activities of organized crime, perpetrators of fraud, hackers, terrorists and others. In addition to cyber-attacks or other security breaches involving the theft of sensitive and confidential information, hackers continue to engage in attacks against large financial institutions including denial of service attacks designed to disrupt external customer facing services, and ransomware attacks designed to deny organizations access to key internal resources or systems. While to date we have not been subject to material cyber-attacks or other cyber incidents, we cannot guarantee all our systems, or the systems of the third-party vendors we rely on, are free from vulnerability to attack, despite safeguards we and our third-party vendors have instituted.

Moreover, we are not able to anticipate or implement effective preventive measures against all security breaches of these types, especially because the techniques used change frequently and because attacks can originate from a wide variety of sources. We employ detection and response mechanisms designed to contain and mitigate security incidents, but early detection may be thwarted by sophisticated attacks and malware designed to avoid detection. Additionally, we face risks related to cyber-attacks and other security breaches in connection with our own and third-party systems, processes and data, including credit card transactions that typically require the transmission of sensitive information regarding our customers through various third parties, including merchant acquiring banks, payment processors, payment card networks and our processors. Some of these parties have in the past been the target of security breaches and cyber-attacks, and because the transactions involve third parties and environments such as the point of sale that we do not control or secure, future security breaches or cyber-attacks affecting any of these third parties could impact us through no fault of our own, and in some cases we may have exposure and suffer losses for breaches or attacks relating to them.

If information security is breached, despite the controls we and our third-party vendors have instituted, information can be lost or misappropriated, resulting in financial losses or costs to us or damages to others. These costs or losses could materially exceed the amount of insurance coverage we have, if any, which would adversely affect our earnings. If significant, sustained or repeated, a system breach, failure or service disruption could compromise our ability to operate effectively, damage our reputation and our relationships with our partners and customers, result in a loss of customer business, and/or subject us to additional regulatory scrutiny and possible financial liability, any of which could have a material adverse effect on our business, financial condition and results of operations.

While we diligently assess applicable regulatory and legislative developments affecting our business, laws and regulations relating to cybersecurity have been frequently changing, imposing new requirements on us, such as the recently adopted New York State Department of Financial Services' Cybersecurity Requirements for Financial Services Companies regulation. In light of these conditions, we face the potential for additional regulatory scrutiny that will lead to increasing compliance and technology expenses and, in some cases, possible limitations on the achievement of our plans for growth and other strategic objectives.

We are subject to competition from both banks and non-bank companies.

The financial services industry, including commercial banking, is highly competitive, and we encounter strong competition for deposits, loans and other financial services in our market area. Our principal competitors include commercial banks, savings banks and savings and loan associations, mutual funds, money market funds, finance companies, trust companies, insurers, leasing companies, credit unions, mortgage companies, real estate investment trusts ("REITs"), private issuers of debt obligations, venture capital firms, private equity funds and suppliers of other investment alternatives, such as securities firms. Many of our non-bank competitors are not subject to the same degree of regulation as we are and thus have advantages over us in providing certain services. Further, many of our competitors are significantly larger than we are and have greater access to capital and other resources.

In addition, financial products and services have become increasingly technology-driven. The adoption of new technologies, including Internet banking services, mobile applications, advanced ATM functionality and cryptocurrencies could require us to make substantial expenditures to modify or adapt our current products and services or to build new products and services. Our ability to meet the needs

of our customers competitively, and in a cost-efficient manner, is dependent on the ability to keep pace with technological advances and to invest in new technology as it becomes available. Many of our competitors have greater resources to invest in technology than we do and may be better equipped to market new technology-driven products and services. The ability to keep pace with technological change is important, and the failure to do so could have a material adverse effect on our business and therefore on our financial condition and results of operations.

Our ability to make opportunistic acquisitions is subject to significant risks, including the risk that regulators will not provide the requisite approvals.

We will continue to evaluate potential acquisitions and may make opportunistic whole or partial acquisitions of other banks, branches, financial institutions, or related businesses from time to time that we expect may further our business strategy, including through participation in FDIC-assisted acquisitions or assumption of deposits from troubled institutions. Any possible acquisition will be subject to regulatory approval, and there can be no assurance that we will be able to obtain such approval in a timely manner or at all. Even if we obtain regulatory approval, these acquisitions could involve numerous risks, including lower than expected performance or higher than expected costs, difficulties related to integration, difficulties and costs associated with consolidation and streamlining inefficiencies, diversion of management's attention from other business activities, changes in relationships with customers, and the potential loss of key employees. In addition, we may not be successful in identifying acquisition candidates or preventing deposit erosion or loan quality deterioration at acquired institutions. Competition for acquisitions can be highly competitive, and we may not be able to acquire other institutions on attractive terms. There can be no assurance that we will be successful in completing or will even pursue future acquisitions, or if such transactions are completed, that we will be successful in integrating acquired businesses into our existing operations. Our ability to grow may be limited if we choose not to pursue or are unable to successfully make acquisitions in the future.

The success of our and the Bank's mergers and acquisitions may depend, in part, on our ability to realize the estimated cost savings from combining the acquired businesses with our and the Bank's existing operations. It is possible that the potential cost savings could turn out to be more difficult to achieve than anticipated. The cost savings estimates also depend on our ability to combine the businesses in a manner that permits those cost savings to be realized. If the estimates turn out to be incorrect or if we are unable to successfully execute our strategy for combining businesses, our anticipated cost savings may not be realized fully or at all, or may take longer to realize than expected.

Moreover, although we have successfully integrated business acquisitions in recent years, there is no assurance that we will be able to continue to do so in the future, which could delay or prevent the anticipated benefits of future acquisitions from being realized fully or at all. In addition, acquisitions typically involve the payment of a premium over book and trading value and thus may result in the dilution of our book value per share.

Various factors may make takeover attempts more difficult to achieve.

The Board of Directors (the "Board") currently has no intention to sell control of the Company. Provisions of our certificate of incorporation and bylaws, federal regulations, Delaware law and various other factors may make it more difficult for companies or persons to acquire control of us without the consent of our Board. A shareholder may want a takeover attempt to succeed because, for example, a potential acquirer could offer a premium over the then prevailing market price of our common stock. The factors that may discourage takeover attempts or make them more difficult include:

(a) Certificate of incorporation, bylaws and statutory provisions.

Provisions of our certificate of incorporation and bylaws and Delaware law may make it more difficult and expensive to pursue a takeover attempt that our Board opposes by making it more difficult to remove our current Board, or to elect new directors. These provisions include limitations on voting rights of beneficial owners of more than 10% of our common stock, supermajority voting requirements for certain business combinations, and plurality voting. Our bylaws also contain provisions regarding the timing and content of stockholder proposals and nominations and qualification for service on the Board.

(b) Required change in control payments and issuance of stock options and recognition and retention plan shares.

We have entered into employment agreements with executive officers, which require payments to be made to them in the event their employment is terminated following a change in control of us or the Bank. We have issued stock grants and stock options in accordance with the 2004 Provident Bancorp Inc. Stock Incentive Plan, the Sterling Bancorp 2014 Stock Incentive Plan and the Sterling Bancorp 2015 Omnibus Equity and Incentive Plan. In the event of a change in control, the vesting of stock and option grants would accelerate. In 2006, we adopted the Provident Bank & Affiliates Transition Benefit Plan. The

plan calls for severance payments ranging from 12 weeks to one year for employees not covered by separate agreements if they are terminated in connection with a change in control of us.

Our results of operations, financial condition or liquidity may be adversely impacted by issues arising from certain industry deficiencies in foreclosure practices, including delays and challenges in the foreclosure process.

Foreclosure timelines in our principal marketplace are longer than the national average. Residential mortgages, in particular, may present us with foreclosure process issues. For example, residential mortgages were 20.4% of our total portfolio loans and loans held for sale as of December 31, 2018, but constituted 38.0% of our non-accrual loans on the same date. Collateral for many of our residential loans is located within the States of New York and New Jersey, where there may continue to be foreclosure process and timeline issues.

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

We believe that our continued growth and future success will depend in large part on the skills of our management team and our ability to motivate and retain these individuals and other key personnel. In particular, we rely on the leadership of our Chief Executive Officer, Jack Kopnisky. The loss of service of Mr. Kopnisky or one or more of our other executive officers or key personnel could reduce our ability to successfully implement our long-term business strategy, our business could suffer, and the value of our common stock could be materially adversely affected. Leadership changes will occur from time to time, and we cannot predict whether significant resignations will occur or whether we will be able to recruit additional qualified personnel. We believe our management team possesses valuable knowledge about the banking industry and our markets and that their knowledge and relationships would be very difficult to replicate. Although the Chief Executive Officer, Chief Financial Officer and other executive officers have entered into employment agreements with us, it is possible that they may not complete the term of their employment agreements or renew them upon expiration. Our success also depends on the experience of our financial center managers and lending officers and on their relationships with the customers and communities they serve. The loss of these key personnel could negatively impact our banking operations. Further, the loss of key personnel, or the inability to recruit and retain qualified personnel in the future, could have an adverse effect on our business, financial condition and results of operations.

ITEM 1B. Unresolved Staff Comments

Not Applicable.

ITEM 2. Properties

Our headquarters are located in a leased facility located at 400 Rella Boulevard, Montebello, New York. We also own a corporate office location in Yonkers, New York and lease corporate back-office space in Lake Success and Jericho on Long Island, New York. At December 31, 2018, we conducted our business through 106 full-service retail and commercial financial centers which serve the New York Metro Market and the New York Suburban Market. Of these financial centers, 24 are located in Nassau County, New York, 22 in Suffolk County, New York, 14 in Queens County, New York, 12 in Westchester County, New York, 11 in Kings County, New York, eight in in Rockland County, New York, six in Orange County, New York, three in New York City, New York and two in Bronx County, New York. We also operate one office in each of Sullivan, Ulster, and Putnam Counties in New York and one office in Bergen County, New Jersey. Additionally, 57 of our financial centers are owned and 49 are leased.

In addition to our financial center network and corporate offices, we lease 19 additional properties which are used for general corporate purposes. See Note 6. "Premises and Equipment, Net" in the notes to consolidated financial statements for further detail on our premises and equipment.

ITEM 3. Legal Proceedings

Note 19. "Commitments and Contingencies - Litigation" in the notes to consolidated financial statements is incorporated herein by reference. We do not anticipate that the aggregate liability arising out of litigation pending against us and our subsidiaries will be material to our consolidated financial statements.

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

Common Stock Market Prices, Holders and Dividends

Our common stock is traded on the New York Stock Exchange ("NYSE") under the symbol "STL".

As of December 31, 2018, there were 216,227,852 shares of our common stock outstanding held by 6,886 holders of record (excluding the number of persons or entities holding stock in street name through various brokerage firms). The closing price per share of common stock on December 31, 2018, the last trading day of our fiscal year, was \$16.51.

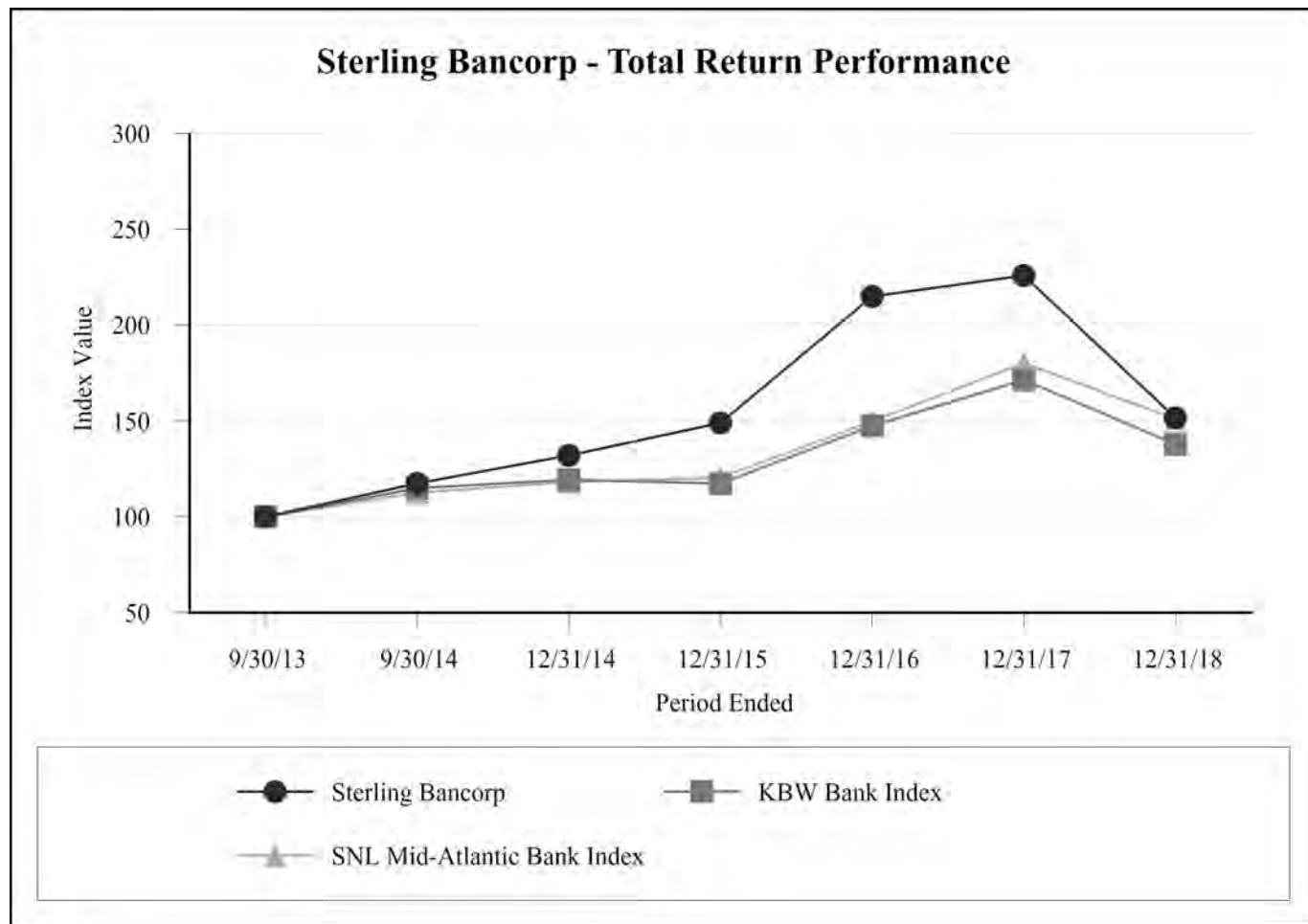
The Board is committed to continuing to pay regular cash dividends; however, there can be no assurance as to future dividends because they are dependent upon our future earnings, capital requirements and financial condition.

See the section captioned "Supervision and Regulation" included in Item 1. "Business", the section captioned "Liquidity and Capital Resources" included in Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 17. "Stockholders' Equity" in the notes to consolidated financial statements, all of which are included elsewhere in this report, for additional information regarding our common stock and our ability to pay dividends.

Performance Graph

Set forth below is a stock performance graph comparing the cumulative total shareholder return on Sterling Bancorp common stock with (a) the cumulative total return on the KBW Bank Index; and (b) the SNL Mid-Atlantic Bank Index, measured as of the last trading day of each period shown. The graph assumes an investment of \$100 on September 30, 2013¹ and reinvestment of dividends on the date of payment without commissions. The performance graph represents past performance and should not be considered to be an indication of future stock performance.

¹ The graph starts at September 30, 2013 to coincide with the fiscal year that began October 1, 2013 and ended September 30, 2014. We changed our fiscal year end to December 31 at December 31, 2014.



Performance at <i>Index</i>	September 30,		December 31,				
	2013	2014	2014	2015	2016	2017	2018
Sterling Bancorp	100.00	117.45	132.05	148.94	214.88	225.90	151.61
KBW Bank Index	100.00	114.96	119.29	117.40	147.45	171.42	137.81
SNL Mid-Atlantic Bank Index	100.00	112.66	118.17	120.42	149.76	180.11	151.04

This stock performance graph shall not be deemed incorporated by reference by any general statement incorporating by reference this annual report on Form 10-K under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that we specifically incorporate this information by reference, and shall not otherwise be deemed filed under such Acts.

Issuer Purchases of Equity Securities

The following table reports information regarding purchases of our common stock during the fourth quarter of 2018 and the stock repurchase plan approved by the Board:

Period (2018)	Total Number of shares (or units) purchased	Average price paid per share (or unit)	Total number of shares (or units) purchased as part of publicly announced plans or programs ⁽¹⁾	Maximum number (or approximate dollar value) of shares (or units) that may yet be purchased under the plans or programs ⁽¹⁾
October 1 — October 31	1,020,055	\$ 17.66	1,020,055	8,979,945
November 1 — November 30	2,591,059	18.43	2,591,059	6,388,886
December 1 — December 31	5,503,657	17.10	5,503,657	10,885,229
Total	<u>9,114,771</u>	<u>17.54</u>	<u>9,114,771</u>	

⁽¹⁾ On February 27, 2018, the Board of Directors authorized a repurchase plan for the purchase of up to 10,000,000 common shares, or 4.6% of the outstanding common shares excluding shares of treasury stock at December 31, 2017. On December 10, 2018, the Board of Directors increased the authorized share limit to 20,000,000 common shares, or 8.9% of the outstanding common shares of treasury stock at December 31, 2018. Repurchases may be made at management’s discretion through open market purchases and block trades in accordance with SEC and regulatory requirements. Any shares repurchased will be held as Treasury stock and made available for general corporate purposes.

ITEM 6. Selected Financial Data

The following summary data is based in part on the consolidated financial statements and accompanying notes, and other schedules appearing elsewhere in this annual report on Form 10-K. The information at/for: (i) the calendar year ended December 31, 2018, 2017, 2016, and 2015; (ii) the three months ended December 31, 2014; and (iii) the fiscal year ended September 30, 2014 is derived in part from, and should be read together with, the audited consolidated financial statements and notes thereto that appear in this annual report on Form 10-K.

For additional information regarding the significant changes in the financial data presented below, see the discussion of our recent mergers and acquisitions in Item 1. “Business”, in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Note 2. “Acquisitions” in the notes to consolidated financial statements, all of which are included elsewhere in this report.

Dollar amounts in tables are stated in thousands, except for share and per share amounts.

	At or for the year ended December 31,				At or for the three months ended December 31, 2014	At or for the fiscal year ended September 30, 2014
	2018	2017	2016	2015		
Selected balance sheet data:						
End of period balances:						
Total securities	\$ 6,667,180	\$ 6,474,561	\$ 3,118,838	\$ 2,643,823	\$ 1,713,183	\$ 1,689,888
Portfolio loans	19,218,530	20,008,983	9,527,230	7,859,360	4,815,641	4,760,438
Total assets	31,383,307	30,359,541	14,178,447	11,955,952	7,424,822	7,337,387
Non-interest bearing deposits	4,241,923	4,080,742	3,239,332	2,936,980	1,481,870	1,799,685
Interest bearing deposits	16,972,225	16,457,462	6,828,927	5,643,027	3,730,455	3,498,969
Total deposits	21,214,148	20,538,204	10,068,259	8,580,007	5,212,325	5,298,654
Borrowings	5,214,183	4,991,210	2,056,612	1,525,344	1,111,553	939,069
Stockholders' equity	4,428,853	4,240,178	1,855,183	1,665,073	975,200	961,138
Tangible equity ¹	2,547,852	2,367,876	1,092,230	917,007	542,942	526,934
Average balances:						
Total securities	\$ 6,704,025	\$ 4,144,435	\$ 2,878,944	\$ 2,156,056	\$ 1,721,121	\$ 1,692,888
Total loans	20,190,630	12,215,759	8,520,367	6,261,470	4,756,015	4,120,749
Total assets	30,746,916	18,451,301	12,883,226	9,604,256	7,340,332	6,757,094
Non-interest bearing deposits	4,108,881	3,363,636	3,120,973	2,332,814	1,626,341	1,580,108
Interest bearing deposits	16,874,456	9,570,199	6,519,993	4,806,521	3,716,446	3,341,822
Total deposits	20,983,337	12,933,835	9,640,966	7,139,335	5,342,787	4,921,930
Borrowings	4,950,546	2,759,919	1,355,491	987,522	902,299	814,409
Stockholders' equity	4,344,096	2,498,512	1,739,073	1,360,859	973,089	906,134
Tangible equity ¹	2,458,580	1,464,057	976,394	760,254	539,693	450,551
Selected operating data:						
Total interest income	\$ 1,208,473	\$ 682,449	\$ 461,551	\$ 348,141	\$ 68,087	\$ 246,906
Total interest expense	241,070	106,306	57,282	36,925	7,850	28,918
Net interest income	967,403	576,143	404,269	311,216	60,237	217,988
Provision for loan losses	46,000	26,000	20,000	15,700	3,000	19,100
Net interest income after provision for loan losses	921,403	550,143	384,269	295,516	57,237	198,888
Total non-interest income	103,197	64,202	70,987	62,751	13,957	47,370
Total non-interest expense	458,370	433,375	247,902	260,318	45,814	208,428
Income before income taxes	566,230	180,970	207,354	97,949	25,380	37,830
Income tax expense	118,976	87,939	67,382	31,835	8,376	10,152
Net income	447,254	93,031	139,972	66,114	17,004	27,678
Preferred stock dividends	7,978	2,002	—	—	—	—
Net income available to common stockholders	\$ 439,276	\$ 91,029	\$ 139,972	\$ 66,114	\$ 17,004	\$ 27,678
Per common share data:						
Basic earnings per share	\$ 1.96	\$ 0.58	\$ 1.07	\$ 0.60	\$ 0.20	\$ 0.34
Diluted earnings per share	1.95	0.58	1.07	0.60	0.20	0.34
Adjusted diluted earnings per share, non-GAAP ¹	2.00	1.40	1.11	0.96	0.23	0.72
Dividends declared per share	0.28	0.28	0.28	0.28	0.07	0.21
Dividend Payout Ratio	14.30%	48.28%	26.17%	46.67%	35.00%	61.76%
Book value per share	\$ 19.84	\$ 18.24	\$ 13.72	\$ 12.81	\$ 11.62	\$ 11.49
Tangible book value per share ¹	11.78	10.53	8.08	7.05	6.47	6.30

See legend below tables.

	At or for the year ended December 31,				At or for the three months ended December 31, 2014	At or for the fiscal year ended September 30, 2014
	2018	2017	2016	2015		
Common shares outstanding:						
Shares outstanding at period end	216,227,852	224,782,694	135,257,570	130,006,926	83,927,572	83,628,267
Weighted average shares basic	224,299,488	157,513,639	130,607,994	109,907,645	83,831,380	80,268,970
Weighted average shares diluted	224,816,996	158,124,270	131,234,462	110,329,353	84,194,916	80,534,043
Other data:						
FTE period end	1,907	2,076	970	1,089	829	836
Financial centers period end	106	128	42	52	32	32
Performance ratios:						
Return on average assets	1.43%	0.49%	1.09%	0.69%	0.92%	0.41%
Return on average equity	10.11	3.64	8.05	4.86	6.93	3.05
Reported return on average tangible assets ¹	1.51	0.52	1.15	0.73	0.98	0.44
Adjusted return on average tangible assets ¹	1.55	1.27	1.20	1.17	1.13	0.92
Reported return on average tangible common equity ¹	17.87	6.22	14.34	8.70	12.50	6.14
Adjusted return on average tangible common equity ¹	18.29	15.17	14.90	13.86	14.42	12.84
Operating efficiency ratio, as reported ¹	42.8	67.7	52.2	69.6	61.7	78.5
Operating efficiency ratio, as adjusted ¹	38.8	41.8	46.2	50.8	54.0	58.7
Net interest margin - GAAP ²	3.51	3.44	3.44	3.60	3.61	3.65
Net interest margin - tax equivalent basis ²	3.57	3.55	3.55	3.67	3.70	3.74
Capital ratios (Company):³						
Common equity tier 1 risk-based ratio	12.31%	12.37%	10.73%	10.74%	NA	NA
Tier 1 risk-based capital ratio	12.95	13.07	10.73	10.74	10.43	10.33
Total risk-based capital ratio	14.06	14.18	12.73	11.29	11.22	11.10
Tier 1 leverage ratio	9.50	9.39	8.95	9.03	8.21	8.12
Tangible equity to tangible assets	9.06	8.76	8.14	8.18	7.76	7.63
Tangible common equity to tangible assets	8.60	8.27	8.14	8.18	7.76	7.63
Regulatory capital ratios (Bank):						
Common equity tier 1 risk-based ratio	13.55%	13.95%	10.87%	11.45%	NA	NA
Tier 1 risk-based capital ratio	13.55	13.95	10.87	11.45	12.00	11.94
Total risk-based capital ratio	14.80	15.21	13.06	12.00	12.79	12.71
Tier 1 leverage ratio	9.94	10.10	9.08	9.65	9.39	9.34
Asset quality data and ratios:						
Allowance for loan losses	\$ 95,677	\$ 77,907	\$ 63,622	\$ 50,145	\$ 42,374	\$ 40,612
Non-performing loans ("NPLs")	168,822	187,213	78,853	66,411	46,642	50,963
Non-performing assets ("NPAs")	188,199	214,308	92,472	81,025	52,509	58,543
Net charge-offs	28,230	11,715	6,523	7,929	1,238	7,365
NPAs to total assets	0.60%	0.71%	0.65%	0.68%	0.71%	0.80%
NPLs to total loans ³	0.88	0.94	0.83	0.84	0.97	1.07
Allowance for loan losses to non-performing loans	56.67	41.61	80.68	75.50	90.80	79.69
Allowance for loan losses to total loans ³	0.50	0.39	0.67	0.64	0.88	0.85
Net charge-offs to average loans	0.14	0.10	0.08	0.13	0.10	0.24

¹ See a reconciliation of as reported financial measures to as adjusted (non-GAAP) financial measures below under the caption "Non-GAAP Financial Measures."

² Net interest margin is net interest income directly from our consolidated income statements as a percentage of average interest-earning assets for the period. Net interest margin tax equivalent basis is net interest income adjusted for the portion of our net interest income that will be exempt from taxation (e.g., was received as a result of holdings of state or municipal obligations). An

amount equal to the tax benefit derived from that component is added back to the net interest income total. This adjustment is considered helpful in comparing one financial institution's net interest income (pre-tax) to that of another institution, as each will have a different proportion of tax-exempt items in their portfolios.

³ Total loans excludes loans held for sale.

Non-GAAP Financial Measures

The non-GAAP financial measures presented below are used by management and our Board of Directors on a regular basis in addition to our GAAP results to facilitate the assessment of our financial performance and to assess our performance compared to our annual budget and strategic plans. These non-GAAP financial measures complement our GAAP reporting and are presented below to provide investors, analysts, regulators and others information that we use to manage our business. Because not all companies use identical calculations, the presentation of the non-GAAP financial measures may not be comparable to other similarly titled measures used by other companies. This information supplements our GAAP reported results, and should not be viewed in isolation from, or as a substitute for, our GAAP results. Accordingly, this non-GAAP financial information should be read in conjunction with our consolidated financial statements, and notes thereto, for the year ended December 31, 2018, included elsewhere in this annual report on Form 10-K. The following non-GAAP financial measures reconcile our GAAP reported results to our as adjusted non-GAAP reported results and metrics presented in the Selected Financial Data table above in this Item. 6.

	At or for the year ended December 31,				At or for the three months ended December 31, 2014	At or for the fiscal year ended September 30, 2014
	2018	2017	2016	2015		
The following table shows the reconciliation of stockholders' equity to tangible common equity (non-GAAP) and the tangible common equity ratio (non-GAAP)⁴:						
Total assets	\$ 31,383,307	\$ 30,359,541	\$ 14,178,447	\$ 11,955,952	\$ 7,424,822	\$ 7,337,387
Goodwill and other intangibles	(1,742,578)	(1,733,082)	(762,953)	(748,066)	(432,258)	(434,204)
Tangible assets	29,640,729	28,626,459	13,415,494	11,207,886	6,992,564	6,903,183
Stockholders' equity	4,428,853	4,240,178	1,855,183	1,665,073	975,200	961,138
Preferred stock	(138,423)	(139,220)	—	—	—	—
Goodwill and other intangibles	(1,742,578)	(1,733,082)	(762,953)	(748,066)	(432,258)	(434,204)
Tangible common stockholders' equity	2,547,852	2,367,876	1,092,230	917,007	542,942	526,934
Common stock outstanding at period end	216,227,852	224,782,694	135,257,570	130,006,926	83,927,572	83,628,267
Common stockholders' equity as a % of total assets	13.67%	13.51%	13.08%	13.93%	13.13%	13.10%
Book value per common share	\$ 19.84	\$ 18.24	\$ 13.72	\$ 12.81	\$ 11.62	\$ 11.49
Tangible common equity as a % of tangible assets	8.60%	8.27%	8.14%	8.18%	7.76%	7.63%
Tangible book value per common share	\$ 11.78	\$ 10.53	\$ 8.08	\$ 7.05	\$ 6.47	\$ 6.30

	At or for the year ended December 31,				At or for the three months ended December 31, 2014	At or for the fiscal year ended September 30, 2014
	2018	2017	2016	2015		
The following table shows the reconciliation of reported net income (GAAP) and earnings per share to adjusted net income available to common stockholders (non-GAAP) and adjusted diluted earnings per share (non-GAAP)²:						
Income before income tax expense	\$ 566,230	\$ 180,970	\$ 207,354	\$ 97,949	\$ 25,380	\$ 37,830
Income tax expense	118,976	87,939	67,382	31,835	8,376	10,152
Net income (GAAP)	447,254	93,031	139,972	66,114	17,004	27,678
Adjustments:						
Net loss (gain) on sale of securities	10,788	344	(7,522)	(4,837)	43	(641)
Net (gain) loss on sale of fixed assets	(11,800)	1	—	—	—	(916)
(Gain) on sale of trust division	—	—	(2,255)	—	—	—
(Gain) loss on extinguishment of debt	(172)	—	9,729	—	—	(721)
Merger-related expense	—	39,232	265	17,079	502	9,455
Charge for asset write-downs, systems integration, retention and severance	13,132	105,110	4,485	29,046	2,493	26,591
Charge on benefit plan settlement	—	—	—	13,384	—	4,095
Amortization of non-compete agreements and acquired customer list intangibles	1,177	1,411	3,514	3,526	859	5,489
Total pre-tax adjustments	13,125	146,098	8,216	58,198	3,897	43,352
Adjusted pre-tax income	579,355	327,068	215,570	156,147	29,277	81,182
Adjusted income tax expense	121,732	103,027	70,052	50,749	9,662	23,340
Adjusted net income (non-GAAP)	457,623	224,041	145,518	105,398	19,615	57,842
Preferred stock dividend	7,978	2,002	—	—	—	—
Adjusted net income available to common stockholders (non-GAAP)	\$ 449,645	\$ 222,039	\$ 145,518	\$ 105,398	\$ 19,615	\$ 57,842
Weighted average diluted shares	224,816,996	158,124,270	131,234,462	110,329,353	84,194,916	80,534,043
Diluted EPS (GAAP)	\$ 1.95	\$ 0.58	\$ 1.07	\$ 0.60	\$ 0.20	\$ 0.34
Adjusted diluted EPS (non-GAAP)	2.00	1.40	1.11	0.96	0.23	0.72

	At or for the year ended December 31,				At or for the three months ended December 31, 2014	At or for the fiscal year ended September 30, 2014
	2018	2017	2016	2015		
The following table shows the reconciliation of reported return on average tangible common equity and adjusted return on average tangible common equity (non-GAAP)³:						
Average stockholders' equity	\$ 4,344,096	\$ 2,498,512	\$ 1,739,073	\$ 1,360,859	\$ 973,089	\$ 906,134
Average preferred stock	(138,829)	(35,122)	—	—	—	—
Average goodwill and other intangibles	(1,746,687)	(999,333)	(762,679)	(600,605)	(433,396)	(455,583)
Average tangible common stockholders' equity	2,458,580	1,464,057	976,394	760,254	539,693	450,551
Net income available to common stockholders	439,276	91,029	139,972	66,114	17,004	27,678
Net income available to common stockholders, if annualized	439,276	91,029	139,972	66,114	67,462	27,678
Reported return on average tangible common equity	17.87%	6.22%	14.34%	8.70%	12.50%	6.14%
Adjusted net income available to common stockholders	\$ 449,645	\$ 222,039	\$ 145,518	\$ 105,398	\$ 19,615	\$ 57,842
Annualized adjusted net income available to common stockholders	449,645	222,039	145,518	105,398	77,820	57,842
Adjusted return on average tangible common equity	18.29%	15.17%	14.90%	13.86%	14.42%	12.84%

	At or for the year ended December 31,				At or for the three months ended December 31, 2014	At or for the fiscal year ended September 30, 2014
	2018	2017	2016	2015		
The following table shows the reconciliation of the reported operating efficiency ratio and adjusted operating efficiency ratio (non-GAAP)⁴:						
Net interest income	\$ 967,403	\$ 576,143	\$ 404,269	\$ 311,216	\$ 60,237	\$ 217,988
Non-interest income	103,197	64,202	70,987	62,751	13,957	47,370
Total net revenue	1,070,600	640,345	475,256	373,967	74,194	265,358
Tax equivalent adjustment on securities	16,231	20,054	12,745	6,503	1,546	5,628
Net loss (gain) on sale of securities	10,788	344	(7,522)	(4,837)	43	(641)
Net (gain) loss on sale of fixed assets	(11,800)	1	—	—	—	(916)
(Gain) on sale of trust division	—	—	(2,255)	—	—	—
Other (other gains and fair value loss on interest rate caps)	—	—	—	—	—	(93)
Adjusted total net revenue	1,085,819	660,744	478,224	375,633	75,783	269,336
Non-interest expense	458,370	433,375	247,902	260,318	45,814	208,428
Merger-related expense	—	(39,232)	(265)	(17,079)	(502)	(9,455)
Charge for asset write-downs, systems integration, retention and severance	(13,132)	(105,110)	(4,485)	(29,046)	(2,493)	(26,591)
Gain (loss) on extinguishment of debt	172	—	(9,729)	—	—	(721)
Charge on benefit plan settlement	—	—	—	(13,384)	—	(4,095)
Amortization of intangible assets	(23,646)	(13,008)	(12,416)	(10,043)	(1,873)	(9,408)
Adjusted non-interest expense	\$ 421,764	\$ 276,025	\$ 221,007	\$ 190,766	\$ 40,946	\$ 158,158
Reported operating efficiency ratio	42.8%	67.7%	52.2%	69.6%	61.7%	78.5%
Adjusted operating efficiency ratio	38.8%	41.8%	46.2%	50.8%	54.0%	58.7%

See legend below tables.

	At or for the year ended December 31,				At or for the three months ended December 31, 2014	At or for the fiscal year ended September 30, 2014
	2018	2017	2016	2015		
The following table shows the reconciliation of reported return on average tangible assets and adjusted return on average tangible assets⁵:						
Average assets	\$ 30,746,916	\$ 18,451,301	\$ 12,883,226	\$ 9,604,256	\$ 7,340,332	\$ 6,757,094
Average goodwill and other intangibles	(1,746,687)	(999,333)	(762,679)	(600,605)	(433,396)	(455,583)
Average tangible assets	29,000,229	17,451,968	12,120,547	9,003,651	6,906,936	6,301,511
Net income available to common stockholders	439,276	91,029	139,972	66,114	17,004	27,678
Net income (loss) available to common stockholders, if annualized	439,276	91,029	139,972	66,114	67,462	27,678
Reported return on average tangible assets	1.51%	0.52%	1.15%	0.73%	0.98%	0.44%
Adjusted net income available to common stockholders	\$ 449,645	\$ 222,039	\$ 145,518	\$ 105,398	\$ 19,615	\$ 57,842
Annualized adjusted net income available to common stockholders	449,645	222,039	145,518	105,398	77,820	57,842
Adjusted return on average tangible assets	1.55%	1.27%	1.20%	1.17%	1.13%	0.92%

¹ Stockholders' equity as a percentage of total assets, book value per common share, tangible common equity as a percentage of tangible assets and tangible book value per common share provides information to help assess our capital position and financial strength. We believe tangible book value measures allow comparability to other banking organizations that have not engaged in acquisitions that have resulted in the accumulation of goodwill and other intangible assets.

- ² Adjusted net income and adjusted diluted earnings per share present a summary of our earnings, which includes adjustments to exclude certain revenues and expenses (generally associated with discrete merger transactions and non-recurring strategic plans) to help in assessing our recurring profitability.
- ³ Reported return on tangible common equity and the adjusted return on average tangible common equity measures provide information to evaluate our use of tangible equity.
- ⁴ The reported operating efficiency ratio is a non-GAAP measure calculated by dividing our GAAP non-interest expense by the sum of our GAAP net interest income plus GAAP non-interest income. The adjusted efficiency ratio is a non-GAAP measure calculated by dividing non-interest expense adjusted for intangible asset amortization and certain expenses generally associated with discrete merger transactions and non-recurring strategic plans by the sum of net interest income plus non-interest income plus the tax equivalent adjustment on securities income and elimination of the the impact of gain or loss on sale of securities. The adjusted efficiency ratio is a measure we use to assess our operating performance.
- ⁵ Reported return on average tangible assets and the adjusted return on average tangible assets measures provide information to help assess our profitability.

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

Forward-Looking Statements

We make statements in this report, and we may from time to time make other statements, regarding our outlook or expectations for earnings, revenues, expenses and/or other financial, business or strategic matters regarding or affecting us that are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are typically identified by words such as “believe,” “expect,” “anticipate,” “intend,” “outlook,” “target,” “estimate,” “forecast,” “project,” by future conditional verbs such as “will,” “should,” “would,” “could” or “may,” or by variations of such words or by similar expressions. These statements are not historical facts, but instead represent our current expectations, plans or forecasts and are based on the beliefs and assumptions of the management and the information available to management at the time that these disclosures were prepared.

Forward-looking statements are subject to numerous assumptions, risks (both known and unknown) and uncertainties, and other factors which change over time. Forward-looking statements speak only as of the date they are made. We do not assume any duty and do not undertake to update our forward-looking statements. Because forward-looking statements are subject to assumptions, risks, uncertainties, and other factors, actual results or future events could differ, possibly materially, from those that we anticipated in our forward-looking statements and future results could differ materially from our historical performance.

The following factors, among others, could cause our future results to differ materially from the plans, objectives, goals, expectations, anticipations, estimates and intentions expressed in forward-looking statements:

- our ability to successfully implement growth and other strategic initiatives, reduce expenses and to integrate and fully realize cost savings and other benefits we estimate in connection with acquisitions, and limiting any business disruption arising therefrom;
- oversight of the Bank by the Consumer Financial Protection Bureau;
- adverse publicity, regulatory actions or litigation with respect to us or other well-known companies and the financial services industry in general and a failure to satisfy regulatory standards;
- the effects of and changes in monetary and policies of the Board of Governors of the Federal Reserve System and the U.S. Government, respectively;
- our ability to make accurate assumptions and judgments about an appropriate level of allowance for loan losses and the collectability of our loan portfolio, including changes in the level and trend of loan delinquencies and write-offs that may lead to increased losses and non-performing assets in our loan portfolio, result in our allowance for loan losses not being adequate to cover actual losses, and require us to materially increase our reserves;
- our use of estimates in determining the fair value of certain of our assets, which may prove to be incorrect and result in significant declines in valuation;
- our ability to manage changes in market interest rates;
- our ability to capitalize on our substantial investments in our information technology and operational infrastructure and systems;

- changes in other economic, competitive, governmental, regulatory, and technological factors affecting our markets, operations, pricing, products, services and fees; and
- our success at managing the risks involved in the foregoing and managing our business.

Additional factors that may affect our results are discussed in this annual report on Form 10-K under Item 1A, “Risk Factors” and elsewhere in this report or in other filings with the SEC. These risks and uncertainties should be considered in evaluating forward-looking statements and undue reliance should not be placed on such statements. You should read such statements carefully.

Critical Accounting Policies

Our accounting and reporting policies are prepared in accordance with GAAP and conform to general practices within the banking industry. Accounting policies considered critical to our financial results include the allowance for loan losses, accounting for business combinations, accounting for goodwill, trade names and other intangible assets, accounting for deferred income taxes and the recognition of interest income. For additional information on our significant accounting policies, see Note 1. “Basis of Financial Statement Presentation and Summary of Significant Accounting Policies” in the notes to consolidated financial statements.

Allowance for Loan Losses. The methodology for determining the allowance for loan losses is considered by us to be a critical accounting policy due to the high degree of judgment involved, the subjectivity of the assumptions utilized and the potential for changes in the economic environment that could result in changes to the amount of the allowance for loan losses considered necessary. We evaluate our loans at least quarterly, including a review of their risk components and their carrying value, and the allowance is adjusted accordingly. While management uses the best information available to make evaluations, future adjustments to the allowance may be necessary if conditions differ substantially from the information used in making such evaluations. In addition, as an integral part of their examination process, our regulatory agencies periodically review the allowance for loan losses. Such agencies may require us to recognize additions to the allowance based on their judgments of information available to them at the time of their examination.

See Note 1. “Basis of Financial Statement Presentation and Summary of Significant Accounting Policies” in the notes to consolidated financial statements for a discussion of the risk components. We consistently review the risk components to identify any changes in trends.

Business Combinations. We account for business combinations under the purchase method of accounting. The application of this method of accounting requires the use of significant estimates and assumptions in the determination of the fair value of assets acquired and liabilities assumed in order to properly allocate purchase price consideration between assets that are amortized, accreted or depreciated from those that are recorded as goodwill. Our estimates of the fair values of assets acquired and liabilities assumed are based upon assumptions that we believe to be reasonable, and whenever necessary, include assistance from independent third-party appraisal and valuation firms.

Deferred Income Taxes. We use the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statements carrying amounts of existing assets and liabilities and their respective tax bases. If current available information raises doubt as to the realization of the deferred tax assets, a valuation allowance is established. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. We exercise significant judgment in evaluating the amount and timing of recognition of the resulting tax liabilities and assets, including projections of future taxable income. These judgments and estimates are reviewed on a continual basis as regulatory and business factors change.

Interest Income. Interest income on loans, securities and other interest-earning assets is accrued monthly unless we consider the collection of interest to be doubtful. Loans are placed on non-accrual status upon the earlier of (i) when payments are contractually past due 90 days or more; or (ii) when we have determined that the borrower is unlikely to meet contractual principal or interest obligations, unless the assets are well secured and in the process of collection. At such time, unpaid interest is reversed by charging interest income for interest in the current year or the allowance for loan losses with respect to prior year income. Interest payments received on non-accrual loans (including impaired loans) are not recognized as income unless future collections are reasonably assured. Loans are returned to accrual status when collectability is no longer considered doubtful. Loans we acquired in mergers are initially recorded at fair value, which involves estimating the amount and timing of principal and interest cash flows initially expected to be collected on the loans and discounting those cash flows at an appropriate market rate of interest. We continue to evaluate reasonableness of expectations for the timing and amount of cash to be collected. Subsequent decreases in expected cash flows may result in changes in the amortization or accretion of fair market value adjustments, and in some cases may result in the loan being considered impaired.

General

The Astoria Merger, the merger with Hudson Valley Holding Corp. (the “HVB Merger”), and the other acquisitions discussed in Note 2. “Acquisitions” in the notes to consolidated financial statements were accounted for as business combinations, and accordingly, their related results of operations are included from the date of acquisition. The discussion and analysis should be read in conjunction with the consolidated financial statements, notes to consolidated financial statements and other information contained in this report.

Recent Developments

Please refer to Item 1. Business for details on recent developments and significant transactions that have impacted our results in the periods presented. Also, see Note 23. “Quarterly Results of Operations (Unaudited)” in the notes to consolidated financial statements for additional information regarding our quarterly results for 2018 and 2017.

Results of Operations

We reported net income available to common stockholders of \$439.3 million, or \$1.95 per diluted common share for 2018, compared to net income available to common stockholders of \$91.0 million, or \$0.58 per diluted common share for 2017, and net income available to common stockholders of \$140.0 million, or \$1.07 per diluted common share, for 2016.

Results for 2018 included continued organic growth from our commercial banking teams, and, since April 2, 2018, the results from the Advantage Funding Acquisition. Results for 2018 were also impacted by the successful integration of Astoria’s operating activities, including the completion of the conversion of Astoria’s legacy deposit systems; progress on our real estate consolidation strategy, and the realization of anticipated efficiencies which have resulted in reduced staffing levels.

Results for 2017 included, from October 2, 2017, the combined results from the Astoria Merger. Results for 2016 reflected the continuing successful integration of the HVB Merger, as well as organic growth generated from our commercial banking teams.

The table below summarizes our results of operations on a tax equivalent basis. Tax equivalent adjustments are the result of increasing income from tax-free securities by an amount equal to the taxes that would be paid if the income were fully taxable based on the 35% federal tax rate that was in effect for 2016 and 2017 and the 21% federal tax rate that was in effect for 2018, thus making tax-exempt yields comparable to taxable asset yields.

Dollar amounts in tables and the accompanying discussion that follows are stated in thousands, except for per share amounts and ratios.

Selected operating data, return on average assets, return on average common equity and dividends per common share for the comparable periods follow:

	For the year ended December 31,		
	2018	2017	2016
Tax equivalent net interest income	\$ 983,634	\$ 596,197	\$ 417,014
Less tax equivalent adjustment	(16,231)	(20,054)	(12,745)
Net interest income	967,403	576,143	404,269
Provision for loan losses	46,000	26,000	20,000
Non-interest income	103,197	64,202	70,987
Non-interest expense	458,370	433,375	247,902
Income before income tax expense	566,230	180,970	207,354
Income tax expense	118,976	87,939	67,382
Net income	447,254	93,031	139,972
Preferred stock dividend	7,978	2,002	—
Net income available to common stockholders	\$ 439,276	\$ 91,029	\$ 139,972
Earnings per common share - basic	\$ 1.96	\$ 0.58	\$ 1.07
Earnings per common share - diluted	1.95	0.58	1.07
Dividends per common share	0.28	0.28	0.28
Return on average assets	1.43%	0.49%	1.09%
Return on average equity	10.11	3.64	8.05

Net Income

For 2018, net income available to common stockholders was \$439,276 compared to net income available to common stockholders of \$91,029 for 2017, an increase of \$348,247. Results for 2018 included the following pre-tax charges:

- amortization of non-compete agreements and acquired customer list intangible assets of \$1,177;
- net loss on sale of securities of \$10,788;
- gain on sale of fixed assets, resulting from the sale of Astoria's former headquarters of \$11,800;
- charges for asset write-downs, systems integration, retention and severance associated with the Advantage Funding acquisition of \$4,396 and loss on impairment of financial centers consolidated in 2018 of \$8,736 for a total of \$13,132; and
- gain on extinguishment of senior notes of \$172.

Excluding the impact of these items, adjusted net income available to common stockholders (non-GAAP) was \$449,645, and adjusted diluted earnings per share available to common stockholders (non-GAAP) were \$2.00 for 2018.

Net income available to common stockholders declined \$48,943 to \$91,029 for 2017, compared to \$139,972 for 2016. Results for 2017 included the following pre-tax charges:

- merger-related expense associated with the Astoria Merger of \$39,232;
- charges for asset write-downs, systems integration, retention and severance associated with the Astoria Merger of \$105,110;
- net loss on sale of securities of \$344; and
- amortization of non-compete agreements and acquired customer list intangible assets of \$1,411.

In addition, in connection with the Tax Cuts and Jobs Act of 2017, in the fourth quarter of 2017 we recorded a charge of \$40,285 in income tax expense to write-down our net deferred tax assets to their estimated value.

Excluding the impact of these items, adjusted net income available to common stockholders (non-GAAP) were \$222,039, and adjusted diluted earnings available to common stockholders (non-GAAP) per share were \$1.40 for 2017.

Results for 2016 included the following pre-tax charges and gains:

- merger-related expense associated with the NSBC Acquisition of \$265;
- amortization of non-compete agreements and acquired customer list intangible assets of \$3,514;
- charges for asset write-downs, systems integration, retention and severance incurred in connection with the divestiture of our residential mortgage originations business, charges incurred in connection with the NSBC Acquisition and continued consolidation of financial centers and other locations of \$4,485;
- net gain on sale of the trust division of \$2,255;
- net gain on sale of securities of \$7,522; and
- loss on extinguishment of a portion of our 5.50% fixed rate senior notes (the “Senior Notes”) and Federal Home Loan Bank of New York (“FHLB”) borrowings of \$9,729.

Excluding the impact of these items, adjusted net income available to common stockholders (non-GAAP) were \$145,518, and adjusted diluted earnings (non-GAAP) per share were \$1.11 for 2016. Please refer to Item 6. “Selected Financial Data” for a reconciliation of the non-GAAP financial measures highlighted above.

Details of the changes in the various components of net income available to common stockholders are further discussed below.

Net Interest Income is the difference between interest income on earning assets, such as loans and securities, and interest expense on liabilities, such as deposits and borrowings, which are used to fund those assets. Net interest income is our largest source of revenue, representing 90.4% and 90.0% of total revenue in 2018 and 2017, respectively. Net interest margin is the ratio of taxable equivalent net interest income to average interest-earning assets for the period. The level of interest rates and the volume and mix of interest earning assets and interest bearing liabilities impact net interest income and net interest margin.

We are primarily funded by core deposits, and non-interest bearing demand deposits represent a significant portion of our funding. Our low cost funding base has had a positive impact on our net interest income and net interest margin. We expect this positive impact to continue in a rising interest rate environment provided longer-term interest rates moved ratably in-line with shorter-term interest rates. However, a flattening of the interest rate yield curve, where the spread between short-term rates and long-term rates narrows, makes holding longer-term and fixed rate interest earning assets less profitable as the cost to fund those assets with shorter-term deposits and borrowings increases, reducing our net interest margin and spread.

The following table sets forth our average balance sheets, average yields and costs, and certain other information for the periods indicated. All average balances are daily average balances. Non-accrual loans were included in the computation of average balances, but have been reflected in the table as loans carrying a zero yield. The yields set forth below include the effect of purchase accounting adjustments, deferred fees, discounts and premiums that are amortized or accreted to interest income or expense.

For the year ended December 31,

	2018			2017			2016		
	Average balance	Interest	Yield/Rate	Average balance	Interest	Yield/Rate	Average balance	Interest	Yield/Rate
Interest earning assets:									
C&I and commercial finance loans ⁽¹⁾	\$ 5,774,201	\$ 303,167	5.25%	\$ 4,378,428	\$ 219,664	5.02%	\$ 3,512,028	\$ 171,896	4.89%
Commercial real estate ⁽²⁾	9,168,026	430,743	4.70%	5,477,304	239,240	4.37%	3,767,834	166,137	4.41%
ADC ⁽³⁾	261,918	15,593	5.95%	241,051	14,367	5.96%	204,447	10,259	5.02%
Total commercial loans ⁽⁴⁾	15,204,145	749,503	4.93%	10,096,783	473,271	4.69%	7,484,309	348,292	4.65%
Consumer loans	336,711	18,967	5.63%	296,368	14,196	4.79%	292,994	13,142	4.49%
Residential mortgage loans	4,649,774	238,026	5.12%	1,822,608	83,294	4.57%	743,064	29,412	3.96%
Total loans, net ⁽⁵⁾	20,190,630	1,006,496	4.98%	12,215,759	570,761	4.67%	8,520,367	390,846	4.59%
Securities taxable	4,114,555	115,971	2.82%	2,625,317	65,278	2.49%	1,933,588	42,541	2.20%
Securities tax exempt	2,589,470	77,293	2.98%	1,519,118	57,299	3.77%	945,356	36,414	3.85%
Interest earning deposits	291,936	3,712	1.27%	242,339	1,891	0.78%	253,505	935	0.37%
FRB and FHLB Stock	342,036	21,232	6.21%	168,576	7,274	4.31%	105,338	3,560	3.38%
Total securities and other earning assets	7,337,997	218,208	2.97%	4,555,350	131,742	2.89%	3,237,787	83,450	2.58%
Total interest earnings assets	27,528,627	1,224,704	4.45%	16,771,109	702,503	4.19%	11,758,154	474,296	4.03%
Non-interest earning assets	3,218,289			1,680,192			1,125,072		
Total assets	\$ 30,746,916			\$ 18,451,301			\$ 12,883,226		
Interest bearing liabilities:									
Demand deposits	\$ 4,084,821	\$ 31,757	0.78%	\$ 2,525,863	\$ 13,394	0.53%	\$ 1,962,813	\$ 6,291	0.32%
Savings deposits ⁽⁶⁾	2,760,759	6,699	0.24%	1,332,054	4,197	0.32%	812,339	4,572	0.56%
Money market deposits	7,505,005	61,532	0.82%	4,663,180	28,141	0.60%	3,124,117	16,874	0.54%
Certificates of deposit	2,523,871	30,108	1.19%	1,049,102	10,378	0.99%	620,724	5,452	0.88%
Total interest bearing deposits	16,874,456	130,096	0.77%	9,570,199	56,110	0.59%	6,519,993	33,189	0.51%
Senior Notes	235,074	8,747	3.72%	126,858	6,186	4.88%	91,291	5,398	5.91%
Other borrowings	4,542,652	92,812	2.05%	2,460,460	34,608	1.41%	1,160,780	13,065	1.13%
Subordinated Notes	172,820	9,415	5.45%	172,601	9,402	5.45%	103,420	\$ 5,630	5.44%
Total borrowings	4,950,546	110,974	2.24%	2,759,919	50,196	1.82%	1,355,491	24,093	1.78%
Total interest bearing liabilities	21,825,002	241,070	1.10%	12,330,118	106,306	0.86%	7,875,484	57,282	0.73%
Non-interest bearing deposits	4,108,881			3,363,636			3,120,973		
Other non-interest bearing liabilities	468,937			259,035			147,696		
Total liabilities	26,402,820			15,952,789			11,144,153		
Stockholders' equity	4,344,096			2,498,512			1,739,073		
Total liabilities and stockholders' equity	\$ 30,746,916			\$ 18,451,301			\$ 12,883,226		
Net interest rate spread ⁽⁷⁾			3.34%			3.33%			3.30%
Net interest earning assets ⁽⁸⁾	\$ 5,703,625			\$ 4,440,991			\$ 3,882,670		
Tax equivalent net interest margin		983,634	3.57%		596,197	3.55%		417,014	3.55%
Less tax equivalent adjustment		(16,231)			(20,054)			(12,745)	
Net interest income		967,403			576,143			404,269	
Accretion income on acquired loans		111,941			43,493			18,586	
Tax equivalent net interest margin excluding accretion income on acquired loans		\$ 871,693	3.17%		\$ 552,704	3.30%		\$ 398,428	3.39%

See legend on the following page.

- (1) Commercial and industrial (“C&I”) and commercial finance loans includes traditional C&I loans and commercial finance loans, which are comprised of asset-based lending, payroll finance, warehouse lending, factored receivables, equipment finance, and public sector finance loans.
- (2) Commercial real estate loans include multi-family loans.
- (3) ADC represents acquisition, development and construction loans.
- (4) Commercial loans include all C&I and commercial finance, commercial real estate and ADC loans.
- (5) Includes the effect of net deferred loan origination fees and costs, accretion of net purchase accounting adjustments, prepayment fees and late charges and non-accrual loans.
- (6) Includes interest bearing mortgage escrow balances.
- (7) Net interest rate spread represents the difference between the tax equivalent yield on average interest earning assets and the cost of average interest bearing liabilities.
- (8) Net interest earning assets represents total interest earning assets less total interest bearing liabilities.

The ratio of interest earning assets to interest bearing liabilities was 126.1%, 136.0% and 149.3% for the years ended December 31, 2018, 2017 and 2016, respectively.

The following table presents the dollar amount of changes in interest income (on a fully tax equivalent basis) and interest expense for the major categories of our interest earning assets and interest bearing liabilities. Information is provided for each category of interest earning assets and interest bearing liabilities with respect to (i) changes attributable to changes in volume (*i.e.*, changes in average balances multiplied by the prior period average rate); and (ii) changes attributable to rate (*i.e.*, changes in average rate multiplied by prior period average balances). For purposes of this table, changes attributable to both rate and volume, which cannot be segregated, have been allocated proportionately to the change due to volume and the change due to rate.

	2018 vs. 2017			2017 vs. 2016		
	Increase (Decrease) due to		Total Increase (Decrease)	Increase (Decrease) due to		Total Increase (Decrease)
	Volume	Rate		Volume	Rate	
Interest earning assets:						
Traditional C&I and commercial finance loans	\$ 73,010	\$ 10,493	\$ 83,503	\$ 38,829	\$ 8,939	\$ 47,768
Commercial real estate	172,204	19,299	191,503	73,510	(408)	73,102
ADC	1,250	(24)	1,226	2,008	2,100	4,108
Consumer loans	2,085	2,686	4,771	155	899	1,054
Residential mortgage loans	143,592	11,140	154,732	48,716	5,166	53,882
Securities taxable	41,092	9,601	50,693	16,616	6,122	22,738
Securities tax exempt	33,911	(13,917)	19,994	21,656	(771)	20,885
Interest earning deposits	448	1,373	1,821	(43)	999	956
FRB and FHLB Stock	9,772	4,186	13,958	2,546	1,168	3,714
Total interest earning assets	477,364	44,837	522,201	203,993	24,214	228,207
Interest bearing liabilities:						
Demand deposits	10,408	7,955	18,363	2,161	4,942	7,103
Savings deposits	3,758	(1,256)	2,502	2,111	(2,486)	(375)
Money market deposits	20,848	12,543	33,391	9,194	2,073	11,267
Certificates of deposit	17,251	2,479	19,730	4,170	756	4,926
Senior Notes	13	—	13	1,844	(1,056)	788
Subordinated Notes	37,907	20,297	58,204	3,762	10	3,772
Other borrowings	4,305	(1,744)	2,561	17,639	3,904	21,543
Total interest bearing liabilities	94,490	40,274	134,764	40,881	8,143	49,024
Less tax equivalent adjustment	9,841	(13,664)	(3,823)	7,692	(383)	7,309
Change in net interest income	\$ 373,033	\$ 18,227	\$ 391,260	\$ 155,420	\$ 16,454	\$ 171,874

2018 compared to 2017

Tax equivalent net interest income increased \$387,437 to \$983,634 for the year ended December 31, 2018 compared to \$596,197 for the year ended December 31, 2017. The increase was primarily the result of an increase in average balances due to the Astoria Merger and organic loan growth from our commercial banking teams. The average volume of interest earning assets increased \$10,757,518, or 64.1%, for 2018 relative to 2017. The tax equivalent net interest margin increased to 3.57% for 2018 compared to 3.55% for 2017, as the increase in accretion income on acquired loans offset an increase in the cost of deposits and other interest bearing liabilities. Interest earning assets yielded 4.45% for 2018 compared to 4.19% for 2017, and the cost of interest bearing liabilities was 1.10% for the year ended December 31, 2018 compared to 0.86% for 2017. The increase in yield on assets and cost of interest bearing liabilities was mainly due to increases in market rates of interest between the periods.

The average balance of loans outstanding increased \$7,974,871, or 65.3%, during 2018, compared to 2017. The majority of the increase in the average balance of loans outstanding was due to the Astoria Merger, organic growth from our commercial banking teams and the Advantage Funding acquisition. Loans accounted for 73.3% of average interest earning assets in 2018 compared to 72.8% in 2017. The average yield on loans was 4.98% in 2018 compared to 4.67% in 2017. Included in yield on loans is the accretion of purchase accounting discounts from our prior acquisitions. Accretion income on acquired loans was \$111,941 for 2018 and contributed 55 basis points to the yield on loans. Accretion income on acquired loans was \$43,493 for 2017 and contributed 35 basis points to the yield on loans. At December 31, 2018, remaining loan purchase accounting discounts on portfolio loans totaled \$117,222.

Tax equivalent interest income on securities increased \$70,687 to \$193,264 in the year ended December 31, 2018, compared to \$122,577 in the year ended December 31, 2017. This was primarily the result of an increase of \$2,559,590 in the average balance of

securities. The average balance of tax-exempt securities increased \$1,070,352, or 70.5%, during 2018, from \$1,519,118 at December 31, 2017 to \$2,589,470 at December 31, 2018. The tax equivalent yield on securities was 2.88% in 2018 compared to 2.96% in 2017. The decrease in tax equivalent yield on securities was primarily due to the change in the federal tax rate, which was 35.0% for 2017 and 21.0% for 2018. The proportion of average tax exempt securities was 38.6% of average securities in 2018 compared to 36.7% in 2017.

Average deposits increased \$8,049,502 in 2018 and were \$20,983,337 in 2018 compared to \$12,933,835 in 2017. Average interest bearing deposits increased \$7,304,257 during 2017, from \$9,570,199 in 2017 to \$16,874,456 in 2018. Average non-interest bearing deposits increased \$745,245 and were \$4,108,881 in 2018 compared to \$3,363,636 in 2017. The growth in average deposits was primarily due to the Astoria Merger and organic growth generated by our commercial banking teams. The average cost of interest bearing deposits was 0.77% in 2018 compared to 0.59% in 2017. The increase in the cost of deposits was primarily attributable to changes in market rates of interest. Since the fourth quarter of 2017, the change in the cost of total deposits relative to the change in the Federal Funds rate was 27.2%.

Average borrowings increased \$2,190,627 to \$4,950,546 in 2018 compared to \$2,759,919 in 2017. The increase in average borrowings during 2018 was primarily utilized to fund growth in loans and other earning assets. The average cost of borrowings was 2.24% for 2018 compared to 1.82% for 2017. The increase in the average cost of borrowings during the year was primarily due to increases in market interest rates. See additional disclosures regarding our borrowings in Note 9. "Borrowings, Senior Notes and Subordinated Notes" in the notes to consolidated financial statements.

Tax equivalent net interest margin excluding accretion income on acquired loans was 3.17% in the year ended December 31, 2018, compared to 3.30% in the year ended December 31, 2017. The decline between the periods was due to the Astoria Merger, as lower yielding residential mortgage and multi-family loans became a larger proportion of our loan portfolio in 2018 compared to 2017, and the increased cost of deposits, which increased as a result of market interest rates.

2017 compared to 2016

Tax equivalent net interest income increased \$179,183 to \$596,197 for 2017 compared to \$417,014 for 2016. The increase was the result of an increase in average balances due to the Astoria Merger and organic loan growth generated by our commercial banking teams. The average balance of interest earning assets increased \$5,012,955, or 42.6%, in 2017 relative to 2016 from \$11,758,154 to \$16,771,109, respectively. Tax equivalent net interest margin was unchanged at 3.55% in 2017 and 2016. Yield on interest earning assets was 4.19% in 2017 compared to 4.03% in 2016, and the cost of interest bearing liabilities was 0.86% for 2017 compared to 0.73% for 2016.

The average balance of loans outstanding increased \$3,695,392, or 43.4%, from \$8,520,367 in 2016 to \$12,215,759 in 2017. The increase in average loans was due to the Astoria Merger and organic growth from our commercial banking teams. Loans accounted for 72.8% of average interest earning assets in 2017 compared to 72.5% in 2016. The average yield on loans was 4.67% in 2017 compared to 4.59% in 2016. Accretion income on acquired loans was \$43,493 for 2017 and contributed 35 basis points to yield on loans. Accretion income on acquired loans was \$18,586 for 2016 and contributed 22 basis points to yield on loans.

Tax equivalent interest income on securities increased \$43,622 to \$122,577 in 2017 compared to \$78,955 for 2016. This was mainly due to an increase of \$1,265,491 in the average balance of securities. The tax equivalent yield on securities was 2.96% in 2017 compared to 2.74% in 2016. The increase in tax equivalent yield on securities in 2017 was mainly the result of an increase in the amount and proportion of tax exempt securities. The proportion of tax exempt securities was 36.7% of average securities in 2017 compared to 32.8% in 2016.

Average deposits increased \$3,292,869 in 2017 and were \$12,933,835 compared to \$9,640,966 for 2016. Average interest bearing deposits increased \$3,050,206 in 2017 compared to 2016. Average non-interest bearing deposits increased \$242,663 and were \$3,363,636 for 2017 compared to \$3,120,973 for 2016. The growth in average deposits was due to the Astoria Merger and organic growth mainly generated by our commercial banking teams. The average cost of interest bearing deposits was 0.59% in 2017 compared to 0.51% in 2016. The increase was mainly due to an increase in market interest rates and the proportion of commercial deposits to total deposits, as commercial deposits usually have higher interest expense.

Average borrowings increased \$1,404,428 to \$2,759,919 in 2017 compared to \$1,355,491 in 2016. The increase in average borrowings in 2017 was mainly utilized to fund growth in loans and other earning assets. The average cost of borrowings was 1.82% for 2017 compared to 1.78% in 2016. The increase in the average cost of borrowings between the periods was mainly due to an increase in interest rates on short-term FHLB borrowings.

Tax equivalent net interest margin excluding accretion income on acquired loans was 3.30% in the year ended December 31, 2017, compared to 3.39% for 2016. The decline between the periods was mainly due to the Astoria Merger, as lower yielding residential mortgage and multi-family loans became a larger proportion of our loan portfolio in 2017 compared to 2016. In addition, the cost of interest bearing deposits increased in 2017 compared to 2016 mainly as a result of increases in market interest rates.

Provision for Loan Losses. The provision for loan losses is determined by us as the amount to be added to the allowance for loan losses after net charge-offs have been deducted in order to bring the allowance to a level that is our best estimate of probable incurred credit losses inherent in the outstanding loan portfolio. In 2018, 2017 and 2016, the provision for loan losses totaled \$46,000, \$26,000, and \$20,000, respectively. See the section captioned “Delinquent Loans, Troubled Debt Restructuring (“TDRs”), Impaired Loans and Classified Assets - Provision for Loan Losses” elsewhere in this discussion for further analysis of the provision for loan losses.

Non-interest Income. Accounting Standards Codification Topic 606, Revenue from Contracts with Customers (the “New Revenue Standard”), created a single framework for recognizing revenue from contracts with customers that fall within its scope. We adopted the New Revenue Standard using the modified retrospective method applied to all contracts not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under the New Revenue Standard while prior period amounts continue to be reported in accordance with prior GAAP. The adoption of the New Revenue Standard did not result in a significant change to the accounting for any in-scope revenue streams. As such, no cumulative effect adjustment was recorded. Services that we provide that fall within the scope of the New Revenue Standard are primarily recognized as revenue as we satisfy our obligation to the customer. The components of non-interest income were as follows:

	For the year ended December 31,		
	2018	2017	2016
Deposit fees and service charges	\$ 26,830	\$ 17,128	\$ 15,166
Accounts receivable management / factoring commissions and other related fees	22,772	17,803	17,695
Loan commissions and fees	16,181	11,637	9,524
Bank owned life insurance	15,651	7,816	5,832
Investment management fees	7,790	2,928	3,710
Net (loss) gain on sale of securities	(10,788)	(344)	7,522
Gain (loss) on sale of fixed assets	11,800	(1)	—
Other	12,961	7,235	11,538
Total non-interest income	<u>\$ 103,197</u>	<u>\$ 64,202</u>	<u>\$ 70,987</u>
Total non-interest income	\$ 103,197	\$ 64,202	\$ 70,987
Net (loss) gain on sale of securities	(10,788)	(344)	7,522
Net gain (loss) on sale of fixed assets	11,800	(1)	—
Non-interest income net of gain or loss on sale of securities and sale of fixed assets	<u>\$ 102,185</u>	<u>\$ 64,547</u>	<u>\$ 63,465</u>

As presented in Item 6. “Selected Financial Data - Non-GAAP Financial Measures” we eliminate net (loss) gain on sale of securities and gain (loss) on sale of fixed assets in calculating our adjusted total revenues and adjusted net income. Net (loss) gain on sale of securities is impacted significantly by changes in market interest rates and strategies we use to manage liquidity and interest rate risk. As a result, net (loss) gain on sale of securities is not part of our corporate budgeting or business planning process. As we continue our financial center consolidation strategy, we will likely sell several locations over time, which may result in gains and losses which are also not a part of our corporate budgeting or recurring operating income. When we analyze non-interest income performance, we eliminate the impact of these gains and losses in evaluating our results.

The main driver of growth in our non-interest income between 2018 and 2017 was the Astoria Merger, which contributed to growth in deposit fees and service charges, loan commissions and fees, bank owned life insurance and investment management fees. Accounts receivable management / factoring commissions and other related fees and income generated on loan swaps, which is included in other non-interest income, also contributed to the increase in non-interest income in 2018. The growth of non-interest income net of gain or loss on sale of securities and sale of fixed assets between 2017 and 2016 was mainly due to the Astoria Merger.

Deposit fees and service charges were \$26,830 for 2018 compared to \$17,128 for 2017 and \$15,166 for 2016. The increase in deposit fees in 2018 compared to 2017, and in 2017 compared to 2016, was mainly due to the Astoria Merger, as our deposit composition has a greater balance between commercial and retail deposits after the merger. Commercial deposits are generally higher balance deposits that generate lower levels of fees and service charges than retail deposits.

Accounts receivable management / factoring commissions and other related fees represents fees generated in our factoring and payroll finance businesses. In factoring, we receive a nonrefundable factoring fee, which is generally a percentage of the factored receivables or sales volume, which is designed to compensate us for the bookkeeping and collection services provided and, if applicable, the credit review of the client's customer and assumption of customer credit risk. In payroll finance, we provide outsourcing support services for clients in the temporary staffing industry. We generate fee income in exchange for providing full back-office, payroll, tax and accounting services to independently-owned temporary staffing companies. Fees in 2018 were \$22,772, an increase of \$4,969 compared to 2017. The increase was mainly due to an increase in factoring commissions and related fees due to organic growth from our factoring and payroll finance teams and a revised allocation of total client revenue between interest income and fee income due to the mix of business. The increase in fees for 2017 compared to 2016 of \$108 was due to organic growth.

Loan commissions and fees income includes fees on lines of credit, loan servicing fees, syndication fees, collateral monitoring, and other loan related fees that are not included in interest income. Loan commissions and fees were \$16,181 for 2018 compared to \$11,637 for 2017 and \$9,524 for 2016. Lines of credit commissions were \$3,041 in 2018 compared to \$1,715 for 2017, due to organic growth from our commercial banking teams. Loan syndication fees were \$3,463 for 2018 compared to \$1,211 for 2017, as we hired a commercial banking team in 2017 that focuses on loan syndications and participations which has steadily increased our volume in these types of transactions. Fee income also increased in loan servicing fees and collateral monitoring fees, which were \$4,935 in 2018 compared to \$2,671 in 2017, mainly due to the Astoria Merger, as we acquired a residential mortgage loan servicing portfolio. Lines of credit commissions were \$1,715 in 2017 compared to \$829 for 2016, due to organic growth from our commercial banking teams. Loan syndication fees were \$1,211 for 2017 compared to \$211 for 2016 as we began loan syndication activities in 2016.

Bank owned life insurance ("BOLI") income mainly represents the change in the cash surrender value of life insurance policies owned by the Bank. BOLI income was \$15,651 for 2018 compared to \$7,816 for 2017 and \$5,832 for 2016. The increase in BOLI income between the periods was mainly due to the Astoria Merger.

Investment management fees principally represent fees from the sale of mutual funds and annuities. In the period between January 2016 through November 2016, investment management fees also included trust fees. These revenues were \$7,790 for 2018 compared to \$2,928 for 2017 and \$3,710 in 2016. The increase in 2018 compared to 2017 was mainly due to the Astoria Merger. We sold our trust business in 2016; trust fee income and was \$2,458 for 2016. The sale caused the decline in investment management fees between 2017 and 2016.

Net (loss) gain on sale of securities was a net loss of \$10,788 for 2018 compared to a net loss of \$344 for 2017 and a net gain of \$7,522 in 2016. In early 2018, we sold certain lower yielding available for sale ("AFS") government agency securities as a means to create a portion of the liquidity for the Advantage Funding Acquisition. In addition, in the fourth quarter of 2018, we sold AFS securities as we continue our strategy of repositioning our balance sheet and interest earning assets to a more optimal mix. In 2016, we sold AFS securities mainly to fund a portion of the NSBC Acquisition.

Gain (loss) on sale of fixed assets was a gain of \$11,800 in 2018 compared to a loss of \$1 for 2017 and \$0 in 2016. In 2018, we sold the Lake Success facility, which previously was Astoria's headquarters. The sales price was \$36,000, which we received in cash. The sale agreement included a lease-back feature; we anticipate fully exiting the location in the first quarter of 2019.

Other non-interest income principally includes loan swap fees, safe deposit box rentals, insurance commissions and foreign exchange fees. Other non-interest income was \$12,961 for 2018 compared to \$7,235 for 2017 and \$11,538 in 2016. The increase in 2018 compared to 2017 was mainly due to an increase of \$2,223 in loan swap fees, which were \$6,124 in 2018 compared to \$3,901 for 2017. The increase was mainly greater demand for loan swaps given the current interest rate environment and investments we have made in hiring more commercial teams that focus on these types of transactions. The decrease in other non-interest income in 2017 compared to 2016 was mainly due to a decline in residential mortgage banking income and mortgage brokerage business. We sold our residential mortgage originations business in the third quarter of 2016. As a result of the sale, mortgage banking revenues declined to \$524 for 2017 compared to \$6,173 for 2016.

Non-interest Expense. The components of non-interest expense were as follows:

	For the year ended December 31,		
	2018	2017	2016
Compensation and employee benefits	\$ 220,340	\$ 150,254	\$ 125,916
Stock-based compensation plans	12,984	8,111	6,518
Occupancy and office operations	68,536	43,649	34,486
Information technology	41,174	19,387	8,866
Amortization of intangible assets	23,646	13,008	12,416
FDIC insurance and regulatory assessments	20,493	11,969	8,240
Other real estate owned, net	1,650	3,423	2,051
Merger-related expense	—	39,232	265
Charge of asset write-downs, systems integration, severance and retention	13,132	105,110	4,485
(Gain) loss on extinguishment of borrowings	(172)	—	9,729
Other	56,587	39,232	34,930
Total non-interest expense	\$ 458,370	\$ 433,375	\$ 247,902

Non-interest expense for 2018 was \$458,370 compared to \$433,375 in 2017 and \$247,902 in 2016. The increase between 2018 and 2017 was mainly due to the Astoria Merger. The increase between 2017 and 2016 was mainly due to merger-related expense and a charge for asset write-downs, systems integration, severance and retention incurred in the Astoria Merger.

Compensation and employee benefits expense and full time equivalent employees (“FTEs”) are presented in the following table:

	Compensation expense	FTEs at period end
December 31, 2018	\$ 220,340	1,907
December 31, 2017	150,254	2,076
Astoria Merger closing date October 2, 2017	NA	2,323
September 30, 2017 - FTE prior to Astoria Merger	NA	992
December 31, 2016	125,916	970

Compensation expense for 2018 increased \$70,086 compared to 2017 mainly due to the Astoria Merger, which closed in October 2017. As presented in the table above, our total number of FTEs increased from 992 to 2,323 as a result of the Astoria Merger. Since the Astoria Merger closing date, we have reduced our FTEs count by 416, (net of 44 FTEs retained in connection with the Advantage Funding Acquisition). Compensation expense for 2017 increased \$24,338 compared to 2016. The increase in compensation expense for 2017 was mainly due to the Astoria Merger, as our FTEs increased in the fourth quarter of 2017.

Stock-based compensation plans expense was \$12,984 for 2018 compared to \$8,111 for 2017 and \$6,518 in 2016. The increase for 2018 compared to 2017, and the increase in 2017 compared to 2016, was mainly due to the Astoria Merger and the resulting increase in personnel included in the stock-based compensation plan. For additional information related to our stock-based compensation, see Note 13. “Stock-Based Compensation” in the notes to consolidated financial statements.

Occupancy and office operations expense was \$68,536 for 2018, compared to \$43,649 in 2017, and \$34,486 in 2016. The increase in occupancy and office operations expense in 2018 compared to 2017 was mainly due to the Astoria Merger, as we acquired 88 financial centers and other locations in the transaction. We had 106 financial centers at December 31, 2018 compared to 128 financial centers at December 31, 2017 and 42 financial centers at December 31, 2016. We will continue to consolidate financial centers and other locations consistent with our strategy of reducing our real estate footprint and controlling expenses.

Information technology expense mainly includes the cost of our deposit and loan servicing systems, software amortization and managed services. Information technology expense was \$41,174 for 2018 compared to \$19,387 for 2017 and \$8,866 for 2016. The increase in 2018 was mainly due to the Astoria Merger. In the third quarter of 2018, we completed the conversion of Astoria’s legacy deposit systems, which should result in a decrease of approximately \$6,000 in information technology expense in 2019.

Amortization of intangible assets mainly includes amortization of core deposit intangible assets, non-compete agreements and customer lists. Amortization of intangible assets was \$23,646 for 2018 compared to \$13,008 for 2017 and \$12,416 for 2016. The increase between the periods was mainly due to the Astoria Merger. Amortization of intangible assets expense is expected to decline to \$19,181 in 2019, as shown in Note 7. “Goodwill and Other Intangible Assets”.

FDIC insurance and regulatory assessments expense was \$20,493 for 2018 compared to \$11,969 for 2017 and \$8,240 for 2016. The FDIC insurance assessment is primarily based on the Bank’s quarterly average assets less quarterly average eligible capital based on regulatory definitions, and OCC assessments are based on total assets at June 30 and December 31. The increase in FDIC insurance and regulatory assessments between the periods was due to an increase in assets as a result of our recent mergers and organic growth. The FDIC announced the deposit insurance fund reserve ratio reached 1.36% at September 30, 2018. As a result, surcharges that were applicable to the Bank due to our size of greater than \$10 billion will cease. We anticipate our FDIC insurance assessment will decline by approximately \$7,000 in 2019.

Other real estate owned (“OREO”) expense, net includes maintenance costs, taxes, insurance, write-downs (subsequent to any write-down at the time of foreclosure or transfer to OREO), and gains and losses from the disposition of OREO. OREO includes real estate assets foreclosed and financial center locations that are held for sale. OREO expense, net included the following:

	For the year ended December 31,		
	2018	2017	2016
(Gain) on sale, net	\$ (1,679)	\$ (398)	\$ (288)
Direct property write-downs	678	2,273	582
Rental income	(149)	(64)	(68)
Property tax	862	939	1,229
Other expenses, net	1,938	673	596
OREO expense, net	<u>\$ 1,650</u>	<u>\$ 3,423</u>	<u>\$ 2,051</u>

OREO expense, net declined \$1,773 for 2018 compared to 2017 mainly due to a decrease in direct property write-downs and an increase in gain on sale, net. Other expenses, net includes mainly maintenance, repairs and legal fees. The increase in OREO expense, net in 2017 compared to 2016 was mainly due to an increase in OREO acquired in the Astoria Merger.

Merger-related expense components were as follows:

	For the year ended December 31,		
	2018	2017	2016
Financial advisory fees	\$ —	\$ 15,217	\$ —
Legal and accounting fees	—	9,776	265
Severance and retention compensation	—	1,200	—
Management change-in-control payments	—	7,500	—
D&O insurance	—	1,250	—
Public relations & communications	—	2,500	—
Merger due diligence	—	575	—
Other	—	1,214	—
Total	<u>\$ —</u>	<u>\$ 39,232</u>	<u>\$ 265</u>

Merger-related expense for 2017 was incurred in connection with the Astoria Merger. Merger-related expense for 2016 was incurred in connection with the NSBC Acquisition. See Note 2. “Acquisitions” in the notes to consolidated financial statements for additional information regarding our acquisitions.

Charge for asset write-downs, systems integration, severance and retention expense were as follows:

	For the year ended December 31,		
	2018	2017	2016
Property, leases and other asset write-downs	\$ 10,186	\$ 12,567	\$ 1,811
Charge to restructure information technology systems	848	18,033	150
Legal settlement	—	500	—
Banking systems integration	—	9,502	—
Severance and retention	2,098	64,508	2,524
Total	\$ 13,132	\$ 105,110	\$ 4,485

Charge for asset write-downs, systems integration, severance and retention for 2018 included a charge of \$8,736 related to our continuing strategy of consolidating financial centers. This charge was incremental to the charge we recorded in 2017 at the closing date of the Astoria Merger as we had not met the cease use date required by GAAP in order to accrue the charge. The charge also included \$1,450 related to the closure and sublease of locations utilized by Advantage Funding. The charge in 2017 was mainly incurred in connection with the Astoria Merger and was related to the full integration of Astoria's operations into our business. The charge in 2016 included a charge to continue our strategy of consolidating financial centers and to write-down assets in connection with the sale of the mortgage banking originations business.

(Gain) loss on extinguishment of borrowings was a gain of \$172 in 2018, no activity in 2017 and \$9,729 in 2016. In 2016, we incurred a loss of \$8,716 on the extinguishment of \$220,000 of high cost FHLB borrowings. We also repurchased \$23,000 of the Senior Notes during 2016 and incurred a loss on extinguishment of \$1,013.

Other non-interest expense was \$56,587 for 2018 compared to \$39,232 for 2017 and \$34,930 for 2016. Other non-interest expense mainly includes professional fees, communication, advertising and promotion, insurance, and operational losses. Additional details regarding these expenses is included in Note 15. "Non-Interest Income and Other Non-interest Expense" in the notes to our consolidated financial statements. The increases in other non-interest expense is mainly due to a combination of organic growth and our prior mergers.

Income Taxes were \$118,976 for 2018 compared to \$87,939 for 2017 and \$67,382 in 2016, which represented an effective income tax rate of 21.0% for 2018, 48.59% for 2017 and 32.50% for 2016. The effective income tax rate for 2018 of 21.0% was equal to the federal statutory rate primarily due to the effect of tax exempt income from loans, securities and BOLI. The effective income tax rate for 2017 included a charge of \$40,285 to write-down our net deferred tax assets to their estimated value due to the enactment of the Tax Cuts and Jobs Act of 2017. Income tax expense for 2017, before the tax law change, was \$47,654 and represented an effective income tax rate of approximately 26.3%, which differed from the 35% federal statutory rate primarily due to the portion of the merger-related expense, and charge for asset write-downs, systems integration, severance and retention expense that are deductible for income tax purposes, and the level of tax exempt income generated from tax exempt loans, securities and BOLI. The effective income tax rate in 2016 differed from the 35% federal statutory rate primarily due to the effect of tax exempt income from loans, securities and BOLI income. For more information, see Note 11. "Income Taxes" in the notes to consolidated financial statements.

Sources and Uses of Funds

The following table illustrates the mix of our funding sources and the assets in which those funds are invested as a percentage of our total average assets for the period indicated. Average assets totaled \$30,746,916 in 2018 compared to \$18,451,301 in 2017 and \$12,883,226 in 2016.

	For the year ended December 31,		
	2018	2017	2016
Sources of Funds:			
Non-interest bearing deposits	13.4%	18.2%	24.2%
Interest bearing deposits	54.8	51.9	50.7
FHLB and other borrowings	14.8	13.3	9.0
Subordinated Notes	0.6	1.0	0.8
Senior Notes	0.8	0.7	0.7
Other non-interest bearing liabilities	1.5	1.4	1.1
Stockholders' equity	14.1	13.5	13.5
Total	100.0%	100.0%	100.0%
Uses of Funds:			
Loans	65.7%	66.2%	66.1%
Securities	21.8	22.5	22.4
Interest earning deposits	0.9	1.3	2.0
FRB and FHLB stock	1.1	0.9	0.8
Other non-interest earning assets	10.5	9.1	8.7
Total	100.0%	100.0%	100.0%

General. Deposits, borrowings, repayments and prepayments of loans and securities, proceeds from sales of loans and securities, proceeds from maturing securities and cash flows from operations are our primary sources of funds for use in lending, investing and for other general corporate purposes. Non-interest bearing deposits and low cost interest bearing deposits comprise over 68% of our sources of funds for all periods shown above. Growing and maintaining these deposits through our commercial banking teams and financial centers is key to our strategy. We primarily use funds to originate loans and purchase securities.

Average deposits were \$20,983,337 for 2018 compared to \$12,933,835 for 2017 and \$9,640,966 for 2016. The growth in deposits in 2018 and 2017 was mainly due to the Astoria Merger and organic growth generated by our commercial banking teams. As of December 31, 2018 approximately 50% of our deposits consisted of consumer deposits and 50% were commercial deposits (including municipal deposits).

Average loans were \$20,190,630 for 2018 compared to \$12,215,759 for 2017 and \$8,520,367 for 2016. The growth in average loan balances in 2018 was mainly due to the Astoria Merger, the Advantage Funding Acquisition and organic growth generated by our commercial banking teams. The growth in average loan balances in 2017 was mainly due to the Astoria Merger and organic growth generated by our commercial banking teams. Average loans represented 73.3%, 72.8% and 72.5% of average earning assets for 2018, 2017 and 2016, respectively. Average loans were 96.2%, 94.4% and 88.4% of average deposits for 2018, 2017 and 2016, respectively. At December 31, 2018, we reclassified residential mortgage loans with a carrying value of of \$1,540,819 to loans held for sale.

Average securities were \$6,704,025 for 2018 compared to \$4,144,435 for 2017 and \$2,878,944 for 2016. As shown in the table above, average securities represented 21.8%, 22.5% and 22.4% of average assets, for the years ended December 31, 2018, 2017 and 2016, respectively. The increase in average securities in 2018 was consistent with the growth in average assets and was mainly related to the Astoria Merger. Average tax exempt securities were 38.6% of our securities portfolio in 2018 compared to 36.7% of our securities portfolio in 2017 and 32.8% in 2016, as we determined the risk adjusted return of this asset class was more attractive relative to other earning assets. The remainder of the securities portfolio consists mainly of mortgage-backed securities, corporate securities and government agency securities.

Portfolio Loans

The following table sets forth the composition of our portfolio loans, which excludes loans held for sale, by type of loan at the periods indicated.

	December 31,									
	2018		2017		2016		2015		2014	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Commercial:										
Commercial and Industrial ("C&I"):										
Traditional C&I	\$ 2,396,182	12.5%	\$ 1,979,448	9.9%	\$ 1,404,774	14.7%	\$ 1,189,154	15.1%	\$ 917,048	19.0%
Asset-based lending	792,935	4.1	797,570	4.0	741,942	7.8	310,214	3.9	327,507	6.8
Payroll finance	227,452	1.2	268,609	1.3	255,549	2.7	221,831	2.8	154,229	3.2
Warehouse lending	782,646	4.1	723,335	3.6	616,946	6.5	387,808	4.9	173,786	3.6
Factored receivables	258,383	1.3	220,551	1.1	214,242	2.2	208,382	2.7	161,625	3.4
Equipment financing	1,215,042	6.3	679,541	3.4	589,315	6.2	631,303	8.0	411,449	8.5
Public sector finance	860,746	4.5	637,767	3.2	349,182	3.7	182,336	2.3	—	—
Total C&I	6,533,386	34.0	5,306,821	26.5	4,171,950	43.8	3,131,028	39.8	2,145,644	44.5
Commercial mortgage:										
Commercial real estate	4,642,417	24.2	4,138,864	20.7	3,162,942	33.2	2,733,351	34.8	1,458,277	30.3
Multi-family	4,764,124	24.8	4,859,555	24.3	981,076	10.3	796,030	10.1	384,544	8.0
ADC	267,754	1.4	282,792	1.4	230,086	2.4	186,398	2.4	96,995	2.0
Total commercial mortgage	9,674,295	50.3	9,281,211	46.4	4,374,104	45.9	3,715,779	47.3	1,939,816	40.3
Total commercial	16,207,681	84.3	14,588,032	72.9	8,546,054	89.7	6,846,807	87.1	4,085,460	84.8
Residential mortgage	2,705,226	14.1	5,054,732	25.3	697,108	7.3	713,036	9.1	529,766	11.0
Consumer	305,623	1.6	366,219	1.8	284,068	3.0	299,517	3.8	200,415	4.2
Total loans	19,218,530	100.0%	20,008,983	100.0%	9,527,230	100.0%	7,859,360	100.0%	4,815,641	100.0%
Allowance for loan losses	(95,677)		(77,907)		(63,622)		(50,145)		(42,374)	
Total portfolio loans, net	\$ 19,122,853		\$ 19,931,076		\$ 9,463,608		\$ 7,809,215		\$ 4,773,267	

Overview. Total portfolio loans, net declined \$808,223 to \$19,122,853 at December 31, 2018 compared to \$19,931,076 at December 31, 2017. The decline in total portfolio loans, net for 2018 was mainly due to the reclassification of \$1,540,819 of residential mortgage loans to loans held for sale. Total loan growth in 2018 was \$732,596, comprised of a \$1,619,649 increase in total commercial loans which was offset by repayments of residential mortgage loans of \$808,687. Total portfolio loans, net increased by \$10,467,468 at December 31, 2017 compared to December 31, 2016. The growth in total portfolio loans, net for 2017 was mainly due to the Astoria Merger and organic growth. The growth in total portfolio loans, net for 2016, was mainly due to organic growth and the acquisitions of NSBC and the restaurant franchise financing loans. At December 31, 2018, total C&I loans comprised 34.0% of total loans compared to 26.5% at December 31, 2017 and 43.8% at December 31, 2016. Total commercial mortgage loans comprised 50.3%, 46.4% and 45.9% of total loans at December 31, 2018, 2017 and 2016, respectively. At December 31, 2018, 84.3% of our portfolio loans were commercial loans, compared to 72.9% at December 31, 2017 and 89.7% at December 31, 2016.

Through our commercial banking teams, we have a diversified asset origination platform that allows us to generate various types of commercial loans. Consistent with our overall strategy, we anticipate that in 2019 we will grow total C&I loans and continue to reduce residential mortgage loans. Our long-term target is a loan portfolio composition with a mix of 45% total C&I loans, 45% total commercial mortgage loans and 10% residential mortgage and consumer loans.

Acquired loans. The table below presents the unpaid principal balance, remaining purchase accounting adjustments and carrying value of acquired loans as of the dates indicated. Generally, loans acquired in a business combination transaction are identified as acquired loans. After an acquired loan matures or is subject to review by our credit administration department we generally transfer that loan to originated loans, as that loan will be individually underwritten by our credit personnel at the time it is renewed or evaluated.

	For the year ended December 31,		
	2018	2017	2016
Advantage Funding Acquisition	\$ 298,684	\$ —	\$ —
Astoria Merger	5,717,901	8,800,453	—
Restaurant Franchise Finance Portfolio	—	91,673	149,555
NSBC Acquisition	—	37,475	179,044
HVB Merger	291,793	401,494	750,462
Provident Merger	27,497	50,142	122,990
Unpaid principal balance	6,335,875	9,381,237	1,202,051
Remaining purchase accounting adjustment	(117,222)	(293,476)	(37,012)
Carrying value	<u>\$ 6,218,653</u>	<u>\$ 9,087,761</u>	<u>\$ 1,165,039</u>

The decline in the unpaid principal balance of acquired loans to \$6,335,875 at December 31, 2018 compared to \$9,381,237 at December 31, 2017, was mainly due to repayments on residential mortgage loans acquired in the Astoria Merger and the migration of loans to originated portfolio loans at maturity or based on a credit evaluation. This was partially offset by acquired loans from the Advantage Funding Acquisition. The increase in the unpaid principal balance of acquired loans of \$8,179,186 in 2017 was mainly due to the Astoria Merger, which was partially offset by repayments and renewals of loans acquired in the HVB Merger and other acquisitions.

At December 31, 2018, the remaining purchase accounting adjustment was \$117,222 compared to \$293,476 at December 31, 2017, a decline of \$176,254. Of this change, \$111,941 was accreted as interest income on acquired loans in 2018, and \$61,025 was transferred to loans held for sale.

General. Our commercial banking teams focus on the origination of C&I loans and commercial mortgage loans. We also originate residential mortgage loans and consumer loans, such as home equity lines of credit, homeowner loans and personal loans in our market area.

Loan Approval/Authority and Underwriting. The Board has established the Credit Risk Committee (the “CRC”), a sub-committee of our Enterprise Risk Committee, to oversee the lending functions of the Bank. The CRC oversees the performance of the Bank’s loan portfolio and its various components and assists in the development of strategic initiatives to enhance portfolio performance.

The Senior Credit Committee (the “SCC”) consists of the Chief Executive Officer, Chief Credit Officer, Deputy Chief Credit Officer, Chief corporate Banking Officer and other senior lending personnel. The SCC is authorized to approve all loans within the legal lending limit of the Bank.

The SCC may also authorize lending authority to individual Bank officers for both single and dual initial approval authority. Other than overdrafts, the only single initial lending authority is for credit scored small business loans up to \$350 and an individually underwritten loan to \$500.

We have established a risk rating system for all of our commercial loans (all types of C&I and commercial mortgage loans) other than our small business loans, which are subject to a scoring process. The risk rating system assesses a variety of factors to rank the risk of default and risk of loss associated with the loan. These ratings are assessed by commercial credit personnel who do not have responsibility for loan originations. We determine our maximum loan-to-one-borrower limits based on the rating of the loan and the relative risk associated with the borrower’s portfolio type.

Underwriting of a commercial loan is based on an assessment of the willingness and ability of the principal to repay in accordance with the proposed terms, as well as an overall assessment of the risks involved. This includes an evaluation of the principal to determine character and capacity to manage. Personal guarantees of the principals are generally required, with exceptions primarily in the case of certain factored receivables the Bank accepts on a non-recourse basis, as well as in the case of loans made to publicly owned and not-for-profit entities. In addition to an evaluation of the financial statements of the principal and/or potential borrower, we analyze the adequacy of the primary and secondary sources of repayment to be relied upon in the transaction. Credit agency reports of the credit history of the principal supplement our analysis of creditworthiness. Checking with other banks and trade investigations may also be conducted. Collateral supporting a secured transaction also is analyzed to determine its marketability.

In connection with our residential mortgage and commercial real estate loans, we generally require property appraisals to be performed by independent appraisers who are approved by the Board. Appraisals are then reviewed by the appropriate loan underwriting areas. Under certain conditions, appraisals may not be required for loans under \$250 or in other limited circumstances. We also require title insurance, hazard insurance and, if indicated, flood insurance on property securing mortgage loans. Title insurance is not required for consumer loans under \$250, such as home equity lines of credit.

Large Credit Relationships. We originate and maintain large credit relationships with numerous commercial customers in the ordinary course of business. We consider large credit relationships to be those with commitments equal to or in excess of \$15,000, prior to any portion being sold. Large relationships also include loan participations purchased if the credit relationship is equal to, or in excess of, \$15,000. In addition to the Company's normal policies and procedures related to the origination of large credits, the SCC must approve all new and renewed credit facilities which are part of large credit relationships. The SCC meets regularly, reviews large credit relationship activity and discusses the current loan pipeline, among other things. The following table provides additional information on our large credit relationships outstanding:

	Number of Relationships	Period end balances		Average loan balances	
		Committed	Outstanding	Committed	Outstanding
Committed amount at:					
December 31, 2018					
\$35.0 million and greater	76	\$ 4,707,816	\$ 3,198,253	\$ 61,945	\$ 42,082
\$25.0 million to \$34.9 million	68	1,959,917	1,499,210	28,822	22,047
\$15.0 million to \$24.9 million	144	2,739,223	2,359,432	19,022	16,385
December 31, 2017					
\$35.0 million and greater	56	\$ 3,264,685	\$ 2,440,096	\$ 58,298	\$ 43,573
\$25.0 million to \$34.9 million	63	1,816,431	1,316,183	28,832	20,892
\$15.0 million to \$24.9 million	129	2,166,533	1,926,796	19,107	16,913

We review large credit relationships on a regular basis. As part of our allowance for loan loss methodology, we consider concentration risk and review the amount of loans in our portfolio that are over \$15,000.

Industry Concentrations. As of December 31, 2018 and 2017, there were no concentrations of loans within any single industry in excess of 10% of total loans, as segregated by Standard Industrial Classification code ("SIC code"). The SIC code is a federally designed standard industrial numbering system used by us to categorize loans by the borrower's type of business. The majority of the Bank's loans are to borrowers located in the greater New York metropolitan region. The Bank has no foreign loans.

Traditional C&I Lending. We make various types of secured and unsecured traditional C&I loans to small and medium-sized businesses in our market area, including loans collateralized by assets, such as accounts receivable, inventory, marketable securities, other liquid collateral, equipment and other assets. The terms of these loans generally range from less than one year to seven years. The loans are either structured on a fixed-rate basis or carry adjustable interest rates indexed to a lending rate that is determined internally, or a short-term market rate index. Traditional C&I loans grew \$416,734, or 21.1%, in 2018 and were \$2,396,182 at December 31, 2018 compared to \$1,979,448 at December 31, 2017. Growth in traditional C&I loans in 2018 was due to organic growth generated by our commercial banking teams. Growth in traditional C&I loans in 2017 was mainly due to organic growth generated by our commercial banking teams and the Astoria Merger.

Asset Based Lending. The Bank provides asset-based loans ("ABL") to small and medium sized businesses on a national basis. ABL loans are secured by certain business assets, which typically include accounts receivable, inventory, machinery and equipment and real estate. The terms of these loans are generally one year to three years. The loans carry adjustable interest rates indexed to a lending rate that is determined internally, or a short-term market rate index. ABL loans were \$792,935 at December 31, 2018 compared to \$797,570 at December 31, 2017 and \$741,942 at December 31, 2016.

Payroll Finance Lending. The Bank provides financing and business process outsourcing, including full back-office, technology and tax accounting services, to independently-owned temporary staffing companies nationwide. Loans typically are structured as an advance used by our clients to fund their employee payroll and are outstanding on average for 40 to 45 days. Payroll finance loans were \$227,452 at December 31, 2018 compared to \$268,609 at December 31, 2017 and \$255,549 at December 31, 2016. At December 31, 2018, and

2017, approximately one-third of the outstanding balances were comprised of loans in which the Bank provides financing only, and two-thirds were loans in which the Bank provides financing and full back-office services.

Warehouse Lending. The Bank provides residential mortgage warehouse funding facilities to non-bank mortgage companies. These loans consist of a line of credit used as temporary financing during the period between the closing of a mortgage loan until its sale into the secondary market, which on average happens within 20 days of the original loan closing. The Bank provides warehouse lines generally ranging from \$15,000 to \$150,000. The warehouse lines are collateralized by high quality first mortgage loans, which include mainly Agency (Fannie Mae and Freddie Mac), Government (FHA and VA), and Non-Agency (Jumbo) mortgage loans. Warehouse lending loans were \$782,646 at December 31, 2018 compared to \$723,335 at December 31, 2017 and \$616,946 at December 31, 2016. Warehouse lending balances usually fluctuate over the course of the year, resulting in average balances that will materially differ from end of period balances.

Factored Receivables Lending. We provide accounts receivable management services. The purchase of a client's accounts receivable is traditionally known as "factoring" and results in payment by the client of a factoring fee, which is generally a percentage of the factored receivables or sales volume, which is designed to compensate the Bank for the bookkeeping and collection services provided and, if applicable, its credit review of the client's customer and assumption of customer credit risk. When the Bank "Factors" (i.e., purchases) an account receivable from a client, it records the receivable as an asset (included in "Gross loans"), records a liability for the funds due to the client (included in "Other liabilities") and credits to non-interest income the factoring fee (included in "Accounts receivable management/factoring commissions and other fees"). The Bank also may advance funds to its client prior to the collection of receivables, charging interest on such advances (in addition to any factoring fees) and normally satisfying such advances by the collection of receivables. At December 31, 2018, factored receivables were \$258,383 compared to \$220,551 at December 31, 2017 and \$214,242 at December 31, 2016.

Equipment Finance Lending. The Bank offers equipment financing across the United States through direct lending programs, third-party sources and vendor programs. In 2018, we integrated the Advantage Funding Acquisition into our equipment finance portfolio, which includes a nationwide vehicle finance and leasing business. At December 31, 2018, equipment finance loans were \$1,215,042 compared to \$679,541 at December 31, 2017, an increase of \$535,501. We acquired \$457,638 of loans in the Advantage Funding Acquisition and the balance of the increase was mainly due to net originations generated by our existing equipment finance team. Our equipment finance lending mainly includes full payout term loans and secured loans for various types of business equipment, with terms generally ranging from 24 to 60 months. Equipment finance loans were \$589,315 at December 31, 2016.

Public Sector Finance. We originate loans to state, municipal and local government entities nationally. At December 31, 2018, outstanding balances were \$860,746, which represents an increase of \$222,979, or 35.0% compared to December 31, 2017. Public sector finance loans were \$349,182 at December 31, 2016. Public sector finance loans are either secured via UCC filings against equipment financed, or obligations related to the ability to levy taxes, either generally or associated with a specific project. All loans in this portfolio are fixed rate and fully amortizing. Public sector finance loans have terms at origination of three to 20 years, with a weighted average term of 16.6 years and a weighted average expected duration of 7.49 at December 31, 2018.

Asset-based lending, payroll finance, warehouse lending, factored receivables, equipment finance and public sector finance are sometimes referred to as our commercial finance business. These categories plus our traditional C&I loans are referred to as C&I in the discussion below.

Commercial Real Estate ("CRE") and Multi-Family Lending. At December 31, 2018, CRE loans were \$4,642,417 compared to \$4,138,864 at December 31, 2017 and \$3,162,942 at December 31, 2016. Multi-family loans were \$4,764,124 at December 31, 2018 compared to \$4,859,555 at December 31, 2017 and \$981,076 at December 31, 2016. In 2018, we continued to originate CRE loans through our commercial banking teams, primarily in the Greater New York metropolitan area. In 2018, we allowed multi-family loans to run-off through repayments as the risk adjusted returns in the sector do not currently meet our requirements. The growth in CRE and multi-family loans in 2017 was mainly due to the Astoria Merger, as we acquired \$625,460 and \$3,770,583 of CRE and multi-family loans, respectively, net of purchase accounting adjustments. The balance of the increases was mainly due to originations from our commercial banking teams.

We originate CRE loans secured predominantly by first liens on commercial real estate and multi-family properties. The underlying collateral of our CRE loans consists of multi-family properties, retail properties, including shopping centers and strip centers, office buildings, nursing homes, industrial and warehouse properties, hotels, motels, restaurants, and schools. To a lesser extent, we originate CRE loans for medical use, non-profits, gas stations and other categories. We may, from time to time, purchase commercial real estate loan participations. Substantially all of our CRE loans are secured by properties located in our primary market area.

The majority of our originated CRE and multi-family loans have terms that range from five to ten years and are structured as (i) five-year fixed rate loans with a rate adjustment for the second five-year period; or (ii) as ten-year fixed-rate loans. Amortization on these loans is typically based on 20 to 25 year terms with balloon maturities generally in five or ten years. Interest rates on CRE loans generally range from 200 basis points to 300 basis points above a reference index.

In the underwriting of CRE and multi-family loans, we generally lend up to 75% of the appraised value. Decisions to lend are based on the economic viability of the property and the creditworthiness of the borrower. In evaluating a proposed CRE loan, we primarily emphasize the ratio of the projected net cash flow to the debt service requirement (generally targeting a minimum ratio of 120%), computed after deductions for a vacancy factor and property expenses we deem appropriate. In addition, a personal guarantee of the loan or a portion thereof is generally required from the principal(s) of the borrower, except for loans secured by multi-family properties, which meet certain debt service coverage and loan to value thresholds. We require title insurance insuring the priority of our lien, fire and extended coverage casualty insurance, and flood insurance, if appropriate, in order to protect our security interest in the underlying property.

CRE loans may involve significant loan balances concentrated with single borrowers or groups of related borrowers. In addition, the payment experience on loans secured by income-producing properties typically depends on the successful operation of the related real estate project and may be subject to adverse conditions in the real estate market and in the general economy. For CRE loans in which the borrower is a significant tenant, repayment experience also depends on the successful operation of the borrower's underlying business.

Acquisition, Development and Construction (“ADC”) Lending. We currently originate construction loans to well qualified borrowers in our immediate footprint. In 2018, ADC loans were \$267,754 compared to \$282,792 at December 31, 2017 and \$230,086 at December 31, 2016. We make construction loans to finance the cost of completing homes, including multi-family homes on the improved property. Advances on construction loans are made in accordance with a schedule reflecting the cost of construction. Repayment of construction loans on residential subdivisions is normally expected from the sale of units to individual purchasers, except in cases of owner occupied construction loans. In the case of income-producing property, repayment is usually expected from permanent financing upon completion of construction. We provide permanent mortgage financing on most of our construction loans on income-producing property. Collateral coverage and risk profile are maintained by restricting the number of model or speculative units in each project.

ADC lending exposes us to greater credit risk than permanent mortgage financing. The repayment of ADC loans generally depends on the sale of the property to third parties or the availability of permanent financing upon completion of all improvements.

Residential Mortgage Lending. Residential mortgage loans included in portfolio loans declined \$2,349,506 in 2018 and were \$2,705,226 at December 31, 2018 compared to \$5,054,732 at December 31, 2017 and \$697,108 at December 31, 2016. Residential mortgage loans represented 14.1% of our total portfolio loans at December 31, 2018 compared to 25.3% and 7.3% at December 31, 2017 and 2016, respectively. At December 31, 2018, we transferred residential mortgage loans, with an unpaid principal balance of \$1,601,844 and a remaining purchase accounting adjustment of \$61,025 to loans held for sale. Net of the transfer to loans held for sale, residential mortgage loans declined \$808,687 mainly due to repayments. The increase in 2017 compared to 2016 was due to the Astoria Merger as we acquired residential mortgage loans of \$4,597,979 (net of fair value adjustments).

The Bank sold its residential mortgage banking origination business in August 2016. The Bank currently originates residential mortgage loans within the Bank's footprint in the Greater New York metropolitan area. Prior to that date, the Bank operated a residential mortgage banking and brokerage business through loan production offices and our financial centers. In order to manage our exposure to rising interest rates, we sold the majority of our conforming fixed rate residential mortgage loans in the secondary market to nationally known entities, including government sponsored entities such as Fannie Mae and Freddie Mac. Residential mortgage loans are generally underwritten according to Fannie Mae and Freddie Mac guidelines for loans they designate as acceptable for purchase. Loans that conform to such guidelines are referred to as “conforming loans”. We generally originate fixed-rate loans in amounts up to the maximum conforming loan limits as established by Fannie Mae and Freddie Mac, which were \$453 in many locations in the continental U.S. and are \$680 in high-cost areas such as New York City and surrounding counties during 2018. Private mortgage insurance is generally required for loans with loan-to-value ratios in excess of 80%.

We also originate loans above conforming limits, referred to as “jumbo loans,” which have been underwritten to substantially the same credit standards as conforming loans. We generally originate these loans to existing customers of the Bank, with whom we have a commercial relationship. As of December 31, 2018, residential mortgage loans serviced for others, which are not recorded on the consolidated balance sheets, excluding loan participations, totaled approximately \$1,180,385, compared to \$1,329,105 at December 31, 2017. The decrease was due to repayments. We do not expect that we will acquire or retain additional servicing assets in 2019.

Our portfolio includes conforming and non-conforming, fixed-rate and ARM loans with maturities up to 30 years and maximum loan amounts generally up to \$4,000 that are fully amortizing with monthly or bi-weekly loan payments. ARM loan products are secured by residential properties with rates that are fixed for a period ranging from six months to ten years. After the initial term, if the loan is not already refinanced, the interest rate on these loans generally resets every year based upon a contractual spread or margin above the average yield on U.S. Treasury securities, adjusted to a constant maturity of one year, as published weekly by the FRB and subject to certain periodic and lifetime limitations on interest rate changes. Many of the borrowers who select these loans have shorter-term credit needs than those who select long-term, fixed-rate loans. ARM loans generally pose different credit risks than fixed-rate loans, primarily because the underlying debt service payments of the borrowers rise as interest rates rise, thereby increasing the potential for default.

In connection with the Astoria Merger, in addition to acquiring fixed-rate and amortizing ARM loans, we also acquired residential mortgage loans originated in 2010 or earlier that are interest-only ARM loans with terms of up to forty years, which have an initial fixed rate for five or seven years and convert into one year interest-only ARM loans at the end of the initial fixed rate period. Interest-only ARM loans require the borrower to pay interest only during the first ten years of the loan term, which typically results in a material increase in the borrower's monthly payments. After the tenth anniversary of the loan, principal and interest payments are required to amortize the loan over the remaining loan term. At December 31, 2018, our residential mortgage loan portfolio had \$292,319 of interest-only ARM and loans that recently converted to principal amortization status within the past 24 months compared to \$599,714 at December 31, 2017.

We require title insurance on all of our residential mortgage loans, and we also require that borrowers maintain fire and extended coverage or all risk casualty insurance (and, if appropriate, flood insurance) in an amount at least equal to the loan balance or the replacement cost of the improvements, but, in any event, in an amount calculated to avoid the effect of any coinsurance clause. Residential mortgage loans generally are required to have a mortgage escrow account from which disbursements are made for real estate taxes and for hazard and flood insurance.

Consumer Lending. We originate a variety of consumer loans, including homeowner loans, home equity lines of credit, new and used automobile loans, and personal unsecured loans, including fixed-rate installment loans and variable lines of credit. We offer fixed-rate, fixed-term second mortgage loans, referred to as homeowner loans, and we also offer adjustable-rate home equity lines of credit secured by junior liens on residential properties.

Loan Portfolio Maturities and Yields. The following table summarizes the scheduled repayments of our loan portfolio at December 31, 2018. Demand loans, loans having no stated repayment schedule or maturity, and overdraft loans are reported as being due less than one year. Weighted average rates are computed based on the rate of the loan at December 31, 2018.

	Less than one year		One to five years		Over five years		Total	
	Amount	Rate	Amount	Rate	Amount	Rate	Amount	Rate
Commercial loans:								
Traditional C&I	\$ 667,515	5.62%	\$ 941,389	5.48%	\$ 787,278	3.65%	\$ 2,396,182	4.92%
Asset-based lending	792,935	6.53	—	—	—	—	792,935	6.53
Payroll finance	227,452	7.04	—	—	—	—	227,452	7.04
Warehouse lending	782,646	4.52	—	—	—	—	782,646	4.52
Factored receivables	258,383	5.10	—	—	—	—	258,383	5.10
Equipment financing	80,257	4.88	1,026,765	5.52	108,020	5.60	1,215,042	5.48
Public sector finance	6,520	3.00	21,975	2.59	832,251	3.26	860,746	3.24
Total C&I	2,815,708	5.61	1,990,129	5.47	1,727,549	3.58	6,533,386	5.03
Commercial mortgage:								
CRE	693,357	4.82	2,304,856	4.66	1,644,204	4.60	4,642,417	4.66
Multi-family	160,158	3.96	2,142,649	3.89	2,461,317	4.00	4,764,124	3.95
ADC	217,856	5.33	49,898	5.29	—	—	267,754	5.32
Total commercial mortgage	1,071,371	4.80	4,497,403	4.30	4,105,521	4.24	9,674,295	4.33
Residential mortgage	6,704	4.51	14,470	5.06	2,684,052	4.78	2,705,226	4.78
Consumer	7,267	13.41	9,356	6.25	289,000	5.65	305,623	5.85
Total loans	\$ 3,901,050	5.40%	\$ 6,511,358	4.66%	\$ 8,806,122	4.32%	\$ 19,218,530	4.66%

The following table sets forth the composition of fixed-rate and adjustable-rate loans at December 31, 2018 that are contractually due after December 31, 2019:

	Fixed	Adjustable	Total
Traditional C&I	\$ 744,322	\$ 984,345	\$ 1,728,667
Equipment financing	1,134,785	—	1,134,785
Public sector finance	854,226	—	854,226
CRE	1,993,345	1,955,715	3,949,060
Multi-family	2,672,485	1,931,481	4,603,966
ADC	8,009	41,889	49,898
Residential mortgage	267,691	2,430,831	2,698,522
Consumer	80,556	217,800	298,356
Total loans	<u>\$ 7,755,419</u>	<u>\$ 7,562,061</u>	<u>\$ 15,317,480</u>

All asset-based lending, payroll finance, warehouse lending and factored receivables are contractually due within 12 months and are mainly adjustable rate.

Delinquent Loans, Troubled Debt Restructuring (“TDRs”), Impaired Loans, OREO and Classified Assets

Loan Portfolio Delinquencies. The following table sets forth certain information on our loan portfolio delinquencies at the dates indicated:

	Loans delinquent for					
	30-89 Days		90 days or more still accruing & non-accrual		Total	
	Number	Amount	Number	Amount	Number	Amount
At December 31, 2018:						
Traditional C&I	34	\$ 17,247	67	\$ 42,298	101	\$ 59,545
ABL	—	—	3	3,281	3	3,281
Payroll finance	—	—	3	881	3	881
Equipment finance	200	34,710	320	12,417	520	47,127
CRE	5	8,431	53	34,266	58	42,697
Multi-family	4	2,750	9	2,681	13	5,431
ADC	1	230	1	434	2	664
Residential mortgage	91	28,078	225	62,245	316	90,323
Consumer	78	5,755	109	10,319	187	16,074
	<u>413</u>	<u>\$ 97,201</u>	<u>790</u>	<u>\$ 168,822</u>	<u>1,203</u>	<u>\$ 266,023</u>
At December 31, 2017:						
Traditional C&I	18	\$ 1,419	70	\$ 37,642	88	\$ 39,061
Equipment finance	18	4,359	27	8,099	45	12,458
CRE	4	12,534	49	22,157	53	34,691
Multi-family	8	1,429	18	4,449	26	5,878
ADC	—	—	7	4,205	7	4,205
Residential mortgage	104	28,454	349	100,282	453	128,736
Consumer	84	5,338	108	10,379	192	15,717
	<u>236</u>	<u>\$ 53,533</u>	<u>628</u>	<u>\$ 187,213</u>	<u>864</u>	<u>\$ 240,746</u>
At December 31, 2016:						
Traditional C&I	27	\$ 1,652	51	\$ 26,941	78	\$ 28,593
Payroll finance	1	14	6	820	7	834
Factored receivables	—	—	4	618	4	618
Equipment finance	20	3,234	20	2,246	40	5,480
CRE	3	967	48	21,414	51	22,381
Multi-family	—	—	1	71	1	71
ADC	—	—	6	5,269	6	5,269
Residential mortgage	33	6,460	81	14,898	114	21,358
Consumer	41	2,773	89	6,576	130	9,349
	<u>125</u>	<u>\$ 15,100</u>	<u>306</u>	<u>\$ 78,853</u>	<u>431</u>	<u>\$ 93,953</u>
At December 31, 2015:						
Traditional C&I	76	\$ 40,440	37	\$ 10,629	113	\$ 51,069
Payroll finance	2	349	2	88	4	437
Factored receivables	—	—	2	220	2	220
Equipment finance	17	2,603	16	1,644	33	4,247
CRE	15	9,938	46	20,742	61	30,680
Multi-family	1	2,485	5	1,717	6	4,202
ADC	—	—	7	3,783	7	3,783
Residential mortgage	28	6,911	91	19,680	119	26,591
Consumer	64	5,270	93	7,908	157	13,178
	<u>203</u>	<u>\$ 67,996</u>	<u>299</u>	<u>\$ 66,411</u>	<u>502</u>	<u>\$ 134,407</u>
At December 31, 2014:						
Traditional C&I	56	\$ 7,156	15	\$ 5,035	71	\$ 12,191
Payroll finance	—	—	3	115	3	115
Factored receivables	—	—	2	244	2	244
Equipment finance	2	726	4	240	6	966
CRE	32	13,306	46	11,738	78	25,044
Multi-family	1	317	3	428	4	745
ADC	7	851	7	6,413	14	7,264
Residential mortgage	28	3,910	94	16,259	122	20,169
Consumer	50	2,717	77	6,170	127	8,887
Total	<u>176</u>	<u>\$ 28,983</u>	<u>251</u>	<u>\$ 46,642</u>	<u>427</u>	<u>\$ 75,625</u>

Collection Procedures for Commercial, Residential and Consumer Loans. A late payment notice is generated after the 16th day of the loan payment due date requesting the payment due plus any late charge assessed. Legal action, notwithstanding ongoing collection efforts, is generally initiated 90 days after the original due date for failure to make payment. Unsecured consumer loans are generally charged-off after 120 days. For commercial loans, charge-off procedures vary depending on individual circumstances.

Past Due, Non-Performing Loans, Non-Performing Assets (Risk Elements). The table below sets forth the amounts and categories of our non-performing assets at the dates indicated.

	December 31,				
	2018	2017	2016	2015	2014
Non-accrual loans:					
Traditional C&I	\$ 42,298	\$ 37,642	\$ 26,386	\$ 10,142	\$ 4,975
Asset-based lending	3,281	—	—	—	—
Payroll finance	881	—	199	—	—
Factored receivables	—	—	618	220	244
Equipment finance	12,221	8,099	2,246	1,644	240
CRE	33,012	21,720	21,008	20,742	11,286
Multi-family	2,681	4,449	71	1,717	272
ADC	—	4,205	5,269	3,700	6,413
Residential mortgage	61,981	99,958	14,790	19,680	16,259
Consumer	10,045	10,284	6,576	7,892	6,170
Total non-accrual loans	166,400	186,357	77,163	65,737	45,859
Accruing loans past due 90 days or more	2,422	856	1,690	674	783
Total non-performing loans	168,822	187,213	78,853	66,411	46,642
OREO	19,377	27,095	13,619	14,614	5,867
Total non-performing assets	<u>\$ 188,199</u>	<u>\$ 241,403</u>	<u>\$ 92,472</u>	<u>\$ 81,025</u>	<u>\$ 52,509</u>
TDRs accruing and not included above	<u>\$ 35,288</u>	<u>\$ 13,564</u>	<u>\$ 11,285</u>	<u>\$ 13,701</u>	<u>\$ 17,261</u>
Ratios:					
Non-performing loans to total loans	0.88%	0.94%	0.83%	0.84%	0.97%
Non-performing assets to total assets	0.60	0.71	0.65	0.68	0.71

There were no non-accrual warehouse lending or public sector finance loans for any periods presented.

Loans are reviewed on a regular basis and are placed on non-accrual status upon the earlier of (i) when full payment of principal or interest is in doubt; or (ii) when either principal or interest is 90 days or more past due, unless the loan is well secured and in the process of collection. Interest accrued and unpaid at the time a loan is placed on non-accrual status is reversed against interest income. Interest payments received on non-accrual loans are generally applied to the principal balance of the outstanding loan. However, based on an assessment of the borrower's financial condition and payment history, an interest payment may be applied to interest income on a cash basis. Appraisals are performed at least annually on classifieds loans.

At December 31, 2018, our non-accrual loans totaled \$166,400 and there were \$2,422 of loans 90 days past due and still accruing interest. Such loans were considered well secured and in the process of collection. At December 31, 2017, we had non-accrual loans of \$186,357, and we had \$856 of loans 90 days past due and still accruing interest. At December 31, 2016, non-accrual loans were \$77,163 and we had \$1,690 of loans 90 days past due and still accruing interest.

Non-performing loans ("NPLs") decreased \$18,391 at December 31, 2018 to \$168,822 compared to \$187,213 at December 31, 2017. The decrease was mainly due to a decline in residential mortgage loan NPLs from repayments and returning loans to accrual status, which was partially offset by increases in CRE, traditional C&I, ABL, payroll finance and equipment finance NPLs.

At December 31, 2017, total NPLs increased \$108,360 compared to December 31, 2016. The increase was mainly due to the Astoria Merger, which included \$99,866 of total NPLs, including \$89,616 that were residential mortgage loans. All of these loans were considered purchase credit impaired loans, discussed further below in the section: "Purchased Credit Impaired ("PCI") Loans". Residential mortgage loans represent the majority of total NPLs in all periods presented, which is mainly attributed to the extended period of time necessary to foreclose on residential mortgages in New York state, which is a judicial foreclosure state. Excluding NPLs

acquired in the Astoria Merger, NPLs increased \$8,494 in 2017, which was mainly due to one taxi medallion relationship that was placed on non-accrual in the fourth quarter of 2017.

Taxi Medallion Loans. At December 31, 2018, we had \$34,063, or 0.18%, of total portfolio loans collateralized by taxi medallions, all of which are TDRs and \$26,136 were substandard and on non-accrual. Taxi medallion loans declined by \$11,913 in 2018, of which \$6,207 was due to partial charge-offs. The balance of the decline was due to repayments. We are working with our borrowers to reduce these balances, and are closely monitoring the collateral values, cash flows and performance of these taxi medallion relationships.

TDR. We have formally modified loans to certain borrowers. If the terms of the modification include a concession, as defined by GAAP, to a borrower that was experiencing financial difficulties at the time of the modification, the loan is considered a TDR, and is also considered an impaired loan. Total TDRs were \$74,885 at December 31, 2018, of which \$38,947 were non-accrual; \$34,892 were current and performing according to terms; \$396 were 30 to 89 days past due; and \$650 were 90 days or more past due. At December 31, 2017 total TDRs were \$42,889, of which \$29,325 were non-accrual, \$13,175 were current and performing, and \$389 were 30 to 89 days past due.

A TDR accruing interest income is a loan that, at the time of modification, was not in non-accrual status and is continuing to perform in accordance with the terms of the modification, or a loan that had been placed on non-accrual, which has demonstrated a period of satisfactory performance after modification, which is generally at least six months of timely payments. Loan modifications include actions such as an extension of the maturity date or the lowering of interest rates and monthly payments. As of December 31, 2018, there were no commitments to lend additional funds to borrowers with loans that have been modified in a TDR. The increase in traditional C&I TDR loans and TDR loans on non-accrual at December 31, 2018 compared to December 31, 2017 was mainly due to one taxi medallion relationship in which we made a concession regarding the repayment terms of the underlying notes to this borrower. The increase in CRE and consumer TDR loans was mainly related to one borrowing relationship in which we made concessions to the borrower to maximize our total recovery of the balances.

OREO. Real estate acquired as a result of foreclosure or by deed in lieu of foreclosure is classified as OREO until such time as it is sold. When real estate is transferred to OREO, it is recorded at fair value less cost to sell. If the fair value less cost to sell is less than the loan balance, the difference is charged against the allowance for loan losses. After transfer to OREO, we regularly update the fair value of the property. Subsequent declines in fair value are charged to current earnings and included in other non-interest expense as part of OREO expense. The table below presents OREO activity for the years ended December 31, 2018, 2017 and 2016:

	For the year ended December 31,		
	2018	2017	2016
Balance beginning of year	\$ 27,095	\$ 13,619	\$ 14,614
Loans transferred to OREO	15,223	7,967	5,377
Sales of OREO	(22,263)	(8,483)	(5,790)
Write downs of OREO	(678)	(2,113)	(582)
OREO acquired in Astoria Merger	—	16,105	—
Balance end of year	\$ 19,377	\$ 27,095	\$ 13,619

Classification of Assets. Our policies, consistent with regulatory guidelines, provide for the classification of loans and other assets that are considered to be of lesser quality such as substandard, doubtful, or loss assets. An asset is considered substandard if it is inadequately protected by the current net worth and paying capacity of the obligor or of the collateral pledged, if any. Substandard assets include those characterized by the distinct possibility that the Bank will sustain some loss if the deficiencies are not corrected. Assets classified as “doubtful” have all of the weaknesses inherent in those classified as “substandard” with the added characteristic that the weaknesses make collection or liquidation in full, on the basis of currently existing facts, conditions, and values, highly questionable and improbable. Assets classified as “loss” are those considered uncollectible and of such little value that their continuance as assets is not warranted and are charged-off. Assets that do not expose us to risk sufficient to warrant classification in one of the aforementioned categories, but which possess potential weaknesses that deserve our close attention, are designated as “special mention”. As of December 31, 2018, we had \$113,180 of assets designated as “special mention” compared to \$136,558 at December 31, 2017. The decrease was mainly due to “special mention” loans repayments and transfers to substandard classification. See a breakdown of “special mention” loans that were originated and acquired in Note 5. “Allowance for Loan Losses” in the notes to consolidated financial statements.

Our determination as to the classification of our assets and the amount of our loan loss allowance are subject to review by our regulators, which can order the establishment of an additional valuation allowance. Management regularly reviews our asset portfolio to determine whether any assets require classification in accordance with applicable regulations. On the basis of management's review of our assets at December 31, 2018, classified assets consisted of loans of \$266,106 and OREO of \$19,377 compared to \$233,255 and \$27,095, respectively, a year earlier. The increase in classified assets at December 31, 2018 was mainly due to ABL and payroll finance loans that were classified during the year and the Advantage Funding Acquisition. See a breakdown of classified assets that were originated and acquired in Note 5. "Allowance for Loan Losses" in the notes to consolidated financial statements.

For the year ended December 31, 2018, gross interest income that would have been recorded had the non-accrual loans at the end of 2018 remained on accrual status throughout the period amounted to approximately \$3,500. Interest income actually recognized on such loans totaled \$1,915. For additional information see Note 5. "Allowance for Loan Losses" in the notes to consolidated financial statements.

Allowance for Loan Losses. We believe the allowance for loan losses is critical to the understanding of our financial condition and results of operations. Selection and application of this "critical accounting policy" involves judgments, estimates, and uncertainties that are susceptible to change. In the event that different assumptions or conditions were to occur, and depending upon the severity of such changes, materially different financial conditions or results of operations are a reasonable possibility.

We maintain our allowance for loan losses at a level that we believe is adequate to absorb probable losses inherent in the existing loan portfolio based on an evaluation of the collectibility of loans, underlying collateral, geographic and other concentrations, and prior loss experience. We use a risk rating system for all commercial loans to evaluate the adequacy of the allowance for loan losses. With this system, each loan, with the exception of those included in large groups of smaller-balance homogeneous loans, is risk rated between one and ten, by credit administration, loan review or loan committee, with one being the best case and ten being a loss or the worst case. Loans with risk ratings between seven and nine are monitored more closely by the credit administration team and, when measured for impairment, if impairment is found that portion is charged-off against the allowance for loan losses. We calculate an average historical loss experience by loan type that is a twelve quarter average for commercial loans and residential loans and eight quarter average for consumer loans. To the loss experience, we apply individual qualitative loss factors that result in an overall loss factor at an appropriate level for the allowance for loan losses for a particular loan type. These qualitative loss factors are determined by management, and are adjusted to reflect our evaluation of:

- levels of, and trends in, delinquencies and non-performing loans, and criticized and classified loans;
- trends in volume of loans;
- effects of exceptions to lending policies and procedures;
- experience, ability, and depth of lending management and staff;
- national and local economic trends and conditions;
- concentrations of credit by such factors as property type, industry, and relationship; and
- for commercial loans, trends in risk ratings.

The allowance for loan losses also includes an element for estimated probable but undetected losses. We analyze loans by two broad segments or classes: real estate secured loans and loans that are either unsecured or secured by other collateral. The segments or classes considered real estate secured are: residential mortgage loans; CRE loans; multi-family loans; ADC loans; home equity lines of credit which are included in consumer loans; and certain other consumer loans. The segments or classes considered unsecured or secured by other than real estate collateral are: C&I loans, which includes traditional C&I loans, asset-based loans, payroll finance loans, warehouse lending, factored receivables, equipment finance loans, public sector finance loans and certain other consumer loans. In all segments or classes, significant loans are reviewed for impairment once they are placed on non-accrual status or are assessed as a TDR. Generally we consider a homogeneous residential mortgage loan or home equity line of credit to be significant if our investment in the loan is greater than \$750. If a loan is deemed to be impaired in one of the real estate secured segments, and it is anticipated that our ultimate source of repayment will be through foreclosure and sale of the underlying collateral, it is generally considered collateral dependent. If the value of the collateral securing a collateral dependent impaired loan is less than the carrying value of the loan, a charge-off is recognized equal to the difference between the value of the collateral and the book value of the loan. In addition, included in impairment losses are amounts recognized for estimated costs to hold and to liquidate the collateral. These costs to hold and liquidate are generally in the range of 22% and are applied to all loans collateralized by real estate.

For certain loans in the consumer segment, we charge-off the full amount of the loan when it becomes 90 to 120 days or more past due, or earlier in the case of bankruptcy, after giving effect to any cash or marketable securities pledged as collateral for the loan. For C&I

loans, we conduct a cash flow projection, and charge-off the difference between the net present value of the cash flows discounted at the effective note rate and the carrying value of the loan, and may recognize an additional charge-off amount to account for the imprecision of our estimates.

ADC lending exposes us to greater credit risk than permanent mortgage financing. The repayment of ADC loans often depends on the sale of the property to third parties or the availability of permanent financing upon completion of all improvements. These events may adversely affect the borrower and the collateral value of the property. ADC loans also expose us to the risk that improvements will not be completed on time in accordance with specifications and projected costs. In addition, the ultimate sale or rental of the property may not occur as anticipated. All of these factors are considered as part of the underwriting, structuring and pricing of the loan. We have deemphasized acquisition and development loans, and attempt to make construction loans only to well qualified borrowers.

CRE loans subject us to the risks that the property securing the loan may not generate sufficient cash flow to service the debt or the borrower may use the cash flow for other purposes. In addition, the foreclosure process, if necessary, may be slow and properties may deteriorate in the process. The market values are also subject to a wide variety of factors, including general economic conditions, industry specific factors, environmental factors, interest rates and the availability and terms of credit.

C&I lending also exposes us to risk because repayment depends on the successful operation of the business, which is subject to a wide range of risks and uncertainties. In addition, the ability to successfully liquidate collateral, if any, is subject to a variety of risks because we must gain control of assets used in the borrower's business before liquidating, which we cannot be assured of doing, and the value in liquidation may be uncertain.

The following table sets forth activity in our allowance for loan losses for the years indicated.

	For the year ended December 31,				For the fiscal year ended September 30,
	2018	2017	2016	2015	2014
Balance at beginning of period	\$ 77,907	\$ 63,622	\$ 50,145	\$ 42,374	\$ 28,877
Charge-offs:					
Traditional C&I	(9,270)	(5,489)	(1,707)	(1,575)	(2,901)
Asset-based lending	(4,936)	—	—	—	—
Payroll finance	(337)	(188)	(28)	(406)	(758)
Factored receivables	(205)	(982)	(1,200)	(291)	(211)
Equipment finance	(8,565)	(3,165)	(1,982)	(3,423)	(1,074)
CRE	(4,935)	(2,379)	(959)	(1,695)	(741)
Multi-family	(308)	—	(417)	(17)	(418)
ADC	(721)	(27)	—	—	(1,479)
Residential mortgage	(1,391)	(860)	(1,045)	(1,251)	(963)
Consumer	(1,408)	(1,095)	(1,615)	(2,360)	(786)
Total charge-offs	(32,076)	(14,185)	(8,953)	(11,018)	(9,331)
Recoveries:					
Traditional C&I	1,080	1,142	999	1,720	1,073
Asset-based lending	9	5	62	—	—
Payroll finance	43	6	32	35	—
Factored receivables	15	23	61	60	9
Equipment finance	951	387	560	825	194
CRE	888	163	353	148	161
Multi-family	283	—	2	9	92
ADC	—	269	104	52	—
Residential mortgage	64	161	30	92	323
Consumer	513	314	227	148	114
Total recoveries	3,846	2,470	2,430	3,089	1,966
Net charge-offs	(28,230)	(11,715)	(6,523)	(7,929)	(7,365)
Provision for loan losses	46,000	26,000	20,000	15,700	19,100
Balance at end of period	\$ 95,677	\$ 77,907	\$ 63,622	\$ 50,145	\$ 40,612
Ratios:					
Net charge-offs to average loans outstanding	0.14%	0.10%	0.08%	0.13%	0.18%
Allowance for loan losses to NPLs	56.67	41.61	80.68	75.50	79.69
Allowance for loan losses to total loans	0.50	0.39	0.67	0.64	0.85

Note: There were no charge-offs or recoveries on warehouse lending or public sector finance loans in any period presented.

Loans acquired in a business combination through merger or acquisition were recorded at fair value with no allowance for loan losses at the acquisition date. Under our current credit and accounting guidelines, once a loan relationship reaches maturity and is re-underwritten, the loan is no longer considered an acquired loan and is included in originated loans. In addition, acquired performing loans that were subsequently subject to a credit evaluation, such as after designation as criticized or classified or placed on non-accrual since the acquisition date, are also included in originated loans.

At December 31, 2018, \$6,335,875 of our portfolio loans were considered acquired loans compared to \$9,381,237 at December 31, 2017, and \$1,165,039 at December 31, 2016. The decline in acquired loans in 2018 was mainly due to \$1,601,844 of residential mortgage loans that were transferred from portfolio loans to loans held for sale, repayments and maturity of loans acquired in the Astoria

Merger. The increase in acquired loans in 2017 compared to 2016 was mainly due to the Astoria Merger. We had purchase accounting fair value discounts recorded for portfolio loan balances in loans, which included estimated losses over the life of the loans when originally established, in the amount of \$117,222, \$293,476 and \$37,012 at December 31, 2018, 2017 and 2016, respectively.

The allowance for loan losses increased \$17,770 in 2018 to \$95,677 compared to \$77,907 at December 31, 2017. The increase in the allowance for loan losses was mainly due to growth in the loan portfolio subject to the allowance for loan losses as a result of organic growth and recent acquisitions. The allowance for loan losses increased \$14,285 in 2017, which was also mainly due to organic loan growth and acquisitions that occurred in 2017 and earlier. The allowance for loan losses increased \$13,477 in 2016, mainly due to organic loan growth and loans from the HVB Merger that were subjected to the allowance for loan losses.

Net charge-offs in 2018 were \$28,230, or 0.14%, of average loans outstanding compared to net charge-offs of \$11,715, or 0.10%, of average loans outstanding in 2017. Net charge-offs in 2016 were \$6,523, or 0.08%, of average loans outstanding. The increase in 2018 was due to additional charge-offs recorded on two of our taxi medallion loan relationships to reflect declines in the value of taxi medallions, charge-offs in the equipment finance portfolio mainly related to printing sector clients, and certain CRE loans. The increase in 2017 was mainly due to charge-offs related to one taxi medallion loan relationship, one CRE loan to a for profit education client (the only such loan in our portfolio) and equipment finance loans mainly related to printing sector clients.

The allowance for loan losses at December 31, 2018 represented 56.67% of NPLs and 0.50% of the total loan portfolio compared to 41.61% of NPLs and 0.39% of the total loan portfolio at December 31, 2017 and 80.68% of NPLs and 0.67% of the total loan portfolio at December 31, 2016. The allowance for loan losses as a percentage of NPLs and to the total loan portfolio increased in 2018 as a result of the provision for loan losses which exceeded net-charge offs, which was due to organic loan growth and acquired loans that migrated into our allowance for loan losses calculation as a result of renewal or a credit evaluation. The allowance for loan losses as a percentage of NPLs and to the total loan portfolio declined in 2017 compared to 2016 mainly due to the Astoria Merger as loans acquired in business combinations were recorded at fair value and are not included in our allowance calculations. In the first quarter of 2016, we placed one taxi medallion relationship on non-accrual, which was the main driver of the increase in NPLs for 2016; however, given the low level of net charge-offs and our recorded provision for loan losses, we increased our allowance for loan losses to NPL coverage ratio in 2017 compared to 2016. The percentages of the allowance for loan losses to NPLs and total loan portfolio were lower in 2016 compared to 2017 mainly due to the portfolio loans acquired in the HVB Merger.

Provision for Loan Losses. We recorded \$46,000 in loan loss provision for 2018 compared to \$26,000 in 2017, and \$20,000 in 2016. Provision for loan loss expense in 2018, 2017 and 2016 mainly reflected the amount of provision required to offset net charge-offs, changes in the levels of criticized and classified loans that are subjected to our allowance, organic loan growth and loans acquired in the Astoria Merger and HVB Merger that were initially recorded at fair value, but have since been renewed or otherwise transitioned into our allowance for loan loss analysis.

Impaired Loans. A loan is impaired when it is probable we will be unable to collect all amounts due according to the contractual terms of the loan agreement. Impaired loan values are based on one of three measures: (i) the present value of expected future cash flows discounted at the loan's effective interest rate; (ii) the loan's observable market price; or (iii) the fair value of the collateral if the loan is collateral dependent. If the measure of an impaired loan is less than its recorded investment, the Bank's practice is to write-down the loan against the allowance for loan losses so the recorded investment matches the impaired value of the loan. Impaired loans generally include a portion of non-performing loans and accruing and performing TDR loans. At December 31, 2018, we had \$100,998 of impaired loans compared to \$60,862 at December 31, 2017, and \$55,391 at December 31, 2016. The increase in impaired loans in 2018 was mainly due to the increase in loans designated as TDR. The increase in impaired loans in 2017 was mainly due to one taxi medallion loan that was placed on non-accrual in 2017.

Purchased Credit Impaired ("PCI") Loans. A PCI loan is an acquired loan that has demonstrated evidence of deterioration in credit quality subsequent to origination. As of December 31, 2018, the balance of PCI loans was \$139,795 and included PCI loans acquired in the HVB Merger and the merger of legacy Sterling Bancorp and legacy Provident New York Bancorp (the "Provident Merger") of \$5,202, which are accounted for under the cost-recovery method and were included in our non-accrual loan totals above. The remaining \$134,593 of PCI loans, which were mainly acquired in the Astoria Merger, are accounted for under applicable guidance which results in an accretable yield that represents the amount of expected cash flows that exceeds the initial investment in the loan. At December 31, 2017, the balance of PCI loans was \$226,612 and included PCI loans accounted for under the cost-recovery method of \$100,367, which were included in our non-accrual loan totals above. The decline in PCI loans in 2018 was mainly due to repayments of PCI loans acquired in the Astoria Merger. The increase in PCI loans in 2017 was the result of the Astoria Merger. Excluding the impact of the Astoria Merger, in 2017 PCI loans declined mainly due to repayments. See the tables of loans evaluated for impairment by segment and changes in accretable yield for PCI loans in Note 4. "Portfolio Loans" in the notes to consolidated financial statements for additional information.

Allocation of Allowance for Loan Losses. The following tables set forth the allowance for loan losses allocated by loan category, the total loan balances by category of loans subject to the allowance for loan losses balance, which excludes acquired loans and loans held for sale, and the percent of loans in each category to total originated loans at the dates indicated. The allowance for loan losses allocated to each category is not necessarily indicative of future losses in any particular category and does not restrict the use of the allowance to absorb losses in other categories.

	December 31,								
	2018			2017			2016		
	Allowance for loan losses	Loan balance	% of total originated loans	Allowance for loan losses	Loan balance	% of total originated loans	Allowance for loan losses	Loan balance	% of total originated loans
Traditional C&I	\$ 14,201	\$ 2,321,131	12.5%	\$ 19,072	\$ 1,708,812	9.9%	\$ 12,864	\$1,043,647	14.7%
Asset-based lending	7,979	792,935	4.1	6,625	760,095	4.0	3,316	562,898	7.8
Payroll finance	2,738	227,452	1.2	1,565	268,609	1.3	951	255,549	2.7
Warehouse lending	2,800	782,646	4.1	3,705	723,335	3.6	1,563	616,946	6.5
Factored receivables	1,064	258,383	1.3	1,395	220,551	1.1	1,669	214,242	2.2
Equipment finance	12,450	913,751	6.3	4,862	664,800	3.4	5,039	562,046	6.2
Public sector finance	1,739	860,746	4.5	1,797	637,767	3.2	1,062	349,182	3.7
CRE	32,285	4,154,956	24.2	24,945	3,476,830	20.7	20,466	2,900,927	33.2
Multi-family	8,355	1,527,619	24.8	3,261	1,174,631	24.3	4,991	868,980	10.3
ADC	1,769	267,754	1.4	1,680	282,792	1.4	1,931	230,086	2.4
Residential mortgage	7,454	621,471	14.1	5,819	532,731	25.3	5,864	521,332	7.3
Consumer	2,843	153,811	1.6	3,181	176,793	1.8	3,906	199,344	3.0
Total	\$ 95,677	\$12,882,655	100.0%	\$ 77,907	\$10,627,746	100.0%	\$ 63,622	\$8,325,179	100.0%
Allowance for loan losses to loans subject to the allowance	0.74%			0.73%			0.76%		

	December 31, 2015			December 31, 2014		
	Allowance for loan losses	Loan balance	% of total originated loans	Allowance for loan losses	Loan balance	% of total originated loans
Traditional C&I	\$ 9,953	\$ 905,242	15.1%	\$ 6,966	\$ 697,407	19.0%
Asset-based lending	2,762	310,214	3.9	4,061	327,507	6.8
Payroll finance	1,936	221,831	2.8	1,506	154,229	3.2
Warehouse lending	589	387,808	4.9	608	173,786	3.6
Factored receivables	1,457	208,382	2.7	1,205	161,625	3.4
Equipment finance	4,925	514,418	8.0	2,569	266,992	8.5
Public sector finance	547	182,336	2.3	—	—	—
CRE	11,461	2,036,103	34.8	7,721	1,230,207	30.3
Multi-family	5,141	552,155	10.1	4,511	379,843	8.0
ADC	2,009	127,363	2.4	2,987	96,995	2.0
Residential mortgage	5,007	433,928	9.1	5,843	427,620	11.0
Consumer	4,358	203,526	3.8	4,397	200,415	4.2
Total	\$ 50,145	\$ 6,083,306	100.0%	\$ 42,374	\$ 4,116,626	100.0%
Allowance for loan losses to loans subject to the allowance	0.82%			1.03%		

For all periods presented, the aggregate allowance for loan losses increased compared to the earlier period. This is mainly the result of the significant increase in the volume of loans due to organic loan growth and the transition of loans acquired in mergers and acquisitions that are now part of our allowance for loan loss calculation.

The allowance for loan losses for traditional C&I loans was \$14,201 at December 31, 2018, compared to \$19,072 at December 31, 2017 and \$12,864 at December 31, 2016. Although traditional C&I loans subject to the allowance for loan losses increased \$612,319 in 2018, the allowance for loan losses declined for traditional C&I loans in 2018 compared to 2017 mainly due to improvement in our historical charge-off experience, improvements in delinquencies and non-accruals, and favorable loan trends and conditions. The increase in the allowance for traditional C&I loans in 2017 compared to 2016 was mainly due to growth of the portfolio. In addition, the historical charge-off experience loss factor increased 16 basis points in 2017 compared to 2016.

The allowance for ABL loans was \$7,979 at December 31, 2018, compared to \$6,625 at December 31, 2017 and \$3,316, at December 31, 2016. The allowance for ABL loans increased in 2018 compared to 2017 mainly due to the increase in loan balances and an increase in the historical charge-off experience loss factor of 30 basis points. The increase in the allowance for ABL loans in 2017 was due to growth of the portfolio, and an increase in the loss factor applied due to a higher concentration of relationships with credit facilities over \$10,000 compared to 2016.

The allowance for loan losses for payroll finance loans was \$2,738 at December 31, 2018, compared to \$1,565 at December 31, 2017 and \$951 at December 31, 2016. The increase in 2018 compared to 2017 was mainly due to adjustments to qualitative factors for higher delinquencies and non-accruals. The increase in 2017 was mainly due to two loans that comprised the majority of the \$9,682 balance of loans graded special mention at December 31, 2017.

The allowance for loan losses for warehouse lending was \$2,800 at December 31, 2018, compared to \$3,705 at December 31, 2017 and \$1,563 at December 31, 2016. The allowance for loan losses for warehouse lending is based solely on qualitative factors, as there have been no delinquencies or historical losses in the portfolio. The decrease in 2018 compared to 2017 was mainly due to improvements in loan trends and conditions as the warehouse lending portfolio has strong risk ratings. The increase in the allowance for loan losses for warehouse lending in 2017 compared to 2016 was due to an adjustment related to the average credit facilities, as most relationships are over \$10,000 and this portfolio includes several of our larger credit facilities.

The allowance for loan losses for factored receivables was \$1,064 at December 31, 2018, compared to \$1,395 at December 31, 2017 and \$1,669 at December 31, 2016. The decrease in 2018 compared to 2017 was mainly due to a decline in the qualitative factor associated with concentrations that reduced the overall reserve level. The decrease in 2017 compared to 2016 reflected a decline in historical charge-off experience and improving trends in loan classifications.

The allowance for loan losses for equipment finance was \$12,450 at December 31, 2018, compared to \$4,862 at December 31, 2017 and \$5,039 at December 31, 2016. The increase in 2018 compared to 2017 was mainly due to an increase in historical charge-off experience loss factor, which increased 62 basis points and due to higher losses related to printing sector clients. The decrease in 2017 compared to 2016 was mainly due to an improvement in the loan trends qualitative factor as a significant proportion of recent originations were to companies with stronger credit profiles (based on facility risk ratings) than in the prior years.

The allowance for loan losses for public sector finance was \$1,739 at December 31, 2018, compared to \$1,797 at December 31, 2017 and \$1,062 at December 31, 2016. The allowance for loan losses for public sector finance loans is based solely on qualitative factors, as there have been no delinquencies or historical losses since its inception in 2015 and the portfolio has strong risk ratings. The decline in the allowance for loan losses for public sector finance loans in 2018 compared to 2017 was due to improvement in loan trends and conditions related to risk ratings. The increase in 2017 compared to 2016 was mainly due to significant growth in the public sector finance portfolio.

The allowance for loan losses for CRE loans was \$32,285 at December 31, 2018, compared to \$24,945 at December 31, 2017, and \$20,466 at December 31, 2016. The increase in the allowance for loan losses for CRE loans in 2018 compared to 2017 was mainly due to organic growth in the CRE portfolio. In addition, there was a three basis point increase in the historical charge-off experience, and an increase in the qualitative factor associated with concentrations as many of the CRE loans are above \$10,000. The increase in the allowance for loan losses for CRE loans in 2017 compared to 2016 was due to organic growth of the portfolio.

The allowance for loan losses for multi-family loans was \$8,355 at December 31, 2018, compared to \$3,261 at December 31, 2017, and \$4,991 at December 31, 2016. The increase in 2018 compared to 2017 was mainly due to an increase in multi-family loan balances subject to the allowance for loan losses, and an increase in qualitative factors for trends and conditions and loan size concentrations. The decline in 2017 compared to 2016 was mainly due to improvements in our historical charge-off experience loss factor, as there were no multi-family loan charge-offs in 2017.

The allowance for loan losses for ADC loans was \$1,769 at December 31, 2018, compared to \$1,680 at December 31, 2017, and \$1,931 at December 31, 2016. The increase in 2018 compared to 2017 was mainly due to an increase in the historical charge-off experience loss

factor of five basis points, and an adjustment to the loan trends qualitative factor. The decrease in 2017 compared to 2016 reflected the continued improvement in our historical loss experience. There were no charge-offs in the ADC portfolio in 2017 and the composition of the portfolio improved in 2017 as it consisted of more seasoned construction loans.

The allowance for loan losses for residential mortgage loans was \$7,454 at December 31, 2018, compared to \$5,819 at December 31, 2017, and \$5,864 at December 31, 2016. The increase in 2018 compared to 2017 was mainly due to an increase in the amount of residential mortgage loans subject to the allowance for loan losses, and increases in the qualitative factors associated with trends and conditions of adjustable rate mortgages and interest-only mortgages. The decline in 2017 compared to 2016 was mainly due to improvements in qualitative factors associated with delinquencies and non-accruals for 15-year fixed and 30-year fixed rate residential mortgage loans.

The allowance loan losses for consumer loans was \$2,843 at December 31, 2018, compared to \$3,181 at December 31, 2017, and \$3,906 at December 31, 2016. The decline in 2018 compared to 2017, and 2017 compared to 2016, was due to improvement in our historical loss experience.

Investment Securities

Overview. The Board's Enterprise Risk Committee oversees our investment program and evaluates our investment policy and objectives. Our Chief Executive Officer, Chief Financial Officer, Chief Investment Officer/Treasurer and certain other senior officers have the authority to purchase and sell securities within specific guidelines established in the investment policy. In addition, a summary of all transactions is reviewed by the Board at least quarterly.

Our objective for the investment securities is to maintain high quality, liquid investment securities with a structure and duration profile designed to limit the impact of a rising interest rate environment on the fair value of the portfolio. The investment portfolio provides for flexibility in interest rate risk management and additional liquidity, in addition to contributing to our overall earnings. Investment securities are also utilized for pledging purposes as collateral for borrowings from FHLB, municipal deposits, and other borrowings. We regularly evaluate the portfolio within the context of our balance sheet optimization strategy of maintaining a prudent liquidity position, while producing growth in earnings and attractive returns on equity and assets. We evaluate the portfolio's size, risk and duration on a daily basis. At December 31, 2018, investment securities represented 21.2% of total assets compared to 21.3% at December 31, 2017 and 22.0% at December 31, 2016. Our long-term target is to manage our investment portfolio within a range of 18.0% to 20.0% of total assets.

At the time of purchase, we designate a security as held to maturity, available for sale, depending on our intent and ability to hold the security. Securities designated as available for sale are reported at fair value, while securities designated as held to maturity are reported at amortized cost. We do not have a trading portfolio. The carrying value of investment securities is comprised of the fair value of investment securities available for sale and the amortized cost of held to maturity securities.

Available for Sale Portfolio. The following table sets forth the composition of our available for sale securities portfolio at the dates indicated.

	December 31, 2018		December 31, 2017		December 31, 2016	
	Amortized cost	Fair value	Amortized cost	Fair value	Amortized cost	Fair value
Residential and multi-family MBS:						
Agency-backed	\$ 2,328,870	\$ 2,268,851	\$ 2,171,044	\$ 2,150,649	\$ 1,213,733	\$ 1,193,481
CMO/Other MBS ¹	596,868	574,770	656,514	649,403	57,563	56,681
Total MBS	2,925,738	2,843,621	2,827,558	2,800,052	1,271,296	1,250,162
Other securities:						
Federal agencies	283,825	273,973	409,322	399,996	204,770	193,979
Corporate bonds	537,210	527,965	147,781	148,226	43,464	42,506
State and municipal	227,546	225,004	264,310	263,798	245,304	240,770
Total other securities	1,048,581	1,026,942	821,413	812,020	493,538	477,255
Total available for sale securities	\$ 3,974,319	\$ 3,870,563	\$ 3,648,971	\$ 3,612,072	\$ 1,764,834	\$ 1,727,417

¹ CMO/Other MBS at December 31, 2018 and 2017 is mainly comprised of multi-family Ginnie Mae securities.

On an amortized cost basis, available for sale (“AFS”) securities increased \$325,348, or 8.9%, compared to December 31, 2017 mainly due to increases in corporate bonds and agency-backed residential MBS, which was partially offset by declines in CMO/other MBS, federal agency securities, and state and municipal securities. We manage the size and composition of our securities portfolio based on the relative risk-adjusted return of various asset classes, focusing mainly on MBS, municipal and corporate securities. The estimated weighted average life of AFS securities was 4.87 years at December 31, 2018 compared to 4.82 years at December 31, 2017. Total unrealized losses on AFS securities was \$103,756 at December 31, 2018 compared to \$36,899 at December 31, 2017. The fair value of investment securities is impacted by interest rates, credit spreads, market volatility and liquidity concerns. The fair value of investment securities generally declines when interest rates increase or when credit spreads widen. In 2018, interest rates increased, which was the main cause of the increase in the unrealized losses on AFS securities.

Held to Maturity Portfolio. The following table sets forth the composition of our held to maturity securities portfolio at the dates indicated.

	December 31, 2018		December 31, 2017		December 31, 2016	
	Amortized cost	Fair value	Amortized cost	Fair value	Amortized cost	Fair value
Residential MBS:						
Agency-backed	\$ 318,590	\$ 310,058	\$ 355,013	\$ 353,487	\$ 277,539	\$ 275,267
CMO/Other MBS	27,780	27,017	33,496	32,762	40,594	40,096
Total residential MBS	346,370	337,075	388,509	386,249	318,133	315,363
Other securities:						
Federal agencies	59,065	59,097	58,640	59,589	58,200	59,592
State and municipal	2,305,420	2,258,512	2,342,927	2,344,423	974,290	941,629
Corporate bonds	68,512	68,551	56,663	57,815	35,048	35,468
Other	17,250	17,287	15,750	15,833	5,750	5,945
Total other securities	2,450,247	2,403,447	2,473,980	2,477,660	1,073,288	1,042,634
Total held to maturity securities	<u>\$ 2,796,617</u>	<u>\$ 2,740,522</u>	<u>\$ 2,862,489</u>	<u>\$ 2,863,909</u>	<u>\$ 1,391,421</u>	<u>\$ 1,357,997</u>

On an amortized cost basis, held to maturity (“HTM”) securities declined \$65,872 at December 31, 2018 compared to December 31, 2017 mainly due to normal repayments received from residential MBS and maturities and calls of state and municipal securities. The estimated weighted average life of HTM securities was 6.19 years at December 31, 2018 compared to 6.43 years at December 31, 2017.

Investment Portfolio Activity. At December 31, 2018, the carrying value of investment securities was \$6,667,180, an increase of \$192,619, or 3.0%, compared to December 31, 2017. During 2018, we purchased \$873,557 of AFS securities and \$145,685 of HTM securities. We sold \$186,914 of securities that were classified as AFS during 2018. In the second quarter of 2018, we sold securities and received proceeds of \$117,810, which were used to fund a portion of the consideration paid for the Advantage Funding Acquisition. In the fourth quarter of 2018, we sold AFS securities consisting of agency and municipal securities and received proceeds of \$69,104.

Investment securities increased \$3,355,723, or 107.6%, at December 31, 2017 compared to \$3,118,838 at December 31, 2016. Tax exempt securities represent \$2,530,424, or 38.0%, of our investment portfolio at December 31, 2018, compared to \$2,606,725, or 40.3% at December 31, 2017 and \$1,215,060, or 39.0%, at December 31, 2016. We sold \$2,516,308 of securities that were classified AFS during 2017, which mainly included securities we acquired in the Astoria Merger.

Portfolio Maturities and Yields. The following table summarizes the composition, maturities and weighted average yield of our investment securities portfolio at December 31, 2018. Maturities are based on the final contractual payment dates and do not reflect the impact of prepayments or early redemptions that may occur. State and municipal securities yields have not been adjusted to a tax equivalent basis.

	1 Year or Less		1-5 years		5-10 years		10 years or more		Total		
	Amortized cost	Yield	Amortized cost	Yield	Amortized cost	Yield	Amortized cost	Yield	Amortized cost	Fair Value	Yield
Available for sale:											
Residential and multi-family MBS:											
Agency-backed	\$ —	—%	\$ 17,160	2.27%	\$ 287,346	2.55%	\$ 2,024,364	2.70%	\$ 2,328,870	\$ 2,268,851	2.78%
CMO/Other MBS	—	—	2,084	1.92	1,905	1.95	592,879	2.87	596,868	574,770	2.84
Total residential MBS	—	—	19,244	2.23	289,251	2.55	2,617,243	2.74	2,925,738	2,843,621	2.79
Federal agencies	—	—	—	—	231,463	2.78	52,362	2.63	283,825	273,973	2.76
Corporate bonds	7,976	5.50	124,976	3.12	404,258	3.75	—	—	537,210	527,965	3.63
State and municipal	11,151	1.67	80,948	1.96	86,594	1.95	48,853	2.07	227,546	225,004	1.94
Total	\$ 19,127	3.27%	\$ 225,168	2.62%	\$ 1,011,566	3.03%	\$ 2,718,458	2.72%	\$ 3,974,319	\$ 3,870,563	2.85%
Held to maturity:											
Residential MBS:											
Agency-backed	\$ 17	2.7%	\$ 37,041	2.62%	\$ 31,427	2.52%	\$ 250,105	2.86%	\$ 318,590	\$ 310,058	2.80%
CMO/Other MBS	—	—	—	—	—	—	27,780	1.96	27,780	27,017	1.96
Total residential MBS	17	2.69	37,041	2.62	31,427	2.52	277,885	2.77	346,370	337,075	2.73
Federal agencies	—	—	59,065	2.56	—	—	—	—	59,065	59,097	2.56
Corporate bonds	—	—	—	—	62,151	4.90	6,361	4.99	68,512	68,551	4.90
State and municipal	64,314	2.26	54,012	2.46	409,939	2.28	1,777,155	2.45	2,305,420	2,258,512	2.41
Other	4,500	3.17	7,750	3.22	5,000	3.82	—	—	17,250	17,287	3.38
Total	\$ 68,831	2.32%	\$ 157,868	2.57%	\$ 508,517	2.63%	\$ 2,061,401	2.50%	\$ 2,796,617	\$ 2,740,522	2.55%

MBS. MBS are created by pooling mortgages and issuing a security collateralized by the pool of mortgages with an interest rate that is less than the interest rate on the underlying mortgages. MBS typically represent a participation interest in a pool of single-family or multi-family mortgages, although most of our MBS are collateralized by single-family mortgages. The issuers of such securities (generally U.S. Government agencies and government sponsored enterprises, including Fannie Mae, Freddie Mac and Ginnie Mae) pool and resell the participation interests in the form of securities to investors, such as us, and guarantee the payment of principal and interest to these investors. Investments in MBS involve a risk in addition to the guarantee of repayment of principal outstanding that actual prepayments will be greater or less than the prepayment rate estimated at the time of purchase, which may require adjustments to the amortization of any premium or accretion of any discount relating to such instruments, thereby affecting the net yield and duration of such securities. We review prepayment estimates for our MBS at purchase to ensure that prepayment assumptions are reasonable considering the underlying collateral for the securities at issue and current interest rates, and to determine the yield and estimated maturity of the MBS portfolio. Periodic reviews of current prepayment speeds are performed in order to ascertain whether prepayment estimates require modification that would cause amortization or accretion adjustments.

A portion of our MBS portfolio is invested in collateralized mortgage obligations (“CMOs”), including Real Estate Mortgage Investment Conduits (“REMICs”), backed by Fannie Mae, Freddie Mac and Ginnie Mae. CMOs and REMICs are types of debt securities issued by special-purpose entities that aggregate pools of mortgages and MBS and create different classes of securities with varying maturities and amortization schedules, as well as a residual interest, with each class possessing different risk characteristics. The cash flows from the underlying collateral are generally divided into “tranches” or classes that have descending priorities with respect to the distribution of principal and interest cash flows, while cash flows on pass-through MBS are distributed pro rata to all security holders. Our practice is to limit fixed-rate CMO investments primarily to the early-to-intermediate tranches, which have the greatest cash flow stability. Floating rate CMOs are purchased with an emphasis on the relative trade-offs between lifetime rate caps, prepayment risk, and interest rates. Other MBS available for sale are mainly Ginnie Mae multi-family backed MBS.

Government and Agency Securities. While these securities generally provide lower yields than other investments, such as MBS, our current investment strategy is to maintain investments in such instruments to the extent appropriate for liquidity purposes and as collateral for borrowings and municipal deposits.

Corporate Bonds. Corporate bonds have a higher risk of default due to potential for adverse changes in the creditworthiness of the issuer. In recognition of this risk, our policy limits purchases of investments in corporate bonds to securities with maturities of fifteen years or less and rated “Baa3/BBB-” or better by at least one nationally recognized rating agency at time of purchase, and to a transaction size of no more than \$25,000 per issuer. Exceptions to our policy, which occur mainly when a security is not rated by a nationally recognized rating agency, require that we further analyze the details of potential investments in such instruments to determine if the securities are appropriate from a credit risk perspective for our investment securities portfolio. Our total corporate bond portfolio limit is the lesser of 5% of total assets or 25% of Tier 1 capital. Given current market conditions, we increased our corporate bond portfolio in 2018 and 2017 based on the risk-adjusted return profile of the securities we purchased.

State and Municipal Bonds. Our investment policy limits municipal bonds to securities with maturities of less than 20 years and rated as investment grade by at least one nationally recognized rating agency at the time of purchase. However, we also purchase securities that are issued by local government entities within our service area. Such local entity obligations generally are not rated, and are subject to internal credit reviews. In addition, the policy generally imposes a transaction limit of \$25,000 per municipal issuer and a total municipal bond portfolio limit to the lesser of 15% of assets or 150% of Tier 1 capital. At December 31, 2018, we held \$84,700 of unrated short-term local municipal obligations as HTM and \$8,900 as AFS.

Deposits

The following table sets forth the distribution of average deposit accounts by account category and the average rates paid at the dates indicated.

	For the year ended December 31,					
	2018		2017		2016	
	Average balance	Rate	Average balance	Rate	Average balance	Rate
Non-interest bearing demand	\$ 4,108,881	—%	\$ 3,363,636	—%	\$ 3,120,973	—%
Interest bearing demand	4,084,821	0.78	2,525,863	0.53	1,962,813	0.32
Savings	2,760,759	0.24	1,332,054	0.32	812,339	0.56
Money market	7,505,005	0.82	4,663,180	0.60	3,124,117	0.54
Certificates of deposit	2,523,871	1.19	1,049,102	0.99	620,724	0.88
Total interest bearing deposits	16,874,456	0.77	9,570,199	0.59	6,519,993	0.51
Total deposits	<u>\$ 20,983,337</u>	0.62%	<u>\$ 12,933,835</u>	0.43%	<u>\$ 9,640,966</u>	0.32%

Average deposits for 2018 were \$20,983,337 and increased \$8,049,502 compared to 2017. The increase was mainly due to the Astoria Merger and organic growth generated by our commercial banking teams. The increase of \$3,292,869 in average deposits in 2017 relative to 2016 was mainly due to organic growth and the Astoria Merger. The average cost of interest bearing deposits was 0.77% for 2018, 0.59% for 2017 and 0.51% for 2016. The average cost of total deposits was 0.62% for 2018, 0.43% for 2017 and 0.34% for 2016. In the first nine months of 2017 and all of 2016, a greater proportion of our deposits were commercial deposits, which usually have higher interest rates paid and are more sensitive to changes in market interest rates. Due to the Astoria Merger, our deposit composition has been more balanced between commercial and retail deposits. We are targeting to maintain our deposits evenly between retail and commercial relationships in 2019.

Distribution of Deposit Accounts by Type. The following table sets forth the distribution of total deposit accounts, by account type, at the dates indicated.

	December 31,					
	2018		2017		2016	
	Amount	%	Amount	%	Amount	%
Non-interest bearing demand	\$ 4,241,923	20.0%	\$ 4,080,742	19.9%	\$ 3,239,332	32.2%
Interest bearing demand	4,207,392	19.8	3,882,064	18.9	2,220,456	22.1
Savings	2,382,520	11.2	2,758,642	13.4	747,031	7.4
Money market	7,905,382	37.3	7,377,118	35.9	3,277,686	32.6
Subtotal	18,737,217	88.3	18,098,566	88.1	9,484,505	94.3
Certificates of deposit	2,476,931	11.7	2,439,638	11.9	583,754	5.8
Total deposits	<u>\$ 21,214,148</u>	<u>100.0%</u>	<u>\$ 20,538,204</u>	<u>100.0%</u>	<u>\$ 10,068,259</u>	<u>100.0%</u>

The following table presents the proportion by business type of each component of total deposits for the periods presented:

	December 31,		
	2018	2017	2016
Retail and commercial deposits - excluding certificates of deposit	74.6%	75.7%	76.1%
Municipal deposits	8.3	7.7	12.8
Retail and commercial certificates of deposit	11.4	11.0	3.4
Wholesale deposits	5.7	5.6	7.7
	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

As of December 31, 2018, 2017, and 2016, we had \$1,751,670, \$1,585,076 and \$1,270,921 respectively, in municipal deposits. Municipal deposits experience seasonal flows associated with school district tax collections and typically peak in September or October of each year and then gradually return to more normalized levels over the fourth quarter. Wholesale deposits consist of brokered deposits, except for reciprocal certificate of deposit account registry service (“CDARs”). Wholesale deposits were \$1,215,181, \$1,149,950, and \$752,631 at December 31, 2018, 2017, and 2016, respectively. The increase in the balance of wholesale deposits was used to fund growth in loans and investment securities and to replace higher cost wholesale borrowings. Retail and commercial certificates of deposit were \$2,416,018, \$2,259,623 and \$332,317 at December 31, 2018, December 31, 2017, and December 31, 2016, respectively. The increase between 2017 and 2016 was mainly due to the Astoria Merger.

Certificates of Deposit by Interest Rate Range. The following table sets forth information concerning certificates of deposit by interest rate range at the dates indicated.

Interest rate range:	At December 31, 2018 - Period to maturity					December 31,		
	1 year or less	1-2 years	2-3 years	3 years or more	Total	% of total	2017	2016
1.00% and below	\$ 144,567	\$ 2,214	\$ 1,757	\$ 1,862	\$ 150,400	6.1%	\$ 1,903,062	\$ 208,810
1.01% to 2.00%	1,039,767	389,781	161,164	153,706	1,744,418	70.4	536,424	374,944
2.01% to 3.00%	239,059	319,111	23,304	609	582,083	23.5	133	—
3.01% to 4.00%	30	—	—	—	30	—	—	—
4.01% to 5.00%	—	—	—	—	—	—	19	—
Total	<u>\$ 1,423,423</u>	<u>\$ 711,106</u>	<u>\$ 186,225</u>	<u>\$ 156,177</u>	<u>\$ 2,476,931</u>	<u>100.0%</u>	<u>\$ 2,439,638</u>	<u>\$ 583,754</u>

Certificates of Deposit by Time to Maturity. The following table sets forth certificates of deposit by time remaining until maturity as of December 31, 2018.

	Period to maturity				Total	Rate
	3 months or less	3-6 months	6-12 months	Over 12 months		
Certificates of deposit less than \$100,000	\$ 191,179	\$ 201,262	\$ 261,485	\$ 597,677	\$ 1,251,603	1.53%
Certificates of deposit \$100,000 or more	210,569	268,066	290,862	455,831	1,225,328	1.85
	<u>\$ 401,748</u>	<u>\$ 469,328</u>	<u>\$ 552,347</u>	<u>\$ 1,053,508</u>	<u>\$ 2,476,931</u>	<u>1.69%</u>

Brokered Deposits. We utilize brokered deposits on a limited basis and maintain limits for the use of wholesale deposits and other short-term funding in general to be less than 10% of total assets. Most of our CDARs¹ brokered deposit funding has a maturity that coincides with the anticipated inflows of deposits in our municipal banking business.

Listed below are our brokered deposits:

	December 31,		
	2018	2017	2016
Interest bearing demand	\$ 23,742	\$ 23,820	\$ 426,437
Money market	983,889	773,804	5,560
Savings	—	—	246,572
Reciprocal CDARs ¹	—	102,259	153,060
CDARs one way	150,192	204,331	—
Total brokered deposits	<u>\$ 1,157,823</u>	<u>\$ 1,104,214</u>	<u>\$ 831,629</u>

¹ Reciprocal CDARs represent deposits in which our core deposit clients have elected to diversify their deposits among us and other financial institutions for purposes of obtaining FDIC insurance coverage on their total deposit amount. However, we maintain full control over the client relationship and deposit pricing. We consider reciprocal CDARs core deposits.

Short-term Borrowings. Our primary source of short-term borrowings (which include borrowings with a maturity less than one year) are advances from the FHLB. Short-term borrowings also include federal funds purchased and repurchase agreements.

The following table sets forth information concerning balances and interest rates on our short-term borrowings at the dates indicated.

	December 31,		
	2018	2017	2016
Balance at end of period	\$ 3,958,635	\$ 2,989,093	\$ 1,397,642
Average balance during period	3,375,905	2,239,321	995,693
Maximum amount outstanding at any month end	3,958,635	2,989,093	1,397,642
Weighted average interest rate at end of period	2.48%	1.69%	0.87%
Weighted average interest rate during period	2.25	1.43	0.73

Short-term borrowings are mainly used to fund loan growth. On a daily basis, the amount of short-term borrowings will fluctuate based on the inflows and outflows of deposits and other sources and uses of funds.

Off-Balance Sheet Arrangements and Aggregate Contractual Obligations

In the normal course of our operations, we engage in a variety of financial transactions that, in accordance with GAAP, are not recorded in our financial statements. We enter into these transactions to meet the financing needs of our clients and for general corporate purposes. These transactions include commitments to extend credit and letters of credit and involve, to varying degrees, elements of credit, interest rate, and liquidity risk. We minimize our exposure to loss under these commitments by subjecting them to credit approval and monitoring procedures.

Our off-balance sheet arrangements are described below.

Lending Commitments. Lending commitments include loan commitments, unused credit lines, and letters of credit. These instruments are not recorded in the consolidated balance sheet until funds are advanced under the commitments.

For our non-real estate commercial customers, loan commitments generally take the form of revolving credit arrangements to finance customers' working capital requirements. At December 31, 2018, these commitments totaled \$1,257,031. For our real estate businesses, loan commitments are generally for residential, multi-family and commercial construction projects, which totaled \$300,355 at December 31, 2018. Loan commitments for our retail customers are generally home equity lines of credit secured by residential property and totaled \$116,672 at December 31, 2018. In addition, loan commitments for overdrafts were \$35,581. Letters of credit issued by us generally are standby letters of credit. Standby letters of credit are commitments issued by us on behalf of our customer/obligor in favor of a beneficiary that specify an amount we can be called upon to pay upon the beneficiary's compliance with the terms of the letter of credit. These commitments are primarily issued in favor of local municipalities to support the obligor's completion of real estate development projects. The credit risk involved in issuing letters of credit is essentially the same as that involved in extending loan facilities to customers. Standby letters of credit are conditional commitments to support performance, typically of a contract or the financial integrity of a customer to a third-party, and represent an independent undertaking by us to the third-party. Letters of credit as of December 31, 2018 totaled \$287,779.

See Note 18. "Off-Balance-Sheet Financial Instruments" in the notes to consolidated financial statements for additional information regarding lending commitments.

Contractual Obligations. In the ordinary course of our operations, we enter into certain contractual obligations. Such obligations include operating leases for premises and equipment. The following table summarizes our significant fixed and determinable contractual obligations and other funding needs by payment date at December 31, 2018. Payments for borrowings do not include interest. Payments for operating leases are based on payments specified in the underlying contracts. Loan commitments, including letters of credit and undrawn lines of credit, are presented at contractual amounts; however, since many of these commitments have historically expired unused or partially used, the total amounts of these commitments do not necessarily reflect future cash requirements.

	Payments due by period				
	1 year or less	1-3 years	3-5 years	5 years or more	Total
Contractual obligations:					
FHLB borrowings	\$ 3,937,298	\$ 901,474	\$ —	\$ —	\$ 4,838,772
Other borrowings	21,338	—	—	—	21,338
3.50% Senior Notes	—	181,130	—	—	181,130
Subordinated Notes	—	—	—	172,943	172,943
Time deposits	1,423,423	897,331	156,177	—	2,476,931
Operating leases	20,275	38,743	30,275	56,504	145,797
	<u>5,402,334</u>	<u>2,018,678</u>	<u>186,452</u>	<u>229,447</u>	<u>7,836,911</u>
Other commitments:					
Letters of credit	253,593	34,120	66	—	287,779
Undrawn lines of credit	1,084,514	454,510	109,650	88,641	1,737,315
Total	<u>\$ 6,740,441</u>	<u>\$ 2,507,308</u>	<u>\$ 296,168</u>	<u>\$ 318,088</u>	<u>\$ 9,862,005</u>

See Note 18. "Off-Balance-Sheet Financial Instruments" in the notes to consolidated financial statements for additional information regarding our contractual obligations.

Impact of Inflation and Changing Prices

The consolidated financial statements and related notes have been prepared in accordance with GAAP, which generally requires the measurement of financial position and operating results in terms of historical dollars without consideration for changes in the relative purchasing power of money over time due to inflation. The primary impact of inflation is reflected in increased operating costs. Our assets and liabilities are primarily monetary in nature and, as a result, changes in market interest rates have a greater impact on performance than the effects of inflation.

Liquidity and Capital Resources

Capital. At December 31, 2018, stockholders' equity totaled \$4,428,854 compared to \$4,240,178 at December 31, 2017. The factors that contributed to the change in stockholders' equity for the periods are presented in the following table:

	For the year ended December 31,	
	2018	2017
Beginning of period	\$ 4,240,178	\$ 1,855,183
Net income	447,254	93,031
Stock-based compensation	7,867	8,625
Treasury stock purchased	(159,903)	—
Common stock issued in Astoria Merger	—	2,189,687
Preferred stock issued in Astoria Merger	—	139,412
Other comprehensive (loss) income	(34,650)	469
Dividends on common stock	(63,118)	(44,035)
Dividends on preferred stock	(8,775)	(2,194)
Balance at end of period	\$ 4,428,853	\$ 4,240,178

The increase in stockholders' equity for 2018 was mainly due to net income of \$447,254 and stock based compensation. These increases were partially offset by the repurchase of 9,114,771 common shares at an aggregate cost of \$159,903, dividends on common stock of \$63,118, dividends on preferred stock of \$8,775 and an other comprehensive loss of \$34,650.

The increase in stockholders' equity for 2017 was mainly due to the issuance of 88,829,776 common shares with a fair value of \$2,189,687 in connection with the Astoria Merger, the issuance of 135,000 preferred shares with a fair value of \$139,412 and net income of \$93,031. The increase was also a result of stock based compensation and other comprehensive income. These increases were partially offset by dividends on common stock of \$44,035 and dividends on preferred stock of \$2,194.

The accumulated other comprehensive loss ("AOCI") component of stockholders' equity totaled a net, after-tax unrealized loss of \$65,945 at December 31, 2018 compared to a net, after-tax unrealized loss of \$26,166 at December 31, 2017. The \$34,650 decrease in 2018 was the result of a \$48,377 decrease in the net after-tax value of available for sale securities due to changes in market interest rates, which was partially offset by an increase in AOCI of \$657 related to accretion of the unrealized holding loss on securities transferred to held to maturity in connection with a prior merger, and an unrealized gain of \$13,070 related to retirement plan obligations. In addition, in 2018 we reclassified \$5,129 from AOCI to retained earnings which represented the stranded income tax effects that resulted from the enactment of the Tax Cuts and Jobs Act in 2017. The \$469 increase in 2017 was the result of a \$313 increase in the net after-tax value of available for sale securities due to changes in market interest rates, an increase in AOCI of \$586 related to accretion of the unrealized holding loss on securities transferred to held to maturity in connection with a prior merger, which were partially offset by a decline of \$430 related to accretion of the unrealized holding loss on retirement plan obligations.

Under current regulatory requirements, amounts reported as AOCI related to securities available for sale, securities transferred to held to maturity, and defined benefit pension plans do not reduce or increase regulatory capital and are not included in the calculation of leverage and risk-based capital ratios. Regulatory agencies for banks and bank holding companies utilize capital guidelines to measure Tier 1 and total capital and to take into consideration the risk inherent in both on-balance sheet and off-balance sheet items. See Note 17. "Stockholders' Equity" in the notes to consolidated financial statements.

At December 31, 2018, we held 13,645,073 shares in treasury compared to 5,090,231 at December 31, 2017. We generally use treasury shares for stock-based compensation purposes.

Stock Repurchase Plans. Our Board has authorized the repurchase of up to 20,000,000 shares of our common stock. At December 31, 2018, there were 10,885,229 shares available for repurchase. In the fourth quarter of 2018, we repurchased 9,114,771 shares. See Part II, Item 5. "Market for Registrant's Common Equity, Related Stockholder Matters, Issuer Purchases of Equity Securities" included elsewhere in this Report.

Dividends. We paid a quarterly dividend of \$0.07 per common share in each quarter of 2018, 2017 and 2016. We also pay a quarterly dividend of \$16.25 per preferred share, which were issued in connection with the Astoria Merger.

Basel III Capital Rules. The Basel III Capital Rules became effective for us and the Bank on January 1, 2015 (subject to a phase-in period for certain provisions). In connection with the adoption of the Basel III Capital Rules, we elected to opt-out of the requirement to include most components of AOCI in regulatory capital. Accordingly, amounts reported as AOCI related to securities available for sale, securities transferred to held-to-maturity in connection with the Provident Merger and our remaining post-retirement benefit plans do not increase or reduce regulatory capital and are not included in the calculation of risk-based capital and leverage ratios. Regulatory agencies for banks and bank holding companies utilize capital guidelines designed to measure capital and take into consideration the risk inherent in both on-balance sheet and off-balance sheet items. See Note 17. “Stockholders’ Equity - (a) Regulatory Capital Requirements” in the notes to consolidated financial statements.

Liquidity. Liquidity measures the ability to meet current and future cash flow needs as they become due. The liquidity of a financial institution reflects its ability to meet loan requests, to accommodate possible outflows in deposits and to take advantage of interest rate market opportunities. The ability of a financial institution to meet its current financial obligations is a function of its balance sheet structure, its ability to liquidate assets and its access to alternative sources of funds. The objective of our liquidity management is to manage cash flow and liquidity reserves so that they are adequate to fund our operations and to meet obligations and other commitments on a timely basis and at a reasonable cost. We seek to achieve this objective and ensure that funding needs are met by maintaining an appropriate level of liquid funds through asset/liability management, which includes managing the mix and time to maturity of financial assets and financial liabilities on our balance sheet. Our liquidity position is enhanced by our ability to raise additional funds as needed in the wholesale markets.

Asset liquidity is provided by liquid assets which are readily marketable or pledgeable or which will mature in the near future. Liquid assets include cash, interest-bearing deposits in banks, securities available for sale, cash flow from securities held to maturity and maturities of securities held to maturity.

Our ability to access liabilities in a timely fashion is provided by access to funding sources which include core deposits, federal funds purchased and repurchase agreements. Our liquidity position is continuously monitored and adjustments are made to the balance between sources and uses of funds as deemed appropriate. Liquidity risk management is an important element in our asset/liability management process. We regularly model liquidity stress scenarios to assess potential liquidity outflows or funding problems resulting from economic activity, volatility in the financial markets, unexpected credit events or other significant occurrences. These scenarios are incorporated into our contingency funding plan, which provides the basis for the identification of our liquidity needs. As of December 31, 2018, management is not aware of any events that are reasonably likely to have a material adverse effect on our liquidity, capital resources or operations. In addition, management is not aware of any regulatory recommendations regarding liquidity that would have a material adverse effect on us.

At December 31, 2018, the Bank had \$438,110 in cash on hand and unused borrowing capacity at the FHLB of \$5,224,452. In addition, the Bank may purchase additional federal funds from other institutions, enter into additional repurchase agreements, and acquire deposits from wholesale and other sources.

We are a bank holding company and do not conduct operations. Our primary sources of liquidity are dividends received from the Bank and borrowings from outside sources. Banking regulations may limit the amount of dividends that may be paid by the Bank. The Bank has developed internal capital management policies and procedures and, under these policies and procedures, which are more restrictive than the requirements necessary to maintain a well-capitalized regulatory designation, the Bank could pay dividends to us of approximately \$276,000 at December 31, 2018. We had cash on hand of \$38,141 and capacity under a revolving line of credit facility of \$35,000 at December 31, 2018.

In September 2018, we renewed our \$35,000 revolving line of credit facility with a third-party financial institution that matures on September 2, 2019. The use of proceeds are for general corporate purposes. The facility has not been used and requires us and the Bank to maintain certain ratios related to capital, non-performing assets to capital, reserves to non-performing loans and debt service coverage. We and the Bank were in compliance with all requirements of the line of credit facility at December 31, 2018.

ITEM 7A. Quantitative and Qualitative Disclosures about Market Risk

Management believes that our most significant form of market risk is interest rate risk. The general objective of our interest rate risk management is to determine the appropriate level of risk given our business strategy, and then manage that risk in a manner that is consistent with our policy to limit the exposure of our net interest income to changes in market interest rates. The Bank's Asset/Liability Management Committee ("ALCO"), which consists of certain members of senior management, evaluates the interest rate risk inherent in certain assets and liabilities, our operating environment, and capital and liquidity requirements, and modifies our lending, investing and deposit gathering strategies accordingly. A committee of the Board reviews ALCO's activities and strategies, the effect of those strategies on our net interest margin, and the effect that changes in market interest rates would have on the economic value of our loan and securities portfolios, as well as the intrinsic value of our deposits and borrowings.

We actively evaluate interest rate risk in connection with our lending, investing, and deposit activities. We emphasize the origination of CRE loans, C&I loans and residential fixed-rate mortgage loans that are repaid monthly and bi-weekly, and adjustable-rate residential and consumer loans. Depending on market interest rates and our capital and liquidity position, we may retain all of the fixed-rate, fixed-term residential mortgage loans that we originate or we may sell or securitize all, or a portion of such longer-term loans, generally on a servicing-released basis. We also invest in shorter term securities, which generally have lower yields compared to longer-term investments. Shortening the average maturity of our interest-earning assets by increasing our investments in shorter-term loans and securities may help us to better match the maturities and interest rates of our assets and liabilities, thereby reducing the exposure of our net interest income to changes in market interest rates. These strategies may adversely affect net interest income due to lower initial yields on these investments in comparison to longer-term, fixed-rate loans and investments.

Management monitors interest rate sensitivity primarily through the use of a model that simulates net interest income ("NII") under varying interest rate assumptions. Management also evaluates this sensitivity using a model that estimates the change in our and the Bank's economic value of equity ("EVE") over a range of interest rate scenarios. EVE is the present value of expected cash flows from assets, liabilities and off-balance sheet contracts. The model assumes estimated loan prepayment rates, reinvestment rates and deposit decay rates that seem reasonable, based on historical experience during prior interest rate changes.

Estimated Changes in EVE and NII. The table below sets forth, as of December 31, 2018, the estimated changes in our (i) EVE that would result from the designated instantaneous changes in the forward rate curves, and (ii) NII that would result from the designated instantaneous changes in the U.S. Treasury yield curve. Computations of prospective effects of hypothetical interest rate changes are based on numerous assumptions including relative levels of market interest rates, loan prepayments and deposit decay, and should not be relied on as indicative of actual results.

Interest rates (basis points)	Estimated EVE	Estimated change in EVE		Estimated NII	Estimated change in NII	
		Amount	Percent		Amount	Percent
+300	\$ 3,969,709	\$ (800,883)	(16.8)%	\$ 1,010,257	\$ 22,461	2.3%
+200	4,317,489	(453,103)	(9.5)	1,008,674	20,878	2.1
+100	4,613,284	(157,308)	(3.3)	1,000,860	13,064	1.3
0	4,770,592	—	—	987,796	—	—
-100	4,749,115	(21,477)	(0.5)	959,822	(27,974)	(2.8)
-200	4,519,505	(251,087)	(5.3)	913,061	(74,735)	(7.6)

The table above indicates that at December 31, 2018, in the event of an immediate 200 basis point increase in interest rates, we would expect to experience a 9.5% decrease in EVE and a 2.1% increase in NII, and in the event of an immediate 200 basis point decrease in interest rates, we would expect to experience a 5.3% decrease in EVE and a 7.6% decrease in NII.

Certain shortcomings are inherent in the methodology used in the above interest rate risk measurements. Modeling changes in EVE and NII require making certain assumptions that may or may not reflect the manner in which actual yields and costs respond to changes in market interest rates. The EVE and NII table presented above assumes that the composition of our interest-rate sensitive assets and liabilities existing at the beginning of a period remains constant over the period being measured and, accordingly, the data does not reflect any actions management may undertake in response to changes in interest rates. The table also assumes that a particular change in interest rates is reflected uniformly across the yield curve regardless of the duration to maturity or the re-pricing characteristics of specific assets and liabilities. Accordingly, although the EVE and NII table provides an indication of our sensitivity to interest rate changes at a particular point in time, such measurements are not intended to and do not provide a precise forecast of the effect of changes that market interest rates may have on our net interest income. Actual results will likely differ.

During the fourth quarter of 2018, the federal funds target rate increased a quarter point to 1.25% - 1.50%. U.S. Treasury yields in the two year maturities increased 69 basis points from 1.20% to 1.89% over the 12-months ended December 31, 2018 while the yield on U.S. Treasury 10-year notes decreased five basis points from 2.45% to 2.40% over the same twelve month period. The decrease in rates on longer-term maturities coupled with the increase in rates to short-term maturities resulted in a flatter 2-10 year treasury yield curve at the end of 2018 relative to December 31, 2017. At its December 2018 meeting, the Federal Open Market Committee (the “FOMC”) reiterated its stance that monetary policy remains accommodative. The FOMC further stated that it expects that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate and the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data. However, should economic conditions improve at a faster pace than anticipated, the FOMC could increase the federal funds target rate quicker. This could cause the shorter end of the yield curve to rise disproportionately relative to the longer end, thereby resulting in a flatter yield curve and greater margin compression.

ITEM 8. Financial Statements and Supplementary Data

The following are included in this item:

- Report of Independent Registered Public Accounting Firm
- (A) Consolidated Balance Sheets as of December 31, 2018 and 2017
- (B) Consolidated Income Statements for the years ended December 31, 2018, 2017 and 2016
- (C) Consolidated Statements of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016
- (D) Consolidated Statements of Changes in Stockholders’ Equity for the years ended December 31, 2018, 2017 and 2016
- (E) Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016
- (F) Notes to Consolidated Financial Statements

The supplementary data required by this item (selected quarterly financial data) is provided in Note 22. “Quarterly Results of Operations (Unaudited)” in the notes to consolidated financial statements.

Report of Independent Registered Public Accounting Firm

Stockholders and the Board of Directors of Sterling Bancorp and Subsidiaries
Montebello, New York

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Sterling Bancorp and Subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related consolidated income statements, statements of comprehensive income, changes in stockholders’ equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively referred to as the “financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework: (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework: (2013) issued by COSO.

Basis for Opinions

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

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

Our audits of the financial statements included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Crowe LLP

We have served as the Company's auditor since 2007.

New York, New York

March 1, 2019

STERLING BANCORP AND SUBSIDIARIES
Consolidated Balance Sheets
As of December 31, 2018 and 2017
(Dollars in thousands, except share and per share data)

	December 31,	
	2018	2017
ASSETS:		
Cash and due from banks	\$ 438,110	\$ 479,906
Securities:		
Available for sale, at fair value	3,870,563	3,612,072
Held to maturity, at amortized cost (fair value of \$2,740,522 and \$2,863,909 at December 31, 2018 and December 31, 2017, respectively)	2,796,617	2,862,489
Total securities	6,667,180	6,474,561
Loans held for sale	1,565,979	5,246
Portfolio loans	19,218,530	20,008,983
Allowance for loan losses	(95,677)	(77,907)
Portfolio loans, net	19,122,853	19,931,076
Federal Home Loan Bank (“FHLB”) and Federal Reserve Bank stock, at cost	369,690	284,112
Accrued interest receivable	107,111	94,098
Premises and equipment, net	264,194	321,722
Goodwill	1,613,033	1,579,891
Core deposit and other intangible assets	129,545	153,191
Bank owned life insurance	653,995	651,638
Other real estate owned	19,377	27,095
Other assets	432,240	357,005
Total assets	<u>\$ 31,383,307</u>	<u>\$ 30,359,541</u>
LIABILITIES AND STOCKHOLDERS’ EQUITY		
LIABILITIES:		
Deposits	\$ 21,214,148	\$ 20,538,204
FHLB borrowings	4,838,772	4,510,123
Other borrowings (repurchase agreements)	21,338	30,162
Senior notes	181,130	278,209
Subordinated notes	172,943	172,716
Mortgage escrow funds	72,891	122,641
Other liabilities	453,232	467,308
Total liabilities	<u>26,954,454</u>	<u>26,119,363</u>
Commitments and Contingent liabilities (See Note 18.)		
STOCKHOLDERS’ EQUITY:		
Preferred stock (par value \$0.01 per share; 10,000,000 shares authorized; 135,000 shares issued and outstanding at December 31, 2018 and December 31, 2017)	138,423	139,220
Common stock (par value \$0.01 per share; 310,000,000 shares authorized at December 31, 2018 and December 31, 2017; 229,872,925 shares issued at December 31, 2018 and December 31, 2017; 216,227,852 and 224,782,694 shares outstanding at December 31, 2018 and December 31, 2017, respectively)	2,299	2,299
Additional paid-in capital	3,776,461	3,780,908
Treasury stock, at cost (13,645,073 shares at December 31, 2018 and 5,090,231 shares at December 31, 2017)	(213,935)	(58,039)
Retained earnings	791,550	401,956
Accumulated other comprehensive loss, net of tax benefit of \$(25,429) at December 31, 2018 and \$(17,083) at December 31, 2017	(65,945)	(26,166)
Total stockholders’ equity	<u>4,428,853</u>	<u>4,240,178</u>
Total liabilities and stockholders’ equity	<u>\$ 31,383,307</u>	<u>\$ 30,359,541</u>

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES
Consolidated Income Statements
For the years ended December 31, 2018 and 2017, and 2016
(Dollars in thousands, except share and per share data)

	December 31,		
	2018	2017	2016
Interest and dividend income:			
Loans, including fees	\$ 1,006,496	\$ 570,761	\$ 390,847
Taxable securities	115,971	65,278	42,540
Non-taxable securities	61,062	37,245	23,669
Other earning assets	24,944	9,165	4,495
Total interest and dividend income	<u>1,208,473</u>	<u>682,449</u>	<u>461,551</u>
Interest expense:			
Deposits	130,096	56,110	33,189
Borrowings	110,974	50,196	24,093
Total interest expense	<u>241,070</u>	<u>106,306</u>	<u>57,282</u>
Net interest income	967,403	576,143	404,269
Provision for loan losses	46,000	26,000	20,000
Net interest income after provision for loan losses	<u>921,403</u>	<u>550,143</u>	<u>384,269</u>
Non-interest income:			
Deposit fees and service charges	26,830	17,128	15,166
Accounts receivable management / factoring commissions and other related fees	22,772	17,803	17,695
Loan commissions and fees	16,181	11,637	9,524
Bank owned life insurance	15,651	7,816	5,832
Investment management fees	7,790	2,928	3,710
Net (loss) gain on sale of securities	(10,788)	(344)	7,522
Gain (loss) on sale of fixed assets	11,800	(1)	—
Other	12,961	7,235	11,538
Total non-interest income	<u>103,197</u>	<u>64,202</u>	<u>70,987</u>
Non-interest expense:			
Compensation and employee benefits	220,340	150,254	125,916
Stock-based compensation plans	12,984	8,111	6,518
Occupancy and office operations	68,536	43,649	34,486
Information technology	41,174	19,387	8,866
Amortization of intangible assets	23,646	13,008	12,416
FDIC insurance and regulatory assessments	20,493	11,969	8,240
Other real estate owned, net	1,650	3,423	2,051
Merger-related expense	—	39,232	265
Charge of asset write-downs, systems integration, severance and retention	13,132	105,110	4,485
(Gain) loss on extinguishment of borrowings	(172)	—	9,729
Other	56,587	39,232	34,930
Total non-interest expense	<u>458,370</u>	<u>433,375</u>	<u>247,902</u>
Income before income taxes	566,230	180,970	207,354
Income tax expense	118,976	87,939	67,382
Net income	<u>447,254</u>	<u>93,031</u>	<u>139,972</u>
Preferred stock dividends	7,978	2,002	—
Net income available to common stockholders	<u>\$ 439,276</u>	<u>\$ 91,029</u>	<u>\$ 139,972</u>
Weighted average common shares:			
Basic	224,299,488	157,513,639	130,607,994
Diluted	224,816,996	158,124,270	131,234,462
Earnings per common share:			
Basic	\$ 1.96	\$ 0.58	\$ 1.07
Diluted	1.95	0.58	1.07

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income
For the years ended December 31, 2018 and 2017, and 2016
(Dollars in thousands)

	December 31,		
	2018	2017	2016
Net income	\$ 447,254	\$ 93,031	\$ 139,972
Other comprehensive income (loss):			
Change in unrealized holding (losses) gains on securities available for sale	(77,645)	173	(17,723)
Change in net unrealized gain on securities transferred to held to maturity	908	969	1,473
Reclassification adjustment for net realized losses (gains) included in net income	10,788	344	(7,522)
Change in funded status of defined benefit plans and acceleration of future amortization of accumulated other comprehensive gain (loss) on defined benefit pension plan	17,824	(711)	390
Total other comprehensive (loss) income items	(48,125)	775	(23,382)
Related income tax benefit (expense)	13,475	(306)	8,871
Other comprehensive (loss) income	(34,650)	469	(14,511)
Total comprehensive income	<u>\$ 412,604</u>	<u>\$ 93,500</u>	<u>\$ 125,461</u>

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES

Consolidated Statements of Changes in Stockholders' Equity
For the years ended December 31, 2018 and 2017, and 2016
(Dollars in thousands, except share and per share data)

	Number of outstanding common shares	Preferred stock	Common stock	Additional paid-in capital	Treasury stock	Retained earnings	Accumulated other comprehensive (loss) income	Total stockholders' equity
Balance at December 31, 2015	130,006,926	\$ —	\$ 1,367	\$ 1,506,612	\$ (76,190)	\$ 245,408	\$ (12,124)	\$ 1,665,073
Net income	—	—	—	—	—	139,972	—	139,972
Other comprehensive loss	—	—	—	—	—	—	(14,511)	(14,511)
Stock option & other stock transactions, net	499,659	—	—	486	5,894	(1,198)	—	5,182
Restricted stock awards, net	380,985	—	—	(762)	4,108	1,577	—	4,923
Common equity issued, net of cost of issuance	4,370,000	—	44	90,951	—	—	—	90,995
Cash dividends declared (\$0.28 per common share)	—	—	—	—	—	(36,451)	—	(36,451)
Balance at December 31, 2016	135,257,570	—	1,411	1,597,287	(66,188)	349,308	(26,635)	1,855,183
Net income	—	—	—	—	—	93,031	—	93,031
Other comprehensive income	—	—	—	—	—	—	469	469
Common stock issued in Astoria Merger transaction	88,829,776	—	888	2,188,799	—	—	—	2,189,687
Preferred stock issued in Astoria Merger transaction, 135,000 shares	—	139,412	—	—	—	—	—	139,412
Stock option & other stock transactions, net	244,252	—	—	149	3,328	(750)	—	2,727
Restricted stock awards, net	451,096	—	—	(5,327)	4,821	6,404	—	5,898
Cash dividends declared (\$0.28 per common share)	—	—	—	—	—	(44,035)	—	(44,035)
Cash dividends paid (\$16.25 per preferred share)	—	(192)	—	—	—	(2,002)	—	(2,194)
Balance at December 31, 2017	224,782,694	139,220	2,299	3,780,908	(58,039)	401,956	(26,166)	4,240,178
Net income	—	—	—	—	—	447,254	—	447,254
Other comprehensive loss	—	—	—	—	—	—	(34,650)	(34,650)
Stock option & other stock transactions, net	66,028	—	—	6	831	(140)	—	697
Restricted stock awards, net	493,901	—	—	(4,453)	3,176	8,447	—	7,170
Purchase of treasury stock	(9,114,771)	—	—	—	(159,903)	—	—	(159,903)
Cash dividends declared (\$0.28 per common share)	—	—	—	—	—	(63,118)	—	(63,118)
Cash dividends declared (\$65.00 per preferred share)	—	(797)	—	—	—	(7,978)	—	(8,775)
Reclassification of the stranded income tax effects from the enactment of the Tax Cuts and Jobs Act from accumulated other comprehensive (loss)	—	—	—	—	—	5,129	(5,129)	—
Balance at December 31, 2018	216,227,852	\$ 138,423	\$ 2,299	\$ 3,776,461	\$ (213,935)	\$ 791,550	\$ (65,945)	\$ 4,428,853

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Cash Flows
For the years ended December 31, 2018 and 2017, and 2016
(Dollars in thousands)

	December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net income	\$ 447,254	\$ 93,031	\$ 139,972
Adjustments to reconcile net income to net cash provided by operating activities:			
Provisions for loan losses	46,000	26,000	20,000
Charge of asset write-downs, systems integration, severance and retention	13,132	105,110	4,485
(Gain) loss on extinguishment of debt	(172)	—	9,729
(Gain) loss and write-downs on other real estate owned	(1,001)	1,715	294
(Gain) loss on sale of premises and equipment	(11,800)	1	—
Depreciation and amortization of premises and equipment	20,349	11,670	8,375
Amortization of intangibles	23,646	13,008	12,416
Amortization of low income housing tax credits	6,655	1,067	536
Net gains on loans held for sale	(41)	(954)	(7,591)
Net losses (gains) on sales of securities	10,788	344	(7,522)
Net (gain) on sale of trust division	—	—	(2,255)
Net (accretion) on loans	(110,942)	(44,242)	(18,093)
Net amortization of premiums on securities	38,985	24,061	16,024
Amortization of premium on certificates of deposit	(6,178)	(1,722)	—
Net (amortization of premium) accretion of discount, on borrowings	(1,748)	144	1,053
Restricted stock expense	12,978	7,961	6,114
Stock option compensation expense	6	149	404
Originations of loans held for sale	(52,919)	(6,224)	(447,950)
Proceeds from sales of loans held for sale	33,005	44,318	447,762
Increase in cash surrender value of BOLI	(15,651)	(7,816)	(5,832)
Deferred income tax expense (benefit)	56,903	81,383	(890)
Other adjustments (principally net changes in other assets and other liabilities)	(114,474)	(106,399)	21,868
Net cash provided by operating activities	394,775	242,605	198,899
Cash flows from investing activities:			
Purchases of securities:			
Available for sale	(873,557)	(1,585,174)	(976,383)
Held to maturity	(145,685)	(1,556,670)	(751,206)
Proceeds from maturities, calls and other principal payments on securities:			
Available for sale	345,037	276,872	286,371
Held to maturity	177,790	70,847	73,925
Proceeds from sales of securities available for sale	186,914	2,516,308	858,531
Proceeds from sales of securities held to maturity	254	—	—
Loan originations, net	(123,454)	(1,054,704)	(1,298,341)
Portfolio loans purchased	(113,698)	(226,831)	(163,320)
Proceeds from sale of loans held for investment	—	33,740	121,028
Proceeds from sales of other real estate owned	23,942	8,881	6,205
Purchase of FHLB and FRB stock, net	(85,578)	(149,014)	(18,340)
Purchase of low income housing tax credit	(20,810)	(14,284)	—
Redemption of and benefits received on bank owned life insurance	13,294	3,585	2,231
Purchases of premises and equipment	(24,015)	(8,259)	(4,155)
Proceeds from the sale of premises and equipment	58,551	—	—
Cash (paid for) received from acquisitions	(481,544)	275,409	(346,690)
Net cash (used in) investing activities	(1,062,559)	(1,409,294)	(2,210,144)

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Cash Flows
For the years ended December 31, 2018 and 2017, and 2016
(Dollars in thousands)

	December 31,		
	2018	2017	2016
Cash flows from financing activities:			
Net increase in transaction, savings and money market deposits	638,651	1,309,621	1,509,054
Net increase (decrease) in time deposits	43,471	117,985	(20,802)
Net (decrease) increase in short-term FHLB borrowings	(260,000)	(189,000)	331,000
Advances of term FHLB borrowings	4,025,000	3,978,415	1,050,000
Repayments of term FHLB borrowings	(3,435,000)	(2,659,464)	(999,896)
Net (decrease) increase in other borrowings	(8,824)	13,520	76
Repayment of Senior Notes	(96,455)	—	(23,793)
Repayment of debt assumed in acquisition	—	(1,143,279)	—
Issuance of Bank Subordinated Notes	—	—	171,813
Net (decrease) in mortgage escrow funds	(49,750)	(31,198)	(206)
Proceeds from stock option exercises	691	2,578	3,588
Proceeds from issuance of common equity	—	—	90,995
Treasury shares purchased	(159,903)	—	—
Cash dividends paid - common stock	(63,118)	(44,035)	(36,451)
Cash dividends paid - preferred stock	(8,775)	(2,194)	—
Net cash provided by financing activities	625,988	1,352,949	2,075,378
Net (decrease) increase in cash and cash equivalents	(41,796)	186,260	64,133
Cash and cash equivalents at beginning of period	479,906	293,646	229,513
Cash and cash equivalents at end of period	<u>\$ 438,110</u>	<u>\$ 479,906</u>	<u>\$ 293,646</u>
Supplemental cash flow information:			
Interest payments	\$ 236,807	\$ 114,391	\$ 57,971
Income tax payments	32,365	69,675	64,904
Real estate acquired in settlement of loans	15,223	7,967	4,780
Securities purchased pending settlement	—	—	24,720
Loans transferred from held for investment to held for sale	1,540,819	33,740	121,028
Acquisitions:			
Non-cash assets acquired:			
Securities available for sale	\$ —	\$ 243,017	\$ —
Securities held to maturity	—	2,858,776	—
Loans held for sale	—	497	—
Total loans, net	439,622	9,209,398	320,447
FRB stock	—	—	—
Accrued interest receivable	—	34,094	1,443
Goodwill	39,356	883,291	25,698
Core deposit and other intangibles	—	99,938	1,500
Bank owned life insurance	—	447,518	—
Premises and equipment, net	379	267,815	176
Other real estate owned	—	16,105	—
Other assets	7,071	335,612	2,265
Total non-cash assets acquired	<u>486,428</u>	<u>14,396,061</u>	<u>351,529</u>

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Cash Flows
For the years ended December 31, 2018 and 2017, and 2016
(Dollars in thousands)

	December 31,		
	2018	2017	2016
Liabilities assumed:			
Deposits	—	9,044,061	—
Escrow deposits	—	140,267	—
FHLB and other borrowings	—	1,589,464	—
Other borrowings	—	1,143,279	—
Subordinated debentures	—	201,520	—
Other liabilities	4,884	223,780	4,839
Total liabilities assumed	<u>4,884</u>	<u>12,342,371</u>	<u>4,839</u>
Preferred stock assumed	—	139,412	—
Net non-cash asset acquired	481,544	1,914,278	346,690
Cash and cash equivalents acquired in acquisitions	20,508	275,409	4,762
Total consideration paid	<u>\$ 502,052</u>	<u>\$ 2,189,687</u>	<u>\$ 351,452</u>

See accompanying notes to consolidated financial statements.

The Company completed the following acquisitions which are included in the “Acquisitions” portion of the statement of cash flows for the following periods: (i) Advantage Funding Management Company, Inc. for the year ended December 31, 2018; (ii) Astoria Financial Corporation for the year ended December 31, 2017; and (iii) NewStar Business Credit for the year ended December 31, 2016.

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(1) Basis of Financial Statement Presentation and Summary of Significant Accounting Policies

Nature of Business

Sterling Bancorp (“Sterling” or the “Company”) is a bank holding company and financial holding company under the Bank Holding Company Act of 1956. Sterling is a Delaware corporation that owns all of the outstanding shares of Sterling National Bank (the “Bank”). Sterling is listed on the New York Stock Exchange under the symbol STL.

The Bank, an independent, full-service national bank founded in 1888, is headquartered in Montebello, New York and is the principal subsidiary of Sterling. The Bank accounts for substantially all of Sterling’s consolidated assets and results of operations. The Bank operates through commercial banking teams and financial centers which serve the greater New York metropolitan region. The Bank targets the following geographic markets: (i) the New York Metro Market, which includes Manhattan, the boroughs and Long Island; and (ii) the New York Suburban Market, which consists of Rockland, Orange, Sullivan, Ulster, Putnam and Westchester counties in New York and Bergen County in New Jersey. The Bank also operates its commercial finance businesses, which include asset-based lending, payroll financing, factoring, warehouse lending, equipment financing, and public sector financing, which target markets across the U.S.

The Bank’s principal business is accepting deposits and, together with funds generated from operations and borrowings, investing in various types of loans and securities. The Bank’s deposits are insured up to applicable limits by the Deposit Insurance Fund of the Federal Deposit Insurance Corporation (“FDIC”). The Office of the Comptroller of the Currency (“OCC”) and the Federal Reserve Board are the primary regulators for the Bank and the Company, respectively.

Nature of Operations and Principles of Consolidation

The consolidated financial statements include the accounts of Sterling, the Bank and the Bank’s wholly-owned subsidiaries. The Bank’s subsidiaries included at December 31, 2018: (i) Sterling National Funding Corp, a company that originates loans to municipalities and governmental entities and acquires securities issued by state and local governments; (ii) Sterling REIT, Inc., a real estate investment trust that holds a portion of the Company’s real estate loans; (iii) Provest Services Corp. II, which has engaged a third-party provider to sell mutual funds and annuities to the Bank’s customers; (iv) AF Agency, Inc., which provides various annuity and wealth management products through contractual agreements with various third parties, and makes insurance products available, primarily to customers of the Bank; (v) several limited liability companies which hold other real estate owned; and (vi) several other companies that have no significant operations or assets. Intercompany transactions and balances are eliminated in consolidation.

Merger with Astoria Financial Corporation

On October 2, 2017, Astoria Financial Corporation (“Astoria”) merged with and into Sterling (the “Astoria Merger”). In connection with the merger, Astoria Bank, the principal subsidiary of Astoria, also merged with and into the Bank.

Merger with Hudson Valley Holding Corp.

On June 30, 2015, Hudson Valley Holding Corp. (“HVHC”) merged with and into Sterling (the “HVB Merger”). In connection with the merger, Hudson Valley Bank, the principal subsidiary of HVHC, also merged with and into the Bank.

Merger with Sterling Bancorp

On October 31, 2013, Provident New York Bancorp (“Legacy Provident”) merged with Sterling Bancorp (“Legacy Sterling”). In connection with the merger, the following corporate actions occurred:

- Legacy Sterling merged with and into Legacy Provident. Legacy Provident was the accounting acquirer and the surviving entity.
- Legacy Provident changed its legal entity name to Sterling Bancorp and became a bank holding company and a financial holding company as defined by the Bank Holding Company Act of 1956, as amended.
- Provident Bank converted to a national bank charter.
- Sterling National Bank merged into Provident Bank.
- Provident Bank changed its legal entity name to Sterling National Bank.

We refer to the transactions detailed above collectively as the “Provident Merger.”

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Use of Estimates

To prepare financial statements in conformity with U.S. generally accepted accounting principles management makes estimates and assumptions based on available information. These estimates and assumptions affect the amounts reported in the financial statements and the disclosures provided and actual results could differ. An estimate that is particularly susceptible to significant near-term change is the allowance for loan losses, which is discussed below.

Reclassifications

Certain amounts from prior periods have been reclassified to conform to the current period presentation. Reclassifications had no effect on prior period net income or total stockholders' equity.

Cash Flows

For purposes of reporting cash flows, cash equivalents include cash and deposits with other financial institutions with an original maturity of 90 days or less. Net cash flows are reported for customer loan and deposit transactions, interest bearing deposits in other financial institutions, short-term FHLB borrowings, mortgage escrow funds and other borrowings.

Restrictions on Cash

The Bank was required to have \$70,709 and \$118,113 of cash on hand or on deposit with the Federal Reserve Bank to meet regulatory reserve and clearing requirements at December 31, 2018 and 2017, respectively.

Securities

Securities include U.S. government agency and government sponsored agencies securities, state and municipal and corporate bonds, and mortgage-backed securities, including collateralized mortgage obligations. The Company classifies its securities among two categories: held to maturity and available for sale. The Company determines the appropriate classification of the Company's securities at the time of purchase. Held to maturity securities are limited to debt securities for which there is the intent and the ability to hold to maturity. These securities are reported at amortized cost. The Company does not engage in trading activities. All other debt and marketable equity securities are classified as available for sale.

Available for sale securities are reported at fair value, with unrealized gains and losses (net of the related deferred income tax effect) excluded from earnings and reported in a separate component of stockholders' equity (accumulated other comprehensive income or loss). Available for sale securities include securities that the Company intends to hold for an indefinite period of time, such as securities to be used as part of the Company's asset/liability management strategy or securities that may be sold to fund loan growth, in response to changes in interest rates and prepayment risks, the need to increase capital, or similar factors.

Premiums on debt securities are generally amortized in interest income on a level yield basis over the earlier of the call date or maturity. Discounts on debt securities are accreted in interest income on a level yield basis over the period to maturity. Amortization of premiums and accretion of discounts on mortgage-backed securities are based on the estimated cash flows of the mortgage-backed securities, periodically adjusted for changes in estimated lives, on a level yield basis. Gains and losses on sales of securities are recorded on the trade date and determined using the specific identification method.

Securities are evaluated for other-than-temporary-impairment ("OTTI") at least quarterly, and more frequently when economic and market conditions warrant such an evaluation. For securities in an unrealized loss position, the Company considers the extent and duration of the unrealized loss, and the financial condition of the issuer. The Company also assesses whether it intends to sell, or it is more likely than not that it will be required to sell, a security in an unrealized loss position before recovery of its amortized cost basis. If either criteria regarding intent to sell is met, the entire difference between amortized cost and fair value is recognized as impairment through earnings. If (i) the Company does not expect to recover the entire amortized cost basis of the security; (ii) the Company does not intend to sell the security; (iii) and it is not more likely than not that the Company will be required to sell the security before recovery of its amortized cost basis, the OTTI is separated into (a) the amount representing the credit loss and (b) the amount related to all other factors. The amount of OTTI related to credit loss is recognized in earnings while the amount related to other factors is recognized in other comprehensive income, net of applicable taxes. The cost basis of individual equity securities is written down to estimated fair value through a charge to earnings when declines in value below cost are considered to be other than temporary. As of December 31, 2018, the Company did not intend to sell, nor is it more likely than not that it would be required to sell, any of its debt securities with unrealized losses prior to recovery of its amortized cost basis less any current period credit loss. (See Note 3. "Securities" and see Note 25. "Subsequent Events").

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Loans Held For Sale

Residential mortgage loans originated and intended for sale in the secondary market are carried at the lower of aggregate cost or fair value, as determined by outstanding commitments from investors. Mortgage loans held for sale are generally sold with servicing rights released. Commercial loans originated and intended for sale generally represent loan syndications and are carried at amortized cost, which approximates fair value, as these loans are variable-rate loans that reprice frequently with no significant change in credit risk since origination. Net unrealized losses, if any, are recorded as a valuation allowance and charged to earnings.

Loans that were previously held for investment that the Company intends to sell are transferred to loans held for sale at the lower of cost or market (fair value). At December 31, 2018, the Company transferred residential mortgage loans with an unpaid principal balance of \$1,601,844 to held for sale. These loans represent substantially all of the remaining 15-year and 30-year fixed rate residential mortgage loans acquired in the Astoria Merger. These loans were subject to purchase accounting discounts, and the related purchase accounting discount of \$61,025 was also transferred to loans held for sale. These loans are subject to a purchase agreement with a third party and, based on the negotiated sales price, there were no amounts reflected as charge-offs recorded at the time of the transfer. Changes in the fair value of the loans are recognized in non-interest income or expense.

Portfolio Loans

Loans where Sterling has the intent and ability to hold for the foreseeable future or until maturity or payoff (other than loans held for sale) are reported at the principal balance outstanding, net of acquisition related purchase accounting adjustments, deferred loan fees and costs from loan originations and the allowance for loan losses. Interest income on loans is accrued on the unpaid principal balance. The Company defers nonrefundable loan origination and commitment fees, and certain direct loan origination costs, and amortizes the net amount as an adjustment of the yield over the estimated life of the loan using the level-yield method without anticipating prepayments. If a loan is prepaid or sold, the net deferred amount is recognized in the income statement at that time. Interest and fees on loans include prepayment fees and late charges collected.

A loan is placed on non-accrual status upon the earlier of: (i) when Sterling determines that the borrower may likely be unable to meet contractual principal or interest obligations; or (ii) when payments are 90 days or more past due based on the contractual terms of the loan, unless the loan is well secured and in the process of collection. Accrual of interest ceases and, in general, uncollected past due interest is reversed and charged against current interest income. Interest payments received on non-accrual loans, including impaired loans, are generally applied to reduce the principal balance outstanding and not recognized as income unless warranted based on the borrower's financial condition and payment record. (See Note 4. "Portfolio Loans").

Acquired Loans, Including Purchased Credit Impaired Loans

Loans the Company acquired in acquisitions are initially recorded at fair value with no carryover of the related allowance for loan losses. Determining the fair value of the loans involves estimating the amount and timing of principal and interest cash flows initially expected to be collected on the loans and discounting those cash flows at an appropriate market rate of interest. Acquired loans are part of our portfolio loans in the consolidated balance sheets and are presented separately in Note 4. "Portfolio Loans".

Loans for which there is both evidence of deterioration of credit quality since origination and probability, at acquisition, that all contractually required payments would not be collected represent purchase credit impaired loans ("PCI loans"). For PCI loans, the Company initially determines which loans will be treated under the cost recovery method (similar to a non-accrual loan) from loans that will be subject to accretion, which represent loans for which the Company was unable to reasonably estimate the timing and amount of expected cash flows. Other acquired loans, including PCI loans, and loans that met the criteria for non-accrual designation at the time of acquisition, are subject to accretion if the Company can reasonably estimate the timing and amount of the expected cash flows on such loans and if the Company expects to fully collect the new carrying value of the loans.

The Company recognizes the accretible yield, which is defined as the excess of all cash flows expected at acquisition over the initial fair value of the loan, as interest income on a level-yield basis over the expected remaining life of the loan. The excess of the loan's contractually required payments over the cash flows expected to be collected is the nonaccretible difference. The nonaccretible difference is not recognized as an adjustment of yield, a loss accrual, or a valuation allowance. Going forward, on a quarterly basis, the Company continues to evaluate whether the timing and the amount of cash to be collected are reasonably expected. Subsequent significant increases in cash flows the Company expects to collect will first reduce any previously recognized valuation allowance and then be reflected prospectively as an increase to the level yield. Subsequent decreases in expected cash flows may result in the loan being considered impaired. Interest income is not recognized to the extent that the net investment in the loan would increase to an amount greater than the estimated payoff amount.

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For PCI loans, the expected cash flows reflect anticipated prepayments, determined on a loan by loan basis according to the anticipated collection plan of these loans. The expected prepayments used to determine the accretable yield are consistent between the cash flows expected to be collected and projections of contractual cash flows so as to not affect the nonaccretable difference. Changes in prepayment assumptions may change the amount of interest income and principal expected to be collected.

For loans for which there was no clear evidence of deterioration of credit quality since origination nor evidence that all contractually required payments would not be collected, the Company accretes interest income based on the contractually required cash flows.

Acquired loans at December 31, 2018 and 2017 include loans that were acquired in the following transactions: the Advantage Funding Acquisition (as defined below; See Note 2. "Acquisitions"); the Astoria Merger; the restaurant franchise financing portfolio acquisition from GE Capital; the NBSC Acquisition, the HVB Merger, and the Provident Merger. Under our current credit and accounting guidelines, once a loan relationship reaches maturity and is re-underwritten, the loan is no longer considered an acquired loan and is included in originated loans. In addition, acquired performing loans that were subsequently subject to a credit evaluation, such as after designation as criticized or classified or placed on non-accrual since the acquisition date, are also included in originated loans. Through this process acquired loans that were subject to a purchase accounting adjustment with a life of loan loss estimate become subject to our loan loss methodology and allowance for loan losses evaluation methodology.

Allowance for Loan Losses

The allowance for loan losses is a valuation allowance, established through a provision for loan losses charged to expense, which represents management's best estimate of probable incurred credit losses inherent in the loan portfolio. The level of the allowance for loan losses reflects management's continuing evaluation of loan loss experience, specific credit risks, current loan portfolio quality, industry and loan type concentrations, economic and regulatory conditions and unidentified losses inherent in the loan portfolios. The allowance for loan losses is a critical accounting estimate and requires substantial judgment of management. The allowance for loan losses consists of specific and general components. The specific component relates to loans that are individually classified as impaired when, based on current information and events, it is probable that the Company will be unable to collect all amounts due according to the contractual terms of the loan agreement. Loans in which the borrower is experiencing financial difficulties and for which the terms have been modified resulting in a concession are considered troubled debt restructurings ("TDRs") and classified as impaired.

Factors considered by the Company in determining impairment include payment status, collateral value, and the probability of collecting scheduled principal and interest when due. Loans that experience insignificant payment delays and payment shortfalls generally are not classified as impaired. The Company determines the significance of payment delays and payment shortfalls on a case-by-case basis, taking into account all circumstances surrounding the loan and the borrower, including the length of the delay, reasons for the delay, prior payment history and the amount of the shortfall in relation to the total amount owed.

The Company's policy is to evaluate loans over \$750 individually for impairment. If a loan is impaired, and there is a shortfall of the present value of the estimated future cash flows using the existing interest rate of the loan or as determined by the fair value of collateral if repayment is expected solely from the collateral, the Company's practice is to charge-off the identified impairment. As a result, at December 31, 2018 and 2017, there was no portion of the allowance for loan losses allocated to impaired loans.

The general component of the allowance for loan losses covers loans that are collectively evaluated for impairment. Large groups of smaller balance homogeneous loans, such as consumer loans, which include home equity lines of credit, and residential mortgage loans are generally collectively evaluated for impairment and they are not included in the separately identified impairment disclosures. The general allowance for loan losses component also includes loans that are not individually identified for impairment evaluation, such as commercial loans below the individual evaluation threshold as well as those loans that are individually evaluated but not considered impaired, including loans rated special mention. The general component of the allowance is based on historical loss experience adjusted for current factors. The historical loss experience is determined by portfolio segment and is based on the actual loss history experienced by the Company over the most recent three years, consumer loans which is based on the most recent two years. The actual loss experience is supplemented with qualitative loss factors that are determined by management and are adjusted to reflect management's evaluation of:

- levels of, and trends in, delinquencies and non-performing loans, and criticized and classified loans;
- trends in volume of loans;
- effects of exceptions to lending policies and procedures;

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- experience, ability, and depth of lending management and staff;
- national and local economic trends and conditions;
- concentrations of credit by such factors as property type, industry, and relationship; and
- for commercial loans, trends in risk ratings.

The Company applies the methodology described above to each portfolio segment. These segments include: traditional commercial and industrial (“C&I”), asset-based lending, payroll finance, warehouse lending, factored receivables, equipment financing, and public sector finance (collectively the C&I portfolio,) loans collateralized by real estate including commercial real estate (“CRE”), multi-family, and acquisition, development and construction (“ADC”) loans, residential mortgage, and certain consumer loans including home equity lines of credit.

C&I lending presents a risk because repayment depends on the successful operation of the business, which is subject to a wide range of risks and uncertainties. In addition, the ability to successfully liquidate collateral, if any, is subject to a variety of risks because the Company must gain control of assets used in the borrower’s business before foreclosing, which it cannot be assured of doing, and the value in a foreclosure sale or other means of liquidation is uncertain.

In addition, CRE and multi-family loans subject the Company to the risks that the property securing the loan may not generate sufficient cash flow to service the debt or the borrower may use the cash flow for other purposes. In addition, if necessary, the foreclosure process may be slow and properties may deteriorate in the process. The market values are also subject to a wide variety of factors, including general economic conditions, industry specific factors, environmental factors, interest rates and the availability and terms of credit.

ADC lending is considered higher risk and exposes the Company to greater credit risk than permanent mortgage financing. The repayment of ADC loans depends upon the sale of the property to third parties or the availability of permanent financing upon completion of all improvements. The Company has deemphasized originations of land acquisition and land development loans; however, it does originate construction loans to select clients principally within its immediate footprint.

When the Company evaluates residential mortgage loans and home equity loans (which are included as consumer loans), it weighs both the credit capacity of the borrower and the collateral value of the home. If unemployment or underemployment increase, the credit capacity of underlying borrowers will decrease, which increases the risk of such loan. Similarly, as the Company obtains a mortgage on the property, if home prices decline, it is exposed to risk in both its first mortgage and equity lending programs due to declines in the value of its collateral. The Company is also exposed to risk because the time to foreclose is significant and has become longer under current market conditions.

For C&I loans, CRE, multi-family and ADC loans the Company evaluates available financial information from the borrower as well as collateral pledged, evaluates whether the borrower can continue to service the debt and their near term prospects. When the Company concludes the collateral and or debt service capacity of the borrower are insufficient to repay its debt, it charges-off the amount that is deemed uncollectible. For unsecured consumer loans, charge-offs are recognized once the loan is 90 days to 120 days or more past due or the borrower files for bankruptcy protection. For secured consumer loans and residential mortgage loans the company monitors the value of the collateral and the borrower’s ability to service debt and records a charge-off when it becomes aware of the loss from and within the time frames specified by regulatory guidance.

Subsequent recoveries, if any, are credited to the allowance for loan losses.

Troubled Debt Restructuring

TDR is a formally renegotiated loan in which the Bank, for economic or legal reasons related to a borrower’s financial difficulties, grants a concession to the borrower that would not have been granted to the borrower otherwise. At the time of restructuring, the Company evaluates whether a TDR loan should remain on accrual based on the accrual status immediately prior to modification and whether, as a result of the TDR, the Company recorded a partial charge-off. A TDR on accrual prior to modification may remain on accrual status provided the Company believes, based on its credit analysis, that collection of principal and interest in accordance with the modified terms is reasonably certain. If the restructuring results in a partial charge-off, the loan is generally classified as non-accrual. Restructured loans can convert from non-accrual to accrual status when said loans have demonstrated performance, generally evidenced by six months of consistent payment performance in accordance with the restructured terms, or by the presence of other significant items. (See Note 4. “Portfolio Loans”).

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Transfers of Financial Assets

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

Federal Reserve Bank of New York and Federal Home Loan Bank Stock

As a member of the Federal Reserve Bank of New York (“FRB”) and the Federal Home Loan Bank of New York (“FHLB”), the Bank is required to hold a certain amount of FRB and FHLB common stock. This stock is a non-marketable equity security and is reported at cost. Both cash and stock dividends are reported as interest and dividend income on other earning assets in the consolidated income statements.

Premises and Equipment

Land is reported at cost, while premises and equipment are reported at cost, less accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful lives of the related assets, which range from three years for equipment and 40 years for premises. Leasehold improvements are amortized on a straight-line basis over the terms of the respective leases, including renewal options, or the estimated useful lives of the improvements, whichever is shorter. Routine holding costs are charged to expense as incurred, while significant improvements are capitalized. The Company recognizes an impairment charge to its premises and equipment, generally in connection with a decision to consolidate or close a financial center. Impairment is based on the excess of the carrying amount of assets over the fair value of the assets. Fair value is determined by third-party valuations or appraisals and evaluations prepared by management. (See Note 6. “Premises and Equipment, Net”).

Goodwill, Trade Names and Other Intangible Assets

Goodwill resulting from business combinations represents the excess of the purchase price over the fair value of the net assets of businesses acquired. Goodwill and trade names (which are included with core deposits and other intangible assets in the consolidated balance sheets) acquired in a purchase business combination that have an indefinite useful life are not amortized, but are tested for impairment at least annually. Goodwill and trade names are the only intangible assets with an indefinite life on the Company’s balance sheet. The Company operates as one reporting unit. Goodwill is tested for impairment in the fourth quarter of each year, or on an interim basis if an conditions warrant that could more likely than not reduce the fair value of the reporting unit below its carrying value.

Core deposit intangibles recorded in acquisitions are amortized to expense using an accelerated method over their estimated lives of eight to ten years. Non-compete agreements are amortized on a straight line basis over their estimated life. Impairment losses on intangible assets and other long-term assets are charged to expense, if and when they occur, with the assets recorded at fair value. (See Note 7. “Goodwill and Other Intangible Assets”).

Bank Owned Life Insurance (“BOLI”)

The Company owns life insurance policies (purchased and acquired) on certain officers and key executives. BOLI is recorded at its cash surrender value (or the amount that can be realized). Changes in the net cash surrender value of the policies, as well as insurance proceeds received, are included in non-interest income on the consolidated income statements and are not subject to income taxes.

In the Astoria Merger the Company acquired BOLI with a carrying value of \$441,840 and \$441,751, at December 31, 2018 and 2017, respectively, which included a claims stabilization reserve of \$35,391 and \$32,624. Repayment of the claims stabilization reserve (funds transferred from the cash surrender value to provide for future death benefit payments) is guaranteed by the insurance carrier provided that certain conditions are met at the date of contract surrender. The Company satisfied these conditions at December 31, 2018 and 2017.

Other Real Estate Owned (“OREO”)

Real estate properties acquired through loan foreclosures are recorded initially at estimated fair value, less expected sales costs, with any resulting write-down charged to the allowance for loan losses. The carrying amount of an OREO asset is reduced by a charge to OREO, net expense to reflect any subsequent declines in estimated fair value. Fair value estimates are based on recent appraisals and other available information. Routine holding costs are charged to expense as incurred, while significant improvements are capitalized. Gains and losses on sales of OREO properties are recognized upon disposition.

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Mortgage Servicing Rights

Mortgage servicing rights are included in other assets in the consolidated balance sheets. Servicing assets are initially recognized as separate assets at fair value when rights are acquired through acquisition or through the sale of residential mortgage loans with servicing retained. Servicing rights are accounted for under the amortization method. Under that method, capitalized servicing rights are amortized periodically to expense in proportion to and over the expected net servicing income.

Servicing rights are evaluated for impairment based upon the fair value of the rights as compared to carrying amount. Impairment is determined by stratifying rights into groupings based on predominant risk characteristics, such as interest rate, loan type and investor type. Impairment is recognized through a valuation allowance for an individual grouping, to the extent that fair value is less than the carrying amount. If the Company later determines that all or a portion of the impairment no longer exists for a particular grouping, a reduction of the allowance may be recorded as a reduction of servicing expense (which is part of other non-interest expense). (See Note 20. "Fair Value Measurements" for a discussion of how fair value is calculated.)

Other Borrowings - Securities Repurchase Agreements

In securities repurchase agreements, the Company transfers securities to a counterparty under an agreement to repurchase the identical securities at a fixed price on a future date. These agreements are accounted for as secured financing transactions since the Company maintains effective control over the transferred securities and the transfer meets other specified criteria. Accordingly, the transaction proceeds are recorded as borrowings and the underlying securities continue to be carried in the Company's investment securities portfolio. Disclosure of the pledged securities is made in the consolidated balance sheets if the counterparty has the right by contract to sell or re-pledge such collateral. (See Note 9. "Borrowings, Senior Notes and Subordinated Notes").

Income Taxes

Income tax expense includes U.S. federal corporate income taxes and income taxes due to states and other jurisdictions in which the Company operates. In addition, for the year ended December 31, 2017, income tax expense included the impact of the enactment of the Tax Cuts and Jobs Act of 2017 (the "Tax Act") which reduced the U.S. federal corporate income tax rate from 35% to 21% and resulted in a charge to reduce the carrying value of the Company's net deferred income tax assets, which are included in the consolidated balance sheets as part of other assets.

Net deferred tax assets are recognized for the estimated future tax effects attributable to "temporary differences" between the financial statement carrying amounts and the tax bases of existing assets and liabilities. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which the temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax laws or rates is recognized in income tax expense in the period that includes the enactment date of the change.

A deferred tax liability is recognized for all temporary differences that will result in future taxable income. A deferred tax asset is recognized for all temporary differences that will result in future tax deductions, subject to reduction of the asset by a valuation allowance in certain circumstances. This valuation allowance is recognized if, based on an analysis of available evidence, we determine that it is more likely than not that some portion, or all, of the deferred tax asset will not be realized.

The valuation allowance is subject to ongoing adjustment based on changes in circumstances that affect management's judgment about the realizability of the deferred tax asset. Adjustments to increase or decrease the valuation allowance are charged or credited, respectively, to income tax expense. The Company recognizes interest and/or penalties related to income tax matters in other non-interest expense.

The Company evaluates uncertain tax positions in a two step process. The first step is recognition, which requires a determination of whether it is more likely than not that a tax position will be sustained upon examination with an examination presumed to occur. The second step is measurement. Under the measurement step, a tax position that meets the more likely than not recognition threshold is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. Tax positions that previously failed to meet the more likely than not recognition threshold should be recognized in the first subsequent financial reporting period in which that threshold is met. A previously recognized tax position that no longer meets the more likely than not recognition threshold should be derecognized in the first subsequent financial reporting period in which the threshold is no longer met. The Company did not have any such position as of December 31, 2018 and 2017. (See Note 11. "Income Taxes").

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Derivatives

Derivatives are recognized as assets and liabilities in the consolidated balance sheets and measured at fair value. For exchange-traded contracts, fair value is based on quoted market prices. For non-exchange traded contracts, fair value is based on dealer quotes, pricing models, discounted cash flow methodologies, or similar techniques for which the determination of fair value may require management judgment or estimation relating to future rates and credit activities.

For asset/liability management purposes, the Bank uses interest rate swap agreements to modify interest rate risk characteristics of certain portfolio loans as an accommodation to our borrowers. Interest rate swaps are contracts in which a series of interest rate flows are exchanged over a prescribed period. The notional amount on which the interest payments are based is not exchanged. These swap agreements are derivative instruments and these instruments effectively convert a portion of the Bank's fixed-rate loans to variable rate loans. (See Note 10. "Derivatives").

Fair Values of Financial Instruments

Fair values of financial instruments are estimated using relevant market information and other assumptions, as more fully disclosed in Note 20. "Fair Value Measurements." Fair value estimates involve uncertainties and matters of significant judgment regarding interest rates, credit risk, prepayments, and other factors, especially in the absence of broad markets for particular items. Changes in assumptions or in market conditions could significantly affect the estimates.

Retirement Plans

In the Astoria Merger the Company assumed Astoria Bank's pension plan, which covers Astoria employees and former Astoria employees meeting specified eligibility criteria. In addition to this pension plan, it assumed other non-qualified and unfunded supplemental retirement plans. These plans were suspended for the accrual of additional benefits prior to the Company's assumption. The Company also assumed the liability for a health care plan that provides for post-retirement medical and dental coverage to select individuals, which is an active plan in which select individuals continued to vest through December 31, 2018. At December 31, 2018, the pension plan is over funded and the net asset balance is included in other assets in the consolidated balance sheets. For the remainder of the retirement plans, the net liabilities are included in other liabilities in the consolidated balance sheets. (See Note 14. "Pension and Other Post Retirement Plans Benefits").

Loss Contingencies

Loss contingencies, including claims and legal actions arising in the ordinary course of business, are recorded as liabilities when the likelihood of loss is probable and an amount or range of loss can be reasonably estimated. The Company does not believe there are such matters that will have a material effect on the consolidated financial statements. (See Note 19. "Commitments and Contingencies").

Loan Commitments and Related Financial Instruments

Financial instruments include off-balance sheet credit instruments, such as commitments to make loans and commercial letters of credit, issued to meet customer financing needs. The face amount for these items represents the exposure to loss, before considering customer collateral or ability to repay. Such financial instruments are recorded when they are funded. (See Note 18. "Off-Balance Sheet Financial Instruments").

Stock-Based Compensation Plans

Compensation expense for stock options and non-vested stock awards/stock units is based on the fair value of the award on the measurement date, which is the date of grant. The expense is recognized ratably over the service period of the award. The fair value of non-vested stock awards/stock units is generally the market price of the Company's common stock on the date of grant. (See Note 13. "Stock-Based Compensation").

Earnings Per Common Share

Basic earnings per common share ("EPS") is computed by dividing net income available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted EPS is computed in a similar manner to basic EPS, except that the weighted average number of common shares is increased to include incremental shares (computed using the treasury stock method) that would have been outstanding if all potentially dilutive stock options were exercised and unvested restricted stock became vested during the periods. (See Note 16. "Earnings Per Common Share").

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Revenue Recognition

The Company recognizes revenue when all of the criteria below have been met: (i) persuasive evidence of an arrangement exists; (ii) delivery of our obligations to our client has occurred; (iii) the price is fixed or determinable; and (iv) collectability of the balance advanced is reasonably assured.

Interest income and fees. Interest income and fees on loans and investment securities are recognized based on the contractual provisions of the underlying agreements and instruments. Loan origination fees and costs are generally deferred and amortized into interest income as yield adjustments over the contractual life and / or commitment period using the effective interest method.

Payroll finance. The Company provides financing and business process outsourcing, including full back-office, technology and tax accounting services to independently-owned temporary staffing companies nationwide. Services include preparation of payroll, payroll tax payments, billings and collections. Non-interest income is recognized when billing to the Company's customer occurs. The Company remits collections from the client's customers to the Company's clients for the amounts collected, net of payroll taxes withheld, the Company's fees, subject to a hold back reserve to offset potential uncollectible balances from the client's other customers.

Factored Receivables. The Company provide accounts receivable management services. The purchase of a client's accounts receivable is traditionally known as "factoring" and results in payment by the client of a factoring fee. The factoring fee included in non-interest income represents compensation to the Company for the bookkeeping and collection services provided. The factoring fee, which is non-refundable, is recognized at the time the receivable is assigned to the Company. Other revenue associated with factored receivables includes wire fees, technology fees, field examination fees and UCC fees. All such fees are recognized as income upon receipt, which is when the Company's obligations are provided to the Company's customers. (See Note 15. "Non-Interest Income and Other Non-Interest Expense" for additional disclosure regarding revenue recognition.)

Segment Information

Public companies are required to report certain financial information about significant revenue-producing segments of the business for which such information is available and utilized by the chief operating decision maker. Substantially all of the Company's operations occur through the Bank and involve the delivery of loan and deposit products to customers. Management makes operating decisions and assesses performance based on an ongoing review of its banking operation, which constitutes the Company's only operating segment for financial reporting purposes.

Recently Adopted Accounting Standards

The Company adopted the following new accounting standards effective January 1, 2018:

Accounting Standards Codification ("ASC") Topic 606, Revenue from Contracts with Customers (the "New Revenue Standard"), (i) creates a single framework for recognizing revenue from contracts with customers that fall within its scope and (ii) revises when it is appropriate to recognize a gain (loss) from the transfer of non-financial assets, such as OREO. The Company adopted the New Revenue Standard using the modified retrospective method applied to all contracts not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under the New Revenue Standard, while prior period amounts continue to be reported in accordance with legacy GAAP. The adoption of the New Revenue Standard did not result in a significant change to the accounting for any in-scope revenue streams. As such, no cumulative effect adjustment was recorded. The majority of the Company's revenues come from interest income and other sources, including loans and securities, that are outside the scope of the New Revenue Standard. The Company's services that fall within the scope of the New Revenue Standard are primarily included within non-interest income in the consolidated income statements and are recognized as revenue as the Company satisfies its obligation to the customer. Services within the scope of the New Revenue Standard include deposit fees and services charges, accounts receivable management / factoring commissions and other fees, investment management fees and the sale of OREO, which is included within OREO, net expense. See Note 15. "Non-Interest Income and Other Non-Interest Expense" for further discussion on the Company's accounting policies for revenue sources within the scope of the New Revenue Standard.

Accounting Standards Update ("ASU") No. 2016-01, Financial Instruments - Overall (Subtopic 825-10): Recognition of Financial Assets and Financial Liabilities (the "New Fair Value Standard"), makes targeted amendments to the guidance for recognition, measurement, presentation and disclosure of financial instruments. The New Fair Value Standard requires equity investments to be measured at fair value with changes in fair value recognized in net income; however, the Company owned no assets subject to this portion of the New Fair Value Standard. The New Fair Value Standard also emphasizes the existing requirement to use exit prices to measure fair value for disclosure purposes and clarifies that entities should not make use of a practicability exception in

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determining the fair value of loans. As a result of the adoption of the New Fair Value Standard, the Company modified its calculation used to estimate the fair value of portfolio loans. See Note 20. "Fair Value Measurements" for further discussion of the Company's methodology. The New Fair Value Standard had no impact to the consolidated balance sheets or income statements.

ASU No. 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost (the "New Retirement Standard"), requires employers to present the service cost component of the net periodic benefit cost in the same income statement line item as other employee compensation costs arising from services rendered during the period. The other components of net benefit cost, including interest cost, expected return on plan assets, amortization of prior service cost/credit and actuarial gain/loss, and settlement and curtailment effects, are presented as a component of other non-interest expense. The adoption of this standard resulted in the reclassification of a net benefit of \$306 and net expense of \$415 from compensation and benefits to other non-interest expense for the years ended December 31, 2017 and 2016, respectively.

ASU No. 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income" (the "AOCI Standard"), allows a reclassification from accumulated other comprehensive income ("AOCI") to retained earnings for the stranded tax effects caused by the revaluation of estimated deferred taxes resulting from the enactment of the Tax Act. As a result of the adoption of the AOCI Standard the Company reduced AOCI and increased retained earnings by \$5,129 in the year ended December 31, 2018 related to unrealized losses on securities available for sale, securities transferred to held to maturity and a net actuarial loss on defined benefit retirement plans. As a result of the adoption of the AOCI standard, the Company will release such income tax effects only when the entire portfolio to which the underlying items are liquidated, sold or extinguished. The adoption of the AOCI Standard did not impact total stockholders' equity or the consolidated income statements for any period.

(2) Acquisitions

Advantage Funding Management Co., Inc. ("Advantage Funding")

On April 2, 2018, the Bank acquired 100% of the outstanding common stock of Advantage Funding (the "Advantage Funding Acquisition"). The total consideration in the transaction was \$502,052 and was paid in cash on the closing date. Advantage Funding is a provider of commercial vehicle and transportation financing services based in Lake Success, New York. Advantage Funding had total outstanding loans and leases of \$457,638 on the acquisition date consisting mainly of fixed rate assets. The fair value of these loans was \$439,622. The Bank paid a premium on the gross loans and leases receivable of 4.5% or \$20,300. In the year ended December 31, 2018, the Company recorded a \$4,396 restructuring charge consisting mainly of professional fees, retention and severance compensation, systems integration expense and facilities consolidation. This charge is included in charge for asset write-downs, systems integration, severance and retention on the consolidated income statement. At December 31, 2018, the Company recognized goodwill of \$39,356 as a result of the Advantage Funding Acquisition. The Advantage Funding Acquisition is consistent with the Company's strategy of growing commercial loans and increasing the proportion of commercial loans in its loan portfolio. The operations of the business are being fully integrated into its equipment finance business line.

Astoria Merger

On October 2, 2017, the Company completed the Astoria Merger. Under the terms of the Astoria Merger agreement, Astoria shareholders received 0.875 shares of the Company's common stock for each share of Astoria common stock, which resulted in the issuance of 88,829,776 of the Company's common shares. Based on the Company's closing stock price per share of \$24.65 on September 29, 2017, the aggregate consideration was \$2,189,687, which included cash in lieu of fractional shares. Consistent with the Company's strategy, the primary reason for the Astoria Merger was the expansion of the Company's geographic footprint in the Greater New York metropolitan region, including Long Island.

The assets acquired and liabilities assumed have been accounted for under the acquisition method of accounting. The assets and liabilities, both tangible and intangible were recorded at their fair values as of October 2, 2017 based on management's best estimate using the information available as of the Astoria Merger date. The application of the acquisition method of accounting resulted in the recognition of goodwill of \$883,291 and a core deposit intangible of \$99,938. Accounting guidance provides that an acquirer must recognize adjustments to provisional amounts that are identified during the measurement period, which, for the Astoria Merger ended October 2, 2018. During the third quarter of 2018 the Company completed the final tax returns related to Astoria's business and operations through October 1, 2017. After completion of these tax returns, the Company reduced income tax balances and goodwill by \$6,214, which finalized all purchase accounting adjustments for the Astoria Merger. This adjustment had no impact to earnings.

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	As recorded by Astoria	Fair value adjustments	As recorded at acquisition
Cash and cash equivalents	\$ 275,409	\$ —	\$ 275,409
Investment securities	3,144,111	(42,318) (a)	3,101,793
Loans held for sale	497	—	497
Loans	9,546,307	(336,909) (b)	9,209,398
Allowance for loan losses	(79,293)	79,293 (c)	—
Bank owned life insurance	447,518	—	447,518
Premises and equipment	90,678	177,137 (d)	267,815
Accrued interest receivable	34,094	—	34,094
Goodwill	185,151	(185,151) (e)	—
Core deposit and other intangibles	—	99,938 (f)	99,938
Other real estate owned	17,705	(1,600) (g)	16,105
Other assets	288,075	47,537 (h)	335,612
Total assets acquired	13,950,252	(162,073)	13,788,179
Deposits	(9,029,303)	(14,758) (i)	(9,044,061)
FHLB borrowings	(1,550,000)	(39,464) (j)	(1,589,464)
Repurchase agreements	(1,100,000)	(43,279) (k)	(1,143,279)
Senior notes	(198,044)	(3,476) (l)	(201,520)
Other liabilities	(354,725)	(9,322) (m)	(364,047)
Total liabilities assumed	(12,232,072)	(110,299)	(12,342,371)
Preferred stock assumed	(129,796)	(9,616) (n)	(139,412)
Total liabilities and preferred stock assumed	\$ (12,361,868)	\$ (119,915)	(12,481,783)
Net assets acquired			1,306,396
Purchase price			2,189,687
Goodwill recorded in the Merger			\$ 883,291

Explanation of certain fair value related adjustments:

- (a) Represents the fair value adjustment on investment securities held to maturity.
- (b) Represents the fair value adjustment to the net book value of loans, which includes an interest rate mark and credit mark adjustment.
- (c) Represents the elimination of Astoria's allowance for loan losses.
- (d) Represents the fair value adjustment to reflect the fair value of land and buildings, which will be amortized on a straight-line basis over the estimated useful lives of the individual assets.
- (e) Represents the elimination of Astoria's goodwill.
- (f) Represents intangible assets recorded to reflect the fair value of core deposits. The core deposit asset was recorded as an identifiable intangible asset and will be amortized on an accelerated basis over the estimated average life of the deposit base.
- (g) Represents an adjustment to reduce the carrying value of other real estate owned to fair value.
- (h) Represents an adjustment to net deferred tax assets resulting from the fair value adjustments related to the acquired assets, liabilities assumed and identifiable intangible assets recorded.
- (i) Represents the fair value adjustment on time deposits, which will be accreted as a reduction of interest expense over the remaining term of the time deposits.
- (j) Represents the fair value adjustment on FHLB borrowings, which was equal to the price paid to terminate Astoria's long-term FHLB borrowings.
- (k) Represents the fair value adjustment on repurchase agreements, which was equal to the price paid to various counterparties to terminate these agreements.

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- (l) Represents the fair value adjustment on senior notes, as determined by quoted market prices, which will be accreted as a reduction of interest expense through maturity of the notes.
- (m) Represents the fair value adjustment to other liabilities assumed in the merger including actuarially determined liabilities of Astoria.
- (n) Represents the fair value adjustment on preferred stock, as determined by quoted market prices, which will be accreted as a reduction in the preferred stock dividends over the five-year call period ending on October 15, 2022.

The fair values for loans acquired from Astoria were estimated using cash flow projections based on the remaining maturity and repricing terms. Cash flows were adjusted by estimating future credit losses and the rate of prepayments. Projected monthly cash flows were then discounted to present value using a risk-adjusted market rate for similar loans. For collateral dependent loans with deteriorated credit quality, fair value was estimated by analyzing the value of the underlying collateral, assuming the fair values of the loans were derived from the eventual sale of the collateral. These values were discounted using market derived rates of return, with consideration given to the period of time and costs associated with the foreclosure and disposition of the collateral. There was no carryover of Astoria's allowance for loan losses associated with the loans that were acquired, as the loans were initially recorded at fair value on the date of the Astoria Merger.

Acquired loan portfolio data for the Astoria Merger is presented below:

	Fair value of acquired loans at acquisition date	Gross contractual amounts receivable at acquisition date	Best estimate at acquisition date of contractual cash flows not expected to be collected
Acquired loans with evidence of deterioration since origination	\$ 167,614	\$ 221,550	\$ 44,545
Acquired loans with no evidence of deterioration since origination	9,041,784	11,509,782	NA

The core deposit intangible asset recognized is being amortized over its estimated useful life of approximately 10 years utilizing the sum-of-the-years digits method.

Goodwill is not amortized for book purposes; however, it is reviewed at least annually for impairment and is not deductible for tax purposes.

The fair value of land, buildings and equipment was estimated using appraisals. Buildings are amortized over their estimated useful lives of approximately 30 years. Improvements and equipment are amortized or depreciated over their estimated useful lives ranging from one to five years.

The fair value of retail demand and interest bearing deposit accounts was assumed to approximate the carrying value as these accounts have no stated maturity and are payable on demand. The fair value of time deposits was estimated by discounting the contractual future cash flows using market rates offered for time deposits of similar remaining maturities.

Direct acquisition and other charges incurred in connection with the Astoria Merger were expensed as incurred and totaled \$39,232 for 2017. These expenses were recorded in merger-related expense on the consolidated income statements. Results of operations for 2017 included a charge for asset write-downs, systems integration, severance and retention which totaled \$105,110 and was recorded in other non-interest expense in the consolidated income statements.

The following table presents selected unaudited pro forma financial information reflecting the Astoria Merger assuming it was completed as of January 1, 2016. The unaudited pro forma financial information is presented for illustrative purposes only and is not necessarily indicative of the financial results of the combined companies had the Astoria Merger actually been completed at the beginning of the periods presented, nor does it indicate future results for any other interim or full year period. Pro forma basic and diluted EPS were calculated using the Company's actual weighted average shares outstanding for the periods presented, plus the incremental shares issued, assuming the Astoria Merger occurred at the beginning of the periods presented. The unaudited pro forma information is based on the actual financial statements of the Company for the periods presented, and on the actual financial statements of Astoria for 2016 and in 2017 until the date of the Astoria Merger, at which time Astoria's results of operations were included in the Company's financial statements.

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The unaudited pro forma information for 2017 and 2016 set forth below reflects adjustments related to (a) purchase accounting fair value adjustments; (b) amortization of core deposit and other intangibles; and (c) adjustments to interest income and expense due to amortization of premiums and accretion of discounts. Direct merger-related expenses and charges incurred in calendar 2017 and costs incurred to write-down assets, accrue for systems integration, retention and severance compensation are assumed to have occurred prior to January 1, 2016. Furthermore, the unaudited pro forma information does not reflect management's estimate of any revenue enhancement opportunities or anticipated potential cost savings for periods that include data as of October 2, 2017 or earlier.

	Pro forma information	
	For the year ended December 31,	
	2017	2016
Net interest income	\$ 939,036	\$ 818,906
Non-interest income	98,726	121,949
Non-interest expense	516,333	544,821
Net income available to common stockholders	316,657	242,398
Pro forma earnings per common share from continuing operations:		
Basic	\$ 1.41	\$ 1.11
Diluted	1.41	1.11

Restaurant Franchise Financing Loan Portfolio

On September 9, 2016, the Bank acquired a restaurant franchise financing loan portfolio from GE Capital with an unpaid principal balance of \$169,760. Total cash paid for the portfolio was \$163,282, which included a discount to the balance of gross loans receivable of 4.00%, or \$6,790, plus accrued interest receivable. As the acquired assets did not constitute a business, the transaction was accounted for as an asset purchase. These loans are classified as traditional C&I loans.

Acquisition of NewStar Business Credit LLC ("NSBC")

On March 31, 2016, the Bank acquired 100% of the outstanding equity interests of NSBC (the "NSBC Acquisition"). NSBC was a provider of asset-based lending solutions to middle market commercial clients. NSBC's loans had a fair value of \$320,447 on the acquisition date and consisted of 100% floating-rate assets. The Bank paid a premium on the balance of gross loans receivable acquired of 5.90%, or \$18,906. The Bank assumed \$4,839 of liabilities, which consisted mainly of cash collateral on loans outstanding. The Bank recognized a customer list intangible asset of \$1,500 that was amortized over its 24-month estimated life and \$25,698 of goodwill. The Bank recorded a \$1,500 restructuring charge consisting mainly of retention and severance compensation, IT contract terminations and professional fees.

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(3) Securities

A summary of amortized cost and estimated fair value of our securities is presented below:

	December 31, 2018							
	Available for Sale				Held to Maturity			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Residential MBS:								
Agency-backed	\$ 2,328,870	\$ 2,347	\$ (62,366)	\$ 2,268,851	\$ 318,590	\$ 73	\$ (8,605)	\$ 310,058
CMO/Other MBS	596,868	11	(22,109)	574,770	27,780	2	(765)	27,017
Total residential MBS	2,925,738	2,358	(84,475)	2,843,621	346,370	75	(9,370)	337,075
Other securities:								
Federal agencies	283,825	—	(9,852)	273,973	59,065	160	(128)	59,097
Corporate bonds	537,210	1,162	(10,407)	527,965	68,512	431	(392)	68,551
State and municipal	227,546	302	(2,844)	225,004	2,305,420	2,654	(49,562)	2,258,512
Other	—	—	—	—	17,250	49	(12)	17,287
Total other securities	1,048,581	1,464	(23,103)	1,026,942	2,450,247	3,294	(50,094)	2,403,447
Total securities	\$ 3,974,319	\$ 3,822	\$ (107,578)	\$ 3,870,563	\$ 2,796,617	\$ 3,369	\$ (59,464)	\$ 2,740,522

	December 31, 2017							
	Available for Sale				Held to Maturity			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Residential MBS:								
Agency-backed	\$ 2,171,044	\$ 1,570	\$ (21,965)	\$ 2,150,649	\$ 355,013	\$ 978	\$ (2,504)	\$ 353,487
CMO/Other MBS	656,514	31	(7,142)	649,403	33,496	26	(760)	32,762
Total residential MBS	2,827,558	1,601	(29,107)	2,800,052	388,509	1,004	(3,264)	386,249
Other securities:								
Federal agencies	409,322	—	(9,326)	399,996	58,640	949	—	59,589
Corporate	147,781	1,421	(976)	148,226	56,663	1,255	(103)	57,815
State and municipal	264,310	1,380	(1,892)	263,798	2,342,927	12,396	(10,900)	2,344,423
Other	—	—	—	—	15,750	83	—	15,833
Total other securities	821,413	2,801	(12,194)	812,020	2,473,980	14,683	(11,003)	2,477,660
Total securities	\$ 3,648,971	\$ 4,402	\$ (41,301)	\$ 3,612,072	\$ 2,862,489	\$ 15,687	\$ (14,267)	\$ 2,863,909

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The amortized cost and estimated fair value of securities at December 31, 2018 are presented below by contractual maturity. Actual maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations. Residential mortgage-backed securities are shown separately since they are not due at a single maturity date.

	December 31, 2018			
	Available for sale		Held to maturity	
	Amortized cost	Fair value	Amortized cost	Fair value
Other securities remaining period to contractual maturity:				
One year or less	\$ 19,127	\$ 19,141	\$ 68,814	\$ 68,917
One to five years	205,924	202,739	120,827	120,821
Five to ten years	722,315	707,793	477,090	473,616
Greater than ten years	101,215	97,269	1,783,516	1,740,093
Total other securities	1,048,581	1,026,942	2,450,247	2,403,447
Residential MBS	2,925,738	2,843,621	346,370	337,075
Total securities	<u>\$ 3,974,319</u>	<u>\$ 3,870,563</u>	<u>\$ 2,796,617</u>	<u>\$ 2,740,522</u>

Sales of securities for the periods indicated below were as follows:

	Year ended December 31,		
	2018	2017	2016
Available for sale:			
Proceeds from sales	\$ 186,914	\$ 2,516,308	\$ 858,531
Gross realized gains	219	8	10,665
Gross realized losses	(10,933)	(352)	(3,143)
Income tax (benefit) expense on realized net (losses) gains	(2,961)	(91)	2,445
Held to maturity: ⁽¹⁾			
Proceeds from sale	\$ 254	\$ —	\$ —
Gross realized loss	(74)	—	—
Income tax (benefit) on realized loss	(21)	—	—

⁽¹⁾ In the year ended December 31, 2018, the Company sold a security that was held to maturity due to a decline in the credit rating and other evidence of deterioration of the issuer's creditworthiness.

At December 31, 2018 and 2017, there were no holdings of securities of any one issuer, other than the U.S. Government and its agencies, in an amount greater than 10% of stockholders' equity.

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The following table summarizes securities available for sale with unrealized losses, segregated by the length of time in a continuous unrealized loss position:

	Continuous unrealized loss position					
	Less than 12 months		12 months or longer		Total	
	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses
Available for sale						
December 31, 2018						
Residential MBS:						
Agency-backed	\$ 156,787	\$ (536)	\$ 1,955,056	\$ (61,830)	\$ 2,111,843	\$ (62,366)
CMO/Other MBS	94	(2)	574,053	(22,107)	574,147	(22,109)
Total residential MBS	156,881	(538)	2,529,109	(83,937)	2,685,990	(84,475)
Other securities:						
Federal agencies	—	—	273,973	(9,852)	273,973	(9,852)
Corporate	230,126	(4,278)	119,869	(6,129)	349,995	(10,407)
State and municipal	16,172	(64)	175,966	(2,780)	192,138	(2,844)
Total other securities	246,298	(4,342)	569,808	(18,761)	816,106	(23,103)
Total	<u>\$ 403,179</u>	<u>\$ (4,880)</u>	<u>\$ 3,098,917</u>	<u>\$ (102,698)</u>	<u>\$ 3,502,096</u>	<u>\$ (107,578)</u>
December 31, 2017						
Residential MBS:						
Agency-backed	\$ 1,349,217	\$ (10,550)	\$ 486,948	\$ (11,415)	\$ 1,836,165	\$ (21,965)
CMO/Other MBS	605,200	(6,064)	36,107	(1,078)	641,307	(7,142)
Total residential MBS	1,954,417	(16,614)	523,055	(12,493)	2,477,472	(29,107)
Other securities:						
Federal agencies	243,476	(1,955)	156,520	(7,371)	399,996	(9,326)
Corporate	65,056	(397)	15,268	(579)	80,324	(976)
State and municipal	97,307	(757)	56,324	(1,135)	153,631	(1,892)
Total other securities	405,839	(3,109)	228,112	(9,085)	633,951	(12,194)
Total	<u>\$ 2,360,256</u>	<u>\$ (19,723)</u>	<u>\$ 751,167</u>	<u>\$ (21,578)</u>	<u>\$ 3,111,423</u>	<u>\$ (41,301)</u>

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The following table summarizes securities held to maturity with unrealized losses, segregated by the length of time in a continuous unrealized loss position:

	Continuous unrealized loss position					
	Less than 12 months		12 months or longer		Total	
	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses
Held to maturity						
December 31, 2018						
Residential MBS:						
Agency-backed	\$ 25,003	\$ (147)	\$ 273,974	\$ (8,458)	\$ 298,977	\$ (8,605)
CMO/Other MBS	101	(2)	25,066	(763)	25,167	(765)
Total residential MBS	25,104	(149)	299,040	(9,221)	324,144	(9,370)
Other securities:						
Federal agencies	29,485	(95)	4,908	(33)	34,393	(128)
Corporate	21,859	(137)	16,261	(255)	38,120	(392)
State and municipal	118,389	(877)	1,897,758	(48,685)	2,016,147	(49,562)
Other	9,488	(12)	—	—	9,488	(12)
Total other securities	179,221	(1,121)	1,918,927	(48,973)	2,098,148	(50,094)
Total	<u>\$ 204,325</u>	<u>\$ (1,270)</u>	<u>\$ 2,217,967</u>	<u>\$ (58,194)</u>	<u>\$ 2,422,292</u>	<u>\$ (59,464)</u>
December 31, 2017						
Residential MBS:						
Agency-backed	\$ 136,679	\$ (572)	\$ 74,303	\$ (1,932)	\$ 210,982	\$ (2,504)
CMO/Other MBS	10,314	(129)	20,160	(631)	30,474	(760)
Total residential MBS	146,993	(701)	94,463	(2,563)	241,456	(3,264)
Other securities:						
Corporate	16,560	(103)	—	—	16,560	(103)
State and municipal	860,536	(5,310)	393,200	(5,590)	1,253,736	(10,900)
Total other securities	877,096	(5,413)	393,200	(5,590)	1,270,296	(11,003)
Total	<u>\$ 1,024,089</u>	<u>\$ (6,114)</u>	<u>\$ 487,663</u>	<u>\$ (8,153)</u>	<u>\$ 1,511,752</u>	<u>\$ (14,267)</u>

At December 31, 2018, a total of 78 available for sale securities were in a continuous unrealized loss position for less than 12 months, and 444 such securities were in an unrealized loss position for 12 months or longer. At December 31, 2018, a total of 177 held to maturity securities were in a continuous unrealized loss for less than 12 months, and 511 held to maturity securities were in a continuous unrealized loss position for 12 months or longer. Declines in the fair value of held to maturity and available for sale securities below their cost that are deemed to be other than temporary are reflected in earnings as realized losses to the extent the impairment is related to credit losses. The amount of the impairment related to other factors is recognized in other comprehensive income. In estimating OTTI losses, management considers, among other things, (i) the length of time and the extent to which the fair value has been less than cost; (ii) the financial condition and near-term prospects of the issuer; and (iii) the intent and ability of the Company to retain its investment in the issuer for a period of time sufficient to allow for any anticipated recovery in cost.

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Management has the ability and intent to hold the securities classified as held to maturity in the table above until they mature, at which time the Company will receive full value for the securities. Furthermore, as of December 31, 2018, management did not have the intent to sell any of the securities classified as available for sale in the table above and believes that it is more likely than not that the Company will not have to sell any such securities before a recovery of cost. Any unrealized losses are largely due to increases in market interest rates over the yields available at the time the underlying securities were purchased. The fair value is expected to recover as the securities approach their maturity date or repricing date or if market yields for such investments decline. Management does not believe any of the securities are impaired due to reasons related to credit quality. As of December 31, 2018, management believes the impairments detailed in the table above are temporary.

Securities pledged for borrowings at FHLB and other institutions, and securities pledged for municipal deposits and other purposes were as follows:

	December 31,	
	2018	2017
Available for sale securities pledged for borrowings, at fair value	\$ 12,206	\$ 10,225
Available for sale securities pledged for municipal deposits, at fair value	817,306	323,341
Held to maturity securities pledged for borrowings, at amortized cost	34,996	35,047
Held to maturity securities pledged for municipal deposits, at amortized cost	1,338,901	1,182,674
Total securities pledged	\$ 2,203,409	\$ 1,551,287

(4) Portfolio Loans

The composition of the Company's loan portfolio, excluding loans held for sale, was the following:

	December 31, 2018			December 31, 2017		
	Originated loans	Acquired loans	Total	Originated loans	Acquired loans	Total
Commercial:						
C&I:						
Traditional C&I	\$ 2,321,131	\$ 75,051	\$ 2,396,182	\$ 1,708,812	\$ 270,636	\$ 1,979,448
Asset-based lending	792,935	—	792,935	760,095	37,475	797,570
Payroll finance	227,452	—	227,452	268,609	—	268,609
Warehouse lending	782,646	—	782,646	723,335	—	723,335
Factored receivables	258,383	—	258,383	220,551	—	220,551
Equipment financing	913,751	301,291	1,215,042	664,800	14,741	679,541
Public sector finance	860,746	—	860,746	637,767	—	637,767
Total C&I	6,157,044	376,342	6,533,386	4,983,969	322,852	5,306,821
Commercial mortgage:						
CRE	4,154,956	487,461	4,642,417	3,476,830	662,034	4,138,864
Multi-family	1,527,619	3,236,505	4,764,124	1,174,631	3,684,924	4,859,555
ADC	267,754	—	267,754	282,792	—	282,792
Total commercial mortgage	5,950,329	3,723,966	9,674,295	4,934,253	4,346,958	9,281,211
Total commercial	12,107,373	4,100,308	16,207,681	9,918,222	4,669,810	14,588,032
Residential mortgage	621,471	2,083,755	2,705,226	532,731	4,522,001	5,054,732
Consumer	153,811	151,812	305,623	176,793	189,426	366,219
Total portfolio loans	12,882,655	6,335,875	19,218,530	10,627,746	9,381,237	20,008,983
Allowance for loan losses	(95,677)	—	(95,677)	(77,907)	—	(77,907)
Total portfolio loans, net	\$ 12,786,978	\$ 6,335,875	\$ 19,122,853	\$ 10,549,839	\$ 9,381,237	\$ 19,931,076

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Acquired loans at December 31, 2018 and 2017 include loans that were acquired in the following transactions: the Advantage Funding Acquisition; the Astoria Merger; the restaurant franchise financing portfolio acquisition from GE Capital; the NBSC Acquisition, the HVB Merger, and the Provident Merger. Under our credit administration and accounting guidelines, once a loan relationship reaches maturity and is re-underwritten, the loan is no longer considered an acquired loan and is included in originated loans. In addition, acquired performing loans that were subsequently subject to a credit evaluation, such as after designation as criticized or classified or placed on non-accrual since the acquisition date, are also included in originated loans.

Consistent with our credit and accounting guidelines discussed above, at December 31, 2018, included in the balance of originated loans were \$1,365,682 in portfolio loans with an allowance for loan loss reserves of \$9,607 that were originally considered acquired loans but have since migrated to the originated loans portfolio as they have reached maturity, were re-underwritten, have been designated criticized or classified status or have been placed on non-accrual since the acquisition date. At December 31, 2017, included in the balance of originated loans were \$1,331,648 in portfolio loans with an allowance for loan loss reserves of \$8,421 that were originally considered acquired loans but have since migrated to the originated loans portfolio as they have reached maturity, were re-underwritten, have migrated to criticized or classified status or have been placed on non-accrual since the acquisition date.

Total portfolio loans include net deferred loan origination fees of \$5,581 at December 31, 2018 and \$4,813 at December 31, 2017.

Portfolio loans subject to purchase accounting adjustments are shown net of discounts on acquired loans, which were \$117,222 at December 31, 2018 and \$293,476 at December 31, 2017.

At December 31, 2018, the Company pledged loans totaling \$8,526,247 to the FHLB as collateral for certain borrowing arrangements. See Note 9. "Borrowings, Senior Notes and Subordinated Notes".

The following tables set forth the amounts and status of the Company's loans and TDRs at December 31, 2018 and 2017:

Originated loans:

	December 31, 2018					
	Current	30-59 days past due	60-89 days past due	90+ days past due	Non- accrual	Total
Traditional C&I	\$ 2,266,947	\$ 5,747	\$ 6,139	\$ —	\$ 42,298	\$ 2,321,131
Asset-based lending	789,654	—	—	—	3,281	792,935
Payroll finance	226,571	—	—	—	881	227,452
Warehouse lending	782,646	—	—	—	—	782,646
Factored receivables	258,383	—	—	—	—	258,383
Equipment financing	879,468	20,466	1,587	9	12,221	913,751
Public sector finance	860,746	—	—	—	—	860,746
CRE	4,118,134	8,054	—	799	27,969	4,154,956
Multi-family	1,524,914	1,014	—	—	1,691	1,527,619
ADC	267,090	230	—	434	—	267,754
Residential mortgage	592,563	1,934	897	264	25,813	621,471
Consumer	143,510	1,720	1,232	271	7,078	153,811
Total loans	\$ 12,710,626	\$ 39,165	\$ 9,855	\$ 1,777	\$ 121,232	\$ 12,882,655
Total TDRs included above	\$ 34,892	\$ 215	\$ 181	\$ 650	\$ 38,947	\$ 74,885
Non-performing loans:						
Loans 90+ days past due and still accruing					\$ 1,777	
Non-accrual loans					121,232	
Total originated non-performing loans					\$ 123,009	

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	December 31, 2017					
	Current	30-59 days past due	60-89 days past due	90+ days past due	Non- accrual	Total
Traditional C&I	\$ 1,670,069	\$ 964	\$ 148	\$ —	\$ 37,631	\$ 1,708,812
Asset-based lending	760,095	—	—	—	—	760,095
Payroll finance	268,609	—	—	—	—	268,609
Warehouse lending	723,335	—	—	—	—	723,335
Factored receivables	220,551	—	—	—	—	220,551
Equipment financing	652,425	1,133	3,143	—	8,099	664,800
Public sector finance	637,767	—	—	—	—	637,767
CRE	3,452,604	7,967	2,457	437	13,365	3,476,830
Multi-family	1,172,967	343	487	—	834	1,174,631
ADC	278,587	—	—	—	4,205	282,792
Residential mortgage	509,087	6,441	688	274	16,241	532,731
Consumer	167,483	2,114	495	—	6,701	176,793
Total loans	\$ 10,513,579	\$ 18,962	\$ 7,418	\$ 711	\$ 87,076	\$ 10,627,746
Total TDRs included above	\$ 13,175	\$ 389	\$ —	\$ —	\$ 29,325	\$ 42,889
Non-performing loans:						
Loans 90+ days past due and still accruing					\$ 711	
Non-accrual loans					87,076	
Total originated non-performing loans					\$ 87,787	

Acquired loans:

	December 31, 2018					
	Current	30-59 days past due	60-89 days past due	90+ days past due	Non- accrual	Total
Traditional C&I	\$ 69,690	\$ 5,256	\$ 105	\$ —	\$ —	\$ 75,051
Equipment financing	288,447	8,659	3,998	187	—	301,291
CRE	481,583	377	—	458	5,043	487,461
Multi-family	3,233,779	1,736	—	—	990	3,236,505
Residential mortgage	2,022,340	18,734	6,513	—	36,168	2,083,755
Consumer	146,042	1,852	951	—	2,967	151,812
Total loans	\$ 6,241,881	\$ 36,614	\$ 11,567	\$ 645	\$ 45,168	\$ 6,335,875
Total TDRs included above	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Non-performing loans:						
Loans 90+ days past due and still accruing					\$ 645	
Non-accrual loans					45,168	
Total acquired non-performing loans					\$ 45,813	

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	December 31, 2017					
	Current	30-59 days past due	60-89 days past due	90+ days past due	Non- accrual	Total
Traditional C&I	\$ 270,318	\$ 268	\$ 39	\$ —	\$ 11	\$ 270,636
Asset-based lending	37,475	—	—	—	—	37,475
Equipment financing	14,658	10	73	—	—	14,741
CRE	651,569	436	1,674	—	8,355	662,034
Multi-family	3,680,710	252	347	—	3,615	3,684,924
Residential mortgage	4,416,909	15,975	5,350	50	83,717	4,522,001
Consumer	183,019	2,250	479	95	3,583	189,426
Total loans	<u>\$ 9,254,658</u>	<u>\$ 19,191</u>	<u>\$ 7,962</u>	<u>\$ 145</u>	<u>\$ 99,281</u>	<u>\$ 9,381,237</u>
Total TDRs included above	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>
Non-performing loans:						
Loans 90+ days past due and still accruing					\$ 145	
Non-accrual loans					99,281	
Total acquired non-performing loans					<u>\$ 99,426</u>	

The following table provides additional analysis of the Company's non-accrual loans at December 31, 2018 and 2017:

	December 31, 2018				December 31, 2017			
	Recorded investment non- accrual loans	Recorded investment PCI non- accrual loans	Recorded investment total non- accrual loans	Unpaid principal balance non- accrual loans	Recorded investment non- accrual loans	Recorded investment PCI non- accrual loans	Recorded investment total non- accrual loans	Unpaid principal balance non- accrual loans
Traditional C&I	\$ 41,625	\$ 673	\$ 42,298	\$ 50,651	\$ 37,631	\$ 11	\$ 37,642	\$ 37,853
Asset-based lending	3,281	—	3,281	3,859	—	—	—	—
Payroll finance	881	—	881	881	—	—	—	—
Equipment financing	12,221	—	12,221	15,744	8,099	—	8,099	8,099
CRE	23,675	9,337	33,012	39,440	12,593	9,127	21,720	25,739
Multi-family	482	2,199	2,681	2,920	834	3,615	4,449	4,705
ADC	—	—	—	—	4,205	—	4,205	4,205
Residential mortgage	24,339	37,642	61,981	72,706	15,935	84,023	99,958	113,002
Consumer	6,576	3,469	10,045	12,170	6,693	3,591	10,284	12,096
Total loans	<u>\$ 113,080</u>	<u>\$ 53,320</u>	<u>\$ 166,400</u>	<u>\$ 198,371</u>	<u>\$ 85,990</u>	<u>\$ 100,367</u>	<u>\$ 186,357</u>	<u>\$ 205,699</u>

At December 31, 2018 and 2017, the recorded investment of PCI non-accrual loans included \$8,152 and \$1,086, respectively, of loans that were originally considered acquired loans but have since migrated to the originated loans portfolio as they have been designated criticized or classified status or have been placed on non-accrual since the acquisition date.

When the ultimate collectibility of the total principal of an impaired loan is in doubt and the loan is on non-accrual status, all payments are applied to principal, under the cost recovery method. When the ultimate collectibility of the total principal of an impaired loan is not in doubt and the loan is on non-accrual status, contractual interest is credited to interest income when received, under the cash basis method.

At December 31, 2018 and 2017, the recorded investment in residential mortgage loans that were formally in process of foreclosure was \$48,107 and \$76,712, respectively, which are included in non-accrual residential mortgage loans above.

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The following table sets forth loans evaluated for impairment by segment and the allowance evaluated by segment at December 31, 2018:

	Loans evaluated by segment				Allowance evaluated by segment		
	Individually evaluated for impairment	Collectively evaluated for impairment	PCI loans	Total loans	Individually evaluated for impairment	Collectively evaluated for impairment	Total allowance for loan losses
Traditional C&I	\$ 48,735	\$ 2,338,432	\$ 9,015	\$ 2,396,182	\$ —	\$ 14,201	\$ 14,201
Asset-based lending	3,281	789,654	—	792,935	—	7,979	7,979
Payroll finance	—	227,452	—	227,452	—	2,738	2,738
Warehouse lending	—	782,646	—	782,646	—	2,800	2,800
Factored receivables	—	258,383	—	258,383	—	1,064	1,064
Equipment financing	3,577	1,211,465	—	1,215,042	—	12,450	12,450
Public sector finance	—	860,746	—	860,746	—	1,739	1,739
CRE	33,284	4,581,911	27,222	4,642,417	—	32,285	32,285
Multi-family	1,662	4,754,912	7,550	4,764,124	—	8,355	8,355
ADC	—	267,754	—	267,754	—	1,769	1,769
Residential mortgage	3,210	2,614,046	87,970	2,705,226	—	7,454	7,454
Consumer	7,249	290,336	8,038	305,623	—	2,843	2,843
Total loans	\$ 100,998	\$ 18,977,737	\$ 139,795	\$ 19,218,530	\$ —	\$ 95,677	\$ 95,677

At December 31, 2018, PCI loans included \$16,555 of loans that were originally considered acquired loans but have since migrated to the originated loans portfolio as they have been designated criticized or classified status or have been placed on non-accrual since acquisition.

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The following table sets forth loans evaluated for impairment by segment and the allowance evaluated by segment at December 31, 2017:

	Loans evaluated by segment				Allowance evaluated by segment		
	Individually evaluated for impairment	Collectively evaluated for impairment	Purchased credit impaired loans	Total loans	Individually evaluated for impairment	Collectively evaluated for impairment	Total allowance for loan losses
Traditional C&I	\$ 35,921	\$ 1,933,155	\$ 10,372	\$ 1,979,448	\$ —	\$ 19,072	\$ 19,072
Asset-based lending	—	797,570	—	797,570	—	6,625	6,625
Payroll finance	—	268,609	—	268,609	—	1,565	1,565
Warehouse lending	—	723,335	—	723,335	—	3,705	3,705
Factored receivables	—	220,551	—	220,551	—	1,395	1,395
Equipment financing	5,341	674,200	—	679,541	—	4,862	4,862
Public sector finance	—	637,767	—	637,767	—	1,797	1,797
CRE	9,663	4,090,143	39,058	4,138,864	—	24,945	24,945
Multi-family	1,597	4,842,898	15,060	4,859,555	—	3,261	3,261
ADC	5,208	277,322	262	282,792	—	1,680	1,680
Residential mortgage	—	4,903,218	151,514	5,054,732	—	5,819	5,819
Consumer	3,132	352,741	10,346	366,219	—	3,181	3,181
Total loans	\$ 60,862	\$ 19,721,509	\$ 226,612	\$20,008,983	\$ —	\$ 77,907	\$ 77,907

At December 31, 2017, PCI loans included \$5,341 of loans that were originally considered acquired loans but have since migrated to the originated loans portfolio as they have been designated criticized or classified status or have been placed on non-accrual since the acquisition date.

At December 31, 2018 and 2017, the Company's portfolio loans included PCI loans acquired in the Astoria Merger, the HVB Merger and the Provident Merger. The carrying value of these loans is presented in the tables above. At December 31, 2018 and 2017, the net recorded amount of PCI loans was \$139,795 and \$226,612, respectively. Loans that are individually evaluated for impairment in the tables above are all included in originated loans.

The following table presents the changes in the balance of the accretable yield discount for PCI loans for 2018, 2017, and 2016:

	Year ended December 31,		
	2018	2017	2016
Balance at beginning of year	\$ 45,582	\$ 11,117	\$ 11,211
Acquisition	—	46,111	2,200
Accretion	(8,006)	(5,016)	(2,139)
Charge-offs	(5,478)	(2,452)	(2,798)
Disposals	(15,072)	(2,000)	—
Reclassification (to) from non-accretable difference	(94)	(2,178)	2,643
Balance at end of year	\$ 16,932	\$ 45,582	\$ 11,117

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Income is not recognized on PCI loans unless the Company can reasonably estimate the cash flows that are expected to be collected over the life of the loan. The following table presents the carrying value of the Company's PCI loans segregated by those PCI loans subject to accretion, and those PCI loans under the cost recovery method at December 31, 2018 and 2017:

	December 31, 2018			December 31, 2017		
	PCI loans subject to accretion	PCI loans under cost recovery method (non- accrual)	Total PCI loans	PCI loans subject to accretion	PCI loans under cost recovery method (non- accrual)	Total PCI loans
Traditional C&I	\$ 5,376	\$ 3,639	\$ 9,015	\$ 6,361	\$ 4,011	\$ 10,372
CRE	26,319	903	27,222	36,100	2,958	39,058
Multi-family	7,550	—	7,550	15,060	—	15,060
ADC	—	—	—	262	—	262
Residential	87,970	—	87,970	151,200	314	151,514
Consumer	7,378	660	8,038	9,637	709	10,346
Total	\$ 134,593	\$ 5,202	\$ 139,795	\$ 218,620	\$ 7,992	\$ 226,612

The following table presents loans individually evaluated for impairment by segment of loans at December 31, 2018 and 2017:

	December 31, 2018		December 31, 2017	
	Unpaid principal balance	Recorded investment	Unpaid principal balance	Recorded investment
Loans with no related allowance recorded:				
Traditional C&I	\$ 64,653	\$ 48,735	\$ 36,408	\$ 35,921
Asset-based lending	3,859	3,281	—	—
Equipment financing	3,577	3,577	5,341	5,341
CRE	43,119	33,284	10,128	9,663
Multi-family	2,341	1,662	1,597	1,597
ADC	—	—	5,474	5,208
Residential	3,430	3,210	—	—
Consumer	7,249	7,249	3,132	3,132
Total	\$ 128,228	\$ 100,998	\$ 62,080	\$ 60,862

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The following tables present the average recorded investment and interest income recognized related to loans individually evaluated for impairment by segment for 2018, 2017 and 2016:

	For the year ended December 31,					
	2018		2017		2016	
	YTD average recorded investment	Interest income recognized	YTD average recorded investment	Interest income recognized	YTD average recorded investment	Interest income recognized
With no related allowance recorded:						
Traditional C&I	\$ 38,242	\$ 1,073	\$ 26,413	\$ 460	\$ 25,508	\$ 22
Asset-based lending	9,440	—	—	—	—	—
Payroll finance	—	—	—	—	71	—
Equipment financing	965	—	4,004	—	1,275	—
CRE	23,671	777	11,808	374	13,625	133
Multi-family	1,713	65	399	65	—	—
ADC	—	—	5,687	206	6,132	31
Residential mortgage	1,751	—	1,068	—	768	—
Consumer	4,248	—	1,977	—	1,530	—
Total	\$ 80,030	\$ 1,915	\$ 51,356	\$ 1,105	\$ 48,909	\$ 186

There was no cash-basis interest income recognized from impaired loans during the years ended December 31, 2018 and 2017. There were no impaired loans with a related allowance recorded at December 31, 2018, 2017 and 2016.

Troubled Debt Restructuring

The following tables set forth the amounts and past due status of the Company's TDRs at December 31, 2018 and December 31, 2017:

	December 31, 2018					
	Current loans	30-59 days past due	60-89 days past due	90+ days past due	Non- accrual	Total
Traditional C&I	\$ 9,011	\$ —	\$ —	\$ —	\$ 25,672	\$ 34,683
Asset-based lending	—	—	—	—	1,276	1,276
Equipment financing	1,905	—	9	—	2,367	4,281
CRE	11,071	—	—	—	7,112	18,183
ADC	—	—	—	434	—	434
Residential mortgage	5,688	—	103	—	2,312	8,103
Consumer	7,217	215	69	216	208	7,925
Total	\$ 34,892	\$ 215	\$ 181	\$ 650	\$ 38,947	\$ 74,885

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	December 31, 2017					
	Current loans	30-59 days past due	60-89 days past due	90+ days past due	Non- accrual	Total
Traditional C&I	\$ 565	\$ —	\$ —	\$ —	\$ 21,083	\$ 21,648
Equipment financing	898	—	—	—	826	1,724
CRE	2,921	—	—	—	115	3,036
ADC	1,495	—	—	—	4,205	5,700
Residential mortgage	5,154	336	—	—	2,810	8,300
Consumer	2,142	53	—	—	286	2,481
Total	\$ 13,175	\$ 389	\$ —	\$ —	\$ 29,325	\$ 42,889

There were no payroll finance, warehouse lending, factored receivables, public sector finance, or multi-family loans that were TDRs for either period presented above. At December 31, 2017, there were also no asset-based lending loans that were TDRs.

The Company had no outstanding commitments to lend additional amounts to customers with TDR loans as of December 31, 2018 and 2017, respectively.

The following table identifies TDRs that occurred during 2018 and 2017:

	December 31, 2018			December 31, 2017		
	Number	Recorded investment		Number	Recorded investment	
		Pre- modification	Post- modification		Pre- modification	Post- modification
Traditional C&I	4	\$ 25,072	\$ 23,943	1	\$ 23,188	\$ 23,188
Asset-based lending	1	1,854	1,276	—	—	—
Equipment financing	4	3,307	3,307	3	3,558	3,337
CRE	1	12,187	12,187	2	1,724	1,724
ADC	—	—	—	1	797	797
Residential mortgage	11	1,684	1,367	4	1,140	1,033
Consumer	2	5,160	5,160	—	—	—
Total TDRs	23	\$ 49,264	\$ 47,240	11	\$ 30,407	\$ 30,079

There were no payroll finance, warehouse lending, factored receivables, public sector finance, multi-family or ADC loans modified as TDRs during 2018. There were no asset-based lending, payroll finance, warehouse lending, factored receivables, public sector finance, multi-family or consumer loans modified as TDRs during 2017.

The amount of TDRs charged-off against the allowance for loan losses was \$2,024 in 2018, \$585 in 2017, and \$286 in 2016.

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(5) Allowance for Loan Losses

Activity in the allowance for loan losses for 2018, 2017, and 2016 is summarized below:

	For the year ended December 31, 2018					
	Beginning balance	Charge-offs	Recoveries	Net charge-offs	Provision	Ending balance
Traditional C&I	\$ 19,072	\$ (9,270)	\$ 1,080	\$ (8,190)	\$ 3,319	\$ 14,201
Asset-based lending	6,625	(4,936)	9	(4,927)	6,281	7,979
Payroll finance	1,565	(337)	43	(294)	1,467	2,738
Warehouse lending	3,705	—	—	—	(905)	2,800
Factored receivables	1,395	(205)	15	(190)	(141)	1,064
Equipment financing	4,862	(8,565)	951	(7,614)	15,202	12,450
Public sector finance	1,797	—	—	—	(58)	1,739
CRE	24,945	(4,935)	888	(4,047)	11,387	32,285
Multi-family	3,261	(308)	283	(25)	5,119	8,355
ADC	1,680	(721)	—	(721)	810	1,769
Residential mortgage	5,819	(1,391)	64	(1,327)	2,962	7,454
Consumer	3,181	(1,408)	513	(895)	557	2,843
Total allowance for loan losses	\$ 77,907	\$ (32,076)	\$ 3,846	\$ (28,230)	\$ 46,000	\$ 95,677
Annualized net charge-offs to average loans outstanding						0.14%

	For the year ended December 31, 2017					
	Beginning balance	Charge-offs	Recoveries	Net charge-offs	Provision	Ending balance
Traditional C&I	\$ 12,864	\$ (5,489)	\$ 1,142	\$ (4,347)	\$ 10,555	\$ 19,072
Asset-based lending	3,316	—	5	5	3,304	6,625
Payroll finance	951	(188)	6	(182)	796	1,565
Warehouse lending	1,563	—	—	—	2,142	3,705
Factored receivables	1,669	(982)	23	(959)	685	1,395
Equipment financing	5,039	(3,165)	387	(2,778)	2,601	4,862
Public sector finance	1,062	—	—	—	735	1,797
CRE	20,466	(2,379)	163	(2,216)	6,695	24,945
Multi-family	4,991	—	—	—	(1,730)	3,261
ADC	1,931	(27)	269	242	(493)	1,680
Residential mortgage	5,864	(860)	161	(699)	654	5,819
Consumer	3,906	(1,095)	314	(781)	56	3,181
Total allowance for loan losses	\$ 63,622	\$ (14,185)	\$ 2,470	\$ (11,715)	\$ 26,000	\$ 77,907
Annualized net charge-offs to average loans outstanding						0.10%

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	For the year ended December 31, 2016					
	Beginning balance	Charge-offs	Recoveries	Net charge-offs	Provision	Ending balance
Traditional C&I	\$ 9,953	\$ (1,707)	\$ 999	\$ (708)	\$ 3,619	\$ 12,864
Asset-based lending	2,762	—	62	62	492	3,316
Payroll finance	1,936	(28)	32	4	(989)	951
Warehouse lending	589	—	—	—	974	1,563
Factored receivables	1,457	(1,200)	61	(1,139)	1,351	1,669
Equipment financing	4,925	(1,982)	560	(1,422)	1,536	5,039
Public sector finance	547	—	—	—	515	1,062
CRE	11,461	(959)	353	(606)	9,611	20,466
Multi-family	5,141	(417)	2	(415)	265	4,991
ADC	2,009	—	104	104	(182)	1,931
Residential mortgage	5,007	(1,045)	30	(1,015)	1,872	5,864
Consumer	4,358	(1,615)	227	(1,388)	936	3,906
Total allowance for loan losses	<u>\$ 50,145</u>	<u>\$ (8,953)</u>	<u>\$ 2,430</u>	<u>\$ (6,523)</u>	<u>\$ 20,000</u>	<u>\$ 63,622</u>
Annualized net charge-offs to average loans outstanding						0.08%

Credit Quality Indicators

As part of the on-going monitoring of the credit quality of the Company's loan portfolio, management tracks certain credit quality indicators including trends related to (i) the weighted-average risk grade of commercial loans; (ii) the level of classified commercial loans; (iii) the delinquency status of residential mortgage loans and consumer loans; (iv) net charge-offs; (v) non-performing loans (see details above); and (vi) the general economic conditions in the greater New York metropolitan region. The Bank analyzes loans individually by classifying the loans as to credit risk, except residential mortgage loans and consumer loans, which are evaluated on a homogeneous pool basis unless the loan balance is greater than \$500. This analysis is performed at least quarterly on all criticized/classified loans. The Bank uses the following definitions of risk ratings:

1 and 2 - These grades include loans that are secured by cash, marketable securities or cash surrender value of life insurance policies.

3 - This grade includes loans to borrowers with strong earnings and cash flow and that have the ability to service debt. The borrower's assets and liabilities are generally well matched and are above average quality. The borrower has ready access to multiple sources of funding including alternatives such as term loans, private equity placements or trade credit.

4 - This grade includes loans to borrowers with above average cash flow, adequate earnings and debt service coverage ratios. The borrower generates discretionary cash flow, assets and liabilities are reasonably matched, and the borrower has access to other sources of debt funding or additional trade credit at market rates.

5 - This grade includes loans to borrowers with adequate earnings and cash flow and reasonable debt service coverage ratios. Overall leverage is acceptable and there is average reliance upon trade credit. Management has a reasonable amount of experience and depth, and owners are willing to invest available outside capital as necessary.

6 - This grade includes loans to borrowers where there is evidence of some strain, earnings are inconsistent and volatile, and the borrowers' outlook is uncertain. Generally such borrowers have higher leverage than those with a better risk rating. These borrowers typically have limited access to alternative sources of bank debt and may be dependent upon debt funding for working capital support.

7 - Special Mention (OCC definition) - Other Assets Especially Mentioned (OAEM) are loans that have potential weaknesses which may, if not reversed or corrected, weaken the asset or inadequately protect the Bank's credit position at some future date. Such assets constitute an undue and unwarranted credit risk but not to the point of justifying a classification of "Substandard." The credit risk may be relatively minor yet constitute an unwarranted risk in light of the circumstances surrounding a specific asset.

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8 - Substandard (OCC definition) - These loans are inadequately protected by the current sound worth and paying capacity of the obligor or of the collateral pledged, if any. Assets so classified must have a well-defined weakness that jeopardizes the liquidation of the debt. They are characterized by the distinct possibility that the Bank will sustain some losses if the deficiencies are not corrected. Loss potential, while existing in the aggregate amount of substandard assets, does not have to exist in individual assets classified as substandard.

9 - Doubtful (OCC definition) - These loans have all the weakness inherent in one classified as “Substandard” with the added characteristics that the weakness makes collection or liquidation in full, on the basis of currently existing facts, conditions, and values, highly questionable and improbable. The possibility of loss is extremely high, but because of certain important and reasonably specific pending factors which may work to the advantage and strengthening of the asset, its classification as an estimated loss is deferred until its more exact status may be determined. Pending factors include proposed merger, acquisition, or liquidating procedures, capital injections, perfecting liens or additional collateral and refinancing plans.

10 - Loss (OCC definition) - These loans are charged-off because they are determined to be uncollectible and unbankable assets. This classification does not reflect that the asset has no absolute recovery or salvage value, but rather it is not practical or desirable to defer writing-off this asset even though partial recovery may be effected in the future. Losses should be taken in the period in which they are determined to be uncollectible.

Loans that are risk-rated 1 through 6 as defined above are considered to be pass-rated loans. As of December 31, 2018 the risk category of gross loans by segment was as follows:

	Special Mention			Substandard		
	Originated	Acquired	Total	Originated	Acquired	Total
Traditional C&I	\$ 12,003	\$ 99	\$ 12,102	\$ 51,903	\$ 128	\$ 52,031
Asset-based lending	14,033	—	14,033	21,865	—	21,865
Payroll finance	9,682	—	9,682	17,766	—	17,766
Factored receivables	—	—	—	508	—	508
Equipment financing	9,966	—	9,966	21,256	—	21,256
CRE	3,852	10,160	14,012	43,336	8,126	51,462
Multi-family	33,321	10,490	43,811	20,812	3,542	24,354
ADC	—	—	—	434	—	434
Residential mortgage	5,179	2,231	7,410	29,475	36,431	65,906
Consumer	1,919	245	2,164	7,223	3,242	10,465
Total	\$ 89,955	\$ 23,225	\$ 113,180	\$ 214,578	\$ 51,469	\$ 266,047

At December 31, 2018, there were \$51,282 of special mention loans and \$95,575 of substandard loans that were originally considered acquired loans but were migrated to the originated loans portfolio as they have been designated criticized or classified status or have been placed on non-accrual since the acquisition date.

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As of December 31, 2017 the risk category of gross loans by segment was as follows:

	Special Mention			Substandard		
	Originated	Acquired	Total	Originated	Acquired	Total
Traditional C&I	\$ 4,677	\$ 2,776	\$ 7,453	\$ 53,731	\$ 184	\$ 53,915
Asset-based lending	30,958	—	30,958	3,835	—	3,835
Payroll finance	15,542	—	15,542	352	—	352
Factored receivables	187	—	187	—	—	—
Equipment financing	4,046	47	4,093	9,299	—	9,299
CRE	16,233	24,205	40,438	20,717	13,812	34,529
Multi-family	1,614	24,988	26,602	2,419	11,847	14,266
ADC	4,204	—	4,204	4,639	—	4,639
Residential mortgage	4,334	1,704	6,038	17,382	83,767	101,149
Consumer	762	281	1,043	6,835	3,672	10,507
Total	\$ 82,557	\$ 54,001	\$ 136,558	\$ 119,209	\$ 113,282	\$ 232,491

At December 31, 2017, there were \$18,415 of special mention loans and \$26,526 substandard loans that were originally considered acquired loans but were migrated to the originated loans portfolio as they have been designated criticized or classified status or have been placed on non-accrual since the acquisition date.

There were \$59 of originated consumer loans rated doubtful at December 31, 2018. There were \$746 of originated traditional C&I loans and \$19 of originated consumer loans rated doubtful at December 31, 2017. There were \$6 of acquired consumer loans rated doubtful at December 31, 2017. There were no warehouse lending or public sector finance loans rated special mention, substandard or doubtful for the periods presented. There were no loans rated loss at December 31, 2018 and 2017.

(6) Premises and Equipment, Net

Premises and equipment are summarized as follows:

	December 31,	
	2018	2017
Land and land improvements	\$ 129,767	\$ 160,376
Buildings	108,416	127,959
Leasehold improvements	29,704	40,442
Furniture, fixtures and equipment	90,397	81,424
Total premises and equipment, gross	358,284	410,201
Accumulated depreciation and amortization	(94,090)	(88,479)
Total premises and equipment, net	\$ 264,194	\$ 321,722

Depreciation and amortization of premises and equipment totaled \$20,349, \$11,670 and \$8,375 for the years ended 2018, 2017, and 2016, respectively.

(7) Goodwill and Other Intangible Assets

Goodwill and other intangible assets are presented in the tables below. The net increase in goodwill in 2018 was related to the Advantage Funding Acquisition of \$39,356 and a reduction in goodwill related to the Astoria Merger of \$6,214. The increase in goodwill and other intangible assets in 2017 was related to the Astoria Merger (See Note 2. "Acquisitions" and Note 11. "Income Taxes").

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Goodwill

The change in goodwill for the periods presented was as follows:

	For the year ended December 31,	
	2018	2017
Beginning of period balance	\$ 1,579,891	\$ 696,600
Acquired goodwill	39,356	883,291
Adjustment to provisional goodwill from Astoria Merger	(6,214)	—
End of period balance	<u>\$ 1,613,033</u>	<u>\$ 1,579,891</u>

Other intangible assets

The balance of other intangible assets for the periods presented was as follows:

	Gross intangible assets	Accumulated amortization	Net intangible assets
December 31, 2018			
Core deposits	\$ 157,959	\$ (53,696)	\$ 104,263
Customer lists	10,450	(5,710)	4,740
Non-compete agreements	11,808	(11,766)	42
Trade name	20,500	—	20,500
	<u>\$ 200,717</u>	<u>\$ (71,172)</u>	<u>\$ 129,545</u>
December 31, 2017			
Core deposits	\$ 157,959	\$ (31,414)	\$ 126,545
Customer lists	10,450	(4,596)	5,854
Non-compete agreements	11,808	(11,516)	292
Trade name	20,500	—	20,500
	<u>\$ 200,717</u>	<u>\$ (47,526)</u>	<u>\$ 153,191</u>

Other intangible assets, except the trade name intangible asset, which is not subject to amortization, are amortized on a straight-line or accelerated bases over their estimated useful lives, which range from one to 10 years. Other intangible asset amortization expense totaled \$23,646 in 2018; \$13,008 in 2017; and \$12,416 in 2016. The estimated aggregate future amortization expense for other intangible assets remaining as of December 31, 2018 was as follows:

	Amortization expense
2019	\$ 19,181
2020	16,800
2021	15,103
2022	13,703
2023	12,322
Thereafter	31,936
Total	<u>\$ 109,045</u>

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(8) Deposits

Deposit balances at December 31, 2018 and 2017 are summarized as follows:

	December 31,	
	2018	2017
Non-interest bearing demand	\$ 4,241,923	\$ 4,080,742
Interest bearing demand	4,207,392	3,882,064
Savings	2,382,520	2,758,642
Money market	7,905,382	7,377,118
Certificates of deposit	2,476,931	2,439,638
Total deposits	<u>\$ 21,214,148</u>	<u>\$ 20,538,204</u>

Municipal deposits totaled \$1,751,670 and \$1,585,076 at December 31, 2018 and December 31, 2017, respectively. See Note 3. "Securities" for the amount of securities that were pledged as collateral for municipal deposits and other purposes.

Certificates of deposit had remaining periods to contractual maturity as follows:

	December 31,	
	2018	2017
Remaining period to contractual maturity:		
Less than one year	\$ 1,423,423	\$ 1,270,605
One to two years	711,106	525,846
Two to three years	186,225	362,233
Three to four years	51,596	160,432
Four to five years	104,581	120,522
Total certificates of deposit	<u>\$ 2,476,931</u>	<u>\$ 2,439,638</u>

Certificate of deposit accounts that exceed the FDIC Insurance limit of \$250 or more totaled \$412,562 and \$371,671 at December 31, 2018 and 2017, respectively.

Listed below are the Company's brokered deposits:

	December 31,	
	2018	2017
Interest bearing demand	\$ 23,742	\$ 23,820
Money market	983,889	773,804
Reciprocal CDARs ⁽¹⁾	—	102,259
CDARs one way	150,192	204,331
Total brokered deposits	<u>\$ 1,157,823</u>	<u>\$ 1,104,214</u>

⁽¹⁾ CDARs represents certificate of deposit account registry services. In 2018, the FDIC revised the definition of brokered deposits, which for the Bank excluded reciprocal CDARs. At December 31, 2018, the balance of reciprocal CDARs was \$97,442.

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(9) Borrowings, Senior Notes and Subordinated Notes

The Company's borrowings and weighted average interest rates are summarized as follows:

	December 31,			
	2018		2017	
	Amount	Rate	Amount	Rate
By type of borrowing:				
FHLB advances and overnight	\$ 4,838,772	2.40%	\$ 4,510,123	1.69%
Repurchase agreements	21,338	1.20	30,162	0.64
5.50% Senior Notes	—	—	76,805	5.98
3.50% Senior Notes	181,130	3.19	201,404	3.19
Subordinated Notes	172,943	5.45	172,716	5.45
Total borrowings	<u>\$ 5,214,183</u>	2.52	<u>\$ 4,991,210</u>	1.96
By remaining period to maturity:				
Less than one year	\$ 3,958,635	2.48%	\$ 2,989,093	1.69%
One to two years	831,889	2.28	775,714	1.79
Two to three years	250,716	2.04	802,650	2.34
Three to four years	—	—	251,037	2.04
Greater than five years	172,943	5.45	172,716	5.45
Total borrowings	<u>\$ 5,214,183</u>	2.52	<u>\$ 4,991,210</u>	1.96

FHLB advances and overnight. As a member of the FHLB, the Bank may borrow up to the amount of eligible mortgages and securities that have been pledged as collateral under a blanket security agreement. As of December 31, 2018 and 2017, the Bank had pledged residential mortgage and CRE loans with eligible collateral values of \$8,526,247 and \$9,123,601, respectively. The Bank had also pledged securities to secure borrowings, which are disclosed in Note 3. "Securities." As of December 31, 2018, the Bank may increase its borrowing capacity by pledging unencumbered securities and mortgage loans that are not required to be pledged for other purposes with an estimated collateral value of \$3,878,427.

Repurchase agreements. Securities sold under repurchase agreements are utilized to facilitate the needs of our clients and are secured short-term borrowings that mature in one to 30 days. Repurchase agreements are stated at the amount of cash received in connection with these transactions. The Bank monitors collateral levels on a continuous basis. The Bank may be required to provide additional collateral based on the fair value of the underlying securities. Securities pledged as collateral are maintained with our safekeeping agents.

5.50% Senior Notes. On July 2, 2013, the Company issued \$100,000 principal amount of 5.50% fixed rate senior notes through a private placement at a discount of 1.75%, which matured on July 2, 2018. At such date, the Company utilized cash on hand to repay the outstanding principal balance and interest of such notes.

3.50% Senior Notes. On October 2, 2017, in connection with the Astoria Merger, the Company assumed \$200,000 principal amount of 3.50% fixed rate senior notes that mature on June 8, 2020 (the "3.50% Senior Notes"). The 3.50% Senior Notes were issued by Astoria on June 8, 2017 through a public offering. The Company recorded the 3.50% Senior Notes at estimated fair value of 100.76% on the acquisition date, which was based on quoted market value. The fair value adjustment of \$757 is being amortized over the remaining maturity using a level-yield methodology, which results in an effective cost of 3.19%. During the fourth quarter of 2018, the Company reacquired \$19,627 of the 3.50% Senior Notes and realized a gain on extinguishment of debt associated with this redemption of \$172, which was included in other non-interest expense in the consolidated income statements.

The 3.50% Senior Notes were issued under an indenture assumed by the Company and Wilmington Trust National Association, as trustee (the "Wilmington Indenture"). The Wilmington Indenture includes provisions that among other things, restrict the Company's ability to dispose of or issue shares of voting stock of a material subsidiary (as defined in the Wilmington Indenture) or transfer the

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entirety of, or a substantial amount of, the Company's assets or merge or consolidate with or into other entities, without satisfying certain conditions. Such conditions were satisfied in the Astoria Merger.

Subordinated Notes. On March 29, 2016, the Bank issued \$110,000 aggregate principal amount of 5.25% fixed-to-floating rate subordinated notes (the "Subordinated Notes") through a private placement at a discount of 1.25%. The cost of issuance was \$500. On September 2, 2016, the Bank reopened the Subordinated Notes offering and issued an additional \$65,000 principal amount of Subordinated Notes. The Subordinated Notes issued September 2, 2016 are fully fungible with, rank equally in right of payment with, and form a single series with the Subordinated Notes issued March 29, 2016. Such notes were issued to the purchasers at a premium of 0.50% and an underwriters discount of 1.25%. The cost of issuance was \$275. At December 31, 2018, the net unamortized discount of all Subordinated Notes was \$2,057, which will be accreted to interest expense over the life of the Subordinated Notes, resulting in an effective yield of 5.45%. Interest is due semi-annually in arrears on April 1 and October 1 of each year, until April 1, 2021. From and including April 1, 2021, the Subordinated Notes will bear interest at a floating rate per annum equal to three-month LIBOR plus 3.937%, payable quarterly on January 1, April 1, July 1 and October 1 of each year, beginning on July 1, 2021, through maturity on April 1, 2026 or earlier redemption. The Subordinated Notes are also redeemable by the Bank, in whole or in part, on April 1, 2021 and on each interest payment date thereafter. The Subordinated Notes are redeemable in whole at any time upon the occurrence of certain specified events. The Subordinated Notes are unsecured, subordinated obligations of the Bank and are subordinated in right of payment to all of the Bank's existing and future senior indebtedness, including claims of depositors and general creditors. The Subordinated Notes qualify as Tier 2 capital for regulatory purposes. See Note 17. "Stockholders' Equity" for additional information.

Revolving line of credit. On September 2, 2018, the Company amended and renewed its existing revolving line of credit agreement for a new 12-month term. The loan agreement is for a \$35,000 revolving line of credit facility (the "Credit Facility") with a financial institution that matures on September 2, 2019. The balance was zero at December 31, 2018 and December 31, 2017. The use of proceeds are for general corporate purposes. The line and accrued interest is payable at maturity, and is required to maintain a zero balance for at least 30 days during its term. The line bears interest at one-month LIBOR plus 1.25%. Under the terms of the Credit Facility, the Company and the Bank must maintain certain ratios related to capital, non-performing assets to capital, reserves to non-performing loans and debt service coverage. The Company and the Bank were in compliance with all requirements of the Credit Facility at December 31, 2018.

(10) Derivatives

The Company utilizes interest rate swap agreements as part of its asset liability management strategy to help manage its interest rate risk position. These derivative contracts relate to transactions in which the Company enters into an interest rate swap with a customer while at the same time entering into an offsetting interest rate swap with another financial institution. In connection with each swap transaction, the Company agrees to pay interest to the customer on a notional amount at a variable interest rate and receive interest from the customer on a similar notional amount at a fixed interest rate. At the same time, the Company agrees to pay another financial institution the same fixed interest rate on the same notional amount and receive the same variable interest rate on the same notional amount. The transaction allows the Company to provide a fixed rate borrowing to a customer and effectively convert the loan to a variable rate loan. Because the Company acts as an intermediary for its customers, changes in the fair value of the underlying derivative contracts largely offset each other and do not materially impact results of operations.

The Company has entered into interest rate swap contracts that are both over-the-counter, or OTC, and those that are exchanged on futures markets such as the Chicago Mercantile Exchange, or the CME. At December 31, 2018 and December 31, 2017, the OTC derivatives are included in the financial statements at the gross fair value amount of the asset (included in other assets) and liability (included in other liabilities), which represents the change in the fair value of the contract since inception. The CME amended its rulebook to legally characterize variation margin payments (a payment made based on changes in the fair value of the interest rate swap contracts) as a settlement, referred to as settled-to-market, or STM. At December 31, 2018 and December 31, 2017 the Company paid cash as STM in the amount of \$5,214 and \$3,523, respectively, for the net fair value of its CME interest rate swap contracts with another financial institution. The variation margin payment changes daily, positively or negatively, based on a change in the fair value of the underlying interest rate swap contracts.

The Company does not typically require its commercial customers to post cash or securities as collateral on its program of back-to-back swaps. However, certain language is written into the International Swaps and Derivatives Association agreement and loan documents where, in default situations, the Company is allowed to access collateral supporting the loan relationship to recover any losses suffered on the derivative asset or liability.

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Summary information as of December 31, 2018 and 2017 regarding these derivatives is presented below:

	Notional amount	Average maturity (in years)	Weighted average fixed rate	Weighted average variable rate	Fair value
December 31, 2018					
Included in other assets:					
Third-party interest rate swap	\$ 516,419				\$ 1,963
Customer interest rate swap	556,934				16,252
Total	<u>\$ 1,073,353</u>	5.90	4.65%	1 m Libor + 2.29%	<u>\$ 18,215</u>
Included in other liabilities:					
Third-party interest rate swap	\$ (556,934)				\$ (4,351)
Customer interest rate swap	(516,419)				(8,650)
Total	<u>\$(1,073,353)</u>	5.90	4.65%	1 m Libor + 2.29%	<u>\$ (13,001)</u>
December 31, 2017					
Included in other assets:					
Third-party interest rate swap	\$ 314,754				\$ 1,155
Customer interest rate swap	306,529				3,302
Total	<u>\$ 621,283</u>	5.79	4.28%	1 m Libor + 1.94%	<u>\$ 4,457</u>
Included in other liabilities:					
Third-party interest rate swap	\$ (306,529)				\$ (4,718)
Customer interest rate swap	(314,754)				(3,262)
Total	<u>\$(621,283)</u>	5.79	4.28%	1 m Libor + 1.94%	<u>\$ (7,980)</u>

The Company enters into various commitments to sell real estate loans into the secondary market. Such commitments are considered to be derivative financial instruments; however, the fair value of these commitments is not material.

(11) Income Taxes

Income tax expense for the periods indicated consisted of the following:

	For the year ended December 31,		
	2018	2017	2016
Current income tax expense:			
Federal	\$ 44,810	\$ 4,375	\$ 55,418
State and local	17,263	2,181	12,854
Total current income tax expense	<u>62,073</u>	<u>6,556</u>	<u>68,272</u>
Deferred income tax expense (benefit):			
Federal	38,661	71,536	(1,069)
State and local	18,242	9,847	179
Total deferred income tax expense (benefit)	<u>56,903</u>	<u>81,383</u>	<u>(890)</u>
Total income tax expense	<u>\$ 118,976</u>	<u>\$ 87,939</u>	<u>\$ 67,382</u>

Actual income tax expense differs from the tax computed based on pre-tax income and the applicable statutory Federal tax rate for the following reasons:

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	For the year ended December 31,		
	2018	2017	2016
Tax at federal statutory rate of 21% for 2018 and 35% for 2017 and 2016	\$ 118,908	\$ 63,341	\$ 72,574
State and local income taxes, net of federal tax benefit	28,049	7,818	8,472
Tax-exempt interest, net of disallowed interest	(19,521)	(18,948)	(11,094)
BOLI income	(3,279)	(2,665)	(1,933)
Non-deductible acquisition related costs	—	2,965	—
Low income housing tax credits	(6,514)	(1,872)	(469)
Equity-based stock compensation benefit	(680)	(1,528)	—
FDIC insurance premium limitation	1,777	—	—
Deferred tax adjustment related to reduction in federal income tax rate	—	40,285	—
Other, net	236	(1,457)	(168)
Actual income tax expense	<u>\$ 118,976</u>	<u>\$ 87,939</u>	<u>\$ 67,382</u>
Effective income tax rate	21.0%	48.6%	32.5%

The following table presents the Company's deferred tax position at December 31, 2018 and 2017:

	December 31,	
	2018	2017
Deferred tax assets:		
Allowance for loan losses	\$ 25,459	\$ 20,468
Deferred compensation	320	315
Other accrued compensation and benefits	10,449	22,321
Deferred rent	2,992	3,445
Intangible assets	566	1,612
Other comprehensive loss (securities)	29,651	11,422
Other comprehensive loss (defined benefit plans)	—	447
Pension expense	8,202	19,576
Accrued expenses	56	4,923
State NOL carryforward	10,376	15,400
AMT credit carryforward	—	4,070
Other	4,009	3,237
Total deferred tax assets	<u>92,080</u>	<u>107,236</u>
Deferred tax liabilities:		
Mortgage servicing rights	2,535	2,722
Other comprehensive gain (defined benefit plans)	4,222	—
Acquisition fair value adjustments	23,282	—
Depreciation of premises and equipment	1,653	1,026
Deferred loan fees and costs	4,625	5,001
Other	1,773	1,154
Total deferred tax liabilities	<u>38,090</u>	<u>9,903</u>
Net deferred tax asset	<u>\$ 53,990</u>	<u>\$ 97,333</u>

On December 22, 2017, the Tax Act was enacted, which included a reduction of the U.S. federal corporate income tax rate from 35% to 21% effective January 1, 2018. As a result, the Company was required to remeasure, through income tax expense, the Company's

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deferred tax assets and liabilities using the enacted rate at which the deferred items are expected to be recovered or settled. The remeasurement of our net deferred tax asset resulted in additional income tax expense of \$40,285 in 2017.

During 2018, the Company completed its accounting for income tax effects related to certain elements of the Tax Act, including purchase accounting adjustments recorded in connection with the Astoria Merger. After completion of the Astoria short-period final tax returns, the Company reduced income tax balances and goodwill by \$6,214, which finalized all purchase accounting adjustments for the Astoria Merger and resolved substantially all items initially estimated as a result of the Tax Act.

Based on the Company's consideration of historical and anticipated future pre-tax income, and the reversal period for the items resulting in the deferred tax assets and liabilities, a valuation allowance for deferred tax assets was not considered necessary at either December 31, 2018 or 2017.

Retained earnings at December 31, 2018 and 2017 included approximately \$9,313 for which no provision for federal income taxes has been made. This amount represents the tax bad debt reserve at December 31, 1987, which is the end of the Bank's base year for purposes of calculating the bad debt deduction for tax purposes. If this portion of retained earnings is used in the future for any purposes other than to absorb bad debts, the amount used will be added to future taxable income. The unrecorded deferred tax liability on the above amount at December 31, 2018 and 2017, was approximately \$1,956 and \$3,260, respectively.

The Company acquired state and local net operating loss ("NOL") carryforwards in the Astoria Merger. The Company has an available New York State NOL carryforward of \$123,589 and a New York City NOL carryforward of \$32,853, both of which expire in 2024.

At December 31, 2018 and 2017, the Company had no unrecognized tax benefits or accrued interest and penalties recorded. The Company does not expect the total amount of unrecognized tax benefits to significantly increase within the next twelve months. The Company records interest and penalties as a component of other non-interest expense.

The Company and its subsidiaries are subject to U.S. federal income tax, as well as income tax of the state of New York and various other states. The Company is generally no longer subject to examination by federal, state and local taxing authorities for tax years prior to December 31, 2015.

(12) Investments in Low Income Housing Tax Credits

The Company has invested in various limited partnerships that sponsor affordable housing projects utilizing the Low Income Housing Tax Credit ("LIHTC") pursuant to Section 42 of the Internal Revenue Code. The purpose of these investments is to assist the Bank in achieving its strategic plan associated with the Community Reinvestment Act and to achieve a satisfactory return on capital. The primary activities of the limited partnerships include the identification, development, and operation of multi-family housing that is leased to qualifying residential tenants. Generally, these types of investments are funded through a combination of debt and equity.

The Company is a limited partner in each LIHTC limited partnership. Each limited partnership is managed by an unrelated third party general partner who exercises full control over the affairs of the limited partnership. The general partner has all the rights, powers and authority granted or permitted to be granted to a general partner of a limited partnership. Duties entrusted to the general partner of each limited partnership include, but are not limited to: investment in operating companies, company expenditures, investment of excess funds, borrowing funds, employment of agents, disposition of fund property, prepayment and refinancing of liabilities, votes and consents, contract authority, disbursement of funds, accounting methods, tax elections, bank accounts, insurance, litigation, cash reserve, and use of working capital reserve funds. Except for limited rights granted to the limited partner(s) relating to the approval of certain transactions, the limited partner(s) may not participate in the operation, management, or control of the limited partnership's business, transact any business in the limited partnership's name or have any power to sign documents for or otherwise bind the limited partnership. In addition, the general partner may only be removed by the limited partner(s) in the event the general partner fails to comply with the terms of the agreement or is negligent in performing its duties.

The general partner of each limited partnership has both the power to direct the activities which most significantly affect the performance of each partnership and the obligation to absorb losses or the right to receive benefits that could be significant to the entities. Therefore, the Company has concluded that it is not the primary beneficiary of any LIHTC partnership. The Company uses the proportional amortization method to account for its investments in these entities.

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The Company's net investment in LIHTC are recorded in other assets in the consolidated balance sheets and the unfunded commitments are recorded in other liabilities in the consolidated balance sheets and were as follows:

	December 31,	
	2018	2017
Gross investment in LIHTC	\$ 217,833	\$ 132,534
Accumulated amortization	(36,335)	(29,680)
Net investment in LIHTC	<u>\$ 181,498</u>	<u>\$ 102,854</u>
Unfunded commitments for LIHTC investments	<u>\$ 138,518</u>	<u>\$ 74,029</u>

Unfunded Commitments

The expected payments for unfunded affordable housing commitments at December 31, 2018 were as follows:

2019	\$ 69,243
2020	56,935
2021	8,176
2022	265
2023	256
2024 and thereafter	3,643
	<u>\$ 138,518</u>

The following table presents tax credits and other tax benefits recognized and amortization expense related to affordable housing as follows:

	For the year ended December 31,		
	2018	2017	2016
Tax credits and other tax benefits recognized	\$ 10,706	\$ 3,195	\$ 628
Amortization expense included in income tax expense	6,655	1,067	536

(13) Stock-Based Compensation

The Company has active stock-based compensation plans, as described below.

The Company's stockholders approved the 2015 Omnibus Equity and Incentive Plan (the "2015 Plan") on May 28, 2015. The 2015 Plan permits the grant of stock options, stock appreciation rights, restricted stock (both time-based and performance-based), restricted stock units, deferred stock and other stock-based awards. The total number of shares that may be awarded under the 2015 Plan is 2,800,000 shares plus the remaining shares available for grant under the 2014 Stock Incentive Plan (the "2014 Plan"). At December 31, 2018, there were 2,318,950 shares available for future grant under the 2015 Plan.

Under the 2015 Plan, one share is deducted from the 2015 Plan for every share that is awarded and delivered under the 2015 Plan.

Restricted stock awards are granted with a fair value equal to the market price of the Company's common stock at the date of grant. Stock option awards are granted with a strike price that is equal to the market price of the Company's stock at the date of grant. The awards generally vest in equal installments annually on the anniversary date and have total vesting periods ranging from one to five years and stock options have 10 year contractual terms.

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The following table summarizes the activity in the Company's active stock-based compensation plans for the periods presented:

	Shares available for grant	Non-vested stock awards/stock units outstanding		Stock options outstanding	
		Number of shares	Weighted average grant date fair value	Number of shares	Weighted average exercise price
Balance at January 1, 2016	4,125,665	726,800	\$ 13.36	1,586,572	\$ 10.95
Granted	(515,869)	515,869	14.60	—	—
Stock awards vested	—	(261,989)	13.09	—	—
Exercised	—	—	—	(503,893)	10.47
Forfeited	130,758	(48,457)	13.88	(78,560)	13.41
Canceled/expired	(100,716)	—	—	—	—
Balance at December 31, 2016	3,639,838	932,223	14.09	1,004,119	11.00
Granted	(610,075)	610,075	24.13	—	—
Stock awards vested	—	(228,661)	16.23	—	—
Exercised	—	—	—	(244,252)	10.52
Forfeited	76,877	(74,877)	18.92	(2,000)	13.18
Canceled/expired	(5,313)	—	—	—	—
Balance at December 31, 2017	3,101,327	1,238,760	20.00	757,867	11.15
Granted	(813,239)	813,239	23.22	—	—
Stock awards vested ⁽¹⁾	(33,392)	(654,231)	19.12	—	—
Exercised	—	—	—	(66,028)	10.46
Forfeited	69,554	(64,254)	22.47	(5,300)	13.18
Canceled/expired	(5,300)	—	—	—	—
Balance at December 31, 2018	<u>2,318,950</u>	<u>1,333,514</u>	\$ 22.12	<u>686,539</u>	\$ 11.20
Exercisable at December 31, 2018				686,539	\$ 11.20

⁽¹⁾ The 33,392 shares of stock awards vested that reduces shares available for grant represents performance shares granted in October 2014 to certain executives. On December 31, 2018, these shares vested at 144.4% of the amount initially granted.

Other information regarding options outstanding and exercisable at December 31, 2018 follows:

	Outstanding and Exercisable		
	Number of stock options	Weighted average	
		Exercise price	Life (in years)
Range of exercise prices:			
\$6.71 to \$9.00	168,000	\$ 8.36	3.22
9.28 to 10.03	59,000	9.71	2.53
11.36 to 11.77	227,362	11.50	4.82
13.23 to 15.01	232,177	13.33	5.86
	<u>686,539</u>	11.20	4.58

The total intrinsic value of outstanding in-the-money stock options and outstanding in-the-money exercisable stock options was \$3,648 at December 31, 2018.

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Proceeds from stock option exercises were \$691, \$2,578, and \$3,588 for 2018, 2017, and 2016, respectively.

The Company uses an option pricing model to estimate the grant date fair value of stock options granted. There were no stock options granted in 2018, 2017 or 2016.

Stock-based compensation expense is recognized ratably over the requisite service period for all awards. Stock-based compensation expense associated with stock options and non-vested stock awards and the related income tax benefit was as follows:

	For the year ended December 31,		
	2018	2017	2016
Stock options	\$ 6	\$ 149	\$ 404
Non-vested stock awards/performance units	12,978	7,961	6,114
Total	\$ 12,984	\$ 8,110	\$ 6,518
Income tax benefit	\$ 2,727	\$ 2,149	\$ 2,118

Unrecognized stock-based compensation expense at December 31, 2018 was \$17,992 and the weighted average period over which unrecognized non-vested awards/performance units is expected to be recognized is 1.67 years.

(14) Pension and Other Post Retirement Benefits

(a) Existing Pension Plans and Other Post Retirement Benefits

On October 2, 2017 and in connection with the Astoria Merger, the Company assumed all of the assets and liabilities of the Astoria Bank Pension Plan, the Astoria Excess and Supplemental Benefit Plans, the Astoria Directors' Retirement Plan, the Greater New York Savings Bank Directors' Retirement Plan and the Long Island Bancorp Directors' Retirement Plan, which collectively are included with pension benefits disclosures in the tables below.

The Company also assumed other post retirement benefits plans including the Astoria Bank Retiree Health Care Plan, and the Astoria Bank BOLI plan, which are combined with legacy Sterling plans, which mainly provide life insurance benefits to certain current and former directors and officers of the Company. These amounts are included with other post retirement benefits in the disclosure tables below.

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The following is a summary of changes in the projected benefit obligation and fair value of pension plans and other post retirement benefits plan assets.

	Pension benefits		Other post retirement benefits	
	December 31,		December 31,	
	2018	2017	2018	2017
Changes in projected benefit obligation:				
Beginning of year balance	\$ 253,583	\$ —	\$ 34,777	\$ 12,125
Benefit obligation assumed in Astoria Merger	—	259,152	—	21,325
Service cost	—	—	64	22
Interest cost	8,521	2,189	1,040	557
Actuarial (gain) loss	(18,815)	3,561	(3,436)	984
Benefits and distributions paid	(11,764)	(11,319)	(1,023)	(236)
Other	—	—	(544)	—
End of year balance	231,525	253,583	30,878	34,777
Changes in fair value of plan assets:				
Beginning of year balance	198,395	—	—	—
Fair value of pension plan assets at October 2, 2017	—	194,010	—	—
Actual gain on plan assets	12,218	6,234	—	—
Employer contributions	41,884	9,470	1,023	236
Benefits and distributions paid	(11,764)	(11,319)	(1,023)	(236)
End of year balance	240,733	198,395	—	—
Funded status at end of year	\$ 9,208	\$ (55,188)	\$ (30,878)	\$ (34,777)

The Astoria Bank Pension Plan was overfunded by \$13,608, which is included in other assets in our consolidated balance sheet at December 31, 2018. The remaining pension benefit plans were underfunded by \$4,400 at December 31, 2018. The underfunded pension benefits and the other post retirement benefits are included in other liabilities in our consolidated balance sheets at December 31, 2018 and 2017.

The Company made a contribution to the Astoria Bank Pension Plan of \$41,510 and made contributions of \$374 to the other pension plans in 2018. Management has announced plans to terminate the Astoria Bank Pension Plan in 2019 and does not anticipate any additional contributions. No pension plan assets are expected to be returned to the Company.

The following is a summary of the components of accumulated other comprehensive gain (loss) related to pension plans and other post retirement benefits. We do not expect that any net actuarial (gain) loss or prior service cost will be recognized as components of net periodic cost in 2019.

	Pension benefits		Other post retirement benefits	
	December 31,		December 31,	
	2018	2017	2018	2017
Net actuarial gain (loss)	\$ 14,922	\$ (1,013)	\$ 978	\$ (167)
Deferred tax (expense) benefit	(3,809)	400	(413)	66
Amount included in accumulated other comprehensive loss, net of tax	\$ 11,113	\$ (613)	\$ 565	\$ (101)

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The following is a summary of the discount rates used to determine the benefit obligations at the dates indicated.

	December 31,	
	2018	2017
Pension benefit plans:		
Astoria Bank Pension Plan	4.08%	3.44%
Astoria Excess and Supplemental Benefit Plans	3.82	3.14
Astoria Directors' Retirement Plan	3.52	2.82
Greater Directors' Retirement Plan	3.66	2.96
LIB Directors' Retirement Plan	N/A	N/A
Other post retirement benefit plans:		
Sterling Other Post retirement life insurance, and other plans	3.58% to 3.73%	2.80% to 3.62%
Astoria Bank Retiree Health Care Plan	4.05	3.42

The components of net periodic pension expense were as follows:

	Pension benefits			Other post retirement benefits		
	For the Year Ended December 31,			For the Year Ended December 31,		
	2018	2017	2016	2018	2017	2016
Service cost	\$ —	\$ —	\$ —	\$ 64	\$ 22	\$ —
Interest cost	8,521	2,189	—	1,040	557	417
Expected return on plan assets	(14,059)	(3,287)	—	—	—	—
Amortization of unrecognized actuarial loss	—	—	—	21	19	—
Amortization of transition obligation	—	—	—	—	2	—
Amortization of prior service cost	—	—	—	—	14	64
Net periodic pension (benefit) expense	<u>\$ (5,538)</u>	<u>\$ (1,098)</u>	<u>\$ —</u>	<u>\$ 1,125</u>	<u>\$ 614</u>	<u>\$ 481</u>

Net periodic pension (benefit) expense is included in compensation and benefits in the consolidated income statements.

The following is a summary of the assumptions used to determine the net periodic (benefit) cost for the years ended December 31, 2018 and 2017.

	Discount rate		Expected return on plan assets	
	2018	2017	2018	2017
Pension benefit plans:				
Astoria Bank Pension Plan	3.44%	3.61%	7.00%	7.00%
Astoria Excess and Supplemental Benefit Plans	3.14	3.21	N/A	N/A
Astoria Directors' Retirement Plan	2.82	2.78	N/A	N/A
Greater Directors' Retirement Plan	2.96	2.96	N/A	N/A
LIB Directors' Retirement Plan	N/A	N/A	N/A	N/A
Other post retirement benefit plans:				
Sterling Other Post retirement life insurance and other plans	2.80% to 4.15%	2.78% to 4.15%	N/A	N/A
Astoria Bank Retiree Health Care Plan	3.42	N/A	N/A	N/A

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On October 2, 2017, as part of the Astoria Merger, the Company assumed the Astoria Bank Retiree Health Care Plan. The following table presents the assumed health care cost trend rates at the dates indicated.

	December 31,	
	2018	2017
Health care cost trend rate assumed for the next year:		
Pre-age 65	6.75%	7.00%
Post-age 65	6.50	6.75
Rate to which the cost trend rate is assumed to decline (the “ultimate trend rate”)	4.75	4.75
Year that ultimate trend rate is reached	2026	2026

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plan. The following table presents the effects on a one-percentage point change in assumed health care cost trend rates.

	One percentage point increase	One percentage point decrease
Effect on total service and interest cost components	\$ 93	\$ (78)
Effect on the post retirement benefit obligation	2,084	(1,738)

Estimated future total benefits expected to be paid are the following for the years ending December 31,:

	Pension benefits	Other post retirement benefits
2019	\$ 12,512	\$ 1,833
2020	12,747	1,828
2021	14,124	1,845
2022	13,201	1,796
2023	13,191	1,798
Thereafter	66,864	16,713

The Astoria Bank Pension Plan’s assets are measured at estimated fair value on a recurring basis. The Astoria Bank Pension Plan groups its assets at fair value in three levels, based on the markets in which the assets are traded and the reliability of the assumptions used to determine fair value. These levels are described in Note 20. “Fair Value Measurements.” Other than the Astoria Bank Pension Plan’s investment in Sterling Bancorp common stock, the assets are managed by Prudential Retirement Insurance and Annuity Company (“PRIAC”).

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The following tables set forth the carrying values of the Astoria Bank Pension Plan's assets measured at estimated fair value on a recurring basis and the level within the fair value for the fair value measurements:

	Carrying value at December 31, 2018				Carrying value at December 31, 2017			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
PRIAC Pooled Separate Accounts ⁽¹⁾	\$ 228,119	\$ 228,119	\$ —	\$ —	\$ 165,315	\$ 165,315	\$ —	\$ —
Sterling Bancorp common stock	—	—	—	—	20,553	20,553	—	—
PRIAC Guaranteed Deposit Account	12,614	—	—	12,614	12,464	—	—	12,464
Cash and cash equivalents	—	—	—	—	63	63	—	—
Total	\$ 240,733	\$ 228,119	\$ —	\$ 12,614	\$ 198,395	\$ 185,931	\$ —	\$ 12,464

⁽¹⁾ The investment allocation at December 31, 2018 consisted of 100% fixed income and the investment allocation at December 31, 2017 consisted of 42% large-cap equity, 33% fixed income, 11% international equity, 8% small-cap equity and 6% mid-cap equity.

The following table sets forth a summary of changes in the estimated fair value of the Astoria Bank Pension Plan's Level 3 assets for the period indicated.

	For the year ended December 31, 2018	For the period from October 2, 2017 to December 31, 2017
Fair value at beginning of period	\$ 12,464	\$ 11,888
Total net gain (loss), realized and unrealized, included in net assets ⁽¹⁾	114	(47)
Purchases	11,783	3,375
Sales	(11,747)	(2,752)
Fair value at end of period	\$ 12,614	\$ 12,464

⁽¹⁾ Includes unrealized loss related to assets held at December 31, 2018 of \$174 for 2018 and unrealized gain related to assets held at December 31, 2017 of \$153 for the period October 2, 2017 to December 31, 2017.

The following table presents information about significant unobservable inputs related to the Astoria Bank Pension Plan's investment in Level 3 assets at the date indicated.

Significant unobservable inputs:	PRIAC guaranteed deposit account range at December 31,	
	2018	2017
Composite market value factor	0.986 - 1.01	1.012 - 1.02
Gross guaranteed crediting rate ⁽¹⁾	3.10% - 3.10%	2.55% - 3.59%

⁽¹⁾ Gross guaranteed crediting rates must be greater than or equal to contractual minimum crediting rate.

The Company's policy is to invest the Astoria Bank Pension Plan assets in a prudent manner in-line with established risk/return levels, preserving liquidity and providing long-term investment returns equal to or greater than the actuarial assumptions. Historically, the strategy allowed for a moderate risk approach in order to achieve greater long-term asset growth. During 2018, management determined it would terminate the Astoria Bank Pension Plan in 2019 subject to obtaining required approvals from the Internal Revenue Service and other regulators. Therefore, the investment allocation of the plan assets was shifted to fixed income securities funds.

The following is a description of valuation methodologies used for the Astoria Bank Pension Plan's assets measured at estimated fair value on a recurring basis.

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PRIAC Pooled Separate Accounts

The fair value of the Astoria Bank Pension Plan's investments in the PRIAC Pooled Separate Accounts is based on the fair value of the underlying securities included in the pooled separate accounts which consist of equity securities and bonds. Investments in these accounts are represented by units and a per unit value. The unit values are calculated by PRIAC and fair value is reported at unit value which is priced daily. For the underlying equity securities, PRIAC obtains closing market prices for those securities traded on a national exchange. For bonds, PRIAC obtains prices from a third-party pricing service using inputs such as benchmark yields, reported trades, broker/dealer quotes and issuer spreads. Prices are reviewed by PRIAC and are challenged if PRIAC believes the price is not reflective of fair value. There are no restrictions as to the redemption of these pooled separate accounts nor does the Astoria Bank Pension Plan have any contractual obligations to further invest in any of the individual pooled separate accounts. These investments are classified as Level 1.

Sterling Bancorp common stock

The fair value of the Astoria Bank Pension Plan's investment in Sterling Bancorp common stock at December 31, 2017 was obtained from a quoted market price in an active market and, as such, this investment was classified as Level 1.

PRIAC Guaranteed Deposit Account

The fair value of the Astoria Bank Pension Plan's investment in the PRIAC Guaranteed Deposit Account is calculated by PRIAC and approximates the fair value of the underlying investments by discounting expected future investment cash flows from both investment income and repayment of principal for each investment purchased directly for the general account. The discount rates assumed in the calculation reflect both the current level of market rates and spreads appropriate to the quality, average life and type of investment being valued. PRIAC calculates a contract-specific composite market value factor, which is determined by summing the product of each investment year's market value factor as of the plan year end by the particular contracts balance within the investment year and dividing the result by the contracts total investment year balance. This contract-specific market value factor is then multiplied by the contract value, which represents deposits made to the contract, plus earnings at the guaranteed crediting rates, less withdrawals and fees, to arrive at the estimated fair value. This investment is classified as Level 3.

Cash and cash equivalents

The fair value of the Astoria Bank Pension Plan's cash and cash equivalents represents the amount available on demand and, as such, are classified as Level 1.

(b) Employee Savings Plan

The Company also sponsors a defined contribution plan established under Section 401(k) of the IRS Code. Eligible employees may elect to contribute up to 50.0% of their compensation to the plan. The Company provides a profit sharing contribution equal to 3.0% of eligible compensation of all employees. The contribution is made to all eligible employees regardless of their 401(k) elective deferral percentage. Voluntary matching and profit sharing contributions are invested in accordance with the participant's direction in one or a number of investment options. Savings plan expense was \$4,844 for 2018, \$3,827 for 2017 and \$3,210 for 2016.

(15) Non-Interest Income and Other Non-interest Expense

(a) Non-Interest Income - Revenue from Contracts with Customers

The Company's significant sources of non-interest income are presented on the face of the consolidated income statements, which include all income in the scope of the New Revenue Standard. A description of the Company's revenue streams accounted for under the New Revenue Standard follows:

Deposit fees and service charges. The Company earns fees from its deposit customers mainly for transaction-based, account maintenance, and overdraft services. Transaction-based fees, which includes services such as ATM use fees, stop payment charges, statement rendering, and ACH fees, are recognized at the time the transaction is executed as that is the point in time the Company fulfills the customer's request. Account maintenance fees, which relate primarily to monthly maintenance, are earned over the course of a month, representing the period over which the Company satisfies the performance obligation. Overdraft fees are recognized at the point in time that the overdraft occurs. Service charges on deposits are withdrawn from the customer's account balance.

Accounts receivable management / factoring commissions and other related fees.

The Company earns these fees / commissions from its payroll finance and factoring businesses, as described below.

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Payroll finance. The Company provides financing and business process outsourcing, including full back-office, technology and tax accounting services, to independently-owned temporary staffing companies nationwide. Services provided includes preparation of payroll, payroll tax payments, billings and collections. Upon completion of the back office support services, and as payroll remittances are made on behalf of the client to fund their employee payroll, which typically occurs weekly, the Company recognizes a portion of the total revenue generated as non-interest income. The Company collects invoices directly from the borrower's customers, and retains the amounts billed for the temporary staffing services provided, and remits the remaining funds to the borrower net of amounts advanced, payroll taxes withheld, the Company's fees, and subject to a reserve to offset potential uncollectible balances.

Factored Receivables. The Company provides accounts receivable management services. The purchase of a client's accounts receivable is traditionally known as "factoring" and results in payment by the client of a factoring fee. The factoring fee included in non-interest income represents compensation to the Company for the bookkeeping and collection services provided. The factoring fee, which is non-refundable, is recognized at the time the receivable is assigned to the Company. Other revenue associated with factored receivables includes wire fees, technology fees, field examination fees and UCC fees. All such fees are recognized as income upon receipt, which is when the Company's obligations are provided to the Company's customers.

Investment management fees. The Company earns investment management fees from its contracts with customers to manage assets for investment, and / or to transact on their accounts. Advisory fees are primarily earned over time as the Company provides the contracted monthly or quarterly services and are generally assessed based on a tiered scale of the market value of assets under management at month end. Fees that are transaction based, including trade execution services, are recognized at the point in time that the transaction is executed, i.e., the trade date.

Gains / Losses on sales of OREO. The Company records a gain or loss from the sale of OREO when control of the property transfers to the buyer, which generally occurs at the time of an executed deed. When the Company finances the sale of OREO to the buyer, the Company assesses whether the buyer is committed to perform its obligations under the contract and whether collectability of the transaction price is probable. Once these criteria are met, the OREO asset is derecognized and the gain or loss on sale is recorded upon the transfer of control of the property to the buyer. In determining the gain or loss on the sale, the Company may adjust the transaction price and related gain (loss) on sale if a significant financing component is present.

Contract Balances. A contract asset balance occurs when an entity performs a service for a customer before the customer pays consideration (resulting in a contract receivable) or before payment is due (resulting in a contract asset). A contract liability balance is an entity's obligation to transfer a service to a customer for which the entity has already received payment (or payment is due) from the customer. The Company's non-interest revenue streams are largely based on transactional activity, or standard month-end revenue accruals such as investment management fees based on period-end market values. Consideration is often received immediately or shortly after the Company satisfies its performance obligation and revenue is recognized. The Company does not typically enter into long-term revenue contracts with customers, and therefore, does not experience significant contract balances. As of December 31, 2018 and 2017, the Company did not have any significant contract balances.

Other non-interest expense items are presented in the following table. Significant components of the aggregate of total net interest income and total non-interest income are presented separately.

	For the year ended December 31,		
	2018	2017	2016
Other non-interest expense:			
Professional fees	\$ 13,371	\$ 9,982	\$ 10,276
Communication	6,451	3,300	3,215
Advertising and promotion	5,930	3,682	2,948
Insurance & surety bond premium	3,630	3,317	3,150
Operational losses	3,176	1,533	978
Other	24,029	17,418	14,363
Total other non-interest expense	<u>\$ 56,587</u>	<u>\$ 39,232</u>	<u>\$ 34,930</u>

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(16) Earnings Per Common Share

The following is a summary of the calculation of earnings per common share (“EPS”):

	For the year ended December 31,		
	2018	2017	2016
Net income available to common stockholders	\$ 439,276	\$ 91,029	\$ 139,972
Weighted average common shares outstanding for computation of basic EPS	224,299,488	157,513,639	130,607,994
Common-equivalent shares due to the dilutive effect of stock options ⁽¹⁾	517,508	610,631	626,468
Weighted average common shares for computation of diluted EPS	224,816,996	158,124,270	131,234,462
Earnings per common share:			
Basic	\$ 1.96	\$ 0.58	\$ 1.07
Diluted	1.95	0.58	1.07
Weighted average common shares that could be exercised that were anti-dilutive for the period ⁽²⁾	—	—	—

(1) Represents incremental shares computed using the treasury stock method.

(2) Anti-dilutive shares are not included in determining diluted earnings per share.

(17) Stockholders’ Equity

(a) Regulatory Capital Requirements

Banks and bank holding companies are subject to various regulatory capital requirements administered by the federal banking agencies. Capital adequacy guidelines, and, additionally for banks, prompt corrective action regulations, involve quantitative measures of assets, liabilities, and certain off-balance sheet items calculated under regulatory accounting practices. Capital amounts and classifications are also subject to qualitative judgments by regulators about components, risk-weighting, and other factors.

The Basel III Capital Rules became effective for the Company and the Bank on January 1, 2015 (subject to a phase-in period for certain provisions). Quantitative measures established by the Basel III Capital Rules to ensure capital adequacy require the maintenance of minimum amounts and ratios (set forth in the table below) of Common Equity Tier 1 capital (as defined in the regulations), Tier 1 capital (as defined in the regulations) and Total capital (as defined in the regulations) to risk-weighted assets (as defined, “RWA”), and of Tier 1 capital to adjusted quarterly average assets (as defined in the regulations) (the “Tier 1 leverage ratio”).

The Company’s and the Bank’s Common Equity Tier 1 capital consists of common stock and related paid-in capital, net of treasury stock, and retained earnings. In connection with the adoption of the Basel III Capital Rules, we elected to opt-out of the requirement to include most components of accumulated other comprehensive income in Common Equity Tier 1 capital. Common Equity Tier 1 capital for both the Company and the Bank is reduced by goodwill and other intangible assets, net of associated deferred tax liabilities and subject to transition provisions.

Tier 1 capital includes Common Equity Tier 1 capital and additional Tier 1 capital, including preferred stock. Total capital includes Tier 1 capital and Tier 2 capital. Tier 2 capital (as defined in the regulations) for both the Bank and the Company includes a permissible portion of the allowance for loan losses and \$172,943 and \$142,777 of the Subordinated Notes, respectively. During the final five years of the term of the Subordinated Notes the permissible portion eligible for inclusion in Tier 2 capital decreases by 20% annually.

The Common Equity Tier 1, Tier 1 and Total capital ratios are calculated by dividing the respective capital amounts by RWA. RWA is calculated based on regulatory requirements and includes total assets, excluding goodwill and other intangible assets, allocated by risk weight category, and certain off-balance-sheet items, among other items.

The Tier 1 leverage ratio is calculated by dividing Tier 1 capital by adjusted quarterly average total assets, which exclude goodwill and other intangible assets, among other things. As fully phased-in on January 1, 2019, the Basel III Capital Rules require the Company

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and the Bank to maintain: (i) a minimum ratio of Common Equity Tier 1 capital to RWA of at least 4.5%, plus a 2.5% “capital conservation buffer” (which is added to the 4.5% Common Equity Tier 1 capital ratio, effectively resulting in a minimum ratio of Common Equity Tier 1 capital to RWA of at least 7.0%); (ii) a minimum ratio of Tier 1 capital to RWA of at least 6.0%, plus the capital conservation buffer (which is added to the 6.0% Tier 1 capital ratio, effectively resulting in a minimum Tier 1 capital ratio of 8.5%); (iii) a minimum ratio of Total capital to RWA of at least 8.0%, plus the capital conservation buffer (which is added to the 8.0% total capital ratio, effectively resulting in a minimum total capital ratio of 10.5%); and (iv) a minimum Tier 1 leverage ratio of 4.0%.

The implementation of the capital conservation buffer began on January 1, 2016 at the 0.625% level and was phased in over a four-year period (increasing by that amount on each subsequent January 1, until it reached 2.5% on January 1, 2019). The Basel III Capital Rules also provide for a “countercyclical capital buffer” that is applicable to only certain covered institutions and does not have any current applicability to the Company or the Bank.

The aforementioned 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 RWA above the minimum but below the conservation buffer (or below the combined capital conservation buffer and countercyclical capital buffer, when the latter is applied) will face constraints on dividends, equity repurchases and compensation based on the amount of the shortfall.

The following table presents actual and required capital ratios as of December 31, 2018 and December 31, 2017 for the Company and the Bank under the Basel III Capital Rules. The minimum required capital amounts presented include the minimum required capital levels as of December 31, 2018 based on the phase-in provisions of the Basel III Capital Rules and the minimum required capital levels as of January 1, 2019 when the Basel III Capital Rules have been fully phased-in. Capital levels required to be considered well capitalized are based upon prompt corrective action regulations, as amended, to reflect the changes under the Basel III Capital Rules.

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	Actual		Minimum capital required - Basel III phase-in schedule		Minimum capital required - Basel III fully phased-in		Required to be considered well capitalized	
	Capital amount	Ratio	Capital amount	Ratio	Capital amount	Ratio	Capital amount	Ratio
December 31, 2018								
Common equity tier 1 to RWA:								
Sterling National Bank	\$2,915,484	13.55%	\$1,371,480	6.38%	\$1,505,939	7.00%	\$1,398,372	6.50%
Sterling Bancorp	2,649,593	12.31	1,372,457	6.38	1,507,011	7.00	N/A	N/A
Tier 1 capital to RWA:								
Sterling National Bank	2,915,484	13.55	1,694,181	7.88	1,828,640	8.50	1,721,073	8.00
Sterling Bancorp	2,788,016	12.95	1,695,388	7.88	1,829,942	8.50	N/A	N/A
Total capital to RWA:								
Sterling National Bank	3,184,758	14.80	2,124,450	9.88	2,258,908	10.50	2,151,341	10.00
Sterling Bancorp	3,027,124	14.06	2,125,963	9.88	2,260,517	10.50	N/A	N/A
Tier 1 leverage ratio:								
Sterling National Bank	2,915,484	9.94	1,172,964	4.00	1,172,964	4.00	1,466,206	5.00
Sterling Bancorp	2,788,016	9.50	1,173,883	4.00	1,173,883	4.00	N/A	N/A
	Actual		Minimum capital required - Basel III phase-in schedule		Minimum capital required - Basel III fully phased-in		Required to be considered well capitalized	
	Capital amount	Ratio	Capital amount	Ratio	Capital amount	Ratio	Capital amount	Ratio
December 31, 2017								
Common equity tier 1 to RWA:								
Sterling National Bank	\$2,770,381	13.95%	\$1,142,247	5.75%	\$1,390,561	7.00%	\$1,291,236	6.50%
Sterling Bancorp	2,458,449	12.37	1,143,045	5.75	1,391,534	7.00	N/A	N/A
Tier 1 capital to RWA:								
Sterling National Bank	2,770,381	13.95	1,440,224	7.25	1,688,539	8.50	1,589,213	8.00
Sterling Bancorp	2,597,669	13.07	1,441,231	7.25	1,689,719	8.50	N/A	N/A
Total capital to RWA:								
Sterling National Bank	3,021,658	15.21	1,837,527	9.25	2,085,842	10.50	1,986,516	10.00
Sterling Bancorp	2,818,404	14.18	1,838,812	9.25	2,087,300	10.50	N/A	N/A
Tier 1 leverage ratio:								
Sterling National Bank	2,770,381	10.10	1,097,449	4.00	1,097,449	4.00	1,371,811	5.00
Sterling Bancorp	2,597,669	9.39	1,106,977	4.00	1,106,977	4.00	N/A	N/A

Management believes that as of December 31, 2018, the Bank was “well-capitalized”. At December 31, 2018 and December 31, 2017, the most recent regulatory notifications categorized the Bank as well capitalized under the regulatory framework for prompt corrective action. There are no conditions or events since that notification that management believes have changed the Bank’s category.

A reconciliation of the Company’s and the Bank’s stockholders’ equity to their respective regulatory capital at December 31, 2018 and 2017 is as follows:

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	The Company		The Bank	
	December 31,		December 31,	
	2018	2017	2018	2017
Total U.S. GAAP stockholders' equity	\$ 4,428,853	\$ 4,240,178	\$ 4,513,577	\$ 4,373,108
Disallowed goodwill and other intangible assets	(1,706,782)	(1,668,680)	(1,664,038)	(1,628,898)
Net unrealized loss on available for sale securities	75,078	22,324	75,078	22,324
Net accumulated other comprehensive income components	(9,133)	3,847	(9,133)	3,847
Tier 1 risk-based capital	2,788,016	2,597,669	2,915,484	2,770,381
Tier 2 capital	142,777	142,174	172,943	172,716
Allowance for loan losses and off-balance sheet commitments	96,331	78,561	96,331	78,561
Total risk-based capital	<u>\$ 3,027,124</u>	<u>\$ 2,818,404</u>	<u>\$ 3,184,758</u>	<u>\$ 3,021,658</u>

(b) Dividend Restrictions

The Company is mainly dependent upon dividends from the Bank to provide funds for the payment of dividends to stockholders and to provide for other cash requirements. 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, 2018, the Bank had capacity to pay aggregate dividends of up to \$276,000 to the Company without prior regulatory approval.

(c) Preferred Stock

On October 2, 2017 and in connection with the Astoria Merger, the Company registered and issued 135,000 shares equal to \$135,000 of 6.50% Non-Cumulative Perpetual Preferred Stock, Series A, par value \$0.01 with a liquidation preference of \$1,000 per share in exchange for each share of Astoria's 6.50% Non-Cumulative Perpetual Preferred Stock, Series C, par value \$1.00 per share, issued and outstanding immediately prior to the the Astoria Merger (the “Company Preferred Stock”). In addition, the Company registered and issued 5,400,000 depositary shares, with each depositary share representing 1/40th interest in the Company Preferred Stock, (the “Depositary Shares”). Holders of the Depositary Shares will be entitled to all proportional rights and preferences of the Company Preferred Stock (including dividends, voting, redemption and liquidation rights). Under the terms of the Company Preferred Stock, the ability of the Company to pay dividends on, make distributions with respect to or repurchase, redeem or otherwise acquire shares of its common stock or any preferred stock ranking on parity with or junior to the Company Preferred Stock will be subject to restrictions in the event that the Company does not declare and either pay or set aside a sum sufficient for payment of dividends on the Company Preferred Stock for the immediately preceding dividend period. Dividends are payable January 15, April 15, July 15 and October 15 of each year. The Preferred Stock is redeemable in whole or in part from time to time, on October 15, 2022 or any dividend payment date thereafter.

(d) Stock Repurchase Plan

In the the first quarter of 2018 the Company's Board of Directors authorized a new common stock repurchase plan to plan to replace the plan that existed at December 31, 2017 in which 776,713 common shares were available to be purchased. Under the new repurchase plan the Company was permitted to purchase up to 10,000,000 common shares. The Board of Directors amended the new common stock repurchase plan in the fourth quarter of 2018 and increased the number of shares that may be purchased up to 20,000,000 common shares. In the fourth quarter of 2018, the Company repurchased 9,114,771 shares of its common stock in the open market at a weighted average price of \$17.54 per share, for total consideration of \$159,903. Repurchases may be made at management's discretion through open market purchases and block trades in accordance with SEC and regulatory requirements. Any common shares purchased will be held as treasury stock and made available for general corporate purposes. There were no shares repurchased during 2017 and 2016.

(e) Liquidation Rights

Upon completion of the second-step conversion in January 2004, the Bank established a special “liquidation account” in accordance with OCC regulations. The account was established for the benefit of Eligible Account Holders and Supplemental Eligible Account Holders (as defined in the plan of conversion) in an amount equal to the greater of (i) the Mutual Holding Company's ownership interest in the retained earnings of the Bank as of the date of its latest balance sheet contained in the prospectus; or (ii) the retained earnings of the Bank at the time that the Bank reorganized into the Mutual Holding Company in 1999. Each Eligible Account Holder

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and Supplemental Eligible Account Holder that continues to maintain his or her deposit account at the Bank would be entitled, in the event of a complete liquidation of the Bank, to a pro rata interest in the liquidation account prior to any payment to the stockholders of the Holding Company (as defined in the plan of conversion). The liquidation account is reduced annually on September 30 to the extent that Eligible Account Holders and Supplemental Eligible Account Holders have reduced their qualifying deposits as of each anniversary date. At December 31, 2018, the liquidation account had a balance of \$13,300. Subsequent increases in deposits do not restore such account holder's interest in the liquidation account. The Bank may not pay cash dividends or make other capital distributions if the effect thereof would be to reduce its stockholder's equity below the amount of the liquidation account.

(18) Off-Balance-Sheet Financial Instruments

In the normal course of business, the Company enters into various transactions, which, in accordance with GAAP, are not included in its consolidated balance sheets. The Company enters into these transactions to meet the financing needs of its customers. These transactions include commitments to extend credit and standby letters of credit, which involve, to varying degrees, elements of credit risk and interest rate risk in excess of the amounts recognized in the consolidated balance sheets. The Company minimizes its exposure to loss under these commitments by subjecting them to credit approval and monitoring procedures.

The Company enters into contractual commitments to extend credit, normally with fixed expiration dates or termination clauses, at specified rates and for specific purposes. Substantially all of the Company's commitments to extend credit are contingent upon customers maintaining specific credit standards at the time of loan funding. Standby letters of credit are written conditional commitments issued by the Company to guarantee the performance of a customer to a third-party. In the event the customer does not perform in accordance with the terms of the agreement with the third-party, the Company would be required to fund the commitment. The maximum potential amount of future payments the Company could be required to make is represented by the contractual amount of the commitment. If the commitment were funded, the Company would be entitled to seek recovery from the customer. Based on the Company's credit risk exposure assessment of standby letter of credit arrangements, the arrangements contain security and debt covenants similar to those contained in loan agreements. As of December 31, 2018, the Company had \$287,779 in outstanding letters of credit, of which \$114,939 were secured by cash collateral and \$65,574 were secured by other collateral. The carrying value of these obligations are not considered material.

The contractual or notional amounts of these instruments, which reflect the extent of the Company's involvement in particular classes of off-balance sheet financial instruments, are summarized as follows:

	December 31,	
	2018	2017
Loan origination commitments	\$ 417,027	\$ 510,135
Unused lines of credit	1,737,315	1,195,656
Letters of credit	287,779	166,824

(19) Commitments and Contingencies

Certain premises and equipment are leased under operating leases with terms expiring through 2034. The Company has the option to renew certain of these leases for additional terms. Future minimum rental payments due under non-cancellable operating leases with initial or remaining terms of more than one year at December 31, 2018 were as follows:

2019	\$ 20,275
2020	20,229
2021	18,514
2022	16,439
2023	13,836
2024 and thereafter	56,504
	<u>\$ 145,797</u>

Occupancy and office operations expense includes net rent expense of \$17,079, \$10,647 and \$10,430, respectively, for 2018, 2017 and 2016.

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Litigation

The Company and the Bank are involved in a number of judicial proceedings concerning matters arising from conducting their business activities. These include routine legal proceedings arising in the ordinary course of business. These proceedings also include actions brought against the Company and the Bank with respect to corporate matters and transactions in which the Company and the Bank were involved. In addition, the Company and the Bank may be requested to provide information or otherwise cooperate with government authorities in the conduct of investigations of other persons or industry groups.

There can be no assurance as to the ultimate outcome of a legal proceeding; however, the Company and the Bank have generally denied, or believe they have meritorious defenses and will deny, liability in all significant litigation pending against them and intend to defend vigorously each case, other than matters determined appropriate to be settled. The Company accrues a liability for legal claims when payments associated with the claims become probable and the costs can be reasonably estimated. The actual costs of resolving legal claims may be substantially higher or lower than the amounts accrued for those claims.

(20) Fair Value Measurements

Fair value is the exchange price that would be received for an asset or paid to transfer a liability (exit price) in an orderly transaction occurring in the principal or most advantageous market for such asset or liability in an orderly transaction between market participants on the measurement date. In estimating fair value, we use valuation techniques that are consistent with the market approach, the income approach and/or the cost approach. Such valuation techniques are consistently applied. GAAP establishes a fair value hierarchy comprised of three levels of inputs that may be used to measure fair values.

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

Level 2 Inputs – Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. These might include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability (such as interest rates, volatilities, prepayment speeds, credit risk, etc.) or inputs that are derived principally from, or corroborated by, market data by correlation or other means.

Level 3 Inputs – Unobservable inputs for determining the fair value of assets or liabilities that reflect an entity's own assumptions about the assumptions that market participants would use in pricing the assets or liabilities.

In general, fair value is based on quoted market prices, when available. If quoted market prices in active markets are not available, fair value is based on internally developed models that primarily use, as inputs, observable market-based parameters. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value. These adjustments may include amounts to reflect counterparty credit quality and the Company's creditworthiness, among other things, as well as unobservable parameters. Any such valuation adjustments are applied consistently over time. The Company's valuation methodologies may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. While management believes the Company's valuation methodologies are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date. Furthermore, the reported fair value amounts have not been comprehensively revalued since the presentation dates, and therefore, estimates of fair value after the balance sheet date may differ significantly from the amounts presented herein. A more detailed description of the valuation methodologies used for assets and liabilities measured at fair value is set forth below. Transfers between levels of the fair value hierarchy are recognized on the actual date of the event or circumstances that caused the transfer, which generally coincide with the Company's monthly and/or quarterly valuation process.

Investment Securities Available for Sale

The majority of the Company's available for sale investment securities are reported at fair value utilizing Level 2 inputs as quoted market prices are generally not available. For these securities, the Company obtains fair value measurements from an independent pricing service. The fair value measurements are calculated based on market prices of similar securities and consider observable data that may include dealer quotes, market spreads, cash flows, the U.S. Treasury yield curve, live trading levels, trade execution data, market consensus prepayment speeds, credit information and the securities' terms and conditions, among other things.

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The Company reviews the prices supplied by the independent pricing service, as well as their underlying pricing methodologies, for reasonableness and to ensure such prices are aligned with traditional pricing matrices. In general, the Company does not purchase investment securities that have a complicated structure. The Company's entire portfolio consists of traditional investments, nearly all of which are mortgage pass-through securities, state and municipal general obligation or revenue bonds, U.S. agency bullet and callable securities and corporate bonds. Pricing for such instruments is fairly generic and is generally easily obtained. From time to time, the Company validates, on a sample basis, prices supplied by the independent pricing service by comparison to prices obtained from third-party sources or derived using internal models.

At December 31, 2018, we do not believe any of our securities are OTTI; however, we review all of our securities on at least a quarterly basis to assess whether impairments, if any, are OTTI.

Derivatives

The fair values of derivatives are based on valuation models using current observable market data (including interest rates and fees), the remaining terms of the agreements and the credit worthiness of the counterparty as of the measurement date, which are considered Level 2 inputs. Our derivatives are traded in an over-the-counter market where quoted market prices are not always available. The Company's derivatives at December 31, 2018, consisted of interest rate swaps. (See Note 10. "Derivatives.")

A summary of assets and liabilities at December 31, 2018 measured at estimated fair value on a recurring basis is as follows:

	December 31, 2018			
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs
Assets:				
Investment securities available for sale:				
Residential MBS:				
Agency-backed	\$ 2,268,851	\$ —	\$ 2,268,851	\$ —
CMO/Other MBS	574,770	—	574,770	—
Total residential MBS	2,843,621	—	2,843,621	—
Federal agencies	273,973	—	273,973	—
Corporate bonds	527,965	—	527,965	—
State and municipal	225,004	—	225,004	—
Total other securities	1,026,942	—	1,026,942	—
Total investment securities available for sale	3,870,563	—	3,870,563	—
Swaps	18,215	—	18,215	—
Total assets	<u>\$ 3,888,778</u>	<u>\$ —</u>	<u>\$ 3,888,778</u>	<u>\$ —</u>
Liabilities:				
Swaps	\$ 13,001	\$ —	\$ 13,001	\$ —
Total liabilities	<u>\$ 13,001</u>	<u>\$ —</u>	<u>\$ 13,001</u>	<u>\$ —</u>

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A summary of assets and liabilities at December 31, 2017 measured at estimated fair value on a recurring basis is as follows:

	December 31, 2017			
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs
Assets:				
Investment securities available for sale:				
Residential MBS:				
Agency-backed	\$ 2,150,649	\$ —	\$ 2,150,649	\$ —
CMO/Other MBS	649,403	—	649,403	—
Total residential MBS	2,800,052	—	2,800,052	—
Federal agencies	399,996	—	399,996	—
Corporate bonds	148,226	—	148,226	—
State and municipal	263,798	—	263,798	—
Total investment securities available for sale	812,020	—	812,020	—
Total available for sale securities	3,612,072	—	3,612,072	—
Interest rate caps and swaps	4,457	—	4,457	—
Total assets	\$ 3,616,529	\$ —	\$ 3,616,529	\$ —
Liabilities:				
Swaps	\$ 7,980	\$ —	\$ 7,980	\$ —
Total liabilities	\$ 7,980	\$ —	\$ 7,980	\$ —

The following categories of financial assets are not measured at fair value on a recurring basis, but are subject to fair value adjustments in certain circumstances (for example, when there is evidence of impairment).

Loans Held for Sale

The estimated fair value of commercial loans originated and intended for sale approximates their carrying value as these loans are variable-rate loans that reprice frequently with no significant change in credit risk since origination. Residential loans held for sale are carried at the lower of cost or fair value, which is evaluated on a pool-level basis. Fair value is determined using quoted prices for similar assets, adjusted for specific attributes of that loan or other observable market data, such as outstanding commitments from third party investors.

Impaired Loans

The Company may record adjustments to the carrying value of loans based on fair value measurements, generally as partial charge-offs of the uncollectible portions of these loans. These adjustments also include certain impairment amounts for collateral dependent loans calculated in accordance with GAAP. Impairment amounts are generally based on the fair value of the underlying collateral supporting the loan and, as a result, the carrying value of the loan less the calculated impairment amount applicable to that loan generally approximates the fair value of the loan. Real estate collateral is valued using independent appraisals or other indications of value based on recent comparable sales of similar properties or assumptions generally observable by market participants. However, due to the substantial judgment applied and limited volume of activity as compared to other assets, fair value is based on Level 3 inputs. Estimates of fair value used for collateral supporting commercial loans not collateralized by real estate generally are based on assumptions not observable in the market place and are also based on Level 3 inputs. Impaired loans are evaluated on at least a quarterly basis for additional impairment and their carrying values are adjusted as needed. Impaired loans that were subject to non-recurring fair value measurements had a balance of \$100,998 and \$60,862 at December 31, 2018, and 2017, respectively. The Company recorded charge-offs on impaired loans of \$12,228 for 2018, \$280 for 2017, and \$513 for 2016.

When valuing impaired loans that are collateral dependent, the Company charges-off the difference between the recorded investment in the loan and the appraised value, which is generally less than 12 months old. A discount for estimated costs to sell the collateral is used when evaluating impaired loans.

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A summary of impaired loans at December 31, 2018 measured at estimated fair value on a non-recurring basis is the following:

	December 31, 2018			
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs
Commercial & industrial	\$ 28,780	\$ —	\$ —	\$ 28,780
CRE	10,725	—	—	10,725
Multi-family	1,210	—	—	1,210
Residential mortgage	769	—	—	769
Total impaired loans measured at fair value	\$ 41,484	\$ —	\$ —	\$ 41,484

A summary of impaired loans at December 31, 2017 measured at estimated fair value on a non-recurring basis is the following:

	December 31, 2017			
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs
Commercial & industrial	\$ 114	\$ —	\$ —	\$ 114
CRE	782	—	—	782
Total impaired loans measured at fair value	\$ 896	\$ —	\$ —	\$ 896

Mortgage Servicing Rights

The Company utilizes the amortization method to account for mortgage servicing rights, which are amortized on a periodic basis, and reported with other assets in the consolidated balance sheet at the lower of amortized cost or fair value. To estimate the fair value of servicing rights, the Company utilizes a third-party that considers the market prices for similar assets and the present value of expected future cash flows associated with the mortgage servicing rights. Mortgage servicing rights are evaluated for impairment based upon the fair value of the rights as compared to the carrying amount. If the carrying amount of an individual tranche exceeds fair value, impairment is recorded on that tranche so that the servicing asset is carried at fair value. Assumptions utilized to calculate fair value include estimates of the cost of servicing, loan default rates, an appropriate discount rate and prepayment speeds. The determination of fair value of servicing rights relies upon Level 3 inputs. The fair value of mortgage servicing rights at December 31, 2018 and 2017 were \$11,715 and \$10,363, respectively.

Other Real Estate Owned (Assets Taken in Foreclosure of Defaulted Loans)

Other real estate owned is initially recorded at fair value less costs to sell when acquired, which establishes a new cost basis. These assets are subsequently accounted for at the lower of cost or fair value, less costs to sell, and are primarily comprised of commercial and residential real estate property. Upon initial recognition, other real estate owned is re-measured and reported at fair value through a charge-off to the allowance for loan losses based on the fair value of the underlying collateral. The fair value is generally determined using appraisals or other indications of value based on recent comparable sales of similar properties or assumptions generally observable in the market place. Adjustments are routinely made in the appraisal process by the independent appraisers to adjust for differences between comparable sales and income data available. The fair value is derived using Level 3 inputs. Appraisals are reviewed by our credit department, our external loan review consultant and verified by officers in our credit administration area. Other real estate owned subject to non-recurring fair value measurement were \$19,377 and \$27,095 at December 31, 2018 and 2017, respectively. There were write-downs of \$678 in 2018, \$2,273 in 2017 and \$582 in 2016 related to changes in fair value recognized through income for those foreclosed assets held by the Company.

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Significant Unobservable Inputs to Level 3 Measurements

The following table presents quantitative information about significant unobservable inputs used in the fair value measurements for Level 3 assets at December 31, 2018:

Non-recurring fair value measurements	Fair value	Valuation technique	Unobservable input / assumptions	Discount rate/ prepayment speeds ⁽¹⁾ (weighted average)
Impaired loans:				
C&I	\$28,780	Discount analysis	Mainly value of taxi medallions	10.0% -19.0% (14.4%)
CRE	10,725	Appraisal	Adjustments for comparable properties	22.0%
Multi-family	1,210	Appraisal	Adjustments for comparable properties	22.0%
Residential mortgage	769	Appraisal	Adjustments for comparable properties	22.0%
Assets taken in foreclosure:				
Residential mortgage	10,531	Appraisal	Adjustments by management to reflect current conditions/selling costs	22.0%
CRE	6,559	Appraisal	Adjustments by management to reflect current conditions/selling costs	22.0%
ADC	2,287	Appraisal	Adjustments by management to reflect current conditions/selling costs	22.0%
Mortgage servicing rights	11,715	Third-party	Discount rates	9.0% - 20.0% (9.6%)
		Third-party	Prepayment speeds	7.98 - 24.07 (8.54)

⁽¹⁾ For loans collateralized by real estate and real estate assets taken in foreclosure the discount rate represents the discount factors applied to the appraisal to determine fair value, which includes a general discount to the appraised value based on historical experience, estimated costs to carry and costs of sale. The amounts used for mortgage servicing rights are discounts applied by a third-party valuation provider, which the Company believes are appropriate.

The following table presents quantitative information about significant unobservable inputs used in the fair value measurements for Level 3 assets at December 31, 2017:

Non-recurring fair value measurements	Fair value	Valuation technique	Unobservable input / assumptions	Discount rate/ prepayment speeds ⁽¹⁾ (weighted average)
Impaired loans:				
Commercial & industrial	\$ 114	Appraisal	Value of underlying collateral	10.0% -19.0% (14.4%)
CRE	782	Appraisal	Adjustments for comparable properties	22.0%
Assets taken in foreclosure:				
Residential mortgage	17,537	Appraisal	Adjustments by management to reflect current conditions/selling costs	22.0%
CRE	7,271	Appraisal	Adjustments by management to reflect current conditions/selling costs	22.0%
ADC	2,287	Appraisal	Adjustments by management to reflect current conditions/selling costs	22.0%
Mortgage servicing rights	10,363	Third-party	Discount rates	9.5% - 20.0% (9.9%)
		Third-party	Prepayment speeds	9.79 - 16.76 (10.3)

⁽¹⁾ See (1) above.

Fair Values of Financial Instruments

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GAAP requires disclosure of fair value information for those financial instruments for which it is practicable to estimate fair value, whether or not such financial instruments are recognized in the consolidated financial statements for interim and annual periods.

Quoted market prices are used to estimate fair values when those prices are available, although active markets do not exist for many types of financial instruments. Fair values for these instruments must be estimated by management using techniques such as discounted cash flow analysis and comparison to similar instruments. These estimates are highly subjective and require judgments regarding significant matters, such as the amount and timing of future cash flows and the selection of discount rates that appropriately reflect market and credit risks. Changes in these judgments often have a material effect on the fair value estimates. Since these estimates are made as of a specific point in time, they are susceptible to material near-term changes. Fair values disclosed in accordance with GAAP do not reflect any premium or discount that could result from the sale of a large volume of a particular financial instrument, nor do they reflect possible tax ramifications or estimated transaction costs.

The following is a summary of the carrying amounts and estimated fair value of financial assets and liabilities (none of which were held for trading purposes) as of December 31, 2018:

	December 31, 2018			
	Carrying amount	Level 1 inputs	Level 2 inputs	Level 3 inputs
Financial assets:				
Cash and due from banks	\$ 438,110	\$ 438,110	\$ —	\$ —
Securities available for sale	3,870,563	—	3,870,563	—
Securities held to maturity	2,796,617	—	2,740,522	—
Portfolio loans, net	19,122,853	—	—	19,033,743
Loans held for sale	1,565,979	—	1,565,979	—
Accrued interest receivable on securities	38,722	—	38,722	—
Accrued interest receivable on loans	68,389	—	—	68,389
FHLB stock and FRB stock	369,690	—	—	—
Swaps	18,215	—	18,215	—
Financial liabilities:				
Non-maturity deposits	(18,737,217)	(18,737,217)	—	—
Certificates of deposit	(2,476,931)	—	(2,447,534)	—
FHLB borrowings	(4,838,772)	—	(4,821,652)	—
Other borrowings	(21,338)	—	(21,337)	—
Senior Notes	(181,130)	—	(179,786)	—
Subordinated Notes	(172,943)	—	(177,481)	—
Mortgage escrow funds	(72,891)	—	(64,074)	—
Accrued interest payable on deposits	(3,191)	—	(3,191)	—
Accrued interest payable on borrowings	(11,823)	—	(11,823)	—
Swaps	(13,001)	—	(13,001)	—

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The following is a summary of the carrying amounts and estimated fair value of financial assets and liabilities (none of which were held for trading purposes) as of December 31, 2017:

	December 31, 2017			
	Carrying amount	Level 1 inputs	Level 2 inputs	Level 3 inputs
Financial assets:				
Cash and due from banks	\$ 479,906	\$ 479,906	\$ —	\$ —
Securities available for sale	3,612,072	—	3,612,072	—
Securities held to maturity	2,862,489	—	2,863,909	—
Portfolio loans, net	19,931,076	—	—	19,903,231
Loans held for sale	5,246	—	5,246	—
Accrued interest receivable on securities	34,652	—	34,652	—
Accrued interest receivable on loans	59,446	—	—	59,446
FHLB stock and FRB stock	284,112	—	—	—
Swaps	4,457	—	4,457	—
Financial liabilities:				
Non-maturity deposits	(18,098,566)	(18,098,566)	—	—
Certificates of deposit	(2,439,638)	—	(2,412,495)	—
FHLB borrowings	(4,510,123)	—	(4,496,184)	—
Other borrowings	(30,162)	—	(30,160)	—
Senior Notes	(278,209)	—	(278,968)	—
Mortgage escrow funds	(122,641)	—	(117,050)	—
Accrued interest payable on deposits	(1,103)	—	(1,103)	—
Accrued interest payable on borrowings	(9,649)	—	(9,649)	—
Swaps	(7,980)	—	(7,980)	—

The following paragraphs summarize the principal methods and assumptions used by the Company to estimate the fair value of certain of the Company's financial instruments noted above:

Loans

Effective January 1, 2018, with the adoption of a new fair value accounting standard, the fair value of portfolio loans, net is determined using an exit price methodology. The exit price methodology is based on a discounted cash flow analysis, in which projected cash flows are based on contractual cash flows adjusted for prepayments for certain loan types (e.g. each of the loan types we reported in Note 4. "Portfolio Loans") and the use of a discount rate based on expected relative risk of the cash flows. The discount rate selected considers loan type, maturity date, a liquidity premium, cost to service, and cost of capital, which is a Level 3 fair value estimate. In 2017, the fair value estimate of portfolio loans, net was determined using an entrance price methodology based only on the discounted methodology outlined above.

Accrued Interest Receivable/Payable

The carrying amounts of accrued interest approximate fair value and are classified in the fair value hierarchy in the same level as with the asset/liability they are associated with.

FHLB of New York Stock and FRB Stock

Due to restrictions placed on transferability, it is not practical to determine the fair value of these securities.

Deposits and Mortgage Escrow Funds

The fair values disclosed for non-maturity deposits (e.g., interest and non-interest checking, savings, and money market accounts) are by definition, equal to the amount payable on demand at the reporting date (i.e., their carrying amount) resulting in a Level 1 classification. The carrying amounts of certificates of deposit and mortgage escrow funds are segregated by account type and original

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term, and fair values are estimated by using a discounted cash flows calculation that applies interest rates currently being offered on certificates to a schedule of aggregated expected monthly maturities on time deposits, resulting in a Level 2 classification.

These fair values do not include the value of core deposit relationships that comprise a significant portion of the Company's deposits. We believe that the Company's core deposit relationships provide a relatively stable, low-cost funding source that has a substantial value separate from the deposit balances.

FHLB Borrowings, Other borrowings, Senior Notes and Subordinated Notes

The carrying amounts of FHLB short-term borrowings, and borrowings under repurchase agreements, generally maturing within ninety days, approximate their fair values, resulting in a Level 2 classification. The fair value of long-term FHLB borrowings, the Senior Notes, and the Subordinated Notes are estimated using discounted cash flow analyzes based on current borrowing rates for similar types of borrowing arrangements, resulting in a Level 2 classification.

Other Financial Instruments

Other financial assets and liabilities listed in the table above have estimated fair values that approximate the respective carrying amounts because the instruments are payable on demand or have short-term maturities and present relatively low credit risk and interest rate risk.

The fair values of the Company's off-balance-sheet financial instruments described in Note 18. "Off-Balance Sheet Financial Instruments" were estimated based on current market terms (including interest rates and fees), considering the remaining terms of the agreements and the credit worthiness of the counterparties. At December 31, 2018 and 2017, the estimated fair value of these instruments approximated the related carrying amounts, which were not material.

Accrued interest receivable/payable

The carrying amounts of accrued interest approximate fair value and are classified in accordance with the related instrument.

The Company may elect to measure certain financial instruments at fair value at specified election dates. The fair value measurement option may be applied instrument by instrument, is generally irrevocable and is applied only to entire instruments and not to portions of instruments. Unrealized gains and losses on items for which the fair value measurement option was elected must be reported in earnings at each reporting date. For the periods presented in this report, the Company had no financial instruments measured at fair value under the fair value measurement option.

(21) Accumulated Other Comprehensive Loss

Components of accumulated other comprehensive income (loss) ("AOCI") were as follows as of the dates shown below:

	December 31,	
	2018	2017
Net unrealized holding loss on available for sale securities	\$ (103,756)	\$ (36,899)
Related income tax benefit	28,679	14,575
Available for sale securities AOCI, net of tax	(75,077)	(22,324)
Net unrealized holding loss on securities transferred to held to maturity	(3,518)	(4,426)
Related income tax benefit	972	1,748
Securities transferred to held to maturity AOCI, net of tax	(2,546)	(2,678)
Net unrealized holding gain (loss) on retirement plans	15,900	(1,924)
Related income tax (expense) benefit	(4,222)	760
Retirement plan AOCI, net of tax	11,678	(1,164)
Accumulated other comprehensive loss	<u>\$ (65,945)</u>	<u>\$ (26,166)</u>

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The following table presents the changes in each component of AOCI for 2018 and 2017, and 2016:

	Net unrealized holding gain (loss) on AFS securities	Net unrealized holding gain (loss) on securities transferred to held to maturity	Net unrealized holding gain (loss) on retirement plans	Total
Year ended December 31, 2018				
Balance at beginning of the period	\$ (22,324)	\$ (2,678)	\$ (1,164)	\$ (26,166)
Reclassification of the stranded income tax effects from the enactment of the Tax Cuts and Jobs Act of 2017 from accumulated other comprehensive loss	(4,376)	(525)	(228)	\$ (5,129)
Other comprehensive (loss) before reclassification	(56,183)	—	—	(56,183)
Amounts reclassified from AOCI	7,806	657	13,070	21,533
Total other comprehensive (loss) income	<u>(52,753)</u>	<u>132</u>	<u>12,842</u>	<u>(39,779)</u>
Balance at end of period	<u>\$ (75,077)</u>	<u>\$ (2,546)</u>	<u>\$ 11,678</u>	<u>\$ (65,945)</u>
Year ended December 31, 2017				
Balance at beginning of the period	\$ (22,637)	\$ (3,264)	\$ (734)	\$ (26,635)
Other comprehensive income before reclassification	64	—	—	64
Amounts reclassified from AOCI	249	586	(430)	405
Total other comprehensive income (loss)	<u>313</u>	<u>586</u>	<u>(430)</u>	<u>469</u>
Balance at end of period	<u>\$ (22,324)</u>	<u>\$ (2,678)</u>	<u>\$ (1,164)</u>	<u>\$ (26,166)</u>
Year ended December 31, 2016				
Balance at beginning of the period	\$ (6,999)	\$ (4,155)	\$ (970)	\$ (12,124)
Other comprehensive (loss) before reclassification	(11,087)	—	—	(11,087)
Amounts reclassified from AOCI	(4,551)	891	236	(3,424)
Total other comprehensive (loss) income	<u>(15,638)</u>	<u>891</u>	<u>236</u>	<u>(14,511)</u>
Balance at end of period	<u>\$ (22,637)</u>	<u>\$ (3,264)</u>	<u>\$ (734)</u>	<u>\$ (26,635)</u>
Location in consolidated income statement where reclassification from AOCI is included	Net (loss) gain on sale of securities	Interest income on securities	Other non- interest expense	

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(22) Condensed Parent Company Financial Statements

Set forth below is the condensed balance sheets of the Company:

	December 31,	
	2018	2017
Assets:		
Cash	\$ 38,141	\$ 88,174
Investment in the Bank	4,513,577	4,373,108
Goodwill	27,910	27,910
Trade name	20,500	20,500
Other assets	15,320	16,842
Total assets	\$ 4,615,448	\$ 4,526,534
Liabilities:		
Senior Notes	\$ 181,130	\$ 278,209
Other liabilities	5,465	8,147
Total liabilities	186,595	286,356
Stockholders' equity	4,428,853	4,240,178
Total liabilities & stockholders' equity	\$ 4,615,448	\$ 4,526,534

The table below presents the condensed income statement:

	For the year ended December 31,		
	2018	2017	2016
Interest income	\$ 46	\$ 29	\$ 14
Dividends from the Bank	290,007	30,000	60,000
Dividends from non-bank subsidiaries	—	—	5,026
Net gain on sale of trust division	—	—	2,255
Interest expense	(8,747)	(6,186)	(5,398)
Non-interest expense	(14,564)	(9,225)	(12,989)
Income tax benefit	5,397	7,258	3,700
Income before equity in undistributed earnings of the Bank	272,139	21,876	52,608
Equity in undistributed earnings of the Bank	175,115	71,155	87,364
Net income	447,254	93,031	139,972
Preferred stock dividends	7,978	2,002	—
Net income available to common stockholders	\$ 439,276	\$ 91,029	\$ 139,972

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The table below presents the condensed statements of cash flows:

	For the year ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net income	\$ 447,254	\$ 93,031	\$ 139,972
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in (undistributed) earnings of the Bank	(175,115)	(71,155)	(87,364)
(Gain) loss on extinguishment of borrowings	(172)	—	1,013
Other adjustments, net	5,560	61,184	6,273
Net cash provided by operating activities	277,527	83,060	59,894
Cash flows from investing activities:			
Sales of securities	—	—	3
Investment in the Bank	—	—	(65,000)
Net cash used for investing activities	—	—	(64,997)
Cash flows from financing activities:			
Equity capital raise	—	—	90,995
Early redemption of Senior Notes	(19,455)	—	(23,793)
Maturity of Senior Notes	(77,000)	—	—
Cash dividends paid on common stock	(63,118)	(46,229)	(36,451)
Cash dividend paid on preferred stock	(8,775)	—	—
Stock-based compensation transactions	691	2,578	3,588
Repurchase of treasury stock	(159,903)	—	—
Net cash (used for) provided by financing activities	(327,560)	(43,651)	34,339
Net (decrease) increase in cash	(50,033)	39,409	29,236
Cash at beginning of the period	88,174	48,765	19,529
Cash at end of the period	\$ 38,141	\$ 88,174	\$ 48,765

STERLING BANCORP AND SUBSIDIARIES
Notes to Consolidated Financial Statements
For the years ended December 31, 2018, 2017, and 2016
(Dollars in thousands, except share or per share data)

(23) Quarterly Results of Operations (Unaudited)

The following is a condensed summary of quarterly results of operations for 2018 and 2017:

Reporting period	For the year ended December 31, 2018			
	First quarter	Second quarter	Third quarter	Fourth quarter
For the quarter ended	March 31	June 30	September 30	December 31
Interest and dividend income	\$ 281,346	\$ 304,906	\$ 309,025	\$ 313,197
Interest expense	46,976	58,690	65,076	70,326
Net interest income	234,370	246,216	243,949	242,871
Provision for loan losses	13,000	13,000	9,500	10,500
Non-interest income	18,707	37,868	24,145	22,475
Non-interest expense	111,749	124,928	111,773	109,921
Income before income tax	128,328	146,156	146,821	144,925
Income tax expense	29,456	31,915	27,171	30,434
Net income	98,872	114,241	119,650	114,491
Preferred stock dividend	1,999	1,996	1,993	1,990
Net income available to common stockholders	\$ 96,873	\$ 112,245	\$ 117,657	\$ 112,501
Earnings per common share:				
Basic	\$ 0.43	\$ 0.50	\$ 0.52	\$ 0.51
Diluted	0.43	0.50	0.52	0.51

Reporting period	For the year ended December 31, 2017			
	First quarter	Second quarter	Third quarter	Fourth quarter
For the quarter ended	March 31	June 30	September 30	December 31
Interest and dividend income	\$ 126,000	\$ 134,263	\$ 145,692	276,495
Interest expense	17,210	21,005	25,619	42,471
Net interest income	108,790	113,258	120,073	234,024
Provision for loan losses	4,500	4,500	5,000	12,000
Non-interest income	12,836	13,618	13,988	23,762
Non-interest expense	60,350	59,657	62,617	250,746
Income (loss) before income tax	56,776	62,719	66,444	(4,960)
Income tax expense	17,709	20,319	21,592	28,319
Net income (loss)	39,067	42,400	44,852	(33,279)
Preferred stock dividend	—	—	—	2,002
Net income (loss) available to common stockholders	\$ 39,067	\$ 42,400	\$ 44,852	(35,281)
Earnings per common share:				
Basic	\$ 0.29	\$ 0.31	\$ 0.33	\$ (0.16)
Diluted	0.29	0.31	0.33	(0.16)

The Company incurred a net loss in the fourth quarter ended December 31, 2017 due mainly to merger-related expense, asset write-downs and other charges associated with the Astoria Merger and an adjustment to write-down deferred taxes to their estimated fair value due to the Tax Act in the amount of \$40,285. The Company recognized charges of \$30,230, which mainly included charges for change-in-control payments, employee benefit plan terminations, financial and legal advisory fees and merger-related marketing expenses. Other restructuring charges of \$104,506 mainly included charges for information technology services, contract terminations, impairments of leases and facilities and retention compensation.

(24) Recently Issued Accounting Standards

ASU 2016-02, *“Leases.”* ASU 2016-02 amends existing lease accounting guidance, including the requirement to recognize most lease arrangements on the balance sheet, including a lease liability measured on a discounted basis, and a right-of-use asset, which represents the lessee’s right to use, or control the use of, a specified asset for the lease term. ASU 2016-02 became effective for the Company on January 1, 2019, and required transition using a modified retrospective approach for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. In July 2018, the FASB issued ASU 2018-11, *“Leases (Topic 842) - Targeted Improvements,”* which, among other things, provides an additional transition method that would allow entities to not apply the guidance in ASU 2016-02 in the comparative periods presented in the financial statements and instead recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. At adoption of ASU 2016-02 the Company expects to recognize right-of-use assets and related lease liabilities totaling \$127,998 and \$133,767, respectively. The Company anticipates it will elect certain practical expedients provided under ASU 2016-02 in which the Company will not reassess (i) whether any expired or existing contracts are or contain leases, (ii) the lease classification for any expired or existing leases or (iii) initial direct costs for any existing leases. The Company also will not apply the recognition requirements of ASU 2016-02 to any short-term leases (as defined by related accounting guidance). The Company expects to utilize the modified-retrospective transition approach prescribed by ASU 2018-11.

ASU 2016-13, *“Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.”* ASU 2016-13 requires the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts and requires enhanced disclosures related to the significant estimates and judgments used in estimating credit losses, as well as the credit quality and underwriting standards of the Company’s loan portfolio. In addition, ASU 2016-13 amends the accounting for credit losses on available-for-sale debt securities and purchased financial assets with credit deterioration. ASU 2016-13 will be effective on January 1, 2020. We are currently evaluating the potential impact of ASU 2016-13 on our financial statements. In that regard, we have formed a cross-functional working group, under the direction of our Chief Financial Officer and our Chief Risk Officer. The working group is comprised of individuals from various functional areas including credit, risk management, finance and business intelligence, among others. The Company is currently working through its implementation plan and, during 2018, the Company performed the following:

- followed the current expected credit losses (“CECL”) program project timeline created in 2017 in conjunction with our advisor, a nationally recognized accounting firm;
- selected the CECL models the Company will use to evaluate credit losses in the loan portfolio;
- enhanced our data analytics capabilities and model risk management processes;
- selected the principal vendor that will assist in data analytics and modeling; and
- continued to evaluate data gaps and mitigation strategies.

The Company is currently unable to reasonably estimate the impact of adopting ASU 2016-13. The impact of adoption will be significantly influenced by the composition, characteristics and quality of our loan and securities portfolios as well as the prevailing economic conditions and forecasts as of the adoption date; however, we anticipate the allowance for loan losses will be greater under the CECL model compared to the current loss incurred model. We currently expect to run our current incurred loss model allowance for loan loss calculation and a draft CECL model on a parallel basis in the last two quarters of 2019.

ASU 2017-08, *“Premium Amortization on Purchased Callable Debt Securities.”* ASU 2017-08 shortens the amortization period for the premium on certain purchased callable debt securities to the earliest call date. Today, entities generally amortize the premium over the contractual life of the security. The new guidance does not change the accounting for purchased callable debt securities held at a discount as discounts continue to be amortized to maturity. ASU No. 2017-08 is effective for interim and annual reporting periods beginning after December 15, 2018. The guidance includes a modified retrospective transition approach under which a cumulative-effect adjustment will be made to retained earnings as of the beginning of the first reporting period in which the guidance is adopted. Management intends to adopt this standard effective January 1, 2019 and the impact of adoption is not expected to have a significant impact on the Company’s financial statements.

ASU 2017-12, *“Derivatives and Hedging (Topic 815) - Targeted Improvements to Accounting for Hedging Activities.”* ASU 2017-12 amends the hedge accounting recognition and presentation requirements in ASC 815 to improve the transparency and understandability of information conveyed to financial statement users about an entity’s risk management activities to better align the entity’s financial reporting for hedging relationships with those risk management activities and to reduce the complexity of and simplify the application of hedge accounting. A provision in ASU 2017-12 provides that the Company may reclassify a debt security

from held to maturity to available for sale if the debt security is eligible to be hedged under the last-of-layer method in accordance with paragraph 815-20-25-12A. Generally, this includes debt securities that are pre-payable, including mortgage-backed securities, and debt securities that are callable by the issuer, which is applicable to many of the Company's state and local government debt securities. The Company transferred held to maturity securities with a book value of \$720,440 and a fair value of \$708,627 at December 31, 2018 to available for sale effective January 1, 2019. See Note 25 "Subsequent Events" for additional information.

ASU 2018-13, "*Fair Value Measurement (Topic 820) - Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement.*" ASU 2018-13 modifies the disclosure requirements on fair value measurements in Topic 820. The amendments in this update remove disclosures that no longer are considered cost beneficial, modify/clarify the specific requirements of certain disclosures, and add disclosure requirements identified as relevant. ASU 2018-13 will be effective for the Company on January 1, 2020, with early adoption permitted, and is not expected to have a significant impact on the Company's financial statements.

ASU 2018-14, "*Compensation - Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20).*" ASU 2018-14 amends and modifies the disclosure requirements for employers that sponsor defined benefit pension or other post-retirement plans. The amendments in this update remove disclosures that are no longer considered cost beneficial, clarify the specific requirements of disclosures, and add disclosure requirements identified as relevant. ASU 2018-14 will be effective for the Company on January 1, 2021, with early adoption permitted, and is not expected to have a significant impact on the Company's financial statements.

ASU 2018-15, "*Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40) - Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract.*" ASU 2018-15 clarifies certain aspects of ASU 2015-05, "*Customer's Accounting for Fees Paid in a Cloud Computing Arrangement,*" which was issued in April 2015. Specifically, ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). ASU 2018-15 does not affect the accounting for the service element of a hosting arrangement that is a service contract. ASU 2018-15 will be effective for the Company on January 1, 2020, with early adoption permitted, and is not expected to have a significant impact on the Company's financial statements.

ASU 2018-16, "*Derivatives and Hedging (Topic 815) - Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes.*" The amendments in this update permit use of the OIS rate based on SOFR as a U.S. benchmark interest rate for hedge accounting purposes under Topic 815 in addition to the interest rates on direct U.S. Treasury obligations, the LIBOR swap rate, the OIS rate based on the Fed Funds Effective Rate and the Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Rate. ASU 2018-16 became effective for the Company on January 1, 2019 and is not expected to have a significant impact on the Company's financial statements.

See Note 1. "Basis of Financial Statement Presentation and Summary of Significant Accounting Policies" for a discussion of the adoption of new accounting standards that affected the consolidated financial statements contained in this report.

(25) Subsequent Events

In connection with the adoption of ASU 2017-12, "*Derivatives and Hedging (Topic 815) - Targeted Improvements to Accounting for Hedging Activities*" that became effective January 1, 2019, during the first quarter of 2019, the Company transferred securities that were classified as held to maturity securities that had a book value of \$720,440 and a fair value of \$708,627 at December 31, 2018 to securities classified as available for sale.

On January 23, 2019, the Company announced it had entered into a definitive agreement with Woodforest National Bank to acquire approximately \$504,000 of commercial loans. In order to fund the acquisition, during the first quarter of 2019, the Company sold securities with a par value of \$548,975 and realized a loss of \$17,630. The securities sold consisted mainly of lower yielding mortgage-backed and government agency securities.

On February 28, 2019, the Bank completed its previously announced acquisition of asset-based lending and equipment finance loans from Woodforest National Bank. The total balance of loans acquired was approximately \$495,000. As the transaction also included the retention of personnel, the transaction will be accounted for as a business combination. The Bank paid a premium on the balance of gross loans receivable of 3.75%, or \$18,575.

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

Not Applicable.

ITEM 9A. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures are controls and procedures designed to ensure that information required to be disclosed by the Company in reports filed or submitted with the SEC is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC, and that such information is accumulated and communicated to management, including our President and Chief Executive Officer (“CEO”) and our Chief Financial Officer (“CFO”), as appropriate, to allow timely decisions regarding required disclosure.

We conducted an evaluation under the supervision and with the participation of our management, including the CEO and CFO, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act) as of December 31, 2018. Based on this assessment we have concluded that as of December 31, 2018, the Company’s disclosure controls and procedures were effective.

(b) Management’s Annual Report on Internal Control Over Financial Reporting

The management of Sterling Bancorp is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934. The Company’s system of internal controls is designed to provide reasonable assurance to the Company’s management and the Board regarding the preparation and fair presentation of published financial statements in accordance with U.S. generally accepted accounting principles. All internal control systems have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. 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.

Management assessed the Company’s internal control over financial reporting as of December 31, 2018. This assessment was based on criteria established in the 2013 Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, we have concluded that, as of December 31, 2018, the Company’s internal control over financial reporting was effective.

(c) Attestation Report of the Registered Public Accounting Firm

The effectiveness of the Company’s internal control over financial reporting as of December 31, 2018 has been audited by Crowe LLP, as stated in their report, which is included elsewhere herein.

(d) Changes in Internal Control over Financial Reporting

There were no changes in the Company’s internal control over financial reporting during the fourth fiscal quarter and the fiscal year ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

ITEM 9B. Other Information

Not applicable.

PART III

ITEM 10. Directors, Executive Officers, and Corporate Governance

The information required by this item will be included in our Proxy Statement for the Annual Meeting of Stockholders (the “2019 Proxy Statement”) and is incorporated herein by reference.

ITEM 11. Executive Compensation

The information required by this item will be included in the 2019 Proxy Statement and is incorporated herein by reference.

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

Sterling Bancorp does not have any equity compensation programs that were not approved by stockholders.

Securities Authorized for Issuance under Equity Compensation Plans

Set forth below is certain information as of December 31, 2018, regarding equity compensation that has been approved by stockholders.

Equity compensation plans approved by stockholders	Number of securities to be issued upon exercise of outstanding options and rights	Weighted average Exercise price ⁽¹⁾	Number of securities remaining available for issuance under plan
Stock Option Plans	686,539	\$ 11.20	2,318,950

(1) Weighted average exercise price represents Stock Option Plans only, since restricted shares have no exercise price.

The other information required by this item will be included in the 2019 Proxy Statement and is incorporated herein by reference.

ITEM 13. Certain Relationships and Related Transactions and Director Independence

The information required by this item will be included in the 2019 Proxy Statement and is incorporated herein by reference.

ITEM 14. Principal Accountant Fees and Services

The information required by this item will be included in the 2019 Proxy Statement and is incorporated herein by reference.

PART IV

ITEM 15. Exhibits and Financial Statement Schedules

(1) Financial Statements

The financial statements filed in Item 8 of this Form 10-K are as follows:

- (A) Report of Independent Registered Public Accounting Firm on Financial Statements
- (B) Consolidated Balance Sheets as of December 31, 2018 and 2017
- (C) Consolidated Income Statements for the years ended December 31, 2018, 2017 and 2016
- (D) Consolidated Statements of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016
- (E) Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2018, 2017 and 2016
- (F) Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016
- (G) Notes to Consolidated Financial Statements
- (H) Financial Statement Schedules

(2) All financial statement schedules have been omitted as the required information is inapplicable or has been included in the Notes to Consolidated Financial Statements.

(3) Exhibits

2.1	<u>Agreement and Plan of Merger, dated as of March 6, 2017, by and between Sterling Bancorp and Astoria Financial Corporation (incorporated by reference to Exhibit 2.1 of the Company's Current Report on Form 8-K filed on March 9, 2017 (File No. 001-35385)).</u>
3.1	<u>Amended and Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 of the Company's Quarterly Report on Form 10-Q filed November 2, 2018).</u>
3.2	<u>Amended and Restated Bylaws of the Company (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed on May 24, 2017 (File No. 001-35385)).</u>
4.1	<u>Form of Common Stock Certificate of the Company (incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K filed on November 1, 2013 (File No. 001-35385)).</u>
4.2	<u>Form of Corporate Governance Agreement (incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed on August 7, 2012 (File No. 001-35385)).</u>
4.3	<u>Deposit Agreement and specimen receipt attached as Exhibit A thereto, dated as of March 19, 2013 among Astoria Financial Corporation, Computershare Shareowner Services, LLC, as Depositary, and the holders of the depositary receipts (incorporated by reference to Exhibit 4.3 of the Company's Registration Statement on Form S-4 filed on April 5, 2017 (File No. 333-217153)).</u>
4.4	<u>First Amendment to the Deposit Agreement, dated as of October 2, 2017, among Sterling Bancorp, Computershare Shareowner Services, LLC, as Depositary, and the holders of the depositary receipts (incorporated by reference to Exhibit 4.4 of the Company's Quarterly Report on Form 10-Q filed on November 3, 2017 (File No. 001-35385)).</u>
4.5	<u>Certificate of Designations of 6.50% Non-Cumulative, Perpetual Preferred Stock, Series A of Sterling Bancorp (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed on October 2, 2017 (File No. 001-35385)).</u>
4.6	<u>Form of Certificate of 6.5% Non-Cumulative Perpetual Preferred Stock, Series A (incorporated by reference to Exhibit 4.2 of the Company's Form 8-A12B filed on September 28, 2017 (File No. 001-35385)).</u>
4.7	<u>Pursuant to Item 601(b)(4)(iii)(A) of Regulation S-K, no instrument which defines the holders of long-term debt of the Company or any of its consolidated subsidiaries is filed herewith. Pursuant to this regulation, the Company hereby agrees to furnish a copy of any such instrument to the Commission upon request.</u>
10.01	<u>Employment Agreement, dated as of July 5, 2017, by and between the Company, the Bank and Christina M. Favilla (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on June 8, 2017 (File No. 001-35385)) (terminated).*</u>
10.02	<u>Provident Bank Amended and Restated 1995 Supplemental Executive Retirement Plan (incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q filed on August 11, 2008 (File No. 000-25233)).*</u>
10.03	<u>Provident Bank 2005 Supplemental Executive Retirement Plan (incorporated by reference to Exhibit 10.2 of the Company's Quarterly Report on Form 10-Q filed on August 11, 2008 (File No. 000-25233)).*</u>
10.04	<u>Provident Bank 2000 Stock Option Plan (incorporated by reference to Appendix A to the Company's Proxy Statement filed on January 18, 2000 (File No. 000-25233)).*</u>
10.05	<u>Provident Bancorp, Inc. 2004 Stock Incentive Plan (incorporated by reference to Appendix A to the Company's Proxy Statement filed on January 19, 2005 (File No. 000-25233)).*</u>

10.06	<u>Form of Stock Option Agreement, dated as of July 6, 2011, by and between the Company and Jack L. Kopnisky (incorporated by reference to Exhibit 10.3 of the Company's Quarterly Report on Form 10-Q filed on August 9, 2011 (File No. 000-25233)).*</u>
10.07	<u>Provident Short-Term Incentive Plan (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on November 1, 2011 (File No. 000-25233)).*</u>
10.08	<u>Sterling Bancorp 2014 Stock Incentive Plan (incorporated by reference to Appendix A to the Company's Proxy Statement for the 2014 Annual Meeting of Stockholders filed on January 10, 2014 (File No. 001-35385)).*</u>
10.09	<u>Sterling Bancorp Stock Incentive Plan (incorporated by reference to Exhibit 10 to Legacy Sterling's Quarterly Report on Form 10-Q filed November 9, 2004 (File No. 001-05273)).*</u>
10.10	<u>Form of Restricted Stock Award Agreement Pursuant to the Provident New York Bancorp 2012 Stock Incentive Plan (incorporated by reference to Exhibit 10.27 to the Company's Annual Report on Form 10-K filed on November 28, 2014). (File No. 001-35385)*</u>
10.11	<u>Form of Stock Option Award Agreement Pursuant to the Provident New York Bancorp 2012 Stock Incentive Plan (incorporated by reference to Exhibit 10.28 to the Company's Annual Report on Form 10-K filed on November 28, 2014 (File No. 001-35385)).*</u>
10.12	<u>Form of Performance-Based Stock Award Agreement Pursuant to the Provident New York Bancorp 2012 Stock Incentive Plan (incorporated by reference to Exhibit 10.29 to the Company's Annual Report on Form 10-K filed on November 28, 2014 (File No. 001-35385)).*</u>
10.13	<u>Form of Restricted Stock Award Agreement Pursuant to the Sterling Bancorp 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.30 to the Company's Annual Report on Form 10-K filed on November 28, 2014 (File No. 001-35385)).*</u>
10.14	<u>Form of Stock Option Award Agreement Pursuant to the Sterling Bancorp 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.31 to the Company's Annual Report on Form 10-K filed on November 28, 2014 (File No. 001-35385)).*</u>
10.15	<u>Form of Performance-Based Stock Award Agreement Pursuant to the 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K filed on November 28, 2014 (File No. 001-35385)).*</u>
10.16	<u>Sterling Bancorp 2015 Omnibus Equity and Incentive Plan (incorporated by reference to Annex B to the Company's Proxy Statement for the 2015 Annual Meeting of Stockholders, filed on April 17, 2015 (File No. 001-35385)).*</u>
10.17	<u>Form of Stock Option Award Agreement Pursuant to the Sterling Bancorp 2015 Omnibus Equity and Incentive Plan (incorporated by reference to Exhibit 10.27 of the Company's Annual Report on Form 10-K filed on February 27, 2017 (File No. 001-35385)).*</u>
10.18	<u>Form of Performance Award Agreement Pursuant to the Sterling Bancorp 2015 Omnibus Equity and Incentive Plan (incorporated by reference to Exhibit 10.28 of the Company's Annual Report on Form 10-K filed on February 27, 2017 (File No. 001-35385)).*</u>
10.19	<u>Form of NEO Restricted Stock Award Agreement Pursuant to the Sterling Bancorp 2015 Omnibus Equity and Incentive Plan (incorporated by reference to Exhibit 10.29 of the Company's Annual Report on Form 10-K filed on February 27, 2017 (File No. 001-35385)).*</u>
10.20	<u>Form of non-NEO Restricted Stock Award Agreement Pursuant to the Sterling Bancorp 2015 Omnibus Equity and Incentive Plan (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on August 7, 2015 (File No. 001-35385)).*</u>
10.21	<u>Supplemental Equity Award to Jack Kopnisky (filed herewith)*</u>
10.22	<u>Supplemental Equity Award to Luis Massiani (filed herewith)*</u>
10.23	<u>Supplemental Equity Award to Thomas Geisel (filed herewith)*</u>
10.24	<u>Supplemental Equity Award to Rodney Whitwell (filed herewith)*</u>
10.25	<u>Supplemental Equity Award to Micheal Finn (filed herewith)*</u>
10.26	<u>Supplemental Equity Award to Brian Edwards (filed herewith)*</u>
10.27	<u>Supplemental Equity Award to James Blose (filed herewith)*</u>
10.28	<u>Supplemental Equity Award to Javier Evans (filed herewith)*</u>
21	<u>Subsidiaries of Registrant (filed herewith).</u>
23	<u>Consent of Crowe LLP (filed herewith).</u>
31.1	<u>Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).</u>
31.2	<u>Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).</u>
32	<u>Certification Pursuant to 18 U.S.C. Section 1350, as amended by Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).</u>
101.INS	<u>XBRL Instance Document (filed herewith)</u>

101.SCH	XBRL Taxonomy Extension Schema Document (filed herewith)
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document (filed herewith)
101.LAB	XBRL Taxonomy Extension Label Linkbase Document (filed herewith)
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document (filed herewith)
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document (filed herewith)

* Indicates management contract or compensatory plan or arrangement.

SIGNATURES

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

Sterling Bancorp

Date: March 1, 2019

By: /s/ Jack L. Kopnisky

Jack L. Kopnisky

President, Chief Executive Officer and Director
(Principal Executive Officer)

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

By: /s/ Jack L. Kopnisky

Jack L. Kopnisky

President, Chief Executive Officer and
Director

(Principal Executive Officer)

Date: March 1, 2019

By: /s/ Luis Massiani

Luis Massiani

Senior Executive Vice President
Chief Financial Officer

Principal Financial Officer

(Principal Accounting Officer)

Date: March 1, 2019

By: /s/ Richard O'Toole

Richard O'Toole

Chairman of the Board of Directors

Date: March 1, 2019

By: /s/ John P. Cahill
John P. Cahill
Director
Date: March 1, 2019

By: /s/ Navy E. Djonovic
Navy E. Djonovic
Director
Date: March 1, 2019

By: /s/ Fernando Ferrer
Fernando Ferrer
Director
Date: March 1, 2019

By: /s/ Robert S. Giambrone
Robert S. Giambrone
Director
Date: March 1, 2019

By: /s/ James J. Landy
James J. Landy
Director
Date: March 1, 2019

By: /s/ Robert W. Lazar
Robert W. Lazar
Director
Date: March 1, 2019

By: /s/ Maureen Mitchell
Maureen Mitchell
Director
Date: March 1, 2019

By: /s/ Patricia M. Nazemetz
Patricia M. Nazemetz
Director
Date: March 1, 2019

By: /s/ Ralph F. Palleschi
Ralph F. Palleschi
Director
Date: March 1, 2019

By: /s/ Burt B. Steinberg
Burt B. Steinberg
Director
Date: March 1, 2019

By: /s/ William E. Whiston
William E. Whiston
Director
Date: March 1, 2019

STERLING BANCORP AND STERLING NATIONAL BANK

BOARD OF DIRECTORS

Richard O'Toole

Chairman of the Board
Executive Vice President,
General Counsel
The Related Companies

Jack L. Kopnisky

President and Chief Executive Officer
Sterling Bancorp and
Sterling National Bank

John P. Cahill

Counsel, Norton, Rose Fulbright LLC
and Principal, Pataki Cahill Group LLC

Navy Djonovic, CPA

Partner, Maier Markey & Justic LLP

Fernando Ferrer

Co-Chairman
Mercury Public Affairs LLC

Robert S. Giambrone

Retired Financial Executive

James J. Landy

Retired Banking Executive

Maureen Mitchell

Senior Advisor, The Boston
Consulting Group

Patricia M. Nazemetz

Principal, NAZ DEC LLC

Ralph F. Palleschi

President and Chief Operating Officer
and Director
First Long Island Investors, LLC and
FLI Investors, LLC

Burt Steinberg

President and Consultant
BSRC Consulting

William E. Whiston

Chief Financial Officer
Archdiocese of New York

EXECUTIVE OFFICERS

Jack L. Kopnisky

President and Chief Executive Officer

Luis Massiani

Senior Executive Vice President,
Chief Financial Officer

Rodney C. Whitwell

Senior Executive Vice President,
Chief Administrative Officer

Thomas X. Geisel

Senior Executive Vice President,
Corporate Banking President

Brian T. Edwards

Senior Executive Vice President,
Consumer Banking President

Michael E. Finn

Senior Executive Vice President,
Chief Risk Officer

James P. Blose

Executive Vice President, General
Counsel and Chief Legal Officer

Javier L. Evans

Executive Vice President,
Chief Human Resources Officer

CORPORATE INFORMATION

CORPORATE COUNSEL

Squire Patton Boggs (US) LLP
2550 M Street, NW
Washington, DC 20037

ANNUAL REPORT ON FORM 10-K

A printed copy of the Company's
Form 10-K for the fiscal year ended
December 31, 2018 will be furnished
without charge to shareholders upon
written request to:

Manager of Shareholder Relations
Sterling Bancorp
400 Rella Boulevard, PO Box 600
Montebello, NY 10901
or call 845.369.8040

INDEPENDENT AUDITORS

Crowe LLP
488 Madison Avenue, Floor 3
New York, NY 10022-5722

TRANSFER AGENT AND REGISTRAR

Computershare
P.O. Box 505012
Louisville, KY 40233-5012

Overnight correspondence should be sent to:

Computershare
462 South 4th Street, Suite 1600
Louisville, KY 40202
Computershare phone number:
800.368.5948

If you have any questions concerning
your shareholder account, call our
transfer agent noted above, at
800.368.5948. This is the number
to call if you require a change of
address, records or information
about lost certificates, dividend
checks, or direct registration.

DIVIDEND REINVESTMENT PLAN (DRIP)

Sterling Bancorp offers shareholders
of STL common stock a Dividend
Reinvestment Plan (DRIP). To receive
a prospectus that describes the DRIP
or to register to participate, please
contact our DRIP plan administrator,
Computershare, at 800.368.5948, or
online at www.computershare.com/investor.

FORWARD-LOOKING STATEMENTS

This annual report contains statements
about the future that are forward-
looking statements for purposes of
applicable securities laws. Forward-
looking statements are subject to
numerous assumptions, risks and
uncertainties. Certain risks that may
affect our forward-looking statements
are discussed in this annual report
under "Item 1A, Risk Factors" of the
attached Form 10-K and elsewhere in
the Form 10-K or in other filings with
the SEC. Actual results could differ
materially from those anticipated in
forward-looking statements. Please
refer to the section of the attached
Form 10-K relating to "Forward-
Looking Statements" under "Item 7,
Management's Discussion and
Analysis of Financial Condition and
Results of Operations" for important
information relating to forward-
looking statements.



Sterling National Bank
Member FDIC



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