ABOVE AND BEYOND

2019 ANNUAL REPORT

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:

Our company's motto of "Above and Beyond is Standard Procedure" provides the foundation for delivering superior service to our clients, strong returns to shareholders, and an environment where our colleagues can realize their ambitions while helping all of our communities grow and prosper.

JACK L. KOPNISKY PRESIDENT AND CEO

Our results in 2019 reflect another significant step forward in executing our strategy of creating a high-performing regional bank focused on targeted client segments in the Greater New York metropolitan area and across the United States. In 2019, we generated record results on several key financial metrics, we transitioned our balance sheet mix toward our targeted business lines, we acquired new commercial finance portfolios, and we returned significant amounts of capital to shareholders through our expanded share repurchase program.

A YEAR OF EVOLUTION AND RECORD FINANCIAL PERFORMANCE

In 2019, we focused on investing in and continuing to grow our most profitable business segments. This has resulted in a substantial transition in our business mix, while allowing us to achieve record performance in adjusted annual diluted earnings per share of $2.07 and an increase in our tangible book value per share to $13.09.

Our full-year results continue the company's history of superior growth of earnings and tangible book value. In the past five years, adjusted earnings per share has grown at a CAGR of 21% and tangible book value per share has grown at a CAGR of 15%. The company's return on assets, return on tangible common equity, and efficiency ratio are among the top quartile of publicly traded banks in the United States. In 2019, the company's stock generated a total return of 29.4% vs. 23.1% for our peer group.

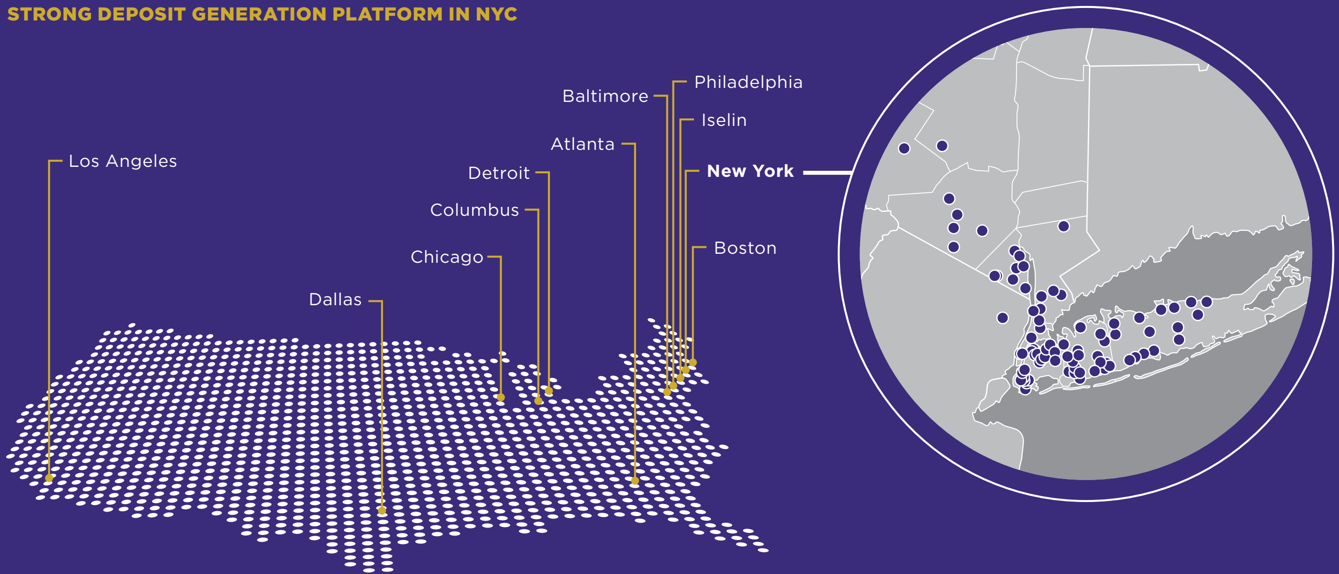
We were able to achieve this performance despite a challenging interest rate environment and an ongoing loan portfolio and balance sheet management strategy in which we have continued to dispose of less appealing financial assets. Our success was achieved by growing our most profitable business lines, investing in targeted technology initiatives, retaining and developing our colleagues, maintaining expense discipline, and returning meaningful amounts of capital to our shareholders.

The current macroeconomic environment, with low absolute levels of interest rates and a shallow sloping yield curve, presents a significant challenge for all commercial banks. Nonetheless, we continue to generate solid performance by focusing on the fundamentals we can most effectively control: the allocation of capital to business lines with attractive risk-adjusted return characteristics, making strategic investments for the future, and focusing on initiatives that will deliver strong operating leverage.

EMPHASIZING OUR STRENGTHS AND EMBRACING CHANGE

In addition to strong operating performance, 2019 was a year of transition to position our company for continued success in the future. We focused our efforts on programs and initiatives that best promote our future profitability and growth by better-aligning our asset mix and infrastructure with our higher-value business lines, investing in contemporary technological capabilities, and enhancing our sources of funding.

We sold a portfolio of residential mortgage loans and lower yielding securities and reinvested the proceeds in new commercial loan originations. We also continued to consolidate financial centers across our



footprint, reducing our total financial center count to 82 locations at year-end from 128 locations at closing of the Astoria merger. Reallocating the cost savings from our financial center rationalization strategy has been critical in allowing us to fund key investments in new technology and personnel while maintaining a disciplined approach to expense management.

Although we de-emphasized certain business lines, Sterling's core commercial business showed impressive growth in 2019. We grew commercial loans by 17%, and total deposits grew by 6%. Commercial loans now comprise 89% of our loan portfolio, from 84% a year ago. Commercial banking growth reflected both growth in our New York metropolitan region commercial loan portfolio, as well as that of our diversified commercial businesses with a broader footprint. Among our newer verticals, public sector finance and affordable housing development provided particularly attractive opportunities for capital efficient and appealing risk-adjusted organic growth.

Efficiency is a hallmark of our organization. We found new avenues by which to control our operating costs through improving our business mix, process optimization and automation. We will continue to transition our operating capabilities in the years ahead. Our efficiency ratio is among the lowest in the banking industry and we believe we can still do even better.

Emerging and improving technologies are fueling meaningful changes in the banking industry. Our company has made significant investments in our technology infrastructure that will allow our clients to interact with the bank in their preferred manner, will introduce new products and capabilities while also enhancing efficiency across our organization. We have developed partnerships with various technology providers to migrate the company to a cloud-based technology infrastructure, deploy robotics and automation technologies to streamline bank operations, provide enhanced digital banking applications, and deploy AI-enabled virtual assistants to enhance the customer service experience. We also launched a direct-to-consumer digital bank that provides a scalable platform for deposit generation. As banking becomes more digitally driven, these initiatives will allow the company to provide an innovative, evolving, and scalable technology experience for both our clients and our colleagues.

FURTHERING CAPITAL RETURN VIA SHARE REPURCHASES

Continued robust internal capital generation and capital reallocated from the reduction in non-core assets provided the company with substantial capital flexibility in 2019. Over the past year, we repurchased

more than 19 million shares of stock, a meaningful increase over our repurchase activity in 2018. Industry-wide pressures on bank sector valuations afforded us the opportunity to repurchase these shares at what we believe to be an attractive price. The company has repurchased 28 million shares over the past two years, which amounts to 13% of total shares outstanding at the initiation of our repurchase program.

Share repurchases will continue to be a component of the company's capital allocation strategy in the near-term, as our board of directors recently authorized a 20 million share increase to our approved share repurchase program. We will continue to execute our repurchases programmatically over time, with the objective of enhancing the trajectory of Sterling's tangible book value per share, a key performance indicator we are focused on growing.

CONTRIBUTING TO OUR COMMUNITIES

As a regional bank, our business is uniquely positioned to provide expertise and capital in support of community reinvestment efforts. During the past year, Sterling provided more than $858 million in funding—including loans and qualified investments—for community development. Among our major initiatives, we provided financing for Veterans Housing in the Bronx, LGBT-friendly senior housing in Suffolk County, and economic and workforce development initiatives within an Opportunity Zone in Brooklyn. Loans from Sterling also enabled the development of 1,489 units of affordable rental housing.

The Sterling National Bank Charitable Foundation funded over $1 million in donations to various organizations across the communities in which we operate. Donations aided programs supporting college success, financial literacy, and health and human services. The Foundation also matched colleague charitable donations totaling more than $53,000.

In 2019, Sterling colleagues volunteered over 4,500 hours of service for various causes, including Junior Achievement, Year Up, Big Brothers Big Sisters, BUILD NYC, United Veterans Beacon House, Urban Pathways, the New Jersey Community Development Corporation, and The Child Center of NY.

REFLECTING ON WHO WE HAVE BECOME AND GIVING THANKS

We are a company that has and will continue to evolve. The needs of our clients, colleagues, shareholders, and communities continue to change, and we must continue to develop our company to ensure we will meet and exceed their needs. Our eight-year history is a reflection of our ability to adjust, change, and ultimately focus on execution. I am proud and excited by who we have become as an organization. Since year-end 2011, we have grown our assets to $31 billion from $3 billion and our deposits to $22 billion from $2 billion. Today, Sterling is the third-largest regional bank by deposits in the New York metro area.

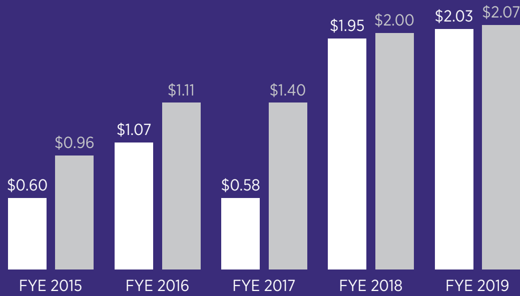
Not only have we grown on an outright basis, we now offer a broad and sophisticated range of commercial and consumer banking services unique to a bank our size in the New York market. A diverse business model affords Sterling the ability to pursue the most appealing business opportunities across a number of business lines, while funding asset growth through a number of different channels. We have added considerable talent as we have grown. Our technology and data, risk-management, and customer service organizations are all well-positioned to both support our existing business and anticipate the operational needs of a larger institution.

I believe we have positioned Sterling to continue to be a market leader in financial performance, service, and product offerings for years to come. This outlook would not be possible without the support of our colleagues, clients, shareholders, and board of directors. Their contributions are critical to the development of Sterling. I would like to conclude by thanking them for their past and future support.

Jack Kopnisky
President and Chief Executive Officer

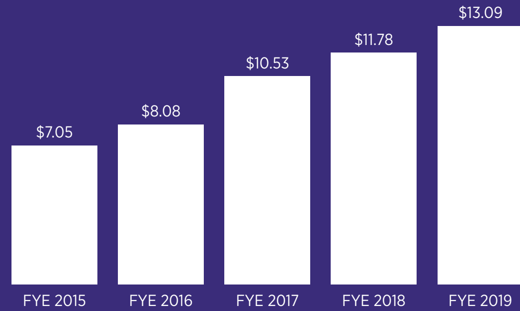
FINANCIAL HIGHLIGHTS

DILUTED EARNINGS PER SHARE[1]



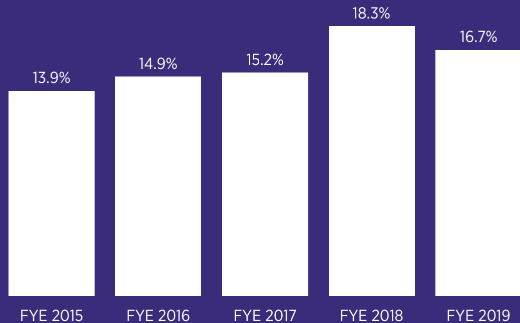
[1]See reconciliation of as reported diluted earnings per share (GAAP) to as adjusted diluted earnings per share (non-GAAP) on page 22 of Form 10-K.

TANGIBLE BOOK VALUE PER SHARE[2]



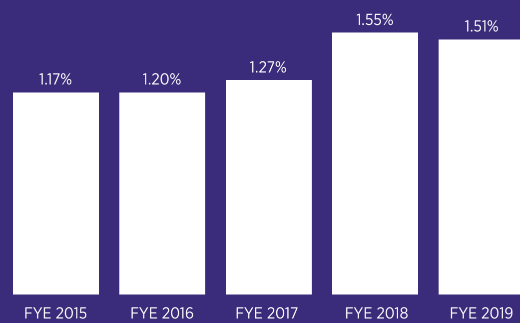
[2]See reconciliation of tangible book value per share to book value per share on page 21 of Form 10-K.

RETURN ON AVERAGE TANGIBLE COMMON EQUITY, ADJUSTED[3]



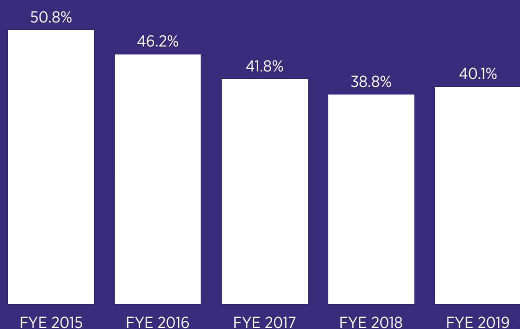
[3]See reconciliation of as reported return on average tangible common equity (GAAP) to as adjusted return on average tangible common equity (non-GAAP) on page 22 of Form 10-K.

RETURN ON AVERAGE TANGIBLE ASSETS, ADJUSTED[4]



[4]See reconciliation of as reported return on average tangible assets (GAAP) to as adjusted return on average tangible assets (non-GAAP) on page 23 of Form 10-K.

EFFICIENCY RATIO, ADJUSTED[5]



[5]See reconciliation of as reported operating efficiency ratio (GAAP) to as adjusted operating efficiency ratio (non-GAAP) on page 23 of Form 10-K.

TOTAL DEPOSITS ($ in Billions)

ABOVE AND BEYOND

2019 FORM 10-K

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2019

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number: 001-35385

STERLING BANCORP

(Exact name of Registrant as Specified in its Charter)

Delaware	**80-0091851**
(State or Other Jurisdiction of Incorporation or Organization)	**(IRS Employer ID No.)**
400 Rella Boulevard, Montebello, New York	**10901**
(Address of Principal Executive Office)	**(Zip Code)**

(Registrant's Telephone Number including area code)

(845) 369-8040

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

Title of Each Class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	STL	New York Stock Exchange
Depositary Shares, each representing a 1/40th interest in a share of 6.50% Non-Cumulative Perpetual Preferred Stock, Series A	STLPRA	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 whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the 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, 2019, was $4,366,384,531.

As of February 27, 2020, there were 197,971,077 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, 2019.

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, 2019, we had, on a consolidated basis, $30.6 billion in assets, $22.4 billion in deposits, stockholders' equity of $4.5 billion and 198,455,324 shares of common stock outstanding. Our financial condition and results of operations are discussed herein on a consolidated basis with the Bank.

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.

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: Emlen Harmon, SVP - Director of 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 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, municipalities 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 number of financial centers and have exited other consumer businesses that did not fit our strategy or meet our risk-adjusted return hurdles, including our residential mortgage originations business, trust business and title insurance business. We expect that we will continue to reduce our total number of financial centers in 2020, and will reallocate a portion of the operating expense savings from these consolidations into growing our commercial banking teams, growing our commercial finance businesses and investing in commercial and retail banking technologies. As of December 31, 2019, we had 30 commercial banking teams and 82 financial centers.

Since merging with Astoria Financial Corporation (“Astoria”) on October 2, 2017, (the “Astoria Merger”) we have executed a strategy to reposition our balance sheet with the objective of increasing the proportion of commercial loans to total portfolio loans. At December 31, 2019, nearly 89% of our portfolio loans are commercial loans compared to approximately 73% at December 31, 2017. We have reduced the proportion of lower yielding residential mortgage loans and multi-family loans through loan sales and repayments, and grown our commercial loan portfolio through a combination of organic growth generated by our commercial banking teams and several commercial loan portfolio acquisitions. We believe that focusing on growing our more scalable commercial businesses will allow us to improve our operating efficiency and increase profitability and operating returns.

We augment organic growth with opportunistic acquisitions of banks and other financial services businesses. For the periods presented, we completed the following acquisitions: the Astoria Merger on October 2, 2017; the acquisition of Advantage Funding Management Co. Inc. (“Advantage Funding”) on April 2, 2018; the acquisition of asset-based lending and equipment finance loans from Woodforest National Bank on February 28, 2019; and the acquisition of equipment finance loans and leases from Santander Bank on November 29, 2019. 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, 2019, we had 1,639 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.

The fully phased-in Basel III Capital Rules require us and the Bank to maintain minimum ratios of (i) Common Equity Tier 1 ("CET1") to risk-weighted assets of at least 7%, (ii) Tier 1 capital (CET1 plus Additional Tier 1 capital) to risk-weighted assets of at least 8.5%, and (iii) Total Capital (Tier 1 capital plus Tier 2 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, 2019.

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, 2019, 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 18. "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, 2019, the Bank could pay dividends of approximately $194.0 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.

FDIC deposit insurance expense totaled $9.1 million for the year ended December 31, 2019, $16.7 million for the year ended December 31, 2018, and $9.0 million for the year ended December 31, 2017. FDIC deposit insurance expense included 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 were paid in full with the assessment of March 31, 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 acceptable 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, 2019, 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.

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, 2019, 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 2019, a reserve of 3% was to be maintained against aggregate transaction accounts between $16.3 million and $124.2 million (subject to adjustment by the FRB) up from between $16.0 million and $122.3 million in 2018, 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 $124.2 million. In 2019, the first $16.9 million of otherwise reservable balances (subject to adjustment by the FRB) was 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 $16.9 million and $127.5 million in 2020. 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

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 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.

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.

Changes in accounting standards and management's application of those standards could materially impact the Company's financial statements.
From time to time, the Financial Accounting Standards Board (the "FASB") changes the financial accounting and reporting standards that govern the preparation of financial statements. These changes can be difficult to predict and can materially impact how the Company records and reports its financial condition and results of operations. For example, in June 2016 the FASB issued an accounting standard related to credit losses that became effective for the Company on January 1, 2020. This standard replaces the incurred loss impairment methodology with an expected credit loss methodology and requires consideration of a broader range of information to determine credit loss estimates. Implementation of the standard will likely result in an increase to the allowance for credit losses, with a corresponding negative impact to equity. This increase to the allowance for credit losses will also adversely impact the Company's regulatory capital position to the extent that the FRB and other U.S. banking agencies do not amend existing regulatory capital rules in a manner that gives appropriate consideration to the loss-absorbing capacity associated with the anticipated increased allowance for credit loss estimate. It is also possible that the Company's reported earnings and lending activity will be negatively impacted in periods following adoption.

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 $2.9 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, 2019, our portfolio of commercial real estate loans, including multi-family loans, totaled $10.3 billion, or 48.0% 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 $8.2 billion, or 38.4% of portfolio loans, and our ADC loans totaled $467.3 million, or 2.2% of portfolio loans. We plan to continue to emphasize the origination of these types of loans, consistent with our overall business strategy of growing commercial loans, other than ADC loans, where we have ceased originations of land acquisition and development loans. Many of our construction loans are related to affordable housing projects where we are also investing in tax credits. Construction loans are typically made 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, commercial & industrial 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 were originated as interest only loans that have converted to principal amortization status.
At December 31, 2019, included in our residential mortgage loan portfolio were $846.6 million of interest only loans and other residential mortgage loans that have converted to principal amortization status. 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, 2019, there were $36.8 million of loans that are interest only or were interest only and have converted to principal amortization status 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 modestly 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 reduced the federal funds rate three times in fiscal year 2019. Generally, the value of our securities fluctuates inversely with changes in interest rates. As of December 31, 2019, our available for sale securities portfolio totaled $3.1 billion. Decreases in the fair value of securities available for sale could have an adverse effect on stockholders' equity and comprehensive income.

Uncertainty relating to the London Interbank Offered Rate ("LIBOR") calculation process and potential phasing out of LIBOR adversely affect our results of operations.
On July 27, 2017, the Chief Executive of the United Kingdom Financial Conduct Authority, which regulates LIBOR, announced that it intends to stop persuading or compelling banks to submit rates for the calibration of LIBOR to the administrator of LIBOR after 2021. The announcement indicates that the continuation of LIBOR on the current basis cannot and will not be guaranteed after 2021. It is impossible to predict whether and to what extent banks will continue to provide LIBOR submissions to the administrator of LIBOR or whether any additional reforms to LIBOR may be enacted in the United Kingdom or elsewhere. At this time, no consensus exists as to what rate or rates may become acceptable alternatives to LIBOR and it is impossible to predict the effect of any such alternatives on the value of LIBOR-based securities and variable rate loans, or other securities or financial arrangements, given LIBOR's role in determining market interest rates globally. The Federal Reserve Board, in conjunction with the Alternative Reference Rates Committee, a steering committee comprised of large U.S. financial institutions, is considering replacing the U.S. dollar LIBOR with a

new index calculated by short-term repurchase agreements, backed by Treasury securities ("SOFR"). SOFR is observed and backward looking, which stands in contrast with LIBOR under the current methodology, which is an estimated forward-looking rate and relies, to some degree, on the expert judgment of submitting panel members. Given that SOFR is a secured rate backed by government securities, it will be a rate that does not take into account bank credit risk (as is the case with LIBOR). SOFR is therefore likely to be lower than LIBOR and is less likely to correlate with the funding costs of financial institutions. Whether or not SOFR attains traction as a LIBOR replacement tool remains in question, although some transactions using SOFR were completed in 2019 (including the Company's issuance of 4.00% Fixed-to-Floating Rate Subordinated Notes due 2029), the future of LIBOR remains uncertain at this time. Uncertainty as to the nature of alternative reference rates and as to potential changes or other reforms to LIBOR may adversely affect LIBOR rates and the value of LIBOR-based loans, and securities in our portfolio. If LIBOR rates are no longer available, and we are required to implement substitute indices for the calculation of interest rates under our loan agreements with our borrowers, we may experience significant expenses in effecting the transition, and may be subject to disputes or litigation with customers and creditors over the appropriateness or comparability to LIBOR of the substitute indices, which could have an adverse effect on our results of operations.

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 Amended and Restated 2015 Omnibus Plan. In the event of a change in control, the vesting of stock and option grants would accelerate. In 2019, we adopted the Sterling National Bank Severance Pay Plan. The plan calls for severance payments ranging from 12 weeks to 36 weeks 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 10.3% of our total portfolio loans as of December

31, 2019, but constituted 34.8% 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, and our Chief Financial Officer, Luis Massiani, who was also recently appointed President of the Bank. The loss of service of Mr. Kopnisky, Luis Massiani 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, 2019, we conducted our business through 82 full-service retail and commercial financial centers which serve the New York Metro Market and the New York Suburban Market. Of these financial centers, 21 are located in Nassau County, New York, 16 in Suffolk County, New York, 11 in Queens County, New York, nine in Kings County, New York, seven in Westchester County, New York, seven in Rockland County, New York, five in Orange County, New York, two in Bronx County, New York and one in New York City, New York. We also operate one office in each of Sullivan and Ulster Counties in New York and one office in Bergen County, New Jersey. Additionally, 41 of our financial centers are owned and 41 are leased.

In addition to our financial center network and corporate offices, we lease nine 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

See Note 20. “Commitments and Contingencies - Litigation” in the notes to consolidated financial statements that 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”.

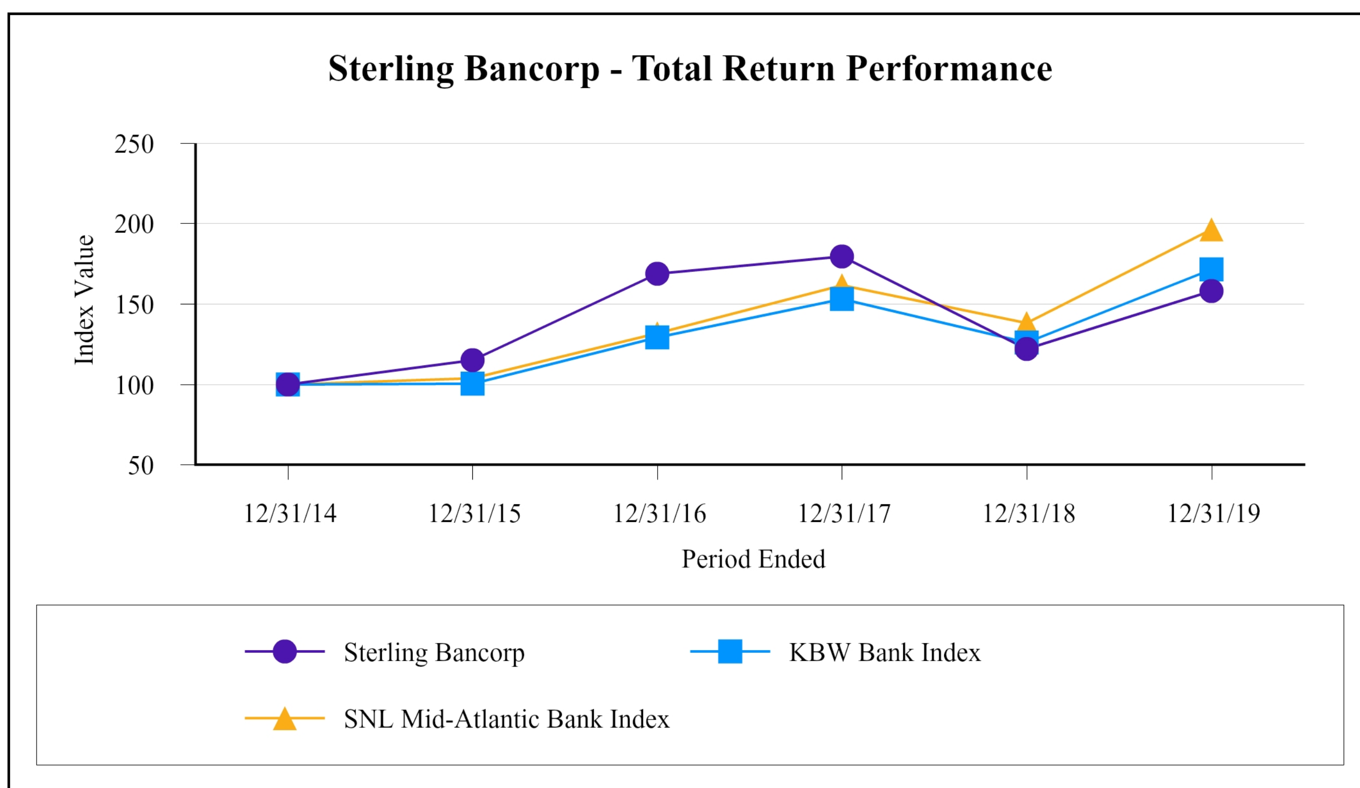
As of December 31, 2019, there were 198,455,324 shares of our common stock outstanding held by 6,645 holders of record (excluding the number of persons or entities holding stock in street name through various brokerage firms). The closing price per share of common stock on December 31, 2019, which was the last trading day of our fiscal year, was $21.08.

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 18. "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 December 31, 2014 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.



	At December 31,					
	2014	2015	2016	2017	2018	2019
Sterling Bancorp	100.00	115.03	168.80	179.57	122.06	158.00
KBW Bank Index	100.00	100.49	129.14	153.15	126.02	171.55
SNL Mid-Atlantic Bank Index	100.00	103.75	131.87	161.62	138.10	196.39

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 2019 and the stock repurchase plan approved by the Board:

	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	342,217	$	19.69	342,217	5,230,318
November 1 — November 30	3,067,599		20.60	3,067,599	2,162,719
December 1 — December 31	590,184		20.37	590,184	1,572,535
Total	4,000,000	$	20.49	4,000,000	

[1] On December 10, 2018, the Board of Directors increased the authorized share limit to 30,000,000 common shares. 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 included in our Annual Reports on Form 10-K for the calendar years ended December 31, 2019, 2018, 2017, 2016 and 2015 and 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 Note 2. "Acquisitions" in the notes to consolidated financial statements, which is included elsewhere in this report. The operating results of mergers and acquisitions during the periods presented are included within our results of operations since the date of acquisition.

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

	At or for the year ended December 31,				
	2019	2018	2017	2016	2015
Selected balance sheet data:					
End of period balances:					
Total securities	$ 5,075,309	$ 6,667,180	$ 6,474,561	$ 3,118,838	$ 2,643,823
Portfolio loans	21,440,212	19,218,530	20,008,983	9,527,230	7,859,360
Total assets	30,586,497	31,383,307	30,359,541	14,178,447	11,955,952
Non-interest bearing deposits	4,304,943	4,241,923	4,080,742	3,239,332	2,936,980
Interest bearing deposits	18,113,715	16,972,225	16,457,462	6,828,927	5,643,027
Total deposits	22,418,658	21,214,148	20,538,204	10,068,259	8,580,007
Borrowings	2,885,958	5,214,183	4,991,210	2,056,612	1,525,344
Stockholders' equity	4,530,113	4,428,853	4,240,178	1,855,183	1,665,073
Tangible common stockholders' equity[1]	2,598,686	2,547,852	2,367,876	1,092,230	917,007
Average balances:					
Total securities	$ 5,676,558	$ 6,704,025	$ 4,144,435	$ 2,878,944	$ 2,156,056
Total loans	20,408,566	20,190,630	12,215,759	8,520,367	6,261,470
Total assets	30,138,390	30,746,916	18,451,301	12,883,226	9,604,256
Non-interest bearing deposits	4,276,992	4,108,881	3,363,636	3,120,973	2,332,814
Interest bearing deposits	17,113,663	16,874,456	9,570,199	6,519,993	4,806,521
Total deposits	21,390,655	20,983,337	12,933,835	9,640,966	7,139,335
Borrowings	3,689,694	4,950,546	2,759,919	1,355,491	987,522
Stockholders' equity	4,463,605	4,344,096	2,498,512	1,739,073	1,360,859
Tangible common stockholders' equity[1]	2,552,123	2,458,580	1,464,057	976,394	760,254
Selected operating data:					
Total interest income	$ 1,202,540	$ 1,208,473	$ 682,449	$ 461,551	$ 348,141
Total interest expense	283,617	241,070	106,306	57,282	36,925
Net interest income	918,923	967,403	576,143	404,269	311,216
Provision for loan losses	45,985	46,000	26,000	20,000	15,700
Net interest income after provision for loan losses	872,938	921,403	550,143	384,269	295,516
Total non-interest income	130,865	103,197	64,202	70,987	62,751
Total non-interest expense	463,837	458,370	433,375	247,902	260,318
Income before income taxes	539,966	566,230	180,970	207,354	97,949
Income tax expense	112,925	118,976	87,939	67,382	31,835
Net income	427,041	447,254	93,031	139,972	66,114
Preferred stock dividends	7,933	7,978	2,002	—	—
Net income available to common stockholders	$ 419,108	$ 439,276	$ 91,029	$ 139,972	$ 66,114
Per common share data:					
Basic earnings per share	$ 2.04	$ 1.96	$ 0.58	$ 1.07	$ 0.60
Diluted earnings per share	2.03	1.95	0.58	1.07	0.60
Adjusted diluted earnings per share, non-GAAP[1]	2.07	2.00	1.40	1.11	0.96
Dividends declared per share	0.28	0.28	0.28	0.28	0.28
Dividend payout ratio	13.77%	14.33%	48.64%	26.25%	46.73%
Book value per share	$ 22.13	$ 19.84	$ 18.24	$ 13.72	$ 12.81
Tangible book value per share[1]	13.09	11.78	10.53	8.08	7.05

See legend below tables.

	At or for the year ended December 31,				
	2019	2018	2017	2016	2015
Common shares outstanding:					
Shares outstanding at period end	198,455,324	216,227,852	224,782,694	135,257,570	130,006,926
Weighted average shares basic	205,679,874	224,299,488	157,513,639	130,607,994	109,907,645
Weighted average shares diluted	206,131,628	224,816,996	158,124,270	131,234,462	110,329,353
Other data:					
FTE period end	1,639	1,907	2,076	970	1,089
Financial centers period end	82	106	128	42	52
Performance ratios:					
Return on average assets	1.39%	1.43%	0.49%	1.09%	0.69%
Return on average equity	9.39	10.11	3.64	8.05	4.86
Reported return on average tangible assets[1]	1.48	1.51	0.52	1.15	0.73
Adjusted return on average tangible assets[1]	1.51	1.55	1.27	1.20	1.17
Reported return on average tangible common equity[1]	16.42	17.87	6.22	14.34	8.70
Adjusted return on average tangible common equity[1]	16.73	18.29	15.17	14.90	13.86
Operating efficiency ratio, as reported[1]	44.2	42.8	67.7	52.2	69.6
Operating efficiency ratio, as adjusted[1]	40.1	38.8	41.8	46.2	50.8
Net interest margin - GAAP[2]	3.43	3.51	3.44	3.44	3.60
Net interest margin - tax equivalent basis[2]	3.49	3.57	3.55	3.55	3.67
Capital ratios (Company):[3]					
Common equity tier 1 risk-based ratio	11.06%	12.31%	12.37%	10.73%	10.74%
Tier 1 risk-based capital ratio	11.65	12.95	13.07	10.73	10.74
Total risk-based capital ratio	13.89	14.06	14.18	12.73	11.29
Tier 1 leverage ratio	9.55	9.50	9.39	8.95	9.03
Tangible equity to tangible assets	9.50	9.06	8.76	8.14	8.18
Tangible common equity to tangible assets	9.03	8.60	8.27	8.14	8.18
Regulatory capital ratios (Bank):					
Common equity tier 1 risk-based ratio	12.32%	13.55%	13.95%	10.87%	11.45%
Tier 1 risk-based capital ratio	12.32	13.55	13.95	10.87	11.45
Total risk-based capital ratio	13.52	14.80	15.21	13.06	12.00
Tier 1 leverage ratio	10.11	9.94	10.10	9.08	9.65
Asset quality data and ratios:					
Allowance for loan losses	$ 106,238	$ 95,677	$ 77,907	$ 63,622	$ 50,145
Non-performing loans (“NPLs”)	179,161	168,822	187,213	78,853	66,411
Non-performing assets (“NPAs”)	191,350	188,199	214,308	92,472	81,025
Net charge-offs	35,424	28,230	11,715	6,523	7,929
NPAs to total assets	0.63%	0.60%	0.71%	0.65%	0.68%
NPLs to total loans[3]	0.84	0.88	0.94	0.83	0.84
Allowance for loan losses to non-performing loans	59.30	56.67	41.61	80.68	75.50
Allowance for loan losses to total loans[3]	0.50	0.50	0.39	0.67	0.64
Net charge-offs to average loans	0.17	0.14	0.10	0.08	0.13

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, 2019, 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,				
	2019	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)[1]:					
Total assets	$ 30,586,497	$ 31,383,307	$ 30,359,541	$ 14,178,447	$ 11,955,952
Goodwill and other intangibles	(1,793,846)	(1,742,578)	(1,733,082)	(762,953)	(748,066)
Tangible assets	28,792,651	29,640,729	28,626,459	13,415,494	11,207,886
Stockholders' equity	4,530,113	4,428,853	4,240,178	1,855,183	1,665,073
Preferred stock	(137,581)	(138,423)	(139,220)	—	—
Goodwill and other intangibles	(1,793,846)	(1,742,578)	(1,733,082)	(762,953)	(748,066)
Tangible common stockholders' equity	2,598,686	2,547,852	2,367,876	1,092,230	917,007
Common stock outstanding at period end	198,455,324	216,227,852	224,782,694	135,257,570	130,006,926
Common stockholders' equity as a % of total assets	14.36%	13.67%	13.51%	13.08%	13.93%
Book value per common share	$ 22.13	$ 19.84	$ 18.24	$ 13.72	$ 12.81
Tangible common equity as a % of tangible assets	9.03%	8.60%	8.27%	8.14%	8.18%
Tangible book value per common share	$ 13.09	$ 11.78	$ 10.53	$ 8.08	$ 7.05

See legend beginning on page 23.

	At or for the year ended December 31,				
	2019	2018	2017	2016	2015
The following table shows the reconciliation of reported net income (GAAP) and diluted 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	$ 539,966	$ 566,230	$ 180,970	$ 207,354	$ 97,949
Income tax expense	112,925	118,976	87,939	67,382	31,835
Net income (GAAP)	427,041	447,254	93,031	139,972	66,114
Adjustments:					
Net loss (gain) on sale of securities	6,905	10,788	344	(7,522)	(4,837)
Net (gain) on termination of pension plan	(11,817)	—	—	—	—
Net (gain) on sale of residential mortgage loans	(8,313)	—	—	—	—
Net (gain) loss on sale of fixed assets	—	(11,800)	1	—	—
(Gain) on sale of trust division	—	—	—	(2,255)	—
(Gain) loss on extinguishment of debt	(46)	(172)	—	9,729	—
Merger-related expense	—	—	39,232	265	17,079
Charge for asset write-downs, systems integration, retention and severance	8,477	4,396	105,110	4,485	29,046
Impairment related to financial centers and real estate consolidation strategy	14,398	8,736	—	—	—
Charge on benefit plan settlement	—	—	—	—	13,384
Amortization of non-compete agreements and acquired customer list intangibles	840	1,177	1,411	3,514	3,526
Total pre-tax adjustments	10,444	13,125	146,098	8,216	58,198
Adjusted pre-tax income	550,410	579,355	327,068	215,570	156,147
Adjusted income tax expense	115,586	121,732	103,027	70,052	50,749
Adjusted net income (non-GAAP)	434,824	457,623	224,041	145,518	105,398
Preferred stock dividend	7,933	7,978	2,002	—	—
Adjusted net income available to common stockholders (non-GAAP)	$ 426,891	$ 449,645	$ 222,039	$ 145,518	$ 105,398
Weighted average diluted shares	206,131,628	224,816,996	158,124,270	131,234,462	110,329,353
Diluted EPS (GAAP)	$ 2.03	$ 1.95	$ 0.58	$ 1.07	$ 0.60
Adjusted diluted EPS (non-GAAP)	2.07	2.00	1.40	1.11	0.96

See legend beginning on page 23.

	At or for the year ended December 31,				
	2019	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	$ 4,463,605	$ 4,344,096	$ 2,498,512	$ 1,739,073	$ 1,360,859
Average preferred stock	(138,007)	(138,829)	(35,122)	—	—
Average goodwill and other intangibles	(1,773,475)	(1,746,687)	(999,333)	(762,679)	(600,605)
Average tangible common stockholders' equity	2,552,123	2,458,580	1,464,057	976,394	760,254
Net income available to common stockholders	419,108	439,276	91,029	139,972	66,114
Reported return on average tangible common equity	16.42%	17.87%	6.22%	14.34%	8.70%
Adjusted net income available to common stockholders	$ 426,891	$ 449,645	$ 222,039	$ 145,518	$ 105,398
Adjusted return on average tangible common equity	16.73%	18.29%	15.17%	14.90%	13.86%

See legend beginning on page 23.

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	At or for the year ended December 31,				
	2019	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	$ 918,923	$ 967,403	$ 576,143	$ 404,269	$ 311,216
Non-interest income	130,865	103,197	64,202	70,987	62,751
Total net revenue	1,049,788	1,070,600	640,345	475,256	373,967
Tax equivalent adjustment on securities	14,834	16,231	20,054	12,745	6,503
Net loss (gain) on sale of securities	6,905	10,788	344	(7,522)	(4,837)
Net (gain) on termination of pension plan	(11,817)	—	—	—	—
(Gain) on sale of trust division	(8,313)	—	—	—	—
Net (gain) loss on sale of fixed assets	—	(11,800)	1	—	—
(Gain) on sale of trust division	—	—	—	(2,255)	—
Adjusted total net revenue	1,051,397	1,085,819	660,744	478,224	375,633
Non-interest expense	463,837	458,370	433,375	247,902	260,318
Gain (loss) on extinguishment of debt	46	172	—	(9,729)	—
Merger-related expense	—	—	(39,232)	(265)	(17,079)
Charge for asset write-downs, systems integration, retention and severance	(8,477)	(4,396)	(105,110)	(4,485)	(29,046)
Impairment related to financial centers and real estate consolidation strategy	(14,398)	(8,736)	—	—	—
Charge on benefit plan settlement	—	—	—	—	(13,384)
Amortization of intangible assets	(19,181)	(23,646)	(13,008)	(12,416)	(10,043)
Adjusted non-interest expense	$ 421,827	$ 421,764	$ 276,025	$ 221,007	$ 190,766
Reported operating efficiency ratio	44.2%	42.8%	67.7%	52.2%	69.6%
Adjusted operating efficiency ratio	40.1%	38.8%	41.8%	46.2%	50.8%

See legend below.

	At or for the year ended December 31,				
	2019	2018	2017	2016	2015
The following table shows the reconciliation of reported return on average tangible assets and adjusted return on average tangible assets[5]:					
Average assets	$ 30,138,390	$ 30,746,916	$ 18,451,301	$ 12,883,226	$ 9,604,256
Average goodwill and other intangibles	(1,773,475)	(1,746,687)	(999,333)	(762,679)	(600,605)
Average tangible assets	28,364,915	29,000,229	17,451,968	12,120,547	9,003,651
Net income available to common stockholders	419,108	439,276	91,029	139,972	66,114
Reported return on average tangible assets	1.48%	1.51%	0.52%	1.15%	0.73%
Adjusted net income available to common stockholders	$ 426,891	$ 449,645	$ 222,039	$ 145,518	$ 105,398
Adjusted return on average tangible assets	1.51%	1.55%	1.27%	1.20%	1.17%

See legend below.

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 provide 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 available to common stockholders 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 average 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

For a discussion of our financial condition and results of operations for fiscal 2018 as compared to fiscal 2017, see "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on March 1, 2019.

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 CFPB;
- 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.

LIBOR Transition and Phase-Out

We have a significant amount of loans, borrowings and swaps that are tied to LIBOR benchmark interest rates. It is anticipated that the LIBOR index will be phased out by the end of 2021 and the Federal Reserve Bank of New York has established the SOFR as its recommended alternative to LIBOR. We have created a sub-committee of our Asset Liability Management Committee to address LIBOR transition and phase-out issues. This committee includes personnel from legal, loan operations, risk, IT, credit, business intelligence, treasury, corporate banking, marketing, audit, accounting and corporate development. We are currently reviewing loan documentation, technology systems and procedures we will need to implement for the transition.

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 and accounting for deferred income taxes. 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.

General

The Astoria Merger, the acquisition of Advantage Funding on April 2, 2018, the acquisition of asset-based lending and equipment finance loans from Woodforest National Bank on February 28, 2019 and the acquisition of equipment finance loans and leases from Santander Bank on November 29, 2019 are discussed in Note 2. "Acquisitions" in the notes to consolidated financial statements. These transactions 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

In addition to the transactions discussed above, recent significant transactions and events include the following:

Balance Sheet Repositioning Strategy

In connection with our objective of creating a more optimal balance sheet mix, during 2019, we executed several strategies that impacted our earning asset mix, including the sale of residential mortgage loans, which is further described below, and the sale of $1.4 billion of investment securities. These asset sales allowed us to reduce low yielding assets that are not part of our longer-term strategy, and improve our funding profile by reducing our higher cost funding liabilities.

Portfolio Acquisitions

See Note 2. “Acquisitions” in the notes to consolidated financial statements for information regarding the equipment finance loan and lease portfolio and origination platform acquired from Santander Bank (the “Santander Portfolio Acquisition”), which consisted of $764.0 million of equipment finance loans and leases and $74.8 million of operating leases, and the commercial loan portfolio and origination platform acquired from Woodforest National Bank (the “Woodforest Portfolio Acquisition”), which consisted of $166.1 million of equipment finance loans and $331.8 million of asset-based lending loans.

Subordinated Notes Issuance

On December 16, 2019, we issued $275.0 million aggregate principal amount of 4.00% fixed-to-floating rate subordinated notes. The proceeds from this issuance will be used in part to redeem the senior notes maturing in June 2020 that we assumed in the Astoria Merger. See Note 9. “Borrowings, Senior Notes and Subordinated Notes” for additional information.

Repurchases of Common Stock

In 2019, we repurchased 19,312,694 shares of our common stock at a cost of $382.9 million, or $19.83 per share. Our weighted average diluted shares outstanding decreased by 18,685,368 between 2018 and 2019.

Sale of residential mortgage loans

At December 31, 2018, we held residential mortgage loans with an unpaid principal balance of $1.6 billion in our held for sale portfolio. These loans represented substantially all of the remaining 15-year and 30-year fixed rate residential mortgage loans acquired in the Astoria Merger. We sold $1.4 billion of these loans in the first six months of 2019 and transferred the remaining loans with an unpaid principal balance of $128.8 million to portfolio loans in the second quarter of 2019.

See Note 24. “Quarterly Results of Operations (Unaudited)” in the notes to consolidated financial statements for information regarding our quarterly results for 2019 and 2018.

Results of Operations

We reported net income available to common stockholders of $419.1 million, or $2.03 per diluted common share for 2019, compared to net income available to common stockholders of $439.3 million, or $1.95 per diluted common share for 2018, and net income available to common stockholders of $91.0 million, or $0.58 per diluted common share, for 2017.

Results for 2019 included continued organic growth from our commercial banking teams and,

- the results from the Woodforest Portfolio Acquisition since February 28, 2019; and
- the results from the Santander Portfolio Acquisition since November 29, 2019.

Results for 2018 included

- the results from the Advantage Funding Acquisition since April 2, 2018; and
- the integration of Astoria’s operating activities, including 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 and operating efficiencies.

Results for 2017 included the combined results from the Astoria Merger from October 2, 2017.

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 2017 and the 21% federal tax rate that was in effect for 2019 and 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,		
	2019	2018	2017
Tax equivalent net interest income	$ 933,757	$ 983,634	$ 596,197
Less tax equivalent adjustment	(14,834)	(16,231)	(20,054)
Net interest income	918,923	967,403	576,143
Provision for loan losses	45,985	46,000	26,000
Non-interest income	130,865	103,197	64,202
Non-interest expense	463,837	458,370	433,375
Income before income taxes	539,966	566,230	180,970
Income tax expense	112,925	118,976	87,939
Net income	427,041	447,254	93,031
Preferred stock dividends	7,933	7,978	2,002
Net income available to common stockholders	$ 419,108	$ 439,276	$ 91,029
Earnings per common share - basic	$ 2.04	$ 1.96	$ 0.58
Earnings per common share - diluted	2.03	1.95	0.58
Dividends per common share	0.28	0.28	0.28
Return on average assets	1.39%	1.43%	0.49%
Return on average equity	9.39	10.11	3.64

Net Income

For 2019, net income available to common stockholders was $419,108 compared to net income available to common stockholders of $439,276 for 2018, a decrease of $20,168. Results for 2019 included the following notable items:

- gain on termination of the defined benefit pension plan assumed in the Astoria Merger of $11,817;
- gain on sale of residential mortgage loans of $8,313;
- an impairment charge of $14,398 to write-off leasehold improvements, land and buildings, and the early termination of several leases related to our real estate consolidation strategy;
- charges for asset write-downs, systems integration, retention and severance associated with the Santander Portfolio Acquisition and Woodforest Portfolio Acquisition of $8,477;
- net loss on sale of securities of $6,905;
- amortization of non-compete agreements and acquired customer list intangible assets of $840;
- gain on extinguishment of senior notes of $46.

Excluding the impact of these items, adjusted net income available to common stockholders (non-GAAP) was $426,891, and adjusted diluted earnings per share available to common stockholders (non-GAAP) were $2.07 for 2019.

Net income available to common stockholders increased $348,247 to $439,276 for 2018, compared to $91,029 for 2017. Results for 2018 included the following notable items:

- charges for asset write-downs, systems integration, retention and severance associated with the Advantage Funding acquisition of $4,396;
- charge for loss on impairment of financial centers of $8,736;
- gain on sale of fixed assets resulting from the sale of Astoria's former headquarters of $11,800;
- net loss on sale of securities of $10,788;

- amortization of non-compete agreements and acquired customer list intangible assets of $1,177; and
- gain on extinguishment of senior notes of $172.

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

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 87.5% and 90.4% of total revenue in 2019 and 2018, 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. Our net interest income and net interest margin are subject to various factors that could affect our level of income. Among these factors are the volume and mix of interest earning assets and interest bearing liabilities, changes in the levels of interest rates, re-pricing frequencies, contractual maturities and loan repayment behavior. 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,								
	2019			2018			2017		
	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]	$ 7,309,743	$ 379,030	5.19%	$ 5,774,201	$ 303,167	5.25%	$ 4,378,428	$ 219,664	5.02%
Commercial real estate [2]	9,663,241	471,360	4.88	9,168,026	430,743	4.70	5,477,304	239,240	4.37
ADC [3]	360,063	20,543	5.71	261,918	15,593	5.95	241,051	14,367	5.96
Total commercial loans [4]	17,333,047	870,933	5.02	15,204,145	749,503	4.93	10,096,783	473,271	4.69
Consumer loans	270,039	15,199	5.63	336,711	18,967	5.63	296,368	14,196	4.79
Residential mortgage loans	2,805,480	143,237	5.11	4,649,774	238,026	5.12	1,822,608	83,294	4.57
Total loans, net [5]	20,408,566	1,029,369	5.04	20,190,630	1,006,496	4.98	12,215,759	570,761	4.67
Securities taxable	3,342,559	94,823	2.84	4,114,555	115,971	2.82	2,625,317	65,278	2.49
Securities tax exempt	2,333,999	70,636	3.03	2,589,470	77,293	2.98	1,519,118	57,299	3.77
Interest earning deposits	375,431	7,020	1.87	291,936	3,712	1.27	242,339	1,891	0.78
FRB and FHLB Stock	298,703	15,526	5.20	342,036	21,232	6.21	168,576	7,274	4.31
Total securities and other earning assets	6,350,692	188,005	2.96	7,337,997	218,208	2.97	4,555,350	131,742	2.89
Total interest earnings assets	26,759,258	1,217,374	4.55	27,528,627	1,224,704	4.45	16,771,109	702,503	4.19
Non-interest earning assets	3,379,132			3,218,289			1,680,192		
Total assets	$ 30,138,390			$ 30,746,916			$ 18,451,301		
Interest bearing liabilities:									
Demand deposits	$ 4,297,038	$ 45,439	1.06%	$ 4,084,821	$ 31,757	0.78%	$ 2,525,863	$ 13,394	0.53%
Savings deposits [6]	2,474,848	8,458	0.34	2,760,759	6,699	0.24	1,332,054	4,197	0.32
Money market deposits	7,583,750	88,929	1.17	7,505,005	61,532	0.82	4,663,180	28,141	0.60
Certificates of deposit	2,758,027	49,535	1.80	2,523,871	30,108	1.19	1,049,102	10,378	0.99
Total interest bearing deposits	17,113,663	192,361	1.12	16,874,456	130,096	0.77	9,570,199	56,110	0.59
Senior Notes	175,153	5,515	3.15	235,074	8,747	3.72	126,858	6,186	4.88
Other borrowings	3,329,612	75,843	2.29	4,542,652	92,812	2.05	2,460,460	34,608	1.41
Subordinated Notes - Bank	173,053	9,427	5.45	172,820	9,415	5.45	172,601	9,402	5.45
Subordinated Notes - Company	11,876	471	3.97	—	—	—	—	—	—
Total borrowings	3,689,694	91,256	2.47	4,950,546	110,974	2.24	2,759,919	50,196	1.82
Total interest bearing liabilities	20,803,357	283,617	1.36	21,825,002	241,070	1.10	12,330,118	106,306	0.86
Non-interest bearing deposits	4,276,992			4,108,881			3,363,636		
Other non-interest bearing liabilities	594,436			468,937			259,035		
Total liabilities	25,674,785			26,402,820			15,952,789		
Stockholders' equity	4,463,605			4,344,096			2,498,512		
Total liabilities and stockholders' equity	$ 30,138,390			$ 30,746,916			$ 18,451,301		
Net interest rate spread [7]			3.19%			3.34%			3.33%
Net interest earning assets [8]	$ 5,955,901			$ 5,703,625			$ 4,440,991		
Tax equivalent net interest margin		933,757	3.49%		983,634	3.57%		596,197	3.55%
Less tax equivalent adjustment		(14,834)			(16,231)			(20,054)	
Net interest income		918,923			967,403			576,143	
Accretion income on acquired loans		91,212			111,941			43,493	
Tax equivalent net interest margin excluding accretion income on acquired loans		$ 842,545	3.15%		$ 871,693	3.17%		$ 552,704	3.30%

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 128.6%, 126.1% and 136.0% for the years ended December 31, 2019, 2018 and 2017, 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.

	2019 vs. 2018			2018 vs. 2017		
	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	$ 79,381	$ (3,518)	$ 75,863	$ 73,010	$ 10,493	$ 83,503
Commercial real estate	23,767	16,850	40,617	172,204	19,299	191,503
ADC	5,604	(654)	4,950	1,250	(24)	1,226
Total commercial loans	108,752	12,678	121,430	246,464	29,768	276,232
Consumer loans	(3,768)	—	(3,768)	2,085	2,686	4,771
Residential mortgage loans	(94,325)	(464)	(94,789)	143,592	11,140	154,732
Securities taxable	(21,964)	816	(21,148)	41,092	9,601	50,693
Securities tax exempt	(7,904)	1,246	(6,658)	33,911	(13,917)	19,994
Interest earning deposits	1,247	2,061	3,308	448	1,373	1,821
FRB and FHLB Stock	(2,497)	(3,208)	(5,705)	9,772	4,186	13,958
Total interest earning assets	(20,459)	13,129	(7,330)	477,364	44,837	522,201
Interest bearing liabilities:						
Demand deposits	1,729	11,953	13,682	10,408	7,955	18,363
Savings deposits	(749)	2,508	1,759	3,758	(1,256)	2,502
Money market deposits	658	26,739	27,397	20,848	12,543	33,391
Certificates of deposit	2,977	16,450	19,427	17,251	2,479	19,730
Senior Notes	(2,019)	(1,213)	(3,232)	4,305	(1,744)	2,561
Other borrowings	(26,972)	10,003	(16,969)	37,907	20,297	58,204
Subordinated Notes - Bank	12	—	12	13	—	13
Subordinated Notes - Company	—	471	471	—	—	—
Total interest bearing liabilities	(24,364)	66,911	42,547	94,490	40,274	134,764
Change in tax equivalent net interest income	3,905	(53,782)	(49,877)	382,874	4,563	387,437
Less tax equivalent adjustment	(1,651)	252	(1,399)	9,841	(13,664)	(3,823)
Change in net interest income	$ 5,556	$ (54,034)	$ (48,478)	$ 373,033	$ 18,227	$ 391,260

2019 compared to 2018

Tax equivalent net interest income decreased $49,877 to $933,757 for the year ended December 31, 2019 compared to $983,634 for the year ended December 31, 2018. The decrease in tax equivalent net interest income was mainly due to higher interest expense in 2019 relative to 2018 and a decrease of $20,729 in accretion income on acquired loans, which was $91,212 for 2019 compared to $111,941 for 2018. We repositioned our balance sheet in 2019 as residential mortgage loan interest income was replaced with commercial loan interest income and the decline in interest income from securities was substantially offset by a decline in interest expense on borrowings.

The average volume of interest earning assets decreased $769,369, or 2.8%, for 2019 relative to 2018, which was mainly due to the residential loan sale and securities sales. The tax equivalent net interest margin decreased to 3.49% for 2019 compared to 3.57% for 2018, mainly due to the decline in accretion income on acquired loans. Interest earning assets yielded 4.55% for 2019 compared to 4.45% for 2018, which was mainly due to increasing commercial loan assets and reducing lower yielding residential loans and securities. The cost of interest bearing liabilities was 1.36% for the year ended December 31, 2019 compared to 1.10% for 2018. The increase in the cost of interest bearing liabilities was mainly due to increases in market rates of interest between the periods.

The average balance of commercial loans outstanding increased $2,128,902, or 14.0%, during 2019, compared to 2018. The increase was the result of organic growth from our commercial banking teams, the Woodforest Portfolio Acquisition and the Santander Portfolio Acquisition. Commercial loans represented 84.9% of total average loans during 2019, compared to 75.3% for 2018. This is consistent with our goal of having commercial loans represent 85.0% of total loans. The yield on commercial loans was 5.02% in 2019, compared to 4.93% for 2018. Interest income from commercial loans increased $121,430 in 2019, compared to 2018. The increase in yield on commercial loans was mainly due to growth in higher yielding commercial real estate loans and run-off from lower yielding multi-family loans acquired in the Astoria Merger. Additionally, accretion income on acquired commercial loans was $61,190 in 2019 compared to $55,217 in 2018; mainly due to the Woodforest Portfolio Acquisition and the Santander Portfolio Acquisition.

The average balance of residential mortgage loans declined $1,844,294 during 2019 compared to 2018. The decline was mainly due to the sale of $1,409,334 of residential mortgage loans in the first quarter of 2019, which is discussed above in "*Recent Developments,"* and continued repayments. The average yield on residential mortgage loans was 5.11% in 2019 compared to 5.12% in 2018. Accretion income on acquired residential mortgage loans was $29,004 during 2019 compared to $54,608 for 2018.

Total accretion income on acquired loans was $91,212 for 2019 and contributed 45 basis points to the yield on loans. Accretion income on acquired loans was $111,941 for 2018 and contributed 55 basis points to the yield on loans. At December 31, 2019, remaining loan purchase accounting discounts on portfolio loans totaled $69,202. Note that in connection with the adoption of the current expected credit loss accounting standard that is effective for us on January 1, 2020, a portion of this balance associated with loans that were deemed purchase credit impaired will be transfered to the allowance for credit losses.

Tax equivalent interest income on securities decreased $27,805 to $165,459 in 2019, compared to $193,264 in 2018. This was mainly due to a decrease of $1,027,467 in the average balance of securities. The average balance of tax-exempt securities decreased $255,471, or 9.9%, during 2019. The tax equivalent yield on securities was 2.91% in 2019 compared to 2.88% in 2018. The increase in tax equivalent yield on securities was primarily due to an increase in the proportion of tax exempt securities to total securities in our portfolio. The proportion of average tax exempt securities was 41.1% of average securities in 2019 compared to 38.6% in 2018.

Average interest earning deposits increased $83,495 in 2019 compared to 2018, mainly due to higher cash levels held as a result of the residential mortgage loan sale, security sales and funding required to complete the portfolio acquisitions.

FRB and FHLB stock income declined $5,705 in 2019 compared to 2018. This was mainly due to the decline in the 10-year Treasury rate, which determines the dividends we receive on FRB stock, and a decline in FHLB stock held during the period, which was due to lower borrowing volumes in 2019 compared to 2018.

Average deposits increased $407,318 in 2019 and were $21,390,655 in 2019 compared to $20,983,337 in 2018. Average interest bearing deposits increased $239,207 during 2019, from $16,874,456 in 2018 to $17,113,663 in 2019. Average non-interest bearing deposits increased $168,111 and were $4,276,992 in 2019 compared to $4,108,881 in 2018. The growth in average deposits was primarily due to organic growth generated by our commercial banking teams and was augmented by growth of on-line deposits and wholesale deposits. The average cost of interest bearing deposits was 1.12% in 2019 compared to 0.77% in 2018. The increase in the cost of deposits was primarily attributable to changes in market rates of interest.

Average borrowings decreased $1,260,852 to $3,689,694 in 2019 compared to $4,950,546 in 2018. The decrease in average borrowings was mainly related to asset sales and an increase in average deposits. The average cost of borrowings was 2.47% for 2019 compared to 2.24% for 2018. 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.

For the full year 2019, the cost of average deposits, borrowings and total funding increased relative to 2018 based on market factors, including the competitive dynamics in our deposit market and increasing market rates of interest. However, these market factors improved over the course of 2019, which combined with our deposit pricing strategies and changing balance sheet composition, allowed us to reduce the cost of deposits, borrowings and total funding in the fourth quarter of 2019 relative to the third quarter of 2019. We anticipate the current interest rate environment and our pricing strategies will allow us to further reduce our cost of total funding liabilities in 2020.

Tax equivalent net interest margin excluding accretion income on acquired loans was 3.15% in the year ended December 31, 2019, compared to 3.17% in the year ended December 31, 2018.

2018 compared to 2017
For this discussion, see "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - 2018 compared to 2017" in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on March 1, 2019.

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 2019 and 2018 the provision for loan losses totaled $45,985 and $46,000, respectively. See the section captioned "Asset Quality Characteristics and Credit Costs - Provision for Loan Losses" elsewhere in this discussion for further analysis of the provision for loan losses.

Non-interest Income. The components of non-interest income were as follows:

	For the year ended December 31,		
	2019	2018	2017
Deposit fees and service charges	$ 26,398	$ 26,830	$ 17,128
Accounts receivable management / factoring commissions and other related fees	23,837	22,772	17,803
Loan commissions and fees	24,129	16,181	11,637
Bank owned life insurance	20,670	15,651	7,816
Investment management fees	7,305	7,790	2,928
Net (loss) on sale of securities	(6,905)	(10,788)	(344)
Gain on termination of pension plan	11,817	—	—
Gain (loss) on sale of fixed assets	—	11,800	(1)
Gain on sale of residential mortgage loans	8,313	—	—
Other	15,301	12,961	7,235
Total non-interest income	$ 130,865	$ 103,197	$ 64,202
Total non-interest income	$ 130,865	$ 103,197	$ 64,202
Net (loss) on sale of securities	(6,905)	(10,788)	(344)
Gain on termination of pension plan	11,817	—	—
Net gain (loss) on sale of fixed assets	—	11,800	(1)
Gain on sale of residential mortgage loans	8,313	—	—
Adjusted non-interest income - non-interest income net of items noted above	$ 117,640	$ 102,185	$ 64,547

As presented in Item 6. "Selected Financial Data - Non-GAAP Financial Measures," we eliminate net (loss) on sale of securities, gain on termination of pension plan, net gain (loss) on sale of fixed assets and gain on sale of residential mortgage loans in calculating our adjusted total revenues and adjusted net income. Net (loss) 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) on sale of securities is not part of our corporate budgeting or business planning process. We terminated the defined benefit pension plan we assumed in the Astoria Merger, which is not part of our recurring operating income. As we continue our financial center consolidation strategy, we may sell real estate over time, which may result in gains and losses based on market conditions, which are also not a part of our recurring operating income. Lastly, we sold $1,409,334 of residential mortgage loans in 2019 that we acquired in the Astoria Merger and gain on sale of residential mortgage loans is not part of our 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 2019 and 2018 was loan commissions and fees, bank owned life insurance and income generated on loan swaps, which is included in other non-interest income.

Deposit fees and service charges were $26,398 for 2019 compared to $26,830 for 2018. The decrease was mainly due to the consolidation of financial centers, which resulted in consumer deposit attrition. Consumer deposits typically generate higher levels of fee income than other types of 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 2019 were $23,837, an increase of $1,065 compared to 2018. The increase was mainly due to an increase in factoring commissions and related fees due to organic growth from our commercial teams.

Loan commissions and fees income includes fees on lines of credit, loan servicing and collateral monitoring fees, syndication fees, collateral monitoring, and other loan related fees that are not included in interest income. Other loan related fees were $9,411 in 2019 compared to $3,745 for 2018. The increase was mainly due to higher gain on sale of equipment finance and public sector finance loans. Loan commissions and fees were $24,129 for 2019 compared to $16,181 for 2018. Lines of credit commissions were $3,953 in 2019 compared to $3,041 for 2018. The increase was mainly due to organic growth from our commercial banking teams. Loan syndication fees were $4,047 for 2019 compared to $3,463 for 2018, as we have continued to invest in growing our syndications team. Loan servicing and collateral monitoring fees were $6,718 in 2019 compared to $4,935 for 2018. The increase was mainly due to additional fees associated with our asset-based lending and equipment finance portfolios and offset by a decline in servicing fees.

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 $20,670 for 2019 compared to $15,651 for 2018. In 2019, we completed the restructuring of $394,818 of BOLI assets acquired in the Astoria Merger. We recorded a gain of $4,796 on the restructuring, which consisted mainly of diversifying the investment asset classes available under the program and a reduction in fees and other charges.

Investment management fees principally represent fees from the sale of mutual funds and annuities through our financial center personnel. These revenues were $7,305 for 2019 compared to $7,790 for 2018. The decrease in 2019 compared to 2018 was mainly due to lower commissions on annuity sales, which was mainly due to the consolidation of our financial center locations.

Net (loss) on sale of securities was a net loss of $6,905 for 2019 compared to a net loss of $10,788 for 2018. In early 2019, we sold $1,386,236 of available for sale securities, and used a portion of the proceeds to fund the Woodforest Portfolio Acquisition. In 2018, we sold certain lower yielding agency securities to create a portion of the liquidity for the Advantage Funding Acquisition.

Gain on termination of pension plan was $11,817 in 2019 compared to $0 for 2018. The gain was related to the termination and settlement of the Astoria defined benefit pension plan and was the result of strong returns on plan assets in 2019 and a better than expected outcome on the annuities purchase terms.

Gain (loss) on sale of fixed assets was $0 in 2019 compared to a gain of $11,800 for 2018. 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 exited the location in the first quarter of 2019.

Gain on sale of residential mortgage loans represents the net gain of $8,313 we realized on the sale of residential mortgage loans held for sale in the first quarter of 2019. The sale was part of our strategy of increasing the percentage of commercial loans to total loans in our loan portfolio. There was no similar gain in 2018.

Other non-interest income principally includes loan swap fees, safe deposit box rentals, insurance commissions and foreign exchange fees. Other non-interest income was $15,301 for 2019 compared to $12,961 for 2018. The increase in 2019 compared to 2018 was mainly due to an increase of $2,877 in loan swap fees, which were $9,001 in 2019 compared to $6,124 for 2018. The increase was mainly due to greater demand for loan swaps given the current interest rate environment and investments in hiring commercial banking teams that focus on originating these types of transactions.

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

	For the year ended December 31,		
	2019	2018	2017
Compensation and employee benefits	$ 215,766	$ 220,340	$ 150,254
Stock-based compensation plans	19,473	12,984	8,111
Occupancy and office operations	64,363	68,536	43,649
Information technology	35,580	41,174	19,387
Amortization of intangible assets	19,181	23,646	13,008
FDIC insurance and regulatory assessments	12,660	20,493	11,969
Other real estate owned, net	622	1,650	3,423
Merger-related expense	—	—	39,232
Charge for asset write-downs, systems integration, severance and retention	8,477	4,396	105,110
(Gain) on extinguishment of borrowings	(46)	(172)	—
Impairment related to financial centers and real estate consolidation strategy	14,398	8,736	—
Other	73,363	56,587	39,232
Total non-interest expense	$ 463,837	$ 458,370	$ 433,375

Non-interest expense for 2019 was $463,837 compared to $458,370 in 2018 and $433,375 in 2017. The increase between 2019 and 2018 was mainly due to the impairment charge related to our real estate consolidation strategy and an increase in other non-interest expense.

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, 2019	$ 215,766	1,639
December 31, 2018	220,340	1,907
December 31, 2017	150,254	2,076

Compensation expense for 2019 declined $4,574 compared to 2018 mainly due to the continued consolidation of financial centers and efficiency gains from automation of certain back-office processes. Our total number of FTEs decreased from 1,907 to 1,639.

Stock-based compensation plans expense was $19,473 for 2019 compared to $12,984 for 2018 and $8,111 in 2017. The increase for 2019 compared to 2018 was mainly due to the number of personnel included in the stock-based compensation plan. Although our FTE count has decreased, we have hired commercial bankers, business development officers nationally, and additional personnel in IT, risk and compliance that are typically participants in our stock-based compensation plan. For additional information related to our stock-based compensation, see Note 14. “Stock-Based Compensation” in the notes to consolidated financial statements.

Occupancy and office operations expense was $64,363 for 2019, compared to $68,536 in 2018. The decrease in occupancy and office operations expense in 2019 compared to 2018 was mainly due to the consolidation of financial centers and back-office locations. We had 82 financial centers at December 31, 2019 compared to 106 financial centers at December 31, 2018. 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 $35,580 for 2019 compared to $41,174 for 2018. The decrease in 2019 was mainly due to the conversion of Astoria’s legacy deposit systems in the third quarter of 2018.

Amortization of intangible assets mainly includes amortization of core deposit intangible assets, non-compete agreements and customer lists. Amortization of intangible assets was $19,181 for 2019 compared to $23,646 for 2018. The decrease between the periods was mainly due a decline in amortizable intangible assets. Amortization of intangible assets expense is expected to decline to approximately $16,800 in 2020 barring any new acquisitions or divestitures.

FDIC insurance and regulatory assessments expense was $12,660 for 2019 compared to $20,493 for 2018. The decrease in FDIC insurance and regulatory assessments between the periods was due to a decline in FDIC insurance assessments that became effective when the deposit insurance fund reserve ratio reached 1.36% at September 30, 2018.

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,		
	2019	2018	2017
(Gain) on sale, net	$ (1,552)	$ (1,679)	$ (398)
Direct property write-downs	959	678	2,273
Rental income	(155)	(149)	(64)
Property tax	459	862	939
Other expenses, net	911	1,938	673
OREO expense, net	$ 622	$ 1,650	$ 3,423

OREO expense, net declined $1,028 for 2019 compared to 2018 mainly due to a decrease in property taxes and other expenses, net. Other expenses, net includes mainly maintenance, repairs and legal fees.

Merger-related expense components were as follows:

	For the year ended December 31,		
	2019	2018	2017
Financial advisory fees	$ —	$ —	$ 15,217
Legal and accounting fees	—	—	9,776
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	$ —	$ —	$ 39,232

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

	For the year ended December 31,		
	2019	2018	2017
Property, leases and other asset write-downs	$ 2,093	$ 1,450	$ 12,567
Charge to restructure information technology systems	2,222	848	18,033
Legal settlement	—	—	500
Banking systems integration	1,043	—	9,502
Severance and retention	3,119	2,098	64,508
Total	$ 8,477	$ 4,396	$ 105,110

Charge for asset write-downs, systems integration, severance and retention for 2019 included a charge of $3,344 related to the Woodforest Portfolio Acquisition and a charge of $5,133 related to the Santander Bank Portfolio Acquisition. The charge for asset write-downs, systems integration, severance and retention for 2018 of $4,396 was related to the Advantage Funding Acquisition.

Impairment related to financial centers and real estate consolidation strategy was $14,398 in 2019 compared to $8,736 in 2018. This charge in 2019 included a write-off of leasehold improvements, land and buildings, and the early termination of several long-term leases, which facilitated the consolidation of 24 financial centers and two back-office locations in 2019. The charge in 2018 included the write-off of leasehold improvements and the early termination of several leases, which facilitated the consolidation of several businesses into our Jericho location and the elimination of one data operations center.

(Gain) on extinguishment of borrowings was a gain of $46 in 2019, compared to $172 in 2018. The gain in 2019 was a result of the repurchase of $7,000 principal amount of 3.50% Senior Notes assumed in the Astoria Merger that are due June 2020. The gain in 2018 was a result of the repurchase of $19,627 principal amount of the same notes.

Other non-interest expense was $73,363 for 2019 compared to $56,587 for 2018. Other non-interest expense mainly includes professional fees, advertising and promotion, pension plan expense, communications, residential loan servicing, insurance, and operational losses. Additional details regarding these expenses is included in Note 16. “Non-Interest Income, Other Non-interest Expense, Other Assets and Other Liabilities” in the notes to our consolidated financial statements. The increases in other non-interest expense was mainly due to an increase in professional fees for consulting and training related to automation and higher loan work-out expense, an increase in advertising and promotion for targeted deposit gathering strategies, an increase in pension plan expense as the expected return on plan assets decreased given a shift to a liability driven investment strategy in anticipation of the Astoria pension plan termination and an increase in residential loan servicing due to work-outs with borrowers and an increase in estimated unrecoverable escrow advances.

Income Taxes were $112,925 for 2019 compared to $118,976 for 2018, which represented an effective income tax rate of 20.9% for 2019, and 21.0% for 2018. In 2019, we recorded estimated income tax expense at 21.0%, which was equal to the federal statutory rate primarily due to the effect of tax exempt income from loans, securities, BOLI and affordable housing investments. The 20.9% rate was the result of recording the income tax benefits of vested stock-based compensation expense as a discrete item. The effective income tax rate for 2018 was 21.0%. For more information, see Note 12. “Income Taxes” and Note 13. “Investments in Low Income Housing Tax Credits”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 $30,138,390 in 2019 compared to $30,746,916 in 2018.

	For the year ended December 31,		
	2019	2018	2017
Sources of Funds:			
Non-interest bearing deposits	14.2%	13.4%	18.2%
Interest bearing deposits	56.8	54.8	51.9
FHLB and other borrowings	11.0	14.8	13.3
Subordinated Notes	0.6	0.6	1.0
Senior Notes	0.6	0.8	0.7
Other non-interest bearing liabilities	2.0	1.5	1.4
Stockholders' equity	14.8	14.1	13.5
Total	100.0%	100.0%	100.0%
Uses of Funds:			
Loans	67.8%	65.7%	66.2%
Securities	18.8	21.8	22.5
Interest earning deposits	1.2	0.9	1.3
FRB and FHLB stock	1.0	1.1	0.9
Other non-interest earning assets	11.2	10.5	9.1
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 increased to 71.0% of our funding in 2019 compared to 68.2% in 2018. Growing and maintaining these deposits through our commercial banking teams, financial centers and other deposit gathering sources is key to our strategy. We primarily use funds to originate commercial loans and purchase securities.

Average deposits were $21,390,655 for 2019 compared to $20,983,337 for 2018. The growth in average deposits was primarily due to organic growth generated by our commercial banking teams, on-line deposits and wholesale deposits. As of December 31, 2019, approximately 50% of our deposits consisted of consumer deposits and 50% were commercial deposits (including municipal deposits).

Average loans were $20,408,566 for 2019 compared to $20,190,630 for 2018. The growth in average loan balances in 2019 was mainly due to organic growth generated by our commercial banking teams and the Woodforest Portfolio Acquisition and Santander Portfolio Acquisition. Average loans represented 76.3% and 73.3% of average earning assets for 2019 and 2018, respectively. Average loans were 95.4% and 96.2% of average deposits for 2019 and 2018, respectively.

Average securities were $5,676,558 for 2019 compared to $6,704,025 for 2018. As shown in the table above, average securities represented 18.8% and 21.8% of average assets for the years ended December 31, 2019 and 2018, respectively. The decrease in average securities in 2019 was part of our balance sheet repositioning strategy. Due to declining interest rate environment and growth in commercial loans in 2019, we sold investment securities to create a more optimal balance sheet mix as discussed above in *"Recent Developments"*. Average tax exempt securities were 41.1% of our securities portfolio in 2019 compared to 38.6% in 2018, as we determined the risk adjusted return of this asset class was more attractive relative to other securities we own. 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,									
	2019		2018		2017		2016		2015	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Commercial:										
C&I:										
Traditional C&I	$ 2,355,031	11.0%	$ 2,396,182	12.5%	$ 1,979,448	9.9%	$ 1,404,774	14.7%	$ 1,189,154	15.1%
Asset-based lending	1,082,618	5.0	792,935	4.1	797,570	4.0	741,942	7.8	310,214	3.9
Payroll finance	226,866	1.1	227,452	1.2	268,609	1.3	255,549	2.7	221,831	2.8
Warehouse lending	1,330,884	6.2	782,646	4.1	723,335	3.6	616,946	6.5	387,808	4.9
Factored receivables	223,638	1.0	258,383	1.3	220,551	1.1	214,242	2.2	208,382	2.7
Equipment financing	1,800,564	8.4	1,215,042	6.3	679,541	3.4	589,315	6.2	631,303	8.0
Public sector finance	1,213,118	5.7	860,746	4.5	637,767	3.2	349,182	3.7	182,336	2.3
Total C&I	8,232,719	38.4	6,533,386	34.0	5,306,821	26.5	4,171,950	43.8	3,131,028	39.8
Commercial mortgage:										
Commercial real estate	5,418,648	25.3	4,642,417	24.1	4,138,864	20.7	3,162,942	33.2	2,733,351	34.8
Multi-family	4,876,870	22.7	4,764,124	24.8	4,859,555	24.3	981,076	10.3	796,030	10.1
ADC	467,331	2.2	267,754	1.4	282,792	1.4	230,086	2.4	186,398	2.4
Total commercial mortgage	10,762,849	50.2	9,674,295	50.3	9,281,211	46.4	4,374,104	45.9	3,715,779	47.3
Total commercial	18,995,568	88.6	16,207,681	84.3	14,588,032	72.9	8,546,054	89.7	6,846,807	87.1
Residential mortgage	2,210,112	10.3	2,705,226	14.1	5,054,732	25.3	697,108	7.3	713,036	9.1
Consumer	234,532	1.1	305,623	1.6	366,219	1.8	284,068	3.0	299,517	3.8
Total loans	21,440,212	100.0%	19,218,530	100.0%	20,008,983	100.0%	9,527,230	100.0%	7,859,360	100.0%
Allowance for loan losses	(106,238)		(95,677)		(77,907)		(63,622)		(50,145)	
Total portfolio loans, net	$ 21,333,974		$19,122,853		$19,931,076		$ 9,463,608		$ 7,809,215	

Overview. Total portfolio loans, net increased $2,211,121 to $21,333,974 at December 31, 2019 compared to $19,122,853 at December 31, 2018. Total commercial loans increased $2,787,887 in 2019 driven by organic growth generated by our commercial banking teams and two loan portfolio acquisitions. In 2019, we acquired $471,878 of loans in the Woodforest Portfolio Acquisition, which were integrated into our asset-based lending and equipment finance portfolios, and we acquired $764,020 of equipment finance loans and leases in the Santander Portfolio Acquisition. Residential mortgage and consumer loans decreased in 2019 as a result of high levels of repayments. At December 31, 2019, total C&I loans comprised 38.4% of total loans compared to 34.0% at December 31, 2018. Total commercial mortgage loans comprised 50.2% at December 31, 2019 compared to 50.3% at December 31, 2018. At December 31, 2019, 88.6% of our portfolio loans were commercial loans, compared to 84.3% at December 31, 2018.

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 2020 we will grow total C&I loans and total commercial mortgage 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,		
	2019	2018	2017
Santander Portfolio Acquisition	$ 738,213	$ —	$ —
Woodforest Portfolio Acquisition	360,526	—	—
Advantage Funding Acquisition	98,977	298,684	—
Astoria Merger	4,592,493	5,717,901	8,800,453
Restaurant franchise finance portfolio	—	—	91,673
NSBC acquisition	—	—	37,475
HVB Merger	216,037	291,793	401,494
Provident Merger	—	27,497	50,142
Unpaid principal balance	6,006,246	6,335,875	9,381,237
Remaining purchase accounting adjustment	(69,202)	(117,222)	(293,476)
Carrying value	$ 5,937,044	$ 6,218,653	$ 9,087,761

The decline in the unpaid principal balance of acquired loans to $6,006,246 at December 31, 2019 compared to $6,335,875 at December 31, 2018, was mainly due to repayments of residential mortgage and multi-family loans acquired in the Astoria Merger, repayments of equipment finance loans from the Advantage Funding Acquisition and the migration of loans to originated portfolio loans as loans matured, we renewed or subject to an updated credit evaluation. This was partially offset by acquired loans from the Santander Portfolio Acquisition and Woodforest Portfolio Acquisitions.

Included in the Santander Portfolio Acquisition were operating leases of $72,291 at December 31, 2019. These operating leases are included in other assets in the consolidated balance sheets.

At December 31, 2019, the remaining purchase accounting adjustment was $69,202 compared to $117,222 at December 31, 2018, a decline of $48,020. Accretion income on acquired loans was $91,212 in 2019, and charge-offs applied to purchase accounting adjustments was $7,248. Purchase accounting adjustments recorded in connection with the Woodforest Portfolio Acquisition and Santander Portfolio Acquisition was $44,817.

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 senior management and senior credit 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 up 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 and approved by credit personnel who do not have responsibility for loan originations. We determine our maximum single relationship exposure limits based on the rating of the individual loans and the relative risk associated with the borrower’s overall credit profile.

Underwriting of a commercial loan is based on an assessment of the 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 repayment terms of the loan. 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. We may also review the borrower with trade investigations. Collateral supporting a secured transaction also is analyzed to determine value and marketability.

In connection with our residential mortgage and commercial real estate loans, we generally require property appraisals to be performed by approved independent appraisers with subsequent review by 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, 2019					
$35.0 million and greater	110	$ 7,261,909	$ 4,679,958	$ 66,017	$ 42,545
$25.0 million to $34.9 million	77	2,260,446	1,530,921	29,356	19,882
$15.0 million to $24.9 million	185	3,542,306	2,533,229	19,148	13,693
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

We review large credit relationships on a regular basis. As part of our allowance for loan loss methodology, we evaluate concentration risk and regularly measure the amount of loan relationships in our portfolio with committed amounts over $15,000.

Industry Concentrations. As of December 31, 2019 and 2018, there were no concentrations of loans within any single industry in excess of 10% of total loans, as segregated by North American Industry Classification System ("NAICS code"). The NAICS code is a federally designed standard industrial numbering system we use 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; however our commercial loan platforms have a national footprint. 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 declined by $41,151, or 1.7%, in 2019 and were $2,355,031 at December 31, 2019 compared to $2,396,182 at December 31, 2018. The decline in traditional C&I loans in 2019 was mainly due to net repayments from the portfolio and competitive factors in the market for such loans that have reduced returns below our risk-adjusted return requirements.

Asset Based Lending. The Bank provides asset-based lending loans ("ABL loans") to businesses on a national basis. ABL loans are secured with a blanket lien and typically include accounts receivable, inventory, machinery and equipment and real estate. The terms of these loans are generally one to five 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 $1,082,618 at December 31, 2019 compared to $792,935 at December 31, 2018. The increase in ABL loans in 2019 was mainly due to loans acquired in the Woodforest Portfolio Acquisition.

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 $226,866 at December 31, 2019 compared to $227,452 at December 31, 2018. At December 31, 2019 and 2018, 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 $1,330,884 at December 31, 2019 compared to $782,646 at December 31, 2018. Warehouse lending balances fluctuate widely over the course of each month and over the year, resulting in average balances that will materially differ from end of period balances. The overall growth in warehouse lending balances in 2019 was due to both new relationships and higher utilization under the existing lines.

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, 2019, factored receivables were $223,638 compared to $258,383 at December 31, 2018.

Equipment Finance Lending. The Bank offers equipment financing across the United States through direct lending programs, third-party sources and vendor programs. In 2019, we completed the Santander Portfolio Acquisition, which included a geographically diverse portfolio of loans and leases collateralized by equipment and vehicles, and the Woodforest Portfolio Acquisition, a portion of which included loans collateralized by transportation, construction, industrial and other assets. At December 31, 2019, equipment finance loans were $1,800,564 compared to $1,215,042 at December 31, 2018, an increase of $585,522. 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. As of December 31, 2019, we had exposure to residual values on equipment financed under leases of $105,530.

Public Sector Finance. We originate loans to state, municipal and local government entities nationally. At December 31, 2019, outstanding balances were $1,213,118, which represented an increase of $352,372, or 40.9%, compared to December 31, 2018. Public sector finance loans are either secured by equipment, or are obligations that are backed by 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 15.7 years and a weighted average expected duration of 8.25 at December 31, 2019.

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, 2019, CRE loans were $5,418,648 compared to $4,642,417 at December 31, 2018. Multi-family loans were $4,876,870 at December 31, 2019 compared to $4,764,124 at December 31, 2018. In 2019, we continued to originate CRE loans through our commercial banking teams, primarily in the Greater New York metropolitan area. Growth in multi-family loans has been limited, as our portfolio of broker originated multi-family loans has continued to run-off through repayments and we have not been actively originating loans in this sector. Multi-family loan originations in 2019 were mainly to clients with which we have a full banking relationship.

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 mall centers), office buildings, co-ops, nursing homes, hotels, motels or restaurants, warehouses, schools and industrial complexes. To a lesser extent, we originate CRE loans for recreation, medical use, land, gas stations, not for profit and other categories. We may, from time to time, purchase CRE 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. At December 31, 2019, ADC loans were $467,331 compared to $267,754 at December 31, 2018. The majority of the growth in ADC loans was related to construction loans related to our affordable housing tax credit investments, in which the construction loan is converted to a combination of long-term debt and equity financing once construction milestones are achieved. 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 held in portfolio loans declined $495,114 in 2019 and were $2,210,112 at December 31, 2019 compared to $2,705,226 at December 31, 2018. In addition, we transferred $128,833 of residential mortgage loans from held for sale to portfolio loans; therefore, the aggregate run-off and repayments of residential mortgage loans was $623,947 in 2019. Residential mortgage loans represented 10.3% of our total portfolio loans at December 31, 2019 compared to 14.1% at December 31, 2018.

The Bank currently originates residential mortgage loans within the Bank's footprint in the Greater New York metropolitan area. Previously, 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 $484 in many locations in the continental U.S. and are $727 in high-cost areas such as New York City and surrounding counties during 2019. 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, 2019, residential mortgage loans serviced for others, which are not recorded on the

consolidated balance sheets, excluding loan participations, totaled approximately $1,044,796, compared to $1,180,385 at December 31, 2018. The decrease was due to repayments. We do not expect that we will acquire or retain additional servicing assets in 2020.

Our portfolio includes conforming and non-conforming, fixed-rate and adjustable rate mortgage (“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, we 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. After the tenth anniversary of the loan, principal and interest payments are required to amortize the loan over the remaining loan term, which typically results in a material increase in the borrower’s monthly payments. At December 31, 2019, our residential mortgage loan portfolio had $846,628 of loans originated as interest-only ARM loans, and substantially all of these had already converted to their amortization period.

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, 2019. 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, 2019.

	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	$ 982,444	4.76%	$ 989,509	5.04%	$ 383,078	4.80%	$ 2,355,031	4.88%
Asset-based lending	1,082,618	6.17	—	—	—	—	1,082,618	6.17
Payroll finance	226,866	5.25	—	—	—	—	226,866	5.25
Warehouse lending	1,330,884	3.60	—	—	—	—	1,330,884	3.60
Factored receivables	223,638	4.08	—	—	—	—	223,638	4.08
Equipment financing	99,811	4.20	1,328,410	4.50	372,343	4.06	1,800,564	4.39
Public sector finance	9,742	2.00	12,394	2.64	1,190,982	3.22	1,213,118	3.21
Total C&I	3,956,003	4.72	2,330,313	4.71	1,946,403	3.69	8,232,719	4.48
Commercial mortgage:								
CRE	710,786	4.33	2,651,834	4.32	2,056,028	4.22	5,418,648	4.28
Multi-family	303,569	3.53	2,030,709	3.91	2,542,592	3.64	4,876,870	3.75
ADC	276,048	4.87	173,383	6.18	17,900	4.10	467,331	5.33
Total commercial mortgage	1,290,403	4.28	4,855,926	4.23	4,616,520	3.91	10,762,849	4.10
Residential mortgage	2,003	3.76	5,154	5.68	2,202,955	4.17	2,210,112	4.17
Consumer	1,553	3.77	6,203	5.94	226,776	5.21	234,532	5.22
Total loans	$ 5,249,962	4.61%	$ 7,197,596	4.39%	$ 8,992,654	3.96%	$ 21,440,212	4.26%

The following table sets forth the composition of fixed-rate and adjustable-rate loans at December 31, 2019 that are contractually due after December 31, 2020:

	Fixed	Adjustable	Total
Traditional C&I	$ 290,111	$ 1,082,476	$ 1,372,587
Equipment financing	1,655,070	45,683	1,700,753
Public sector finance	1,203,376	—	1,203,376
CRE	2,383,697	2,324,165	4,707,862
Multi-family	2,587,350	1,985,951	4,573,301
ADC	25,090	166,192	191,282
Residential mortgage	379,012	1,829,097	2,208,109
Consumer	13,581	219,399	232,980
Total loans	$ 8,537,287	$ 7,652,963	$ 16,190,250

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

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Asset Quality Characteristics and Credit Costs

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, 2019:						
Traditional C&I	12	$ 3,036	71	$ 27,258	83	$ 30,294
ABL	—	—	4	4,966	4	4,966
Payroll finance	—	—	3	9,396	3	9,396
Equipment finance	352	27,742	511	33,050	863	60,792
CRE	5	952	53	26,213	58	27,165
Multi-family	5	1,091	10	3,400	15	4,491
ADC	1	71	1	434	2	505
Residential mortgage	62	17,997	218	62,275	280	80,272
Consumer	44	1,991	113	12,169	157	14,160
Total	481	$ 52,880	984	$ 179,161	1,465	$ 232,041
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
Total	413	$ 97,201	790	$ 168,822	1,203	$ 266,023
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
Total	236	$ 53,533	628	$ 187,213	864	$ 240,746
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
Total	125	$ 15,100	306	$ 78,853	431	$ 93,953
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
Total	203	$ 67,996	299	$ 66,411	502	$ 134,407

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,				
	2019	2018	2017	2016	2015
Non-accrual loans:					
Traditional C&I	$ 27,148	$ 42,298	$ 37,642	$ 26,386	$ 10,142
Asset-based lending	4,966	3,281	—	—	—
Payroll finance	9,396	881	—	199	—
Factored receivables	—	—	—	618	220
Equipment finance	33,050	12,221	8,099	2,246	1,644
CRE	26,213	33,012	21,720	21,008	20,742
Multi-family	3,400	2,681	4,449	71	1,717
ADC	434	—	4,205	5,269	3,700
Residential mortgage	62,275	61,981	99,958	14,790	19,680
Consumer	12,169	10,045	10,284	6,576	7,892
Total non-accrual loans	179,051	166,400	186,357	77,163	65,737
Accruing loans past due 90 days or more	110	2,422	856	1,690	674
Total non-performing loans	179,161	168,822	187,213	78,853	66,411
OREO	12,189	19,377	27,095	13,619	14,614
Total non-performing assets	$ 191,350	$ 188,199	$ 214,308	$ 92,472	$ 81,025
TDRs accruing and not included above	$ 49,807	$ 35,288	$ 13,564	$ 11,285	$ 13,701
Ratios:					
Non-performing loans to total loans	0.84%	0.88%	0.94%	0.83%	0.84%
Non-performing assets to total assets	0.63	0.60	0.17	0.65	0.68

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 non-performing assets as required by their status as classifieds loans.

At December 31, 2019, our non-accrual loans totaled $179,051 and there were $110 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, 2018, we had non-accrual loans of $166,400, and we had $2,422 of loans 90 days past due and still accruing interest.

Non-performing loans ("NPLs") increased $10,339 at December 31, 2019 to $179,161 compared to $168,822 at December 31, 2018. The increase was mainly due to NPLs in our equipment finance portfolio, which consisted mainly of lower balance loans secured by transportation equipment. The decline in traditional C&I NPLs was mainly due to the work-out of one of our taxi medallion relationships. The decline in CRE NPLs was mainly due to repayments.

Taxi Medallion Loans. At December 31, 2019, we had $30,424, or 0.14%, of total portfolio loans collateralized by taxi medallions, of which $13,392 were TDR, substandard and on non-accrual. Taxi medallion loans declined by $3,639 in 2019 due to repayments.

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 $75,656 at December 31, 2019, of which $25,849 were non-accrual; $49,260 were current and performing according to terms; $547 were 30 to 89 days past due; and none were 90 days or more past due. At December 31, 2018 total TDRs were $74,885, of which $38,947 were non-accrual, $34,892 were current and performing, and $396 were 30 to 89 days past due. A detailed listing of TDRs is presented in Note 4. "Portfolio Loans - Troubled Debt Restructuring" in the notes to consolidated financial statements.

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, 2019, there were no commitments to lend additional funds to borrowers with loans that have been modified in a TDR. The decrease in traditional C&I TDR loans and TDR loans on non-accrual at December 31, 2019 compared to December 31, 2018 was mainly due to one taxi medallion relationship which we worked out of during the year. The increase in multi-family loan TDRs was due to one relationship in which we made a concession when the borrower became delinquent in property taxes. The increase in CRE TDR loans was mainly related to one borrowing relationship in which we made a concession that included consolidation of three facilities with an interest-only repayment requirement for a 12-month period. The increase in residential mortgage loan TDRs was made in accordance with mortgage servicing standards and represent concessions made to maximize our recovery of the unpaid principal balance.

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, 2019, 2018 and 2017:

	For the year ended December 31,		
	2019	2018	2017
Balance beginning of year	$ 19,377	$ 27,095	$ 13,619
Loans transferred to OREO	6,291	15,223	7,967
Sales of OREO	(12,520)	(22,263)	(8,483)
Write downs of OREO	(959)	(678)	(2,113)
OREO acquired in Astoria Merger	—	—	16,105
Balance end of year	$ 12,189	$ 19,377	$ 27,095

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, 2019, we had $159,976 of assets designated as "special mention" compared to $113,180 at December 31, 2018. The increase was mainly due to asset-based lending "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, 2019, classified assets consisted of loans of $295,428 and OREO of $12,189 compared to $266,106 and $19,377, respectively, a year earlier. The increase in classified assets at December 31, 2019 was mainly due to ABL, payroll finance and equipment finance loans that were classified during the year. 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, 2019, gross interest income that would have been recorded had non-accrual loans remained on accrual status throughout the period amounted to approximately $9,800. Interest income actually recognized on such loans totaled $958. 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 and 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 traditional acquisition and development loans in favor of investments in subsidized low income housing developments, 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,				
	2019	2018	2017	2016	2015
Balance at beginning of period	$ 95,677	$ 77,907	$ 63,622	$ 50,145	$ 42,374
Charge-offs:					
Traditional C&I	(6,186)	(9,270)	(5,489)	(1,707)	(1,575)
Asset-based lending	(18,984)	(4,936)	—	—	—
Payroll finance	(252)	(337)	(188)	(28)	(406)
Factored receivables	(141)	(205)	(982)	(1,200)	(291)
Equipment finance	(7,034)	(8,565)	(3,165)	(1,982)	(3,423)
CRE	(891)	(4,935)	(2,379)	(959)	(1,695)
Multi-family	—	(308)	—	(417)	(17)
ADC	(6)	(721)	(27)	—	—
Residential mortgage	(4,092)	(1,391)	(860)	(1,045)	(1,251)
Consumer	(1,552)	(1,408)	(1,095)	(1,615)	(2,360)
Total charge-offs	(39,138)	(32,076)	(14,185)	(8,953)	(11,018)
Recoveries:					
Traditional C&I	952	1,080	1,142	999	1,720
Asset-based lending	—	9	5	62	—
Payroll finance	17	43	6	32	35
Factored receivables	137	15	23	61	60
Equipment finance	723	951	387	560	825
CRE	845	888	163	353	148
Multi-family	304	283	—	2	9
ADC	—	—	269	104	52
Residential mortgage	133	64	161	30	92
Consumer	603	513	314	227	148
Total recoveries	3,714	3,846	2,470	2,430	3,089
Net charge-offs	(35,424)	(28,230)	(11,715)	(6,523)	(7,929)
Provision for loan losses	45,985	46,000	26,000	20,000	15,700
Balance at end of period	$ 106,238	$ 95,677	$ 77,907	$ 63,622	$ 50,145
Ratios:					
Net charge-offs to average loans outstanding	0.17%	0.14%	0.10%	0.08%	0.13%
Allowance for loan losses to NPLs	59.30	56.67	41.61	80.68	75.50
Allowance for loan losses to total loans	0.50	0.50	0.39	0.67	0.64

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.

As disclosed above in *Acquired Loans,* we had purchase accounting fair value discounts recorded on portfolio loans, which included estimated credit losses over the life of the loans, of $69,202 and $117,222 at December 31, 2019 and 2018, respectively.

The allowance for loan losses increased $10,561 in 2019 to $106,238 compared to $95,677 at December 31, 2018. 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.

Net charge-offs in 2019 were $35,424, or 0.17%, of average loans outstanding compared to net charge-offs of $28,230, or 0.14%, of average loans outstanding in 2018. The increase in 2019 was mainly due to three loans in the ABL portfolio.

The allowance for loan losses at December 31, 2019 represented 59.3% of NPLs and 0.50% of the total loan portfolio compared to 56.7% of NPLs and 0.50% of the total loan portfolio at December 31, 2018. The allowance for loan losses as a percentage of NPLs and to the total loan portfolio was relatively unchanged in 2019 as growth in the allowance for loan losses substantially offset increases in NPLs and portfolio loans.

Provision for Loan Losses. We recorded $45,985 in loan loss provision for 2019 compared to $46,000 in 2018. Provision for loan loss expense in 2019 and 2018 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 prior mergers and acquisitions 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, 2019, we had $109,025 of impaired loans compared to $100,998 at December 31, 2018. The increase in impaired loans in 2019 was mainly due to concessions we made on one CRE relationship and one multi-family relationship.

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, 2019, the balance of PCI loans was $116,274 and included PCI loans acquired in the merger with Hudson Valley Holding Corp and the merger of legacy Sterling Bancorp and legacy Provident New York Bancorp (the "Provident Merger") of $3,275, which are accounted for under the cost-recovery method and were included in our non-accrual loan totals above. The remaining $112,999 of PCI loans, which were acquired in the Astoria Merger and Woodforest Portfolio Acquisition, 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, 2018, the balance of PCI loans was $139,795 and included PCI loans accounted for under the cost-recovery method of $5,202, which were included in our non-accrual loan totals above. The decline in PCI loans in 2019 was mainly due to repayments of PCI loans acquired in the Astoria Merger. 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,								
	2019			2018			2017		
	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	$ 15,951	$ 2,302,254	14.9%	$ 14,201	$ 2,321,131	12.5%	$ 19,072	$ 1,708,812	9.9%
Asset-based lending	14,272	804,086	5.2%	7,979	792,935	4.1	6,625	760,095	4.0
Payroll finance	2,064	226,866	1.5%	2,738	227,452	1.2	1,565	268,609	1.3
Warehouse lending	917	1,330,884	8.6%	2,800	782,646	4.1	3,705	723,335	3.6
Factored receivables	654	223,638	1.5%	1,064	258,383	1.3	1,395	220,551	1.1
Equipment finance	16,723	881,380	5.7%	12,450	913,751	6.3	4,862	664,800	3.4
Public sector finance	1,967	1,213,118	7.9%	1,739	860,746	4.5	1,797	637,767	3.2
CRE	27,965	5,017,592	32.5%	32,285	4,154,956	24.1	24,945	3,476,830	20.7
Multi-family	11,440	2,303,826	14.9%	8,355	1,527,619	24.8	3,261	1,174,631	24.3
ADC	4,732	467,331	3.0%	1,769	267,754	1.4	1,680	282,792	1.4
Residential mortgage	7,598	541,681	3.5%	7,454	621,471	14.1	5,819	532,731	25.3
Consumer	1,955	121,310	0.8%	2,843	153,811	1.6	3,181	176,793	1.8
Total	$ 106,238	$ 15,433,966	100.0%	$ 95,677	$ 12,882,655	100.0%	$ 77,907	$ 10,627,746	100.0%
Allowance for loan losses to loans subject to the allowance	0.69%			0.74%			0.73%		

	December 31, 2016			December 31, 2015		
	Allowance for loan losses	Loan balance	% of total originated loans	Allowance for loan losses	Loan balance	% of total originated loans
Traditional C&I	$ 12,864	$ 1,043,647	14.7%	$ 9,953	$ 905,242	15.1%
Asset-based lending	3,316	562,898	7.8	2,762	310,214	3.9
Payroll finance	951	255,549	2.7	1,936	221,831	2.8
Warehouse lending	1,563	616,946	6.5	589	387,808	4.9
Factored receivables	1,669	214,242	2.2	1,457	208,382	2.7
Equipment finance	5,039	562,046	6.2	4,925	514,418	8.0
Public sector finance	1,062	349,182	3.7	547	182,336	2.3
CRE	20,466	2,900,927	33.2	11,461	2,036,103	34.8
Multi-family	4,991	868,980	10.3	5,141	552,155	10.1
ADC	1,931	230,086	2.4	2,009	127,363	2.4
Residential mortgage	5,864	521,332	7.3	5,007	433,928	9.1
Consumer	3,906	199,344	3.0	4,358	203,526	3.8
Total	$ 63,622	$ 8,325,179	100.0%	$ 50,145	$ 6,083,306	100.0%
Allowance for loan losses to loans subject to the allowance	0.76%			0.82%		

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 $15,951 at December 31, 2019, compared to $14,201 at December 31, 2018. Although traditional C&I loans subject to the allowance for loan losses decreased $18,877 in 2019, the allowance for loan losses for traditional C&I loans increased $1,750 compared to 2018 mainly due to an increase in the historical charge-off experience factor of six basis points. In addition, increases in delinquencies and unfavorable loan trends and conditions offset improvements in policy exceptions and other trends and conditions. In total, the allowance for loan losses for traditional C&I loans increased 10 basis points from 2018.

The allowance for ABL loans was $14,272 at December 31, 2019, compared to $7,979 at December 31, 2018. The allowance for ABL loans increased in 2019 compared to 2018 mainly due to an increase in the historical charge-off experience loss factor of 77 basis points, which was mainly due to the work-out of three ABL loan relationships. The increase in the allowance was also due to growth in the ABL portfolio, and increases in the loss factors applied due to higher delinquencies and criticized and classified loans.

The allowance for loan losses for payroll finance loans was $2,064 at December 31, 2019, compared to $2,738 at December 31, 2018. The decrease in 2019 compared to 2018 was mainly due to declines in delinquencies and criticized and classified payroll finance loans.

The allowance for loan losses for warehouse lending was $917 at December 31, 2019, compared to $2,800 at December 31, 2018. 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 2019 was mainly due to improvements in loan trends and conditions as the warehouse lending portfolio has continued to maintain strong risk ratings and payment performance.

The allowance for loan losses for factored receivables was $654 at December 31, 2019, compared to $1,064 at December 31, 2018. The decrease in 2019 compared to 2018 was mainly due to a decline in the balance of factored receivables of $34,745 and a decline in the historical charge-off experience factor of 18 basis points.

The allowance for loan losses for equipment finance was $16,723 at December 31, 2019, compared to $12,450 at December 31, 2018. The balance of equipment finance loans subject to the allowance for loan losses declined $32,371, as the equipment finance loans and leases acquired in the Woodforest Portfolio Acquisition and Santander Portfolio Acquisition were mainly subject to purchase accounting adjustments and not the allowance for loan losses. The allowance for loan losses for equipment finance increased in 2019 compared to 2018 mainly due to an increase in historical charge-off experience loss factor of 17 basis points and an increase in the qualitative factor associated with delinquencies and criticized and classified loans.

The allowance for loan losses for public sector finance was $1,967 at December 31, 2019, compared to $1,739 at December 31, 2018. 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 and the portfolio has strong risk ratings and payment performance. The increase in the allowance for loan losses for public sector finance loans in 2019 compared to 2018 was due to growth in the portfolio of $352,372.

The allowance for loan losses for CRE loans was $27,965 at December 31, 2019, compared to $32,285 at December 31, 2018. CRE loans subject to the allowance for loan losses increased $862,636. The decrease in the allowance for loan losses for CRE loans in 2019 compared to 2018 was mainly due to improvements in the qualitative factors related to policies and procedures, portfolio trends and conditions and a three basis points decline in the historical charge-off experience.

The allowance for loan losses for multi-family loans was $11,440 at December 31, 2019, compared to $8,355 at December 31, 2018. The increase in 2019 compared to 2018 was mainly due to an increase in multi-family loan balances subject to the allowance for loan losses of $776,207. Historical charge-off experience was stable at less than one basis point in 2019.

The allowance for loan losses for ADC loans was $4,732 at December 31, 2019, compared to $1,769 at December 31, 2018. The increase in 2019 compared to 2018 was mainly due to an increase in the balance of ADC loans, which increased $199,577. We also increased the qualitative factor for loan trends on ADC loans due to growth in the portfolio.

The allowance for loan losses for residential mortgage loans was $7,598 at December 31, 2019, compared to $7,454 at December 31, 2018. Residential mortgage loans subject to the allowance for loan losses declined $79,790 during 2019, as the majority of the run-off and repayments were related to acquired loans. The increase in the allowance for loan losses for residential mortgage loans in 2019 compared to 2018 was mainly due to an increase in the qualitative factors associated with trends and conditions of adjustable rate mortgages and interest-only mortgages.

The allowance for loan losses for consumer loans was $1,955 at December 31, 2019, compared to $2,843 at December 31, 2018. The decline in 2019 compared to 2018 was mainly due to a decline in the balance of consumer loans subject to the allowance for loan losses and 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 changes in the interest rate environment on the fair value and return performance 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, our liquidity position, and our objective of producing earnings and attractive returns. We evaluate the portfolio's size, risk and duration on a daily basis. At December 31, 2019, investment securities represented 18.8% of total earning assets compared to 25.2% at December 31, 2018. Our long-term target is to manage our investment portfolio within a range of 15.0% to 17.5% of total earning assets.

At the time of purchase, we designate a security as held to maturity or 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, 2019		December 31, 2018		December 31, 2017	
	Amortized cost	Fair value	Amortized cost	Fair value	Amortized cost	Fair value
Residential and multi-family mortgage-backed securities ("MBS"):						
Agency-backed	$ 1,595,766	$ 1,615,119	$ 2,328,870	$ 2,268,851	$ 2,171,044	$ 2,150,649
Other MBS[1]	508,217	512,277	596,868	574,770	656,514	649,403
Total MBS	2,103,983	2,127,396	2,925,738	2,843,621	2,827,558	2,800,052
Other securities:						
Federal agencies	196,809	201,138	283,825	273,973	409,322	399,996
Corporate bonds	307,050	320,922	537,210	527,965	147,781	148,226
State and municipal	435,213	446,192	227,546	225,004	264,310	263,798
Total other securities	939,072	968,252	1,048,581	1,026,942	821,413	812,020
Total available for sale securities	$ 3,043,055	$ 3,095,648	$ 3,974,319	$ 3,870,563	$ 3,648,971	$ 3,612,072

[1] Other MBS at December 31, 2019, 2018 and 2017 is mainly comprised of multi-family Ginnie Mae securities.

On an amortized cost basis, available for sale ("AFS") securities decreased $931,264, compared to December 31, 2018, mainly due to sales. As discussed in Note 3. "Securities" in the notes to consolidated financial statements, we 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. In the first quarter of 2019, we sold securities with a book value of $751,935 to raise liquidity for the Woodforest Portfolio Acquisition, and to reduce lower yielding securities as a percentage of total earning assets.

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 3.84 years at December 31, 2019 compared to 4.87 years at December 31, 2018. Total net unrealized gains on AFS securities was $52,593 at December 31, 2019 compared to total net unrealized losses of $103,756 at December 31, 2018. 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 increases when interest rates decrease or when credit spreads tighten. In 2019, market interest rates decreased, which was the main cause of the AFS securities moving from an unrealized loss to an unrealized gain.

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

	December 31, 2019		December 31, 2018		December 31, 2017	
	Amortized cost	Fair value	Amortized cost	Fair value	Amortized cost	Fair value
Residential MBS:						
Agency-backed	$ 168,743	$ 170,495	$ 318,590	$ 310,058	$ 355,013	$ 353,487
Other MBS	—	—	27,780	27,017	33,496	32,762
Total residential MBS	168,743	170,495	346,370	337,075	388,509	386,249
Other securities:						
Federal agencies	59,475	60,297	59,065	59,097	58,640	59,589
Corporate bonds	19,904	20,319	68,512	68,551	56,663	57,815
State and municipal	1,718,789	1,789,185	2,305,420	2,258,512	2,342,927	2,344,423
Other	12,750	12,895	17,250	17,287	15,750	15,833
Total other securities	1,810,918	1,882,696	2,450,247	2,403,447	2,473,980	2,477,660
Total held to maturity securities	$ 1,979,661	$ 2,053,191	$ 2,796,617	$ 2,740,522	$ 2,862,489	$ 2,863,909

On an amortized cost basis, held to maturity ("HTM") securities declined $816,956 at December 31, 2019 compared to December 31, 2018 mainly due to the transfer of securities discussed above. The balance of the decline was due to normal repayments on MBS and maturities and calls of state and municipal securities. The estimated weighted average life of HTM securities was 5.54 years at December 31, 2019 compared to 6.19 years at December 31, 2018.

Investment Portfolio Activity. At December 31, 2019, the carrying value of investment securities was $5,075,309, a decrease of $1,591,871, or 23.9%, compared to December 31, 2018. During 2019, we purchased $226,689 of AFS securities and $22,700 of HTM securities. In 2019, we sold $1,386,236 of securities that were classified as AFS at the time of sale. Tax exempt securities represent $2,164,981, or 42.7%, of our investment portfolio at December 31, 2019, compared to $2,530,424, or 38.0%, at December 31, 2018.

Portfolio Maturities and Yields. The following table summarizes the composition, maturities and weighted average yield of our investment securities portfolio at December 31, 2019. 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	$ 3,083	2.73%	$ 37,181	2.57%	$ 206,980	2.69%	$1,348,522	2.82%	$1,595,766	$1,615,119	2.80%
Other MBS	—	—	—	—	—	—	508,217	2.87	508,217	512,277	2.84
Total residential MBS	3,083	2.73	37,181	2.57	206,980	2.69	1,856,739	2.81	2,103,983	2,127,396	2.80
Federal agencies	—	—	—	—	146,735	2.81	50,074	2.78	196,809	201,138	2.80
Corporate bonds	10,016	2.26	57,504	3.68	239,530	4.37	—	—	307,050	320,922	4.17
State and municipal	2,140	3.18	65,124	2.32	213,530	2.20	154,419	2.20	435,213	446,192	2.22
Total	$ 15,239	3.27%	$ 159,809	2.62%	$ 806,775	3.03%	$2,061,232	2.72%	$3,043,055	$3,095,648	2.85%
Held to maturity:											
Residential MBS - agency-backed	$ —	—%	$ —	—%	$ —	—%	$ 168,743	2.85%	$ 168,743	$ 170,495	2.85%
Federal agencies	34,794	2.37	24,681	2.77	—	—	—	—	59,475	60,297	2.53
Corporate bonds	—	—	9,904	5.19	10,000	5.50	—	—	19,904	20,319	5.35
State and municipal	24,113	2.04	33,508	2.31	306,069	2.25	1,355,099	2.52	1,718,789	1,789,185	2.46
Other	—	—	7,750	3.21	5,000	3.81	—		12,750	12,895	3.44
Total	$ 58,907	2.23%	$ 75,843	2.93%	$ 321,069	2.38%	$1,523,842	2.56%	$1,979,661	$2,053,191	2.53%

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 Real Estate Mortgage Investment Conduits ("REMICs") backed by Fannie Mae, Freddie Mac and Ginnie Mae. 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 REMICs investments primarily to the early-to-intermediate tranches, which have the greatest cash flow stability. Floating rate REMICs are purchased with an emphasis on the relative trade-offs between lifetime rate caps, prepayment risk, and interest rates.

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 investment policy limits purchases of 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. At December 31, 2019, we owned non-rated corporate bonds including $110,432 of AFS securities and $19,904 of HTM securities. Such securities are either issued by a bank or bank holding company. 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 decreased our corporate bond portfolio in 2019 based on the risk-adjusted return profile of the securities and market outlook.

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, 2019, we held $23,972 of unrated short-term local municipal obligations as HTM and $3,068 as AFS. In addition, at December 31, 2019, we owned $21,096 of bonds issued by a state in which the rating was withdrawn when the bonds were refunded.

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,					
	2019		2018		2017	
	Average balance	Rate	Average balance	Rate	Average balance	Rate
Non-interest bearing demand	$ 4,276,992	—%	$ 4,108,881	—%	$ 3,363,636	—%
Interest bearing demand	4,297,038	1.06	4,084,821	0.78	2,525,863	0.53
Savings	2,474,848	0.34	2,760,759	0.24	1,332,054	0.32
Money market	7,583,750	1.17	7,505,005	0.82	4,663,180	0.60
Certificates of deposit	2,758,027	1.80	2,523,871	1.19	1,049,102	0.99
Total interest bearing deposits	17,113,663	1.12	16,874,456	0.77	9,570,199	0.59
Total deposits	$ 21,390,655	0.90%	$ 20,983,337	0.62%	$ 12,933,835	0.43%

Average deposits for 2019 were $21,390,655 and increased $407,318 compared to 2018. The increase was mainly due to growth generated by our commercial banking teams, on-line deposits and wholesale deposits. The average cost of interest bearing deposits was 1.12% for 2019 compared to 0.77% for 2018. The average cost of total deposits was 0.90% for 2019, compared to 0.62% for 2018. In the first three quarters of 2019, the cost of average deposits increased as compared to the prior quarter mainly due to the increase in market interest rates and the competitive environment for deposits in the Greater New York metropolitan region. In the fourth quarter of 2019, the cost of total deposits decreased by three basis points due to improvement in market conditions and competitive dynamics. We anticipate the current interest rate environment and pricing strategies we have implemented will allow us to further reduce our cost of total deposits in 2020.

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,					
	2019		2018		2017	
	Amount	%	Amount	%	Amount	%
Non-interest bearing demand	$ 4,304,943	19.2%	$ 4,241,923	20.0%	$ 4,080,742	19.9%
Interest bearing demand	4,427,012	19.8	4,207,392	19.8	3,882,064	18.9
Savings	2,652,764	11.8	2,382,520	11.2	2,758,642	13.4
Money market	7,585,888	33.8	7,905,382	37.3	7,377,118	35.9
Subtotal	18,970,607	84.6	18,737,217	88.3	18,098,566	88.1
Certificates of deposit	3,448,051	15.4	2,476,931	11.7	2,439,638	11.9
Total deposits	$ 22,418,658	100.0%	$ 21,214,148	100.0%	$ 20,538,204	100.0%

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

	December 31,		
	2019	2018	2017
Retail and commercial deposits - excluding certificates of deposit	71.0%	74.6%	75.7%
Municipal deposits	8.9	8.3	7.7
Retail and commercial certificates of deposit	11.8	11.4	11.0
Wholesale deposits	8.3	5.7	5.6
Total	100.0%	100.0%	100.0%

As of December 31, 2019 and 2018 we had $1,988,047 and $1,751,670, respectively, in municipal deposits. Municipal deposits experience annual seasonal flows associated with school district tax collections and typically peak in September and October and then gradually return to normalized levels in the fourth quarter. Growth in municipal deposits was generated by new client relationships in our municipal banking and public sector finance teams. Wholesale deposits were $1,870,199 at December 31, 2019 and $1,215,181 at December 31, 2018. Wholesale deposits consist mainly of brokered deposits, except for reciprocal certificate of deposit account registry service ("CDARs"). The increase in the balance of wholesale deposits was used to fund growth in loans and to replace higher cost borrowings. Retail and commercial certificates of deposit were $2,644,628 at December 31, 2019, compared to $2,416,018 at December 31, 2018. The increase was mainly due to growth generated by our financial centers in the first half of 2019, when market interest rates were increasing.

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.

	At December 31, 2019 - Period to maturity						December 31,	
	1 year or less	1-2 years	2-3 years	3 years or more	Total	% of total	2018	2017
Interest rate range:								
1.00% and below	$ 69,276	$ 14,917	$ 3,030	$ 4,832	$ 92,055	2.6%	$ 150,400	$ 1,903,062
1.01% to 2.00%	1,476,914	177,624	104,525	104,736	1,863,799	54.1	1,744,418	536,424
2.01% to 3.00%	1,462,912	28,686	34	565	1,492,197	43.3	582,083	133
3.01% to 4.00%	—	—	—	—	—	—	30	—
4.01% to 5.00%	—	—	—	—	—	—	—	19
Total	$ 3,009,102	$ 221,227	$ 107,589	$ 110,133	$ 3,448,051	100.0%	$ 2,476,931	$ 2,439,638

Certificates of Deposit by Time to Maturity. The following table sets forth certificates of deposit by time remaining until maturity as of December 31, 2019.

	Period to maturity					
	3 months or less	3-6 months	6-12 months	Over 12 months	Total	Rate
Certificates of deposit $250,000 or less	$ 799,797	$ 543,285	$ 331,163	$ 421,419	$ 2,095,664	1.96%
Brokered certificates of deposit over $250,000	618,502	153,749	—	—	772,251	1.68
Other certificates of deposit over $250,000	299,028	177,752	85,826	17,530	580,136	2.26
	$ 1,717,327	$ 874,786	$ 416,989	$ 438,949	$ 3,448,051	1.95%

Substantially all brokered deposits balances are an aggregation of individual deposits balances that are below the FDIC insurance limit of $250,000.

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. We manage the maturity of our brokered deposits to coincide with the anticipated inflows of deposits in our municipal banking business.

Listed below are our brokered deposits:

	December 31,		
	2019	2018	2017
Interest bearing demand	$ 149,566	$ 23,742	$ 23,820
Money market	944,627	1,134,081	773,804
Reciprocal CDARs [1]	—	—	102,259
Certificates of deposit	772,251	—	204,331
Total brokered deposits	$ 1,866,444	$ 1,157,823	$ 1,104,214

[1] The Federal Deposit Insurance Act was amended in June 2018 to except a capped amount of reciprocal deposits from treatment as brokered deposits for certain insured depository institutions, including the Bank. From that date forward, we no longer report reciprocal deposits as brokered deposits. 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. Also, in 2018 and 2017 we presented brokered deposits that were non-reciprocal CDARs, (CDARs one way) as a separate line item in the disclosure. Due to the change described above we modified our disclosure for all periods presented to present brokered deposits by account category.

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. At December 31, 2019, short-term borrowings included $173,504 of 3.50% Senior Notes we assumed in the Astoria Merger that mature in June 2020.

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

	December 31,		
	2019	2018	2017
Balance at end of period	$ 1,491,446	$ 3,958,635	$ 2,989,093
Average balance during period	2,289,810	3,375,905	2,239,321
Maximum amount outstanding at any month end	3,232,127	3,958,635	2,989,093
Weighted average interest rate at end of period	2.19%	2.48%	1.69%
Weighted average interest rate during period	2.39	2.25	1.43

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, 2019, these commitments totaled $1,260,723. For our real estate businesses, loan commitments are generally for residential, multi-family and commercial construction projects, which totaled $468,729 at December 31, 2019. Loan commitments for our retail customers are generally home equity lines of credit secured by residential property and totaled $96,663 at December 31, 2019. In addition, loan commitments for overdrafts were $27,713. 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, 2019 totaled $307,287.

See Note 19. "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, 2019. 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	$ 1,295,265	$ 950,388	$ —	$ —	$ 2,245,653
Other borrowings	22,678	—	—	—	22,678
3.50% Senior Notes	173,504	—	—	—	173,504
Subordinated Notes - Company	—	—	—	270,941	270,941
Subordinated Notes - Bank	—	—	—	173,182	173,182
Time deposits	3,009,102	328,816	110,133	—	3,448,051
Operating leases	19,907	34,890	27,653	55,540	137,990
	4,520,456	1,314,094	137,786	499,663	6,471,999
Other commitments:					
Letters of credit	283,319	23,902	66	—	307,287
Undrawn lines of credit	1,300,161	415,642	204,327	177,964	2,098,094
Total	$ 6,103,936	$ 1,753,638	$ 342,179	$ 677,627	$ 8,877,380

See Note 19. “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, 2019, stockholders’ equity totaled $4,530,113 compared to $4,428,853 at December 31, 2018. 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,	
	2019	2018
Beginning of period	$ 4,428,853	$ 4,240,178
Net income	427,041	447,254
Stock-based compensation	17,826	7,867
Treasury stock purchased	(382,883)	(159,903)
Other comprehensive income (loss)	106,161	(34,650)
Dividends on common stock	(58,110)	(63,118)
Dividends on preferred stock	(8,775)	(8,775)
Balance at end of period	$ 4,530,113	$ 4,428,853

The increase in stockholders’ equity for 2019 was mainly due to net income of $427,041, other comprehensive income of 106,161 and stock-based compensation of $17,826. These increases were partially offset by the repurchase of 19,312,694 common shares at an aggregate cost of $382,883, dividends on common stock of $58,110 and dividends on preferred stock of $8,775.

The accumulated other comprehensive income ("AOCI") component of stockholders' equity totaled a net, after-tax unrealized gain of $40,216 at December 31, 2019 compared to a net, after-tax unrealized loss of $65,945 at December 31, 2018. The increase in 2019 was the result of a $113,133 increase in the net after-tax value of available for sale securities due to changes in market interest rates and an increase in AOCI of $2,008 related to accretion of the unrealized holding loss on securities transferred to held to maturity in connection with a prior merger. These additions were partially offset by an unrealized loss of $8,980 related to retirement plan obligations.

Under current regulatory requirements, amounts reported as AOCI related to securities available for sale, securities transferred to held to maturity, and retirement plan obligations do not increase or reduce 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 18. "Stockholders' Equity" in the notes to consolidated financial statements.

At December 31, 2019, we held 31,417,601 shares in treasury compared to 13,645,073 at December 31, 2018. We generally use treasury shares for stock-based compensation purposes.

Stock Repurchase Plans. Our Board has authorized the repurchase of up to 30,000,000 shares of our common stock. At December 31, 2019, there were 1,572,535 shares available for repurchase. During January and February 2020, we purchased 1,572,535 of our common shares, completing our existing authorization. On February 26, 2020, our Board authorized an increase of 20,000,000 shares to our common stock repurchase program. We intend to continue to repurchase common stock over time, depending on market conditions. We anticipate repurchasing approximately 10,000,000 common shares in the year ending December 31, 2020. 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 2019, 2018 and 2017. 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 a previous 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 18. "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, 2019, 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, 2019, the Bank had $329,151 in cash on hand and unused borrowing capacity at the FHLB of $5,467,912. 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 $193,958 at December 31, 2019 without prior regulatory approval. We had cash on hand of $265,145 and capacity under a revolving line of credit facility of $35,000 at December 31, 2019. Cash on hand at December 31, 2019 included the majority of the proceeds from our issuance of $275,000 aggregate principal amount of 4.00% fixed-to-floating rate subordinated notes that was completed on December 16, 2019. We expect a portion of the proceeds from this issuance will be used to redeem the senior notes maturing in June 2020 that we assumed in the Astoria Merger.

In September 2019, we renewed our $35,000 revolving line of credit facility with a third-party financial institution that matures on August 31, 2020. 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, 2019.

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 a diversified loan portfolio including CRE, C&I and other commercial finance loans with a balance of fixed-rates and adjustable-rates. To a lesser extent, we originate residential mortgage and consumer loans. We also invest in shorter term securities, which generally have lower yields compared to longer-term investments. We manage the average maturity of our interest-earning assets to better match the maturities and interest rates of our funding 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 the yields on our investments and loans in comparison to longer-term, fixed rate loans and investments that may be available in other asset classes.

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, 2019, 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	$ 4,320,516	$ (30,030)	(0.7)%	$ 1,061,439	$ 130,213	14.0%
+200	4,418,018	67,472	1.6	1,019,815	88,589	9.5
+100	4,435,459	84,913	2.0	975,066	43,840	4.7
0	4,350,546	—	—	931,226	—	—
-100	4,093,957	(256,589)	(5.9)	877,703	(53,523)	(5.7)
-200	3,646,233	(704,313)	(16.2)	828,908	(102,318)	(11.0)

The table above indicates that at December 31, 2019, in the event of an immediate 200 basis point increase in interest rates, we would expect to experience a 1.6% increase in EVE and a 9.5% increase in NII, and in the event of an immediate 200 basis point decrease in interest rates, we would expect to experience a 16.2% decrease in EVE and a 11.0% 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 2019, the federal funds target rate was reduced a quarter point to 1.50% - 1.75%. U.S. Treasury yields in the two year maturities decreased 90 basis points from 2.48% to 1.58% over the 12-months ended December 31, 2019 while the yield on U.S. Treasury 10-year notes decreased 77 basis points from 2.69% to 1.92% over the same twelve month period. The decrease in rates on longer-term maturities coupled with the greater decrease in rates to short-term maturities resulted in a steeper 2-10 year treasury yield curve at the end of 2019 relative to December 31, 2018. At its December 2019 meeting, the Federal Open Market Committee (the "FOMC") decided to maintain the target range for the federal funds rate and stated that in determining the timing and size of future adjustments to the target range for the federal funds rate, the FOMC will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric two percent inflation objective. However, should economic conditions deteriorate, the FOMC could continue to resume lowering the federal funds target range.

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, 2019 and 2018
(B) Consolidated Income Statements for the years ended December 31, 2019, 2018 and 2017
(C) Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018 and 2017
(D) Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2019, 2018 and 2017
(E) Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017
(F) Notes to Consolidated Financial Statements

The supplementary data required by this item (selected quarterly financial data) is provided in Note 24. "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, 2019 and 2018, 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, 2019, and the related notes (collectively referred to as the "financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control - Integrated Framework: (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

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

Critical Audit Matter

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

Qualitative Loss Factors in the Allowance for Loan Losses

The methodology for determining the allowance for loan losses requires substantial judgment by management. As described in notes 1, 4, and 5 to the consolidated financial statements, the allowance for loan losses is a critical accounting estimate which represents management's best estimate of probable incurred credit losses inherent in the loan portfolio.

The allowance for loan losses consists of a general component for loans collectively evaluated for impairment and a specific component for loans individually evaluated for impairment. The general component is comprised of a calculation of historical loss experience based on actual historical losses experienced by the Company 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
- 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
- trends in risk ratings (for commercial loans)

We consider the qualitative loss factors in the allowance for loan losses to be a critical audit matter due to (1) the significance of the qualitative loss factors to the allowance for loan losses, (2) the level of audit effort required to evaluate the qualitative loss factors given the volume and subjective nature of the inputs, and (3) the level of audit effort required to evaluate management's judgment related to the qualitative loss factors as the estimate required substantial management judgment.

To address this matter, we tested the design and operating effectiveness of the Company's controls related to the qualitative loss factors including, but not limited to:

- Management's review of the qualitative and quantitative conclusions related to the qualitative loss factors and the resulting allocation to the allowance
- The review of the completeness and accuracy of data used as the basis for adjusting the qualitative loss factors
- Management's testing of the mathematical accuracy of the allowance for loan losses
- Allowance committee's review of the allowance for loan losses and provision for loan losses

Our principal substantive audit procedures related to the qualitative loss factors included:

- Evaluating the reasonableness of management’s allowance for loan losses methodology
- Analytically reviewing the balance of the allowance for loan losses and provision for loan losses for reasonableness and directional consistency with internal and external trends
- Evaluating the reasonableness of changes in qualitative factors which included evaluating the directional consistency with internal and external trends as well as evaluating the magnitude of those changes
- Testing completeness and accuracy of certain data used in the qualitative factor calculations
- Testing the mathematical accuracy of the allowance for loan losses calculation

/s/ Crowe, LLP

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

New York, New York
February 28, 2020

STERLING BANCORP AND SUBSIDIARIES

Consolidated Balance Sheets

As of December 31, 2019 and 2018

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

	December 31,	
	2019	2018
ASSETS:		
Cash and due from banks	$ 329,151	$ 438,110
Securities:		
Available for sale, at fair value	3,095,648	3,870,563
Held to maturity, at amortized cost (fair value of $2,053,191 and $2,740,522 at December 31, 2019 and December 31, 2018, respectively)	1,979,661	2,796,617
Total securities	5,075,309	6,667,180
Loans held for sale	8,125	1,565,979
Portfolio loans	21,440,212	19,218,530
Allowance for loan losses	(106,238)	(95,677)
Portfolio loans, net	21,333,974	19,122,853
Federal Home Loan Bank (“FHLB”) and Federal Reserve Bank stock, at cost	251,805	369,690
Accrued interest receivable	100,312	107,111
Premises and equipment, net	227,070	264,194
Goodwill	1,683,482	1,613,033
Core deposit and other intangible assets	110,364	129,545
Bank owned life insurance	613,848	653,995
Other real estate owned	12,189	19,377
Other assets	840,868	432,240
Total assets	$ 30,586,497	$ 31,383,307
LIABILITIES AND STOCKHOLDERS’ EQUITY		
LIABILITIES:		
Deposits	$ 22,418,658	$ 21,214,148
FHLB borrowings	2,245,653	4,838,772
Other borrowings (repurchase agreements)	22,678	21,338
Senior notes	173,504	181,130
Subordinated Notes - Bank	173,182	172,943
Subordinated Notes - Company	270,941	—
Mortgage escrow funds	58,316	72,891
Other liabilities	693,452	453,232
Total liabilities	26,056,384	26,954,454
Commitments and Contingent liabilities (See Notes 19 and 20.)		
STOCKHOLDERS’ EQUITY:		
Preferred stock (par value $0.01 per share; 10,000,000 shares authorized; 135,000 shares issued and outstanding at December 31, 2019 and December 31, 2018)	137,581	138,423
Common stock (par value $0.01 per share; 310,000,000 shares authorized at December 31, 2019 and December 31, 2018; 229,872,925 shares issued at December 31, 2019 and December 31, 2018; 198,455,324 and 216,227,852 shares outstanding at December 31, 2019 and December 31, 2018, respectively)	2,299	2,299
Additional paid-in capital	3,766,716	3,776,461
Treasury stock, at cost (31,417,601 shares at December 31, 2019 and 13,645,073 shares at December 31, 2018)	(583,408)	(213,935)
Retained earnings	1,166,709	791,550
Accumulated other comprehensive income (loss), net of tax expense (benefit) of $15,361 at December 31, 2019 and $(25,429) at December 31, 2018	40,216	(65,945)
Total stockholders’ equity	4,530,113	4,428,853
Total liabilities and stockholders’ equity	$ 30,586,497	$ 31,383,307

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES
Consolidated Income Statements
For the years ended December 31, 2019, 2018 and 2017
(Dollars in thousands, except share and per share data)

	December 31,		
	2019	2018	2017
Interest and dividend income:			
Loans, including fees	$ 1,029,369	$ 1,006,496	$ 570,761
Taxable securities	94,823	115,971	65,278
Non-taxable securities	55,802	61,062	37,245
Other earning assets	22,546	24,944	9,165
Total interest and dividend income	1,202,540	1,208,473	682,449
Interest expense:			
Deposits	192,361	130,096	56,110
Borrowings	91,256	110,974	50,196
Total interest expense	283,617	241,070	106,306
Net interest income	918,923	967,403	576,143
Provision for loan losses	45,985	46,000	26,000
Net interest income after provision for loan losses	872,938	921,403	550,143
Non-interest income:			
Deposit fees and service charges	26,398	26,830	17,128
Accounts receivable management / factoring commissions and other related fees	23,837	22,772	17,803
Loan commissions and fees	24,129	16,181	11,637
Bank owned life insurance	20,670	15,651	7,816
Investment management fees	7,305	7,790	2,928
Net (loss) on sale of securities	(6,905)	(10,788)	(344)
Gain on termination of pension plan	11,817	—	—
Gain (loss) on sale of fixed assets	—	11,800	(1)
Gain on sale of residential mortgage loans	8,313	—	—
Other	15,301	12,961	7,235
Total non-interest income	130,865	103,197	64,202
Non-interest expense:			
Compensation and employee benefits	215,766	220,340	150,254
Stock-based compensation plans	19,473	12,984	8,111
Occupancy and office operations	64,363	68,536	43,649
Information technology	35,580	41,174	19,387
Amortization of intangible assets	19,181	23,646	13,008
FDIC insurance and regulatory assessments	12,660	20,493	11,969
Other real estate owned, net	622	1,650	3,423
Merger-related expense	—	—	39,232
Charge for asset write-downs, systems integration, severance and retention	8,477	4,396	105,110
(Gain) on extinguishment of borrowings	(46)	(172)	—
Impairment related to financial centers and real estate consolidation strategy	14,398	8,736	—
Other	73,363	56,587	39,232
Total non-interest expense	463,837	458,370	433,375
Income before income taxes	539,966	566,230	180,970
Income tax expense	112,925	118,976	87,939
Net income	427,041	447,254	93,031
Preferred stock dividends	7,933	7,978	2,002
Net income available to common stockholders	$ 419,108	$ 439,276	$ 91,029
Weighted average common shares:			
Basic	205,679,874	224,299,488	157,513,639
Diluted	206,131,628	224,816,996	158,124,270
Earnings per common share:			
Basic	$ 2.04	$ 1.96	$ 0.58
Diluted	2.03	1.95	0.58

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income
For the years ended December 31, 2019, 2018 and 2017
(Dollars in thousands)

	December 31,		
	2019	2018	2017
Net income	$ 427,041	$ 447,254	$ 93,031
Other comprehensive income (loss):			
Change in unrealized holding gains (losses) on securities available for sale	161,255	(77,645)	173
Unrealized loss on transfer of securities held to maturity to available for sale	(11,813)	—	—
Change in net unrealized gain on securities transferred to held to maturity	2,775	908	969
Reclassification adjustment for net realized losses included in net income	6,905	10,788	344
Change in funded status of defined benefit plans and acceleration of future amortization of accumulated other comprehensive (loss) gain on defined benefit pension plan	(12,410)	17,824	(711)
Total other comprehensive income (loss) items	146,712	(48,125)	775
Related income tax (expense) benefit	(40,551)	13,475	(306)
Other comprehensive income (loss)	106,161	(34,650)	469
Total comprehensive income	$ 533,202	$ 412,604	$ 93,500

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES

Consolidated Statements of Changes in Stockholders' Equity
For the years ended December 31, 2019, 2018 and 2017
(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, 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 paid ($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
Net income	—	—	—	—	—	427,041	—	427,041
Other comprehensive income	—	—	—	—	—	—	106,161	106,161
Stock option & other stock transactions, net	257,765	—	—	—	2,182	727	—	2,909
Restricted stock awards, net	1,282,401	—	—	(9,745)	11,228	13,434	—	14,917
Purchase of treasury stock	(19,312,694)	—	—	—	(382,883)	—	—	(382,883)
Cash dividends declared ($0.28 per common share)	—	—	—	—	—	(58,110)	—	(58,110)
Cash dividends declared ($65.00 per preferred share)	—	(842)	—	—	—	(7,933)	—	(8,775)
Balance at December 31, 2019	198,455,324	$ 137,581	$ 2,299	$ 3,766,716	$ (583,408)	$1,166,709	$ 40,216	$ 4,530,113

See accompanying notes to consolidated financial statements.

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Cash Flows
For the years ended December 31, 2019, 2018 and 2017
(Dollars in thousands)

	December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income	$ 427,041	$ 447,254	$ 93,031
Adjustments to reconcile net income to net cash provided by operating activities:			
Provisions for loan losses	45,985	46,000	26,000
Charge of asset write-downs, systems integration, severance and retention	8,477	4,396	105,110
(Gain) from termination of defined benefit pension plan	(11,817)	—	—
(Gain) on extinguishment of debt	(46)	(172)	—
(Gain) loss and write-downs on other real estate owned	(593)	(1,001)	1,715
(Gain) loss on sale of premises and equipment	—	(11,800)	1
Depreciation and amortization of premises and equipment	19,926	20,349	11,670
Impairment on fixed assets	10,751	6,769	—
Impairment from early termination of leases	3,647	1,967	—
Amortization of intangibles	19,181	23,646	13,008
Amortization of low income housing tax credits	16,718	6,655	1,067
Net (gains) on loans held for sale	(8,313)	(41)	(954)
Net losses on sales of securities	6,905	10,788	344
Net (accretion) on loans	(90,011)	(110,942)	(44,242)
Net amortization of premiums on securities	34,109	38,985	24,061
Amortization of premium on certificates of deposit	(3,819)	(6,178)	(1,722)
Net (amortization of premium) accretion of discount, on borrowings	(1,540)	(1,748)	144
Restricted stock expense	19,473	12,978	7,961
Stock option compensation expense	—	6	149
Originations of loans held for sale	(8,000)	(52,919)	(6,224)
Proceeds from sales of loans held for sale	28,687	33,005	44,318
Increase in cash surrender value of BOLI	(20,670)	(15,651)	(7,816)
Deferred income tax expense	81,176	56,903	81,383
Other adjustments (principally net changes in other assets and other liabilities)	(139,198)	(114,474)	(106,399)
Net cash provided by operating activities	438,069	394,775	242,605
Cash flows from investing activities:			
Purchases of securities:			
Available for sale	(226,689)	(873,557)	(1,585,174)
Held to maturity	(22,700)	(145,685)	(1,556,670)
Proceeds from maturities, calls and other principal payments on securities:			
Available for sale	464,261	345,037	276,872
Held to maturity	106,098	177,790	70,847
Proceeds from sales of securities available for sale	1,386,236	186,914	2,516,308
Proceeds from sales of securities held to maturity	—	254	—
Loan originations, net	(953,920)	(123,454)	(1,054,704)
Portfolio loans purchased	—	(113,698)	(226,831)
Proceeds from sale of residential mortgage loans held for sale that were previously portfolio loans	1,409,334	—	—
Proceeds from sale of commercial loans held for investment	125,555	—	33,740
Proceeds from sales of other real estate owned	14,072	23,942	8,881
Redemption (purchase) of FHLB and FRB stock, net	117,885	(85,578)	(149,014)
Purchase of low income housing tax credit	(96,342)	(20,810)	(14,284)
Redemption of and benefits received on bank owned life insurance	64,317	13,294	3,585

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Cash Flows
For the years ended December 31, 2019, 2018 and 2017
(Dollars in thousands)

	December 31,		
	2019	2018	2017
Purchases of premises and equipment	(23,705)	(24,015)	(8,259)
Proceeds from the sale of premises and equipment	30,152	58,551	—
Cash (paid for) received from acquisitions	(1,361,804)	(481,544)	275,409
Net cash provided by (used in) investing activities	1,032,750	(1,062,559)	(1,409,294)
Cash flows from financing activities:			
Net increase in transaction, savings and money market deposits	233,390	638,651	1,309,621
Net increase in time deposits	974,939	43,471	117,985
Net (decrease) increase in short-term FHLB borrowings	(792,000)	(260,000)	(189,000)
Advances of term FHLB borrowings	2,350,000	4,025,000	3,978,415
Repayments of term FHLB borrowings	(4,150,000)	(3,435,000)	(2,659,464)
Net increase (decrease) in other borrowings	1,340	(8,824)	13,520
Repayment of Senior Notes	(6,954)	(96,455)	—
Repayment of debt assumed in acquisition	—	—	(1,143,279)
Issuance of Subordinated Notes - Company	270,941	—	—
Net (decrease) in mortgage escrow funds	(14,575)	(49,750)	(31,198)
Proceeds from stock option exercises	2,909	691	2,578
Treasury shares purchased	(382,883)	(159,903)	—
Cash dividends paid - common stock	(58,110)	(63,118)	(44,035)
Cash dividends paid - preferred stock	(8,775)	(8,775)	(2,194)
Net cash (used in) provided by financing activities	(1,579,778)	625,988	1,352,949
Net (decrease) increase in cash and cash equivalents	(108,959)	(41,796)	186,260
Cash and cash equivalents at beginning of period	438,110	479,906	293,646
Cash and cash equivalents at end of period	$ 329,151	$ 438,110	$ 479,906
Supplemental cash flow information:			
Interest payments	$ 284,575	$ 236,807	$ 114,391
Income tax payments	62,368	32,365	69,675
Real estate acquired in settlement of loans	6,291	15,223	7,967
Loans transfered from held for investment to held for sale	125,555	1,540,819	33,740
Securities held to maturity transferred to available for sale	708,627	—	—
Residential loans transferred from held for sale to portfolio	127,833	—	—
Right of use assets obtained in exchange for lease liabilities	112,226	—	—
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	1,217,188	439,622	9,209,398
Accrued interest receivable	2,854	—	34,094
Goodwill	70,449	39,356	883,291
Core deposit and other intangibles	—	—	99,938
Bank owned life insurance	—	—	447,518
Premises and equipment, net	—	379	267,815

STERLING BANCORP AND SUBSIDIARIES
Consolidated Statements of Cash Flows
For the years ended December 31, 2019, 2018 and 2017
(Dollars in thousands)

	December 31,		
	2019	2018	2017
Other real estate owned	—	—	16,105
Other assets	75,379	7,071	335,612
Total non-cash assets acquired	1,365,870	486,428	14,396,061
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	4,066	4,884	223,780
Total liabilities assumed	4,066	4,884	12,342,371
Preferred stock assumed	—	—	139,412
Net non-cash asset acquired	1,361,804	481,544	1,914,278
Cash and cash equivalents acquired in acquisitions	—	20,508	275,409
Total consideration paid	$ 1,361,804	$ 502,052	$ 2,189,687

See accompanying notes to consolidated financial statements.

The Company completed the following acquisitions which are included in the “Acquisitions” portion of the consolidated statements of cash flows for the following periods: (i) equipment finance loan and leases portfolio from Santander Bank and asset-based lending and equipment finance loan portfolio from Woodforest National Bank for the year ended December 31, 2019; (ii) Advantage Funding Management Company, Inc. for the year ended December 31, 2018; and (iii) Astoria Financial Corporation for the year ended December 31, 2017.

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

Nature of Business
Sterling Bancorp ("Sterling," the "Company" "we," "us" and "our") is a bank holding company and financial holding company under the Bank Holding Company Act of 1956, as amended. We are a Delaware corporation that owns all of the outstanding shares of Sterling National Bank (the "Bank"). We are 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 our principal subsidiary. The Bank accounts for substantially all of our 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, 2019: (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 our real estate mortgage 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.

The Astoria Merger and our other acquisitions are accounted for using the purchase method with the operating results of the mergers and acquisitions included with our results of operations since their respective dates of acquisition.

Use of Estimates
To prepare financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") 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 affect 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 Federal Home Loan Bank of New York ("FHLB") borrowings, mortgage escrow funds and other borrowings.

Restrictions on Cash
The Bank was required to have $92,767 and $70,709 of cash on hand or on deposit with the Federal Reserve Bank to meet regulatory reserve and clearing requirements at December 31, 2019 and 2018, respectively.

Securities
Securities include U.S. government agency and government sponsored agencies securities, state and municipal and corporate bonds, and mortgage-backed securities. We classify our securities among two categories: held to maturity and available for sale. We determine the appropriate classification of our 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. We do 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 we intend to hold for an indefinite period of time, such as securities to be used as part of our 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, we consider the extent and duration of the unrealized loss, and the financial condition of the issuer. We also assess whether we intend to sell, or it is more likely than not that we 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) we do not expect to recover the entire amortized cost basis of the security; (ii) we do not intend to sell the security; and (iii) it is not more likely than not that we 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, 2019, we did not intend to sell, nor is it more likely than not that we would be required to sell, any of our debt securities with unrealized losses prior to recovery of its amortized cost basis less any current period credit loss. (See Note 3. "Securities").

Loans Held For Sale
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 we intend to sell are transferred to loans held for sale at the lower of cost or market (fair value). At December 31, 2018, we transferred residential mortgage loans with an unpaid principal balance of $1,601,844 to loans held for sale. These loans represented 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. The majority of these loans were sold subject to a purchase agreement with a third-party generating a net gain on sale of $8,313. In the second quarter of 2019, we transferred $128,833 of loans classified as held for sale at December 31, 2018 to portfolio loans. The net carrying value of the loans transferred from held for sale to portfolio loans approximated their fair value.

Portfolio Loans
Loans where we have 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. We defer nonrefundable loan origination and commitment fees, and certain direct loan origination costs, and amortize 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 we determine 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 we 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, we initially determine 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 we were 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 we can reasonably estimate the timing and amount of the expected cash flows on such loans and if we expect to fully collect the new carrying value of the loans.

We recognize the accretable 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 nonaccretable difference. The nonaccretable difference is not recognized as an adjustment of yield, a loss accrual, or a valuation allowance. Going forward, on a quarterly basis, we continue to evaluate whether the timing and the amount of cash to be collected are reasonably expected. Subsequent significant increases in cash flows we expect 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.

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, we accrete interest income based on the contractually required cash flows.

Acquired loans at December 31, 2019 and 2018 include loans that were acquired in the following transactions: the Santander Portfolio Acquisition, the Woodforest Portfolio Acquisition and Advantage Funding Acquisition (each as defined below; See Note 2. "Acquisitions"); the Astoria Merger; the June 30, 2015 merger with Hudson Valley Holding Corp. (the "HVB Merger"), and the October 31, 2013 merger between legacy Provident New York Bancorp and legacy Sterling Bancorp (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 being 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 portfolio. 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 we 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 us 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. We determine 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.

Our 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, our practice is to charge-off the identified impairment. As a result, at December 31, 2019 and 2018, 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 us over the most recent three years, except for 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;
- 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.

We apply 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 we must gain control of the assets used in the borrower's business before foreclosing, which we 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 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, 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 us 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. We have deemphasized originations of land acquisition and land development loans. Many of our construction loans are related to affordable housing projects where we are also investing in tax credits. Other construction loans are typically made on an exception basis.

When we evaluate residential mortgage loans and home equity loans (which are included as consumer loans), we weigh 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 we obtain a mortgage on the property, if home prices decline, we are exposed to risk in both our first mortgage and equity lending programs due to declines in the value of our collateral. We are 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 we evaluate available financial information from the borrower, as well as collateral pledged, and whether the borrower can continue to service the debt and their near term prospects. When we conclude the collateral and / or debt service capacity of the borrower are insufficient to repay its debt, we charge-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, we monitor the value of the collateral and the borrower's ability to service debt and record a charge-off when we become 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, we evaluate 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, we recorded a partial charge-off. A TDR on accrual prior to modification may remain on accrual status provided we believe, based on our 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").

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 us, 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 we do 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 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 ranges from three years for equipment to 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.

We lease certain financial centers and back office locations under operating leases. We also own certain financial centers which we lease to outside parties under operating lessor leases; however, these leases are not material. In 2019, we adopted the new lease accounting standard, which is described below. Under the new leasing standard, for operating leases other than those considered to be short-term, we recognize right of use assets and related lease liabilities. Right of use assets are included as a component of other assets, and lease liabilities are included with other liabilities in our consolidated balance sheet. A short-term operating lease has an original term of 12 months or less and does not have a purchase option.

In recognizing right of use assets and related lease liabilities, we account for lease and non-lease components (such as taxes, insurance and common area maintenance costs) separately when such amounts are readily determinable under our lease contracts. Lease payments over the expected term were discounted using our incremental borrowing rate referenced to the FHLB advance rates for borrowings of similar term. We also consider renewal and termination options in the determination of the term of the lease. If it is reasonably certain that a renewal or termination option will be exercised, the effect of such options are included in the determination of the expected lease term. Generally, we are not reasonably certain about whether or not we will renew a lease until the lease is within the last year of the existing lease term.

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 our balance sheet. We operate as one reporting unit. Goodwill is tested for impairment in the fourth quarter of each year, or on an interim basis if there are conditions that could more likely than not reduce the fair value of the reporting unit below its carrying value.

Core deposit intangibles and customer lists 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")
We own 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.

BOLI with a carrying value of $397,633 and $441,840, at December 31, 2019 and 2018, respectively, included a claims stabilization reserve of $11,074 and $35,391. 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. We satisfied these conditions at December 31, 2019 and 2018.

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.

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 we later determine 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 21. “Fair Value Measurements” for a discussion of how fair value is calculated.)

Other Borrowings - Securities Repurchase Agreements

In securities repurchase agreements, we transfer 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 we maintain 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 our 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”).

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 11. “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 21. “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 covered 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 our assumption. We also assumed the liability for a health care plan that provided for post-retirement medical and dental coverage to select individuals, which was an active plan in which select individuals continued to vest through December 31, 2018. During 2019, we terminated the pension plan assumed in the Astoria Merger and recorded a net gain of $11,817 on the termination. For the remainder of the retirement plans, the net liabilities are included in other liabilities in the consolidated balance sheets. (See Note 15. “Pension and Other Post Retirement 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. We do not believe there are such matters that will have a material effect on the consolidated financial statements. (See Note 20. “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 19. “Off-Balance Sheet Financial Instruments”).

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 17. “Earnings Per Common Share”).

Revenue Recognition
We recognize 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. We provide 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 our customer occurs. We remit collections from the client’s customers to our clients for the amounts collected, net of payroll taxes withheld, and our fees, subject to a hold back reserve to offset potential uncollectible balances from the client’s other customers.

Factored Receivables. 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. The factoring fee included in non-interest income represents compensation to us for the bookkeeping and collection services provided. The factoring fee, which is non-refundable, is recognized at the time the receivable is assigned to us. 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 our obligations are provided to our customers. (See Note 16. “Non-Interest Income, Other Non-Interest Expense, Other Assets and Other Liabilities” for additional disclosure regarding revenue recognition.)

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 our common stock on the date of grant. (See Note 14. “Stock-Based Compensation”).

Income Taxes
Income tax expense includes U.S. federal corporate income taxes and income taxes due to states and other jurisdictions in which we operate. In addition, for the year ended December 31, 2018, 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 our 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.

We evaluate 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. We did not have any such position as of December 31, 2019 and 2018. (See Note 12. "Income Taxes").

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 our 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 our only operating segment for financial reporting purposes.

Recently Adopted Accounting Standards
We adopted the following new accounting standards effective January 1, 2019:

Accounting Standards Codification ("ASC") Topic 842 "Leases" requires lessees to recognize most leases on their balance sheets as a right-of-use asset with a corresponding lease liability. The standard included additional required qualitative and quantitative disclosures. We adopted the following practical expedients and elected the following accounting policies related to the leasing standard:

- Carry over of historical lease classifications and whether existing contracts contain leases;
- Current lease classification for existing leases;
- Short-term lease accounting policy, allowing us not to recognize right-of-use assets and liabilities for leases with a term of 12 months or less; and
- Lease and non-lease components are not separated for certain leases.

As of December 31, 2019, the adoption of this standard resulted in the recognition of right-of-use assets of $112,226 and a lease liability of $118,986, included in other assets and other liabilities, respectively, in the consolidated balance sheets. The standard did not have a significant impact on operating results or cash flows. See Note 10. "Leases" for additional information.

"Derivatives and Hedging (Topic 815) - Targeted Improvements to Accounting for Hedging Activities" ("ASU 2017-12") amended 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 we may reclassify a debt security from held to maturity to available for sale at the time of adoption if the debt security is eligible to be hedged under the last-of-layer method in accordance with ASU 2017-12. Generally, this includes debt securities that are pre-payable, including mortgage-backed securities, and debt securities that are callable by the issuer, which are applicable to many of our state and municipal debt securities. We 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 3. "Securities" for additional information.)

(2) Acquisitions

Equipment finance loan and lease portfolio and origination platform acquired from Santander Bank ("Santander")
On November 29, 2019, the Bank acquired an equipment finance loan and lease portfolio consisting of equipment finance loans, sales-type leases and operating leases from Santander (the "Santander Portfolio Acquisition"). In addition, the Bank obtained sales and relationship management and business development personnel who will continue to manage the acquired loan and lease portfolio and originate new loans and leases. The total consideration paid in cash at closing was $846,112. We acquired $764,020 of equipment finance loans and leases (classified as portfolio loans on the consolidated balance sheets), and $74,834 of operating leases (classified as other assets on the consolidated balance sheets). The fair value of these loans and leases was $820,144 at the time of acquisition. The Bank paid a premium of 0.75% on the unpaid principal balance of the loans or $6,291. The transaction was accounted for as a business combination. We recorded a $5,133 restructuring charge consisting mainly of severance, retention, systems integration expense and facilities consolidation, which is included in charge for asset write-downs, retention and severance on the consolidated income statements. The acquired loans and origination platform have been fully integrated into our equipment finance business line.

Commercial loan portfolio and origination platform acquired from Woodforest National Bank ("Woodforest")
On February 28, 2019, the Bank acquired a commercial loan portfolio consisting of equipment finance loans and leases and asset-based lending loans from Woodforest (the "Woodforest Portfolio Acquisition"). In addition, the Bank obtained sales and relationship management and business development personnel based in Novi, Michigan, who will continue to originate new loans and leases. The total consideration paid in cash at closing was $515,692. We acquired $166,143 of equipment finance loans, which are mainly fixed rate loans, and $331,842 of asset-based lending loans, which are mainly variable rate loans. The fair value of these loans was $471,878 at the time of acquisition. The Bank paid a premium of 3.75% on the unpaid principal balance of the loans or $18,674. The transaction was accounted for as a business combination. We recorded a $3,344 restructuring charge consisting mainly of severance, retention, systems integration expense, facilities consolidation and professional fees, which is included in charge for asset write-downs, retention and severance on the consolidated income statement. The acquired loans and origination platform have been fully integrated into our asset-based lending and equipment finance business lines.

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, we 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. We recognized goodwill of $39,356 as a result of the Advantage Funding Acquisition. The Advantage Funding Acquisition is consistent with our 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 our equipment finance business line.

Astoria Merger
On October 2, 2017, we completed the Astoria Merger. Under the terms of the Astoria Merger agreement, Astoria shareholders received 0.875 shares of our common stock for each share of Astoria common stock, which resulted in the issuance of 88,829,776 of our common shares. Based on our 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 our 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 we completed the final tax returns related to Astoria's business and operations through October 1, 2017. After completion of these tax returns, we 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.

	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.

(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.

(3) Securities

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

	December 31, 2019							
	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	$ 1,595,766	$ 20,385	$ (1,032)	$ 1,615,119	$ 168,743	$ 1,827	$ (75)	$ 170,495
Other MBS	508,217	4,104	(44)	512,277	—	—	—	—
Total residential MBS	2,103,983	24,489	(1,076)	2,127,396	168,743	1,827	(75)	170,495
Other securities:								
Federal agencies	196,809	4,582	(253)	201,138	59,475	822	—	60,297
Corporate bonds	307,050	13,917	(45)	320,922	19,904	415	—	20,319
State and municipal	435,213	11,321	(342)	446,192	1,718,789	70,530	(134)	1,789,185
Other	—	—	—	—	12,750	147	(2)	12,895
Total other securities	939,072	29,820	(640)	968,252	1,810,918	71,914	(136)	1,882,696
Total securities	$ 3,043,055	$ 54,309	$ (1,716)	$ 3,095,648	$ 1,979,661	$ 73,741	$ (211)	$ 2,053,191

	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
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	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

A summary of securities classified as held to maturity at December 31, 2018 that were transferred to available for sale effective January 1, 2019 is presented below.

	Amortized cost	Fair value
Residential MBS:		
Agency-backed	$ 125,343	$ 121,510
Other MBS	27,780	27,017
Total residential MBS	153,123	148,527
Other securities:		
Corporate	49,001	48,607
State and municipal	518,316	511,493
Total of securities transferred from held to maturity to available for sale	$ 720,440	$ 708,627

The amortized cost and estimated fair value of securities at December 31, 2019 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, 2019			
	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	$ 12,156	$ 12,150	$ 58,907	$ 59,197
One to five years	122,628	126,575	75,843	77,606
Five to ten years	599,795	620,643	321,069	334,475
Greater than ten years	204,493	208,884	1,355,099	1,411,418
Total other securities	939,072	968,252	1,810,918	1,882,696
Residential MBS	2,103,983	2,127,396	168,743	170,495
Total securities	$ 3,043,055	$ 3,095,648	$ 1,979,661	$ 2,053,191

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

	Year ended December 31,		
	2019	2018	2017
Available for sale:			
Proceeds from sales	$ 1,386,236	$ 186,914	$ 2,516,308
Gross realized gains	12,170	219	8
Gross realized losses	(19,075)	(10,933)	(352)
Income tax (benefit) on realized net losses	(1,450)	(2,961)	(91)
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, we 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.

We adopted ASU 2017-12, as of January 1, 2019, which allows us to 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 ASU 2017-12. Generally, this includes debt securities that are pre-payable, including mortgage-backed securities, and debt securities that are callable by the issuer, which are applicable to many of our state and municipal debt securities. We 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. In the first quarter of 2019, we sold securities with a book value of $751,935 to raise liquidity for the Woodforest Portfolio Acquisition, and to reduce lower yielding securities as a percentage of total assets.

At December 31, 2019 and 2018, 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.

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, 2019						
Residential MBS:						
Agency-backed	$ 98,350	$ (317)	$ 108,052	$ (715)	$ 206,402	$ (1,032)
Other MBS	—	—	5,916	(44)	5,916	(44)
Total residential MBS	98,350	(317)	113,968	(759)	212,318	(1,076)
Other securities:						
Federal agencies	39,573	(253)	—	—	39,573	(253)
Corporate	—	—	12,006	(45)	12,006	(45)
State and municipal	12,795	(94)	14,651	(248)	27,446	(342)
Total other securities	52,368	(347)	26,657	(293)	79,025	(640)
Total	$ 150,718	$ (664)	$ 140,625	$ (1,052)	$ 291,343	$ (1,716)
December 31, 2018						
Residential MBS:						
Agency-backed	$ 156,787	$ (536)	$ 1,955,056	$ (61,830)	$ 2,111,843	$ (62,366)
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	$ 403,179	$ (4,880)	$ 3,098,917	$ (102,698)	$ 3,502,096	$ (107,578)

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, 2019						
Residential MBS:						
Agency-backed	$ 39,732	$ (69)	$ 1,598	$ (6)	$ 41,330	$ (75)
Other MBS	—	—	—	—	—	—
Total residential MBS	39,732	(69)	1,598	(6)	41,330	(75)
Other securities:						
Corporate	—	—	—	—	—	—
State and municipal	177	(2)	8,258	(132)	8,435	(134)
Other	9,998	(2)	—	—	9,998	(2)
Total other securities	10,175	(4)	8,258	(132)	18,433	(136)
Total	$ 49,907	$ (73)	$ 9,856	$ (138)	$ 59,763	$ (211)
December 31, 2018						
Residential MBS:						
Agency-backed	$ 25,003	$ (147)	$ 273,974	$ (8,458)	$ 298,977	$ (8,605)
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	$ 204,325	$ (1,270)	$ 2,217,967	$ (58,194)	$ 2,422,292	$ (59,464)

At December 31, 2019, a total of 52 available for sale securities were in a continuous unrealized loss position for less than 12 months, and 99 such securities were in an unrealized loss position for 12 months or longer. At December 31, 2019, a total of seven held to maturity securities were in a continuous unrealized loss for less than 12 months, and 47 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) our intent and ability to retain the investment in the issuer for a period of time sufficient to allow for any anticipated recovery in cost.

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 we will receive full value for the securities. Furthermore, as of December 31, 2019, 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 we 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, 2019, 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,	
	2019	2018
Available for sale securities pledged for borrowings, at fair value	$ 22,678	$ 12,206
Available for sale securities pledged for municipal deposits, at fair value	866,020	817,306
Held to maturity securities pledged for borrowings, at amortized cost	483	34,996
Held to maturity securities pledged for municipal deposits, at amortized cost	1,432,909	1,338,901
Total securities pledged	$ 2,322,090	$ 2,203,409

(4) Portfolio Loans

The composition of our loan portfolio, including leases net of unearned discounts and excluding loans held for sale, was the following:

	December 31, 2019			December 31, 2018		
	Originated loans	Acquired loans	Total	Originated loans	Acquired loans	Total
Commercial:						
C&I:						
Traditional C&I	$ 2,302,254	$ 52,777	$ 2,355,031	$ 2,321,131	$ 75,051	$ 2,396,182
Asset-based lending	804,086	278,532	1,082,618	792,935	—	792,935
Payroll finance	226,866	—	226,866	227,452	—	227,452
Warehouse lending	1,330,884	—	1,330,884	782,646	—	782,646
Factored receivables	223,638	—	223,638	258,383	—	258,383
Equipment financing	881,380	919,184	1,800,564	913,751	301,291	1,215,042
Public sector finance	1,213,118	—	1,213,118	860,746	—	860,746
Total C&I	6,982,226	1,250,493	8,232,719	6,157,044	376,342	6,533,386
Commercial mortgage:						
CRE	5,017,592	401,056	5,418,648	4,154,956	487,461	4,642,417
Multi-family	2,303,826	2,573,044	4,876,870	1,527,619	3,236,505	4,764,124
ADC	467,331	—	467,331	267,754	—	267,754
Total commercial mortgage	7,788,749	2,974,100	10,762,849	5,950,329	3,723,966	9,674,295
Total commercial	14,770,975	4,224,593	18,995,568	12,107,373	4,100,308	16,207,681
Residential mortgage	541,681	1,668,431	2,210,112	621,471	2,083,755	2,705,226
Consumer	121,310	113,222	234,532	153,811	151,812	305,623
Total portfolio loans	15,433,966	6,006,246	21,440,212	12,882,655	6,335,875	19,218,530
Allowance for loan losses	(106,238)	—	(106,238)	(95,677)	—	(95,677)
Total portfolio loans, net	$ 15,327,728	$ 6,006,246	$ 21,333,974	$ 12,786,978	$ 6,335,875	$ 19,122,853

Acquired loans at December 31, 2019 and 2018 include loans that were acquired in the following transactions: the Santander Portfolio Acquisition, the Woodforest Portfolio Acquisition, the Advantage Funding Acquisition, the Astoria Merger, 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, 2019, included in the balance of originated loans were $776,928 portfolio loans with an allowance for loan loss reserves of $7,130 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, 2018, included in the balance of originated loans were $1,365,682 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.

Total portfolio loans include net deferred loan origination fees of $9,946 at December 31, 2019 and $5,581 at December 31, 2018.

Portfolio loans subject to purchase accounting adjustments are shown net of discounts on acquired loans, which were $69,202 at December 31, 2019 and $117,222 at December 31, 2018.

At December 31, 2019, we pledged loans totaling $7,670,673 to the FHLB as collateral for certain borrowing arrangements. See Note 9. “Borrowings, Senior Notes and Subordinated Notes”.

See Note 10. “Leases” for additional information regarding assets leased to others that are classified as portfolio loans.

The following tables set forth the amounts and status of our loans and TDRs at December 31, 2019 and 2018:

Originated loans:

	December 31, 2019					
	Current	30-59 days past due	60-89 days past due	90+ days past due	Non-accrual	Total
Traditional C&I	$ 2,272,185	$ 761	$ 2,050	$ 110	$ 27,148	$ 2,302,254
Asset-based lending	799,120	—	—	—	4,966	804,086
Payroll finance	217,470	—	—	—	9,396	226,866
Warehouse lending	1,330,884	—	—	—	—	1,330,884
Factored receivables	223,638	—	—	—	—	223,638
Equipment financing	825,876	10,390	12,064	—	33,050	881,380
Public sector finance	1,213,118	—	—	—	—	1,213,118
CRE	4,994,384	194	190	—	22,824	5,017,592
Multi-family	2,300,083	552	13	—	3,178	2,303,826
ADC	466,826	71	—	—	434	467,331
Residential mortgage	496,283	4,249	93	—	41,056	541,681
Consumer	111,408	797	3	—	9,102	121,310
Total loans	$ 15,251,275	$ 17,014	$ 14,413	$ 110	$ 151,154	$ 15,433,966
Total TDRs included above	$ 49,260	$ 547	$ —	$ —	$ 25,849	$ 75,656
Non-performing loans:						
Loans 90+ days past due and still accruing					$ 110	
Non-accrual loans					151,154	
Total originated non-performing loans					$ 151,264	

	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	

Acquired loans:

	December 31, 2019					
	Current	30-59 days past due	60-89 days past due	90+ days past due	Non-accrual	Total
Traditional C&I	$ 52,552	$ 200	$ 25	$ —	$ —	$ 52,777
Asset-based lending	278,532	—	—	—	—	278,532
Equipment financing	913,896	5,288	—	—	—	919,184
CRE	397,099	568	—	—	3,389	401,056
Multi-family	2,572,296	526	—	—	222	2,573,044
Residential mortgage	1,633,557	13,655	—	—	21,219	1,668,431
Consumer	108,964	1,191	—	—	3,067	113,222
Total loans	$ 5,956,896	$ 21,428	$ 25	$ —	$ 27,897	$ 6,006,246
Total TDRs included above	$ —	$ —	$ —	$ —	$ —	$ —
Non-performing loans:						
Loans 90+ days past due and still accruing					$ —	
Non-accrual loans					27,897	
Total acquired non-performing loans					$ 27,897	

	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	

The following table provides additional analysis of our non-accrual loans at December 31, 2019 and 2018:

	December 31, 2019				December 31, 2018			
	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	$ 27,148	$ —	$ 27,148	$ 37,058	$ 41,625	$ 673	$ 42,298	$ 50,651
Asset-based lending	4,966	—	4,966	15,638	3,281	—	3,281	3,859
Payroll finance	9,396	—	9,396	9,396	881	—	881	881
Equipment financing	33,050	—	33,050	43,725	12,221	—	12,221	15,744
CRE	18,575	7,638	26,213	32,107	23,675	9,337	33,012	39,440
Multi-family	3,178	222	3,400	3,181	482	2,199	2,681	2,920
ADC	434	—	434	434	—	—	—	—
Residential mortgage	38,804	23,471	62,275	73,029	24,339	37,642	61,981	72,706
Consumer	7,798	4,371	12,169	14,330	6,576	3,469	10,045	12,170
Total loans	$ 143,349	$ 35,702	$ 179,051	$ 228,898	$ 113,080	$ 53,320	$ 166,400	$ 198,371

At December 31, 2019 and 2018, the recorded investment of PCI non-accrual loans included $7,805 and $8,152, 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, 2019 and 2018, the recorded investment in residential mortgage loans that were formally in process of foreclosure was $38,024 and $48,107, respectively, which are included in non-accrual residential mortgage loans above.

The following table sets forth loans evaluated for impairment by segment and the allowance evaluated by segment at December 31, 2019:

	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	$ 29,838	$ 2,320,256	$ 4,937	$ 2,355,031	$ —	$ 15,951	$ 15,951
Asset-based lending	4,684	1,064,275	13,659	1,082,618	—	14,272	14,272
Payroll finance	9,396	217,470	—	226,866	—	2,064	2,064
Warehouse lending	—	1,330,884	—	1,330,884	—	917	917
Factored receivables	—	223,638	—	223,638	—	654	654
Equipment financing	4,971	1,794,036	1,557	1,800,564	—	16,723	16,723
Public sector finance	—	1,213,118	—	1,213,118	—	1,967	1,967
CRE	39,882	5,358,023	20,743	5,418,648	—	27,965	27,965
Multi-family	11,159	4,860,246	5,465	4,876,870	—	11,440	11,440
ADC	—	467,331	—	467,331	—	4,732	4,732
Residential mortgage	6,364	2,140,650	63,098	2,210,112	—	7,598	7,598
Consumer	2,731	224,986	6,815	234,532	—	1,955	1,955
Total loans	$ 109,025	$ 21,214,913	$ 116,274	$ 21,440,212	$ —	$ 106,238	$ 106,238

At December 31, 2019, PCI loans included $14,185 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.

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 the acquisition date.

At December 31, 2019 and 2018, our portfolio loans included PCI loans acquired in the Woodforest Portfolio Acquisition, Astoria Merger, the HVB Merger and the Provident Merger. The carrying value of these loans is presented in the tables above. At December 31, 2019 and 2018, the net recorded amount of PCI loans was $116,274 and $139,795, 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 2019, 2018, and 2017:

	Year ended December 31,		
	2019	2018	2017
Balance at beginning of year	$ 16,932	$ 45,582	$ 11,117
Acquisition	2,093	—	46,111
Accretion	(8,775)	(8,006)	(5,016)
Charge-offs	(2,136)	(5,478)	(2,452)
Disposals	—	(15,072)	(2,000)
Reclassification (to) from non-accretable difference	5,889	(94)	(2,178)
Balance at end of year	$ 14,003	$ 16,932	$ 45,582

Income is not recognized on PCI loans unless we 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 our PCI loans segregated by those PCI loans subject to accretion, and those PCI loans under the cost recovery method at December 31, 2019 and 2018:

	December 31, 2019			December 31, 2018		
	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	$ 2,988	$ 1,949	$ 4,937	$ 5,376	$ 3,639	$ 9,015
Asset-based lending	13,659	—	13,659	—	—	—
Equipment financing	1,557	—	1,557	—	—	—
CRE	20,033	710	20,743	26,319	903	27,222
Multi-family	5,465	—	5,465	7,550	—	7,550
Residential	63,098	—	63,098	87,970	—	87,970
Consumer	6,199	616	6,815	7,378	660	8,038
Total	$ 112,999	$ 3,275	$ 116,274	$ 134,593	$ 5,202	$ 139,795

The following table presents loans individually evaluated for impairment by segment of loans at December 31, 2019 and 2018:

	December 31, 2019		December 31, 2018	
	Unpaid principal balance	Recorded investment	Unpaid principal balance	Recorded investment
Loans with no related allowance recorded:				
Traditional C&I	$ 39,595	$ 29,838	$ 64,653	$ 48,735
Asset-based lending	16,181	4,684	3,859	3,281
Payroll finance	9,396	9,396	—	—
Equipment financing	6,409	4,971	3,577	3,577
CRE	44,526	39,882	43,119	33,284
Multi-family	11,491	11,159	2,341	1,662
Residential	7,728	6,364	3,430	3,210
Consumer	2,928	2,731	7,249	7,249
Total	$ 138,254	$ 109,025	$ 128,228	$ 100,998

The following tables present the average recorded investment and interest income recognized related to loans individually evaluated for impairment by segment for 2019, 2018 and 2017:

	For the year ended December 31,					
	2019		2018		2017	
	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	$ 32,253	$ 329	$ 38,242	$ 1,073	$ 26,413	$ 460
Asset-based lending	15,930	—	9,440	—	—	—
Payroll finance	2,349	—	—	—	—	—
Equipment financing	5,111	23	965	—	4,004	—
CRE	31,177	531	23,671	777	11,808	374
Multi-family	5,809	58	1,713	65	399	65
ADC	386	13	—	—	5,687	206
Residential mortgage	5,548	4	1,751	—	1,068	—
Consumer	3,646	—	4,248	—	1,977	—
Total	$ 102,209	$ 958	$ 80,030	$ 1,915	$ 51,356	$ 1,105

There was no cash-basis interest income recognized from impaired loans during the years ended December 31, 2019, 2018 and 2017. There were no impaired loans with a related allowance recorded at December 31, 2019, 2018 and 2017.

Troubled Debt Restructuring

The following tables set forth the amounts and past due status of the Company's TDRs at December 31, 2019 and December 31, 2018:

	December 31, 2019					
	Current loans	30-59 days past due	60-89 days past due	90+ days past due	Non-accrual	Total
Traditional C&I	$ 929	$ —	$ —	$ —	$ 13,392	$ 14,321
Asset-based lending	—	—	—	—	912	912
Equipment financing	5,261	—	—	—	3,764	9,025
CRE	25,295	—	—	—	4,600	29,895
Multi-family	7,819	—	—	—	—	7,819
ADC	—	—	—	—	434	434
Residential mortgage	7,537	547	—	—	2,507	10,591
Consumer	2,419	—	—	—	240	2,659
Total	$ 49,260	$ 547	$ —	$ —	$ 25,849	$ 75,656

	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

We had no outstanding commitments to lend additional amounts to customers with TDR loans as of December 31, 2019 and 2018, respectively.

The following table identifies TDRs that occurred during 2019 and 2018:

	December 31, 2019			December 31, 2018		
		Recorded investment			Recorded investment	
	Number	Pre-modification	Post-modification	Number	Pre-modification	Post-modification
Traditional C&I	1	$ 5,026	$ 5,026	4	$ 25,072	$ 23,943
Asset-based lending	—	—	—	1	1,854	1,276
Equipment financing	8	8,563	7,728	4	3,307	3,307
CRE	2	15,659	15,659	1	12,187	12,187
Multi-family	1	7,819	7,819	—	—	—
Residential mortgage	6	3,215	3,215	11	1,684	1,367
Consumer	—	—	—	2	5,160	5,160
Total TDRs	18	$ 40,282	$ 39,447	23	$ 49,264	$ 47,240

The amount of TDRs charged-off against the allowance for loan losses was $630 in 2019, $2,024 in 2018, and $1 in 2017.

(5) Allowance for Loan Losses

Activity in the allowance for loan losses for 2019, 2018, and 2017 is summarized below:

For the year ended December 31, 2019	Beginning balance	Charge-offs	Recoveries	Net charge-offs	Provision	Ending balance
Traditional C&I	$ 14,201	$ (6,186)	$ 952	$ (5,234)	$ 6,984	$ 15,951
Asset-based lending	7,979	(18,984)	—	(18,984)	25,277	14,272
Payroll finance	2,738	(252)	17	(235)	(439)	2,064
Warehouse lending	2,800	—	—	—	(1,883)	917
Factored receivables	1,064	(141)	137	(4)	(406)	654
Equipment financing	12,450	(7,034)	723	(6,311)	10,584	16,723
Public sector finance	1,739	—	—	—	228	1,967
CRE	32,285	(891)	845	(46)	(4,274)	27,965
Multi-family	8,355	—	304	304	2,781	11,440
ADC	1,769	(6)	—	(6)	2,969	4,732
Residential mortgage	7,454	(4,092)	133	(3,959)	4,103	7,598
Consumer	2,843	(1,552)	603	(949)	61	1,955
Total allowance for loan losses	$ 95,677	$ (39,138)	$ 3,714	$ (35,424)	$ 45,985	$ 106,238
Annualized net charge-offs to average loans outstanding						0.17%

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%

Credit Quality Indicators

As part of the on-going monitoring of the credit quality of our 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.

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, 2019 the risk category of gross loans by segment was as follows:

	Special Mention			Substandard		
	Originated	Acquired	Total	Originated	Acquired	Total
Traditional C&I	$ 8,349	$ 54	$ 8,403	$ 38,669	$ 801	$ 39,470
Asset-based lending	57,560	20,885	78,445	24,508	—	24,508
Payroll finance	437	—	437	17,156	—	17,156
Equipment financing	18,639	7,258	25,897	42,503	—	42,503
CRE	16,926	9,437	26,363	75,761	4,231	79,992
Multi-family	18,463	—	18,463	15,425	822	16,247
ADC	1,855	—	1,855	505	—	505
Residential mortgage	93	—	93	41,552	21,219	62,771
Consumer	20	—	20	9,209	3,067	12,276
Total	$ 122,342	$ 37,634	$ 159,976	$ 265,288	$ 30,140	$ 295,428

At December 31, 2019, there were $74,738 of special mention loans and $119,913 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.

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 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 no loans rated doubtful at December 31, 2019. There were $59 of originated consumer loans rated doubtful at December 31, 2018. There were no acquired consumer loans rated doubtful at December 31, 2018. There were no loans rated loss at December 31, 2019 and 2018.

(6) Premises and Equipment, Net

Premises and equipment are summarized as follows:

	December 31,	
	2019	2018
Land and land improvements	$ 105,683	$ 129,767
Buildings	92,762	108,416
Leasehold improvements	29,956	29,704
Furniture, fixtures and equipment	105,397	90,397
Total premises and equipment, gross	333,798	358,284
Accumulated depreciation and amortization	(106,728)	(94,090)
Total premises and equipment, net	$ 227,070	$ 264,194

Depreciation and amortization of premises and equipment totaled $19,926, $20,349 and $11,670 for the years ended 2019, 2018, and 2017, respectively.

(7) Goodwill and Other Intangible Assets

Goodwill and other intangible assets are presented in the tables below. Acquired goodwill in 2019 of $70,449 includes $44,781 from the Woodforest Portfolio Acquisition and $25,668 from the Santander Portfolio Acquisition. (See Note 2. “Acquisitions”). The increase in goodwill and other intangible assets 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 (See Note 2. “Acquisitions” and Note 12. “Income Taxes”).

Goodwill

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

	For the year ended December 31, 2019	For the year ended December 31, 2018
Beginning of period balance	$ 1,613,033	$ 1,579,891
Acquired goodwill	70,449	39,356
Adjustment to provisional goodwill from Astoria Merger	—	(6,214)
End of period balance	$ 1,683,482	$ 1,613,033

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, 2019			
Core deposits	$ 157,959	$ (72,037)	$ 85,922
Customer lists	10,450	(6,508)	3,942
Non-compete agreements	11,808	(11,808)	—
Trade name	20,500	—	20,500
	$ 200,717	$ (90,353)	$ 110,364
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
	$ 200,717	$ (71,172)	$ 129,545

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 $19,181 in 2019; $23,646 in 2018; and $13,008 in 2017. The estimated aggregate future amortization expense for other intangible assets remaining as of December 31, 2019 was as follows:

	Amortization expense
2020	$ 16,800
2021	15,104
2022	13,703
2023	12,322
2024	10,448
Thereafter	21,487
Total	$ 89,864

(8) Deposits

Deposit balances at December 31, 2019 and 2018 are summarized as follows:

	December 31,	
	2019	2018
Non-interest bearing demand	$ 4,304,943	$ 4,241,923
Interest bearing demand	4,427,012	4,207,392
Savings	2,652,764	2,382,520
Money market	7,585,888	7,905,382
Certificates of deposit	3,448,051	2,476,931
Total deposits	$ 22,418,658	$ 21,214,148

Municipal deposits totaled $1,988,047 and $1,751,670 at December 31, 2019 and December 31, 2018, 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,	
	2019	2018
Remaining period to contractual maturity:		
Less than one year	$ 3,009,102	$ 1,423,423
One to two years	221,227	711,106
Two to three years	107,589	186,225
Three to four years	47,711	51,596
Four to five years	62,422	104,581
Total certificates of deposit	$ 3,448,051	$ 2,476,931

Certificate of deposit accounts that exceed the FDIC Insurance limit of $250 or more totaled $1,352,387 and $412,562 at December 31, 2019 and 2018, respectively. As presented in the table below, at December 31, 2018, we held no brokered certificates of deposits. Of the $1,352,387 of certificates of deposits accounts greater than $250 at December 31, 2019, $772,251 were brokered certificates of deposits, which are mainly an aggregation of individual depositor accounts below the FDIC insurance limit.

Listed below are our brokered deposits:

	December 31,	
	2019	2018
Interest bearing demand	$ 149,566	$ 23,742
Money market	944,627	1,134,081
Certificates of deposits	772,251	—
Total brokered deposits	$ 1,866,444	$ 1,157,823

(9) Borrowings, Senior Notes and Subordinated Notes

Our borrowings and weighted average interest rates are summarized as follows:

	December 31,			
	2019		2018	
	Amount	Rate	Amount	Rate
By type of borrowing:				
FHLB advances and overnight	$ 2,245,653	2.04%	$ 4,838,772	2.40%
Repurchase agreements	22,678	1.20	21,338	1.20
3.50% Senior Notes	173,504	3.19	181,130	3.19
Subordinated Notes - Company	270,941	4.17	—	—
Subordinated Notes - Bank	173,182	5.45	172,943	5.45
Total borrowings	$ 2,885,958	2.53	$ 5,214,183	2.52
By remaining period to maturity:				
Less than one year	$ 1,491,446	2.19%	$ 3,958,635	2.48%
One to two years	925,388	2.07	831,889	2.28
Two to three years	25,000	1.71	250,716	2.04
Three to four years	—	—	—	—
Greater than five years	444,124	4.67	172,943	5.45
Total borrowings	$ 2,885,958	2.53	$ 5,214,183	2.52

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, 2019 and 2018, the Bank had pledged residential mortgage and CRE loans with eligible collateral values of $7,670,673 and $8,526,247, respectively. The Bank had also pledged securities to secure borrowings, which are disclosed in Note 3. “Securities.” As of December 31, 2019, 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 $2,757,716.

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.

3.50% Senior Notes. On October 2, 2017, in connection with the Astoria Merger, we 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. We 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 $131 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, we 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 us and Wilmington Trust National Association, as trustee (the “Wilmington Indenture”). The Wilmington Indenture includes provisions that among other things, restrict our ability to dispose of or issue shares of voting stock of a material subsidiary (as defined in the Wilmington Indenture) or transfer the entirety of, or a substantial amount of, our assets or merge or consolidate with or into other entities, without satisfying certain conditions. Such conditions were satisfied in the Astoria Merger.

Subordinated Notes - Company. On December 16, 2019, we issued $275,000 aggregate principal amount of 4.00% fixed-to-floating rate subordinated notes (the "Subordinated Notes - Company") through a public offering at a discount of 1.25%. The cost of issuance was $634. At December 31, 2019, the net unamortized discount of the Subordinated Notes - Company was $4,059, which will be accreted to interest expense over the life of the Subordinated Notes - Company, resulting in an effective yield of 4.17%. Interest is due semi-annually in arrears on June 30 and December 30 each year, commencing on June 30, 2020, until December 30, 2024. From and including December 30, 2024, the Subordinated Notes - Company will bear interest at a floating rate per annum equal to a benchmark rate, which is expected to be Three-Month Term SOFR plus 253 basis points, payable quarterly in arrears on March 30, June 30, September 30 and December 30 of each year, beginning on March 30, 2025, through maturity on December 30, 2029 or earlier redemption. The Subordinated Notes - Company are also redeemable by us, in whole or in part on December 30, 2024 and on each interest payment date thereafter. The Subordinated Notes - Company are redeemable in whole at any time upon the occurrence of certain specified events. The Subordinated Notes - Company are unsecured, subordinated obligations and are subordinated in right to payment of all of our existing and future senior indebtedness, including claims of depositors and general creditors and rank equally to the Subordinated Notes - Bank, discussed below. The Subordinated Notes - Company qualify as Tier 2 capital for regulatory purposes. See Note 18. ("Stockholders' Equity" for additional information regarding regulatory capital).

Subordinated Notes - Bank. On March 29, 2016, the Bank issued $110,000 aggregate principal amount of 5.25% fixed-to-floating rate subordinated notes (the "Subordinated Notes - Bank") 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 - Bank offering and issued an additional $65,000 principal amount of Subordinated Notes - Bank. The Subordinated Notes - Bank issued September 2, 2016 are fully fungible with, rank equally in right of payment with, and form a single series with the Subordinated Notes - Bank 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, 2019, the net unamortized discount of all Subordinated Notes - Bank was $1,818, which will be accreted to interest expense over the life of the Subordinated Notes - Bank, 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 - Bank 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 - Bank 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 - Bank are redeemable in whole at any time upon the occurrence of certain specified events. The Subordinated Notes - Bank 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 - Bank qualify as Tier 2 capital for regulatory purposes. See Note 18. "Stockholders' Equity" for additional information regarding regulatory capital.

Revolving line of credit. On August 27, 2019, we amended and renewed our 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 August 31, 2020. The balance was zero at December 31, 2019 and December 31, 2018. 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, we and the Bank must 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 Credit Facility at December 31, 2019.

(10) Leases

Lessor Arrangements
In our equipment finance portfolio we finance various types of equipment and machinery for clients through operating and sales-type leases. Sales-type leases and operating leases are carried at the aggregate of lease payments receivable plus the estimated residual value of the leased assets and any initial direct costs incurred to originate these leases, less unearned income and any purchase accounting adjustments, which are accreted into interest income over the lease term using the interest method. Our leases generally do not contain non-lease components.

Payment terms are generally fixed; however, in some agreements, lease payments may be indexed to a rate or index, such as LIBOR. Leases are typically payable in monthly installments with terms ranging from 30 to 120 months and may contain renewal options and purchase options that allow the client to acquire the leased asset at or near the end of the lease. To estimate the amount we expect to derive from a leased asset at the end of the lease term, we consider both internal and third-party appraisals as well as historical experience. We acquire leased assets at fair market value and provide funding to our clients at acquisition cost, less any volume or trade discounts as applicable. Therefore, there is generally no selling profit or loss to recognize or defer at lease inception.

The residual value of a sales-type or operating lease represents the estimated fair value of the leased equipment at the end of the lease term. In establishing residual value estimates, we may rely on industry data, historical experience, and independent appraisals. At maturity of a lease, residual assets are offered for sale, which may result in an extension of the lease by our client, a lease to a new client, or purchase of the residual asset by our client or another party. Impairment of residual values arises if the expected fair value is less than the carrying amount. We assess our net investment in sales-type leases (including residual values) for impairment on at least an annual basis with any impairment losses recognized in the allowance for loan losses. At December 31, 2019, there was no impairment losses recognized.

The components of our net investments in sales-type leases, which are included in Portfolio Loans on the consolidated balance sheet are as follows:

	December 31, 2019
Sales-type leases:	
Lease receivables	$ 218,861
Unguaranteed residual values	76,361
Total net investment in sales-type leases	$ 295,222

During the year ended December 31, 2019, we recognized lease interest income of $8,186 on sales-type leases and $2,388 on operating leases.

The remaining maturities of lease receivables as of December 31, 2019 were as follows:

	Operating	Sales-type
2020	$ 14,131	$ 79,749
2021	13,988	65,468
2022	13,341	72,183
2023	11,311	73,688
2024	9,820	29,198
Thereafter	9,700	53,019
Total lease payments	$ 72,291	373,305
Unearned income		(78,083)
Net lease receivables		$ 295,222

Lessee Arrangements
We determine if an arrangement is a lease at inception. We enter into leases in the normal course of business primarily for financial centers, back-office operations locations, business development offices, information technology data centers and equipment. Our leases have remaining terms of one year to 16 years, some of which include options to extend the lease for up to 10 years and some of which include options to terminate the lease within two years. Sub-leases are not material to our financial statements and were not considered in the right-of-use asset or lease liability. Our leases do not include residual value guarantees or significant covenants.

We include lease extension and termination options in the lease term if, after considering relevant economic factors, it is reasonably certain we will exercise the option.

At December 31, 2019, operating lease right-of-use assets of $112,226 and operating lease liabilities of $118,986 were included in other assets and other liabilities, respectively, on our consolidated balance sheet. We do not have any significant finance leases in which we are the lessee.

The components of lease expense were as follows:

	For the year ended December 31, 2019
Operating lease expense	$ 19,550
Sub-lease income	(2,581)
Net lease expense	$ 16,969

Net lease expense for the years ended December 31, 2018 and 2017, prior to the adoption of ASU 2016-02, was $17,079 and $10,647, respectively.

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

2020	$ 19,907
2021	18,355
2022	16,535
2023	14,759
2024	12,894
2025 and thereafter	55,540
Total lease payments	137,990
Interest	19,004
Present value of lease liabilities	$ 118,986

The weighted average remaining lease term and discount rate used to calculate the present value of our right-of-use asset and lease liabilities were the following:

	December 31, 2019
Weighted average remaining lease term (years)	7.94
Weighted average remaining discount rate	3.26%

(11) Derivatives

We utilize interest rate swap agreements as part of our asset liability management strategy to help manage our interest rate risk position. These derivative contracts relate to transactions in which we enter 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, we agree 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, we agree 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 us to provide a fixed rate borrowing to a customer and effectively convert the loan to a variable rate loan. Because we act as an intermediary for our customers, changes in the fair value of the underlying derivative contracts largely offset each other and do not materially impact the results of our operations.

We have 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, or London Clearing House, or the LCH. At December 31, 2019 and December 31, 2018, 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, 2019 and December 31, 2018 we paid cash as STM in the amount of $43,004 and $5,214, respectively, for the net fair value of its CME and LCH interest rate swap contracts with other financial institutions. The variation margin payment changes daily, positively or negatively, based on a change in the fair value of the underlying interest rate swap contracts.

We do not typically require our commercial customers to post cash or securities as collateral on our 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, we are allowed to access collateral supporting the loan relationship to recover any losses suffered on the derivative asset or liability.

Summary information as of December 31, 2019 and 2018 regarding these derivatives is presented below:

	Notional amount	Average maturity (in years)	Weighted average fixed rate	Weighted average variable rate	Fair value
December 31, 2019					
Included in other assets:					
Third-party interest rate swap	$ 116,874				$ 15
Customer interest rate swap	1,738,675				67,303
Total	$ 1,855,549	5.18	4.50%	1 m Libor + 2.23%	$ 67,318
Included in other liabilities:					
Third-party interest rate swap	$ 1,738,675				$ 23,998
Customer interest rate swap	116,874				316
Total	$ 1,855,549	5.18	4.50%	1 m Libor + 2.23%	$ 24,314
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	$ 1,073,353	5.90	4.65%	1 m Libor + 2.29%	$ 18,215
Included in other liabilities:					
Third-party interest rate swap	$ 556,934				$ 4,351
Customer interest rate swap	516,419				8,650
Total	$ 1,073,353	5.90	4.65%	1 m Libor + 2.29%	$ 13,001

(12) Income Taxes

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

	For the year ended December 31,		
	2019	2018	2017
Current income tax expense:			
Federal	$ 4,133	$ 44,810	$ 4,375
State and local	27,616	17,263	2,181
Total current income tax expense	31,749	62,073	6,556
Deferred income tax expense:			
Federal	72,030	38,661	71,536
State and local	9,146	18,242	9,847
Total deferred income tax expense	81,176	56,903	81,383
Total income tax expense	$ 112,925	$ 118,976	$ 87,939

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:

	For the year ended December 31,		
	2019	2018	2017
Tax at federal statutory rate of 21% for 2019 and 2018 and 35% for 2017	$ 113,393	$ 118,908	$ 63,341
State and local income taxes, net of federal tax benefit	29,042	28,049	7,818
Tax-exempt interest, net of disallowed interest	(20,238)	(19,521)	(18,948)
BOLI income	(4,963)	(3,279)	(2,665)
Non-deductible acquisition related costs	—	—	2,965
Low income housing tax credits and other benefits	(19,567)	(9,823)	(3,030)
Low income housing investment amortization expense	16,718	6,655	1,067
Equity-based stock compensation benefit	(468)	(680)	(1,528)
FDIC insurance premium limitation	977	1,777	—
Deferred tax adjustment related to reduction in federal income tax rate	—	—	40,285
Other, net	(1,969)	(3,110)	(1,366)
Actual income tax expense	$ 112,925	$ 118,976	$ 87,939
Effective income tax rate	20.9%	21.0%	48.6%

The following table presents our deferred tax position at December 31, 2019 and 2018:

	December 31,	
	2019	2018
Deferred tax assets:		
Allowance for loan losses	$ 28,779	$ 25,459
Lease liability	32,232	—
Deferred compensation	333	320
Other accrued compensation and benefits	8,953	10,449
Deferred rent	1,496	2,992
Intangible asset amortization	—	566
Other comprehensive loss (securities)	—	29,651
Pension and post retirement expense	4,207	8,202
Deferred loan fees and costs	2,694	—
Accrued expenses	1,590	56
Net operating loss carryforwards	41,044	10,376
Other	3,605	4,009
Total deferred tax assets	124,933	92,080
Deferred tax liabilities:		
Right of use asset (leases)	30,401	—
Acquisition fair value adjustments	56,292	23,282
Depreciation of premises and equipment and tax leases	79,349	1,653
Other comprehensive income (securities)	14,331	—
Deferred capital gains	6,590	—
Mortgage servicing rights	2,250	2,535
Other comprehensive gain (defined benefit plans)	624	4,222
Deferred loan fees and costs	—	4,625
Intangible asset amortization	1,633	—
Other	1,033	1,773
Total deferred tax liabilities	192,503	38,090
Net deferred tax (liability) asset	$ (67,570)	$ 53,990

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, we were required to remeasure, through income tax expense, our 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, we completed our 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, we 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 our 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, 2019 or 2018.

Retained earnings at December 31, 2019 and 2018 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, 2019 and 2018, was approximately $1,956.

We acquired state and local net operating loss ("NOL") carryforwards in the Astoria Merger. We have an available New York State NOL carryforward of $108,141 and a New York City NOL carryforward of $28,747, both of which expire in 2024. During 2019, we generated a federal NOL of $152,238, which has no expiration date.

At December 31, 2019 and 2018, we had no unrecognized tax benefits or accrued interest and penalties recorded. We do not expect the total amount of unrecognized tax benefits to significantly increase within the next twelve months. We record interest and penalties as a component of other non-interest expense.

We and our subsidiaries are subject to U.S. federal income tax, as well as income tax of the state of New York and various other states. We are generally no longer subject to examination by federal, state and local taxing authorities for tax years prior to December 31, 2016. There are several state and local income tax audits on-going. We do not expect any adjustments from such audits to be material to our consolidated financial statements.

(13) Investments in Low Income Housing Tax Credits

We have 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.

We are 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, we have concluded that we are not the primary beneficiary of any LIHTC partnership. We use the proportional amortization method to account for our investments in these entities.

Our 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,	
	2019	2018
Gross investment in LIHTC	$ 439,877	$ 217,833
Accumulated amortization	(53,053)	(36,335)
Net investment in LIHTC	$ 386,824	$ 181,498
Unfunded commitments for LIHTC investments	$ 264,930	$ 138,518

Unfunded Commitments

The expected payments for unfunded affordable housing commitments at December 31, 2019 were as follows:

2020	$ 111,275
2021	79,619
2022	61,123
2023	2,080
2024	2,956
2025 and thereafter	7,877
	$ 264,930

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,		
	2019	2018	2017
Tax credits and other tax benefits recognized	$ 12,708	$ 10,706	$ 3,195
Amortization expense included in income tax expense	16,718	6,655	1,067

(14) Stock-Based Compensation

We have one active stock-based compensation plan, as described below.

Our stockholders approved the 2015 Omnibus Equity and Incentive Plan (the “2015 Plan”) on May 28, 2015. The 2015 Plan permitted 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 could be awarded under the 2015 Plan was 2,800,000 shares, plus the remaining shares available for grant under the 2014 Stock Incentive Plan as of the date of adoption of the 2015 Plan.

On May 29, 2019, our stockholders approved the Amended and Restated 2015 Omnibus Equity and Incentive Plan (the “Amended Omnibus Plan”). The Amended Omnibus Plan increased the shares available for issuance to 7,000,000 from 4,454,318, and updated certain tax-related provisions as a result of the Tax Act and related administrative changes. The Amended Omnibus Plan provides for the granting of the same instruments as the 2015 Plan, and one share is deducted for every share that is awarded and delivered under the Amended Omnibus Plan.

At December 31, 2019, there were an aggregate amount of 3,347,036 shares available for future grant under the Amended Omnibus Plan.

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

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

		Non-vested stock awards/stock units outstanding		Stock options outstanding	
	Shares available for grant	Number of shares	Weighted average grant date fair value	Number of shares	Weighted average exercise price
Balance at January 1, 2017	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	2,318,950	1,333,514	$ 22.12	686,539	$ 11.20
Increase per Amended 2015 Omnibus Equity and Incentive Plan	2,545,682	—	—	—	—
Granted	(1,544,013)	1,544,013	19.66	—	—
Stock awards vested [2]	(70,353)	(593,560)	19.37	—	—
Exercised	—	—	—	(257,765)	11.29
Forfeited	98,270	(96,770)	21.92	(1,500)	10.03
Canceled/expired	(1,500)	—	—	—	—
Balance at December 31, 2019	3,347,036	2,187,197	$ 20.96	427,274	$ 11.15
Exercisable at December 31, 2019				427,274	$ 11.15

[1] The 33,392 shares vested represent performance shares that were granted in October 2014 to certain executives with a three-year measurement period. On December 31, 2018, these shares vested at 144.4% of the amount initially granted.
[2] The 70,353 shares vested represents performance shares that were granted in February 2016 to certain executives with a three-year measurement period. These shares vested in the first quarter of 2019 at 150.0% of the target amount granted, which resulted in these additional shares being awarded and additional expense of $1,000 which was recorded in the first quarter of 2019.

Other information regarding options outstanding and exercisable at December 31, 2019 follows:

	Outstanding and Exercisable		
		Weighted average	
	Number of stock options	Exercise price	Life (in years)
Range of exercise prices:			
$7.63 to $9.00	107,700	$ 8.31	2.40
9.28 to 10.03	45,500	9.62	1.87
11.36 to 11.77	115,764	11.36	3.81
13.23 to 15.01	158,310	13.36	4.87
	427,274	11.15	3.64

The total intrinsic value of outstanding in-the-money stock options and outstanding in-the-money exercisable stock options was $4,243 at December 31, 2019.

We use an option pricing model to estimate the grant date fair value of stock options granted. There were no stock options granted in 2019, 2018 or 2017.

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,		
	2019	2018	2017
Stock options	$ —	$ 6	$ 149
Non-vested stock awards/performance units	19,473	12,978	7,961
Total	$ 19,473	$ 12,984	$ 8,110
Income tax benefit	$ 4,089	$ 2,727	$ 2,149
Proceeds from stock option exercises	$ 2,909	$ 691	$ 2,578

Unrecognized stock-based compensation expense at December 31, 2019 was $27,738 and the weighted average period over which unrecognized non-vested awards/performance units is expected to be recognized is 1.75 years.

(15) Pension and Other Post Retirement Benefits

(a) *Existing Pension Plans and Other Post Retirement Benefits*

Our pension benefit plans include all of the assets and liabilities of 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 were assumed in the Astoria Merger. Our other post retirement benefit plans include the Astoria Bank Retiree Health Care Plan and the Astoria Bank BOLI plan, which were assumed in the Astoria Merger, and other non-qualified Supplemental Executive Retirement Plans ("SERPs") that provide certain directors, officers and executives with supplemental retirement benefits.

During the third quarter of 2019, we terminated the Astoria Bank Employees' Pension Plan (the "Plan"). We purchased annuities from a third-party insurance carrier and made lump sum distributions as elected by Plan participants. In connection with the Plan termination, we recognized a net gain of $11,817, which was mainly comprised of the remaining balance of accumulated other comprehensive income and related deferred taxes. At December 31, 2019, a pension reversion asset of $16,442 was recorded in other assets in the consolidated balance sheets, and is held in custody by the Bank's 401(k) plan custodian. The pension reversion asset is expected to be charged to earnings over the next five to seven years as it is distributed to employees under qualified compensation and benefit programs.

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,	
	2019	2018	2019	2018
Changes in projected benefit obligation:				
Beginning of year balance	$ 231,525	$ 253,583	$ 30,878	$ 34,777
Service cost	—	—	48	64
Interest cost	6,924	8,521	997	1,040
Actuarial (gain) loss	(8,469)	(18,815)	1,338	(3,436)
Benefits and distributions paid	(11,004)	(11,764)	(1,023)	(1,023)
Pension termination	(213,552)	—	—	—
Other	(895)	—	—	(544)
End of year balance	4,529	231,525	32,238	30,878
Changes in fair value of plan assets:				
Beginning of year balance	240,733	198,395	—	—
Actual gain on plan assets	—	12,218	—	—
Employer contributions	361	41,884	1,023	1,023
Benefits and distributions paid	(11,004)	(11,764)	(1,023)	(1,023)
Pension termination	(213,552)	—	—	—
Transfer to 401(k) plan pension reversion asset	(16,538)	—	—	—
End of year balance	—	240,733	—	—
Funded status at end of year (liability) asset	$ (4,529)	$ 9,208	$ (32,238)	$ (30,878)

The underfunded pension benefits and the other post retirement benefits are included in other liabilities in our consolidated balance sheets at December 31, 2019 and 2018. The over funded pension benefits at December 31, 2018 was included in other assets in our consolidated balance sheets.

We made no contribution to the Astoria Bank Pension plan and made contributions of $361 to the other pension plans in 2019. We made a contribution to the Astoria Bank Pension Plan of $41,510 and made contributions of $374 to the other pension plans in 2018.

The following is a summary of the components of accumulated other comprehensive gain related to pension plans and other post retirement benefits. We do not expect that any net actuarial gain or prior service cost will be recognized as components of net periodic cost in 2020.

	Pension benefits		Other post retirement benefits	
	December 31,		December 31,	
	2019	2018	2019	2018
Net actuarial gain	$ 1,647	$ 14,922	$ 2,081	$ 978
Deferred tax (expense)	(455)	(3,809)	(575)	(413)
Amount included in accumulated other comprehensive gain, net of tax	$ 1,192	$ 11,113	$ 1,506	$ 565

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

	December 31,	
	2019	2018
Pension benefit plans:		
Astoria Bank Pension Plan	N/A	4.08%
Astoria Excess and Supplemental Benefit Plans	2.68	3.82
Astoria Directors' Retirement Plan	2.39	3.52
Greater Directors' Retirement Plan	2.50	3.66
LIB Directors' Retirement Plan	N/A	N/A
Other post retirement benefit plans:		
Sterling Other Post retirement life insurance, and other plans	2.34% to 3.23%	3.58% to 3.73%
Astoria Bank Retiree Health Care Plan	3.00	4.05

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,		
	2019	2018	2017	2019	2018	2017
Service cost	$ —	$ —	$ —	$ 48	$ 64	$ 22
Interest cost	6,924	8,521	2,189	997	1,040	557
Expected return on plan assets	(8,800)	(14,059)	(3,287)	—	—	—
Amortization of unrecognized actuarial (gain) loss	—	—	—	(102)	21	19
Amortization of transition obligation	—	—	—	—	—	2
Amortization of prior service cost	—	—	—	—	—	14
Net periodic pension (benefit) expense	$ (1,876)	$ (5,538)	$ (1,098)	$ 943	$ 1,125	$ 614

Net periodic pension (benefit) expense is included in other non-interest income 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, 2019 and 2018.

	Discount rate		Expected return on plan assets	
	2019	2018	2019	2018
Pension benefit plans:				
Astoria Bank Pension Plan	N/A	3.44%	N/A	7.00%
Astoria Excess and Supplemental Benefit Plans	3.82	3.14	N/A	N/A
Astoria Directors' Retirement Plan	3.52	2.82	N/A	N/A
Greater Directors' Retirement Plan	3.66	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	2.34% to 4.15%	2.80% to 4.15%	N/A	N/A
Astoria Bank Retiree Health Care Plan	4.05	3.42%	N/A	N/A

As part of the Astoria Merger, we 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,	
	2019	2018
Health care cost trend rate assumed for the next year:		
Pre-age 65	6.50%	6.75%
Post-age 65	6.00	6.50
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	$ 81	$ (68)
Effect on the post retirement benefit obligation	2,286	(1,898)

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

	Pension benefits	Other post retirement benefits
2020	$ 321	$ 1,782
2021	1,532	1,802
2022	307	1,742
2023	297	1,730
2024	286	1,700
Thereafter	1,217	15,957

The Astoria Bank Pension Plan's assets were measured at estimated fair value on a recurring basis. The Astoria Bank Pension Plan presented its assets at fair value in three levels, based on the markets in which the assets were traded and the reliability of the assumptions used to determine fair value. These levels are described in Note 21. "Fair Value Measurements." The assets were managed by Prudential Retirement Insurance and Annuity Company ("PRIAC").

The following tables set forth the carrying values of the Astoria Bank Pension Plan's assets at December 31, 2018, 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			
	Total	Level 1	Level 2	Level 3
PRIAC Pooled Separate Accounts [1]	$ 228,119	$ 228,119	$ —	$ —
PRIAC Guaranteed Deposit Account	12,614	—	—	12,614
Cash and cash equivalents	—	—	—	—
Total	$ 240,733	$ 228,119	$ —	$ 12,614

(1) The investment allocation consisted of 100% fixed income securities funds.

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
Fair value at beginning of period	$ 12,464
Total net gain, realized and unrealized, included in net assets [1]	114
Purchases	11,783
Sales	(11,747)
Fair value at end of period	$ 12,614

[1] Includes unrealized loss related to assets held of $174.

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.

	PRIAC guaranteed deposit account range at December 31, 2018
Significant unobservable inputs:	
Composite market value factor	0.986 - 1.01
Gross guaranteed crediting rate [1]	3.10% - 3.10%

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

Our policy was 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.

PRIAC Pooled Separate Accounts
The fair value of the Astoria Bank Pension Plan's investments in the PRIAC Pooled Separate Accounts was based on the fair value of the underlying securities included in the pooled separate accounts which consisted of equity securities and bonds. Investments in these accounts were represented by units and a per unit value. The unit values were calculated by PRIAC and fair value was reported at unit value which was 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 were reviewed by PRIAC and were challenged if PRIAC believed the price was not reflective of fair value. There were no restrictions as to the redemption of these pooled separate accounts nor did the Astoria Bank Pension Plan have any contractual obligations to further invest in any of the individual pooled separate accounts. These investments were 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 was 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 calculated a contract-specific composite market value factor, which was 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 was then

multiplied by the contract value, which represented 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 was classified as Level 3.

Cash and cash equivalents
The fair value of the Astoria Bank Pension Plan's cash and cash equivalents represented the amount available on demand and, as such, were classified as Level 1.

(b) Employee Savings Plan
We also sponsor 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. We provide 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. Employee savings plan expense was $7,850 for 2019, $4,844 for 2018 and $3,827 for 2017.

(16) Non-Interest Income, Other Non-Interest Expense, Other Assets and Other Liabilities

(a) Non-Interest Income - Revenue from Contracts with Customers
Our significant sources of non-interest income in our consolidated income statements. A description of our revenue streams is the following::

Deposit fees and service charges. We earn fees from our deposit customers mainly for transaction-based, account maintenance, and overdraft services. Transaction-based fees include services such as ATM use fees, stop payment charges, statement rendering, and ACH fees, and are recognized at the time the transaction is executed. Account maintenance fees, which relate primarily to monthly account maintenance, are earned over the course of a month, which represents the period over which we satisfy the performance obligation. Overdraft fees are recognized when the overdraft occurs. Service charges on deposits are withdrawn from the customer's account balance.

Accounts receivable management / factoring commissions and other related fees.
We earn these fees / commissions in our payroll finance and factoring businesses, as described below.

Payroll finance. We provide financing and business process outsourcing, including full back-office, technology and tax accounting services, to independently-owned temporary staffing companies nationwide. Services provided include 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 we recognize a portion of the total revenue generated as non-interest income. We collect invoices directly from the borrower's customers, retain the amounts billed for the temporary staffing services provided, and remit the remaining funds to the borrower. The funds are remitted net of amounts previously advanced, payroll taxes withheld, service fees charged by us, and a reserve amount which is retained to offset potential uncollectible balances.

Factored Receivables. 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. The factoring fee included in non-interest income represents compensation to us for bookkeeping and collection services provided. The factoring fee, which is non-refundable, is recognized at the time the receivable is assigned to us. Other revenue associated with factored receivables includes wire transfer fees, technology fees, field examination fees and UCC fees. All such fees are recognized as income upon receipt.

Investment management fees. We earn investment management fees from our contracts with customers to manage assets for investment, and / or to transact on their accounts. Advisory fees are primarily earned over time as we provide 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 when the transaction is executed, i.e., the trade date.

Gains / Losses on sales of OREO. We record 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 we finance the sale of OREO to the buyer, we 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, we 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. Our 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 we satisfy our performance obligation and revenue is recognized. We do not typically enter into long-term revenue contracts with customers, and therefore, we do not experience significant contract balances. As of December 31, 2019 and 2018, we did not have any significant contract balances.

(b) Other Non-Interest Expense

Other non-interest expense items are presented in the following table.

	For the year ended December 31,		
	2019	2018	2017
Other non-interest expense:			
Professional fees	$ 19,519	$ 13,371	$ 9,982
Advertising and promotion	8,458	5,930	3,682
Communication	6,684	6,451	3,300
Residential mortgage loan servicing	5,926	3,393	924
Insurance & surety bond premium	3,831	3,630	3,317
Operational losses	3,643	3,176	1,533
Other	25,302	20,636	16,494
Total other non-interest expense	$ 73,363	$ 56,587	$ 39,232

(c) Other Assets

Other assets are presented in the following table. Significant components of the aggregate of other assets are presented separately.

	At December 31,	
	2019	2018
Other assets:		
Low income housing tax credit investments (see Note 13)	$ 386,824	$ 181,498
Right of use asset for operating leases (see Note 10)	112,226	—
Fair value of swaps (see Note 11)	67,318	18,215
Operating leases - equipment and vehicles leased to others (see Note 10)	72,291	—
Other asset balances	202,209	232,527
Total other assets	$ 840,868	$ 432,240

Other asset items include income tax balances, collateral posted for swaps that are not exchange traded, prepaid insurance, prepaid property taxes, prepaid maintenance, accounts receivable and miscellaneous assets.

(d) Other Liabilities

Other liabilities are presented in the following table. Significant components of the aggregate of other liabilities are presented separately.

	At December 31,	
	2019	2018
Other liabilities:		
Commitment to fund low income housing tax credit investments (see Note 13)	$ 264,930	$ 138,518
Lease liability (see Note 10)	118,986	—
Payroll finance and factoring liabilities	105,972	130,505
Fair value of swap liabilities (see Note 11)	24,314	13,001
Other liability balances	179,250	171,208
Total other liabilities	$ 693,452	$ 453,232

Other liability balances include accrued interest payable, accounts payable, accrued liabilities mainly for compensation and benefit plans and other miscellaneous liabilities.

(17) Earnings Per Common Share

The following is a summary of the calculation of earnings per common share ("EPS"):

	For the year ended December 31,		
	2019	2018	2017
Net income available to common stockholders	$ 419,108	$ 439,276	$ 91,029
Weighted average common shares outstanding for computation of basic EPS	205,679,874	224,299,488	157,513,639
Common-equivalent shares due to the dilutive effect of stock options (1)	451,754	517,508	610,631
Weighted average common shares for computation of diluted EPS	206,131,628	224,816,996	158,124,270
Earnings per common share:			
Basic	$ 2.04	$ 1.96	$ 0.58
Diluted	2.03	1.95	0.58
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.

(18) 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 us 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 $173,182 and $148,023 of the Subordinated Notes - Bank, respectively. Tier 2 capital at the Company includes $270,941 of the Subordinated Notes - Company. During the final five years of the terms of both outstanding issuances of 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 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 tables present actual and required capital ratios as of December 31, 2019 and December 31, 2018 for the Company and the Bank under the Basel III Capital Rules. The Basel III Capital Rules became fully phased-in on January 1, 2019. The minimum required capital amounts presented include the minimum required capital levels as of December 31, 2019 and 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.

	Actual		Minimum capital required - Basel III		Required to be considered well capitalized	
	Capital amount	Ratio	Capital amount	Ratio	Capital amount	Ratio
December 31, 2019						
Common equity tier 1 to RWA:						
Sterling National Bank	$2,882,208	12.32%	$1,637,001	7.00%	$1,520,073	6.50%
Sterling Bancorp	2,588,975	11.06	1,638,718	7.00	N/A	N/A
Tier 1 capital to RWA:						
Sterling National Bank	2,882,208	12.32	1,987,787	8.50	1,870,859	8.00
Sterling Bancorp	2,726,556	11.65	1,989,872	8.50	N/A	N/A
Total capital to RWA:						
Sterling National Bank	3,162,282	13.52	2,455,502	10.50	2,338,574	10.00
Sterling Bancorp	3,252,412	13.89	2,458,077	10.50	N/A	N/A
Tier 1 leverage ratio:						
Sterling National Bank	2,882,208	10.11	1,140,570	4.00	1,425,713	5.00
Sterling Bancorp	2,726,556	9.55	1,141,603	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, 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	2,788,017	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	3,027,125	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	2,788,017	9.50	1,173,883	4.00	1,173,883	4.00	N/A	N/A

Management believes that as of December 31, 2019, the Bank was “well-capitalized”. At December 31, 2019 and December 31, 2018, 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, 2019 and 2018 is as follows:

	The Company		The Bank	
	December 31,		December 31,	
	2019	2018	2019	2018
Total U.S. GAAP common stockholders' equity	$ 4,392,532	$ 4,290,429	$ 4,643,022	$ 4,513,577
Disallowed goodwill and other intangible assets	(1,763,341)	(1,706,781)	(1,720,598)	(1,664,038)
Net unrealized (gain) loss on available for sale securities	(38,056)	75,078	(38,056)	75,078
Net accumulated other comprehensive income components	(2,160)	(9,133)	(2,160)	(9,133)
Tier 1 risk-based capital	2,588,975	2,649,593	2,882,208	2,915,484
Preferred stock - additional Tier 1 capital	137,581	138,424	—	—
Total Tier 1 capital	2,726,556	2,788,017	2,882,208	2,915,484
Subordinated notes - Bank	148,023	142,777	173,182	172,943
Subordinated notes - Company	270,941	—	—	—
Total Tier 2 capital	418,964	142,777	173,182	172,943
Allowance for loan losses and off-balance sheet commitments	106,892	96,331	106,892	96,331
Total risk-based capital	$ 3,252,412	$ 3,027,125	$ 3,162,282	$ 3,184,758

(b) Dividend Restrictions

We are 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, 2019, the Bank had capacity to pay aggregate dividends of up to $193,958 to us without prior regulatory approval.

(c) Preferred Stock

On October 2, 2017 and in connection with the Astoria Merger, we 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 $1,000.00 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, we 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, 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. 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 first quarter of 2018, our Board of Directors authorized a new common stock repurchase plan to replace the plan that previously existed in which 776,713 common shares were available to be purchased. Under the new authorization we were permitted to purchase up to 10,000,000 common shares. In the fourth quarter of 2018, our Board of Directors authorized an additional 10,000,000 common shares available to be purchased. During 2018, we repurchased 9,114,771 shares of our common stock in the open market at a weighted average price of $17.54 per share, for total consideration of $159,903. In the second quarter of 2019, our Board of Directors increased the number of shares authorized for repurchase by 10,000,000 to a total of 30,000,000 common shares. In 2019, we repurchased 19,312,694 shares of our common stock in the open market at a weighted average price of $19.83 per share, for total consideration of $382,883. 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 1,572,535 shares available for repurchase at December 31, 2019.

(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 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, 2019, 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.

(19) Off-Balance Sheet Financial Instruments

In the normal course of business, we enter into various transactions, which, in accordance with GAAP, are not included in its consolidated balance sheets. We enter into these transactions to meet the financing needs of our 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. We minimize our exposure to loss under these commitments by subjecting them to credit approval and monitoring procedures.

We enter into contractual commitments to extend credit, normally with fixed expiration dates or termination clauses, at specified rates and for specific purposes. Substantially all of our 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 us 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, we would be required to fund the commitment. The maximum potential amount of future payments we could be required to make is represented by the contractual amount of the commitment. If the commitment were funded, we would be entitled to seek recovery from the customer. Based on our 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, 2019, we had $307,287 in outstanding letters of credit, of which $132,046 were secured by cash collateral and $74,000 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 our involvement in particular classes of off-balance sheet financial instruments, are summarized as follows:

	December 31,	
	2019	2018
Loan origination commitments	$ 565,392	$ 417,027
Undrawn lines of credit	1,532,702	1,737,315
Letters of credit	307,287	287,779

(20) 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.

(21) 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 our creditworthiness, among other things, as well as unobservable parameters. Any such valuation adjustments are applied consistently over time. Our 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 our 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 our monthly and/or quarterly valuation process.

The following categories of financial assets are measured at fair value on a recurring basis.

Investment Securities Available for Sale
The majority of our 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, we obtain 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.

We review 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, we do not purchase investment securities that have a complicated structure. Our 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, we validate, 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, 2019, 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. Our derivatives at December 31, 2019, consisted of interest rate swaps. (See Note 11. "Derivatives.")

A summary of assets and liabilities at December 31, 2019 measured at estimated fair value on a recurring basis is as follows:

	December 31, 2019			
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs
Assets:				
Investment securities available for sale:				
Residential MBS:				
Agency-backed	$ 1,615,119	$ —	$ 1,615,119	$ —
CMO/Other MBS	512,277	—	512,277	—
Total residential MBS	2,127,396	—	2,127,396	—
Federal agencies	201,138	—	201,138	—
Corporate bonds	320,922	—	320,922	—
State and municipal	446,192	—	446,192	—
Total other securities	968,252	—	968,252	—
Total investment securities available for sale	3,095,648	—	3,095,648	—
Swaps	67,318	—	67,318	—
Total assets	$ 3,162,966	$ —	$ 3,162,966	$ —
Liabilities:				
Swaps	$ 24,314	$ —	$ 24,314	$ —
Total liabilities	$ 24,314	$ —	$ 24,314	$ —

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 investment securities available for sale	1,026,942	—	1,026,942	—
Total available for sale securities	3,870,563	—	3,870,563	—
Interest rate caps and swaps	18,215	—	18,215	—
Total assets	$ 3,888,778	$ —	$ 3,888,778	$ —
Liabilities:				
Swaps	$ 13,001	$ —	$ 13,001	$ —
Total liabilities	$ 13,001	$ —	$ 13,001	$ —

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

We 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 $109,025 and $100,998 at December 31, 2019, and 2018, respectively. We recorded charge-offs on impaired loans of $26,987 for 2019, $12,228 for 2018, and $280 for 2017. The increase in charge-offs on impaired loans for 2019 was mainly due to the work-out of three ABL loans.

When valuing impaired loans that are collateral dependent, we charge-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.

A summary of impaired loans at December 31, 2019 measured at estimated fair value on a non-recurring basis is the following:

	December 31, 2019			
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs
C&I	$ 14,515	$ —	$ —	$ 14,515
Asset-based lending	3,772	—	—	3,772
Equipment financing	1,794	—	—	1,794
CRE	12,614	—	—	12,614
Multi-family	1,184	—	—	1,184
Residential mortgage	2,924	—	—	2,924
Consumer	1,300	—	—	1,300
Total impaired loans measured at fair value	$ 38,103	$ —	$ —	$ 38,103

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

Mortgage Servicing Rights

We utilize 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 sheets at the lower of amortized cost or fair value. To estimate the fair value of servicing rights, we utilize 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, 2019 and 2018 were $8,308 and $11,715, respectively.

OREO

OREO 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, OREO 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. OREO subject to non-recurring fair value measurement was $12,189 and $19,377 at December 31, 2019 and 2018, respectively. There were write-downs of $959 in 2019, $678 in 2018 and $2,273 in 2017 related to changes in fair value recognized through income for those foreclosed assets held by us.

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, 2019:

Non-recurring fair value measurements	Fair value	Valuation technique	Unobservable input / assumptions	Discount rate/ prepayment speeds(1) (weighted average)
Impaired loans:				
C&I	$14,515	Discount analysis	Mainly value of taxi medallions	6.0% -10.0% (7.9%)
Asset-based lending	3,772	Appraisal	Value of underlying collateral	Approx. 50%
Equipment financing	1,794	Appraisal	Value of underlying collateral	15.0%
CRE	12,614	Appraisal	Adjustments for comparable properties	22.0%
Multi-family	1,184	Appraisal	Adjustments for comparable properties	22.0%
Residential mortgage	2,924	Appraisal	Adjustments for comparable properties	22.0%
Consumer	1,300	Appraisal	Adjustments for comparable properties	22.0%
Assets taken in foreclosure:				
Residential mortgage	5,220	Appraisal	Adjustments by management to reflect current conditions/selling costs	22.0%
CRE	4,682	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	8,308	Third-party	Discount rates	9.5% - 20.0% (9.9%)
		Third-party	Prepayment speeds	9.16 - 20.76 (10.26)

(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, 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	Appraisal	Value of underlying collateral	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) See (1) above.

Fair Values of Financial Instruments
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, 2019:

	December 31, 2019			
	Carrying amount	Level 1 inputs	Level 2 inputs	Level 3 inputs
Financial assets:				
Cash and due from banks	$ 329,151	$ 329,151	$ —	$ —
Securities available for sale	3,095,648	—	3,095,648	—
Securities held to maturity	1,979,661	—	2,053,191	—
Portfolio loans, net	21,333,974	—	—	21,382,990
Loans held for sale	8,125	—	8,125	—
Accrued interest receivable on securities	29,308	—	29,308	—
Accrued interest receivable on loans	71,004	—	—	71,004
FHLB stock and FRB stock	251,805	—	—	—
Swaps	67,318	—	67,318	—
Financial liabilities:				
Non-maturity deposits	18,970,607	18,970,607	—	—
Certificates of deposit	3,448,051	—	3,444,669	—
FHLB borrowings	2,245,653	—	2,248,851	—
Other borrowings	22,678	—	22,677	—
Senior Notes	173,504	—	173,733	—
Subordinated Notes	444,123	—	453,512	—
Mortgage escrow funds	58,316	—	58,315	—
Accrued interest payable on deposits	5,427	—	5,427	—
Accrued interest payable on borrowings	8,629	—	8,629	—
Swaps	24,314	—	24,314	—

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	—

The following paragraphs summarize the principal methods and assumptions used by us to estimate the fair value of certain of our 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.

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

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 our deposits. We believe that our 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 our off-balance-sheet financial instruments described in Note 19. “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, 2019 and 2018, 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.

We 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, we had no financial instruments measured at fair value under the fair value measurement option.

(22) Accumulated Other Comprehensive Income (Loss)

Components of accumulated other comprehensive income (loss) (“AOCI”) were as follows as of the dates shown below:

	December 31,	
	2019	2018
Net unrealized holding gain (loss) on available for sale securities	$ 52,593	$ (103,756)
Related income tax (expense) benefit	(14,537)	28,679
Available for sale securities AOCI, net of tax	38,056	(75,077)
Net unrealized holding loss on securities transferred to held to maturity	(744)	(3,518)
Related income tax benefit	206	972
Securities transferred to held to maturity AOCI, net of tax	(538)	(2,546)
Net unrealized holding gain on retirement plans	3,728	15,900
Related income tax (expense)	(1,030)	(4,222)
Retirement plan AOCI, net of tax	2,698	11,678
Accumulated other comprehensive income (loss)	$ 40,216	$ (65,945)

The following table presents the changes in each component of AOCI for 2019 and 2018, and 2017:

	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, 2019				
Balance at beginning of the period	$ (75,077)	$ (2,546)	$ 11,678	$ (65,945)
Other comprehensive income before reclassification	116,684	—	—	116,684
Securities reclassified from held to maturity to available for sale	(8,548)	—	—	(8,548)
Amounts reclassified from AOCI	4,997	2,008	(8,980)	(1,975)
Total other comprehensive income (loss)	113,133	2,008	(8,980)	106,161
Balance at end of period	$ 38,056	$ (538)	$ 2,698	$ 40,216
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	(52,753)	132	12,842	(39,779)
Balance at end of period	$ (75,077)	$ (2,546)	$ 11,678	$ (65,945)
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)	313	586	(430)	469
Balance at end of period	$ (22,324)	$ (2,678)	$ (1,164)	$ (26,166)
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	

(23) Condensed Parent Company Financial Statements

Set forth below are the condensed balance sheets of the Company:

	December 31,	
	2019	2018
Assets:		
Cash	$ 265,145	$ 38,141
Investment in the Bank	4,643,022	4,513,577
Goodwill	27,910	27,910
Trade name	20,500	20,500
Other assets	24,521	15,320
Total assets	$ 4,981,098	$ 4,615,448
Liabilities:		
Senior Notes	$ 173,504	$ 181,130
Subordinated Notes - Company	270,941	—
Other liabilities	6,540	5,465
Total liabilities	450,985	186,595
Stockholders’ equity	4,530,113	4,428,853
Total liabilities & stockholders’ equity	$ 4,981,098	$ 4,615,448

The table below presents the condensed income statement of the Company:

	For the year ended December 31,		
	2019	2018	2017
Interest income	$ 43	$ 46	$ 29
Dividends from the Bank	500,000	290,007	30,000
Interest expense	(5,986)	(8,747)	(6,186)
Non-interest expense	(21,566)	(14,564)	(9,225)
Income tax benefit	6,260	5,397	7,258
Income before equity in undistributed earnings of the Bank	478,751	272,139	21,876
Equity in (excess distributed) undistributed earnings of the Bank	(51,710)	175,115	71,155
Net income	427,041	447,254	93,031
Preferred stock dividends	7,933	7,978	2,002
Net income available to common stockholders	$ 419,108	$ 439,276	$ 91,029

The table below presents the condensed statements of cash flows of the Company:

	For the year ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income	$ 427,041	$ 447,254	$ 93,031
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in excess distributed (undistributed) earnings of the Bank	51,710	(175,115)	(71,155)
(Gain) on extinguishment of 3.50% Senior Notes	(46)	(172)	—
Other adjustments, net	6,171	5,560	61,184
Net cash provided by operating activities	484,876	277,527	83,060
Cash flows from investing activities:			
Investment in the Bank	(75,000)	—	—
Cash flows from financing activities:			
Proceeds from issuance of Subordinated Notes - Company	270,941	—	—
Early redemption of 3.50% Senior Notes	(6,954)	(19,455)	—
Maturity of 5.50% Senior Notes	—	(77,000)	—
Cash dividends paid on common stock	(58,110)	(63,118)	(46,229)
Cash dividend paid on preferred stock	(8,775)	(8,775)	—
Stock-based compensation transactions	2,909	691	2,578
Repurchase of treasury stock	(382,883)	(159,903)	—
Net cash (used for) financing activities	(182,872)	(327,560)	(43,651)
Net increase (decrease) in cash	227,004	(50,033)	39,409
Cash at beginning of the period	38,141	88,174	48,765
Cash at end of the period	$ 265,145	$ 38,141	$ 88,174

(24) Quarterly Results of Operations (Unaudited)

The following is a consolidated condensed summary of quarterly results of operations for 2019 and 2018:

	For the year ended December 31, 2019			
Reporting period	First quarter	Second quarter	Third quarter	Fourth quarter
For the quarter ended	March 31	June 30	September 30	December 31
Interest and dividend income	$ 309,400	$ 302,457	$ 295,209	$ 295,474
Interest expense	73,894	70,618	71,888	67,217
Net interest income	235,506	231,839	223,321	228,257
Provision for loan losses	10,200	11,500	13,700	10,585
Non-interest income	19,597	27,058	51,830	32,381
Non-interest expense	114,992	126,940	106,455	115,450
Income before income tax	129,911	120,457	154,996	134,603
Income tax expense	28,474	23,997	32,549	27,905
Net income	101,437	96,460	122,447	106,698
Preferred stock dividend	1,989	1,987	1,982	1,976
Net income available to common stockholders	$ 99,448	$ 94,473	$ 120,465	$ 104,722
Earnings per common share:				
Basic	$ 0.47	$ 0.46	$ 0.59	$ 0.52
Diluted	0.47	0.46	0.59	0.52

	For the year ended December 31, 2018			
Reporting period	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

(25) Recently Issued Accounting Standards

ASU 2016-13, *"Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments."* ASU 2016-13, together with several other codification updates, 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 our 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 was effective on January 1, 2020. We are currently documenting, evaluating and testing our internal controls associated with the current expected credit losses ("CECL") model and refining our processes and procedures.

We anticipate the adoption of ASU 2016-13 will increase our allowance for credit losses ("ACL") by approximately $80,000 to $100,000, which is based on our current portfolio size and composition and includes the impact of completed loan portfolio acquisitions. We anticipate approximately $20,000 of the increase will be recorded as a reclassification between loan balances and the ACL related to existing purchase accounting adjustments on purchase credit impaired loans. The remaining increase to the ACL will be an recorded as adjustment to the balance of retained earnings as of January 1, 2020, net of tax. The amount of the increase in our ACL balance will be impacted by portfolio loans that were acquired in various merger and purchase transactions, which do not currently have an allowance for loan losses, to the extent estimated incurred losses were covered by existing purchase accounting adjustments, which contemplated life of loan loss estimates at acquisition.

We anticipate the increase to our allowance for off-balance sheet credit exposures related to loan commitments will be approximately 0.25% to 0.35% of outstanding unfunded loan commitments.

We anticipate the impact of CECL to our ACL related to our securities portfolio will not be material given the composition of our securities portfolio and expectations for future economic conditions. Over 50% of our securities portfolio is comprised of U.S. Government and Government agency securities and the balance of our securities consist mainly of high investment grade municipal and corporate securities.

The adoption of ASU 2016-13 is not expected to significantly impact our regulatory capital ratios or well-capitalized status. We anticipate we will fully adopt the impact of CECL effective January 1, 2020 and therefore are not planning to elect the three year regulatory capital phase-in for the CECL standard.

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 us on January 1, 2020, and is not expected to have a significant impact on our 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 us on January 1, 2021, with early adoption permitted, and is not expected to have a significant impact on our 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 us on January 1, 2020, and is not expected to have a significant impact on our financial statements.

ASU 2019-12, *"Income Taxes (Topic 740) - Simplifying the Accounting for Income Taxes."* ASU 2019-12 provides guidance to simplify the accounting for income taxes by eliminating certain exceptions to the guidance in ASC 740 related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition for deferred tax liabilities for outside basis differences. ASU 2019-12 also simplifies aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step-up in the tax basis of goodwill. ASU 2019-12 will be effective for us on January 1, 2021, with early adoption permitted, and is not expected to have a significant impact on our 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.

(26) Subsequent Events

On February 26, 2020, our Board of Directors authorized an increase of 20,000,000 shares to our common stock repurchase plan.

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, 2019. Based on this assessment we have concluded that as of December 31, 2019, our 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. Our system of internal controls is designed to provide reasonable assurance to our 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 our internal control over financial reporting as of December 31, 2019. 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, 2019, our internal control over financial reporting was effective.

(c) Attestation Report of the Registered Public Accounting Firm

The effectiveness of our internal control over financial reporting as of December 31, 2019 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 our internal control over financial reporting during the fourth fiscal quarter and the fiscal year ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. Other Information

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 2020 Annual Meeting of Stockholders (the "2020 Proxy Statement") and is incorporated herein by reference.

ITEM 11. Executive Compensation

The information required by this item will be included in the 2020 Proxy Statement and is incorporated herein by reference.

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

We do 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, 2019, 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	427,274	$ 11.15	3,347,036

(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 2020 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 2020 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 2020 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, 2019 and 2018
(C) Consolidated Income Statements for the years ended December 31, 2019, 2018 and 2017
(D) Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018 and 2017
(E) Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2019, 2018 and 2017
(F) Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017
(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	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))
3.1	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).
3.2	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)).
4.1	Description of the Company's Capital Stock and Depositary Shares, each representing 1/40 interest in a share of 6.50% Non-Cumulative Perpetual Preferred Stock, Series A (filed herewith).
4.2	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)).
4.3	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)).
4.4	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)).
4.5	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)).
4.6	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)).
4.7	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)).
4.8	Indenture, dated as of December 16, 2019, by and between Sterling Bancorp and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K filed on December 16, 2019 (File No. 001-35385)).
4.9	First Supplemental Indenture, dated as of December 16, 2019, by and between Sterling Bancorp and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 of the Company's Current Report on Form 8-K filed on December 16, 2019 (File No. 001-35385)).
4.10	Form of 4.00% Fixed-to-Floating Subordinated Notes due 2029 (attached as Exhibit A in Exhibit 4.9 hereto).
4.11	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.
10.01	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)).*

10.02	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)).*
10.03	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)).*
10.04	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)).*
10.05	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)).*
10.06	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)).*
10.07	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)).*
10.08	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)).*
10.09	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)*
10.10	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)).*
10.11	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)).*
10.12	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)).*
10.13	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)).*
10.14	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)).*
10.15	Sterling Bancorp Amended and Restated 2015 Omnibus Equity and Incentive Plan (incorporated by reference to Annex A to the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders, filed on April 17, 2019 (File No. 001-35385)).*
10.16	Form of Stock Option Award Agreement Pursuant to the Sterling Bancorp Amended and Restated 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)).*
10.17	Form of Performance Award Agreement Pursuant to the Sterling Bancorp Amended and Restated 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)).*
10.18	Form of NEO Restricted Stock Award Agreement Pursuant to the Sterling Bancorp Amended and Restated 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)).*
10.19	Form of non-NEO Restricted Stock Award Agreement Pursuant to the Sterling Bancorp Amended and Restated 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)).*
10.20	Amended and Restated Employment Agreement by and among the Company, the Bank and Jack L. Kopnisky, dated April 3, 2019 (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on April 5, 2019 (File No. 001-35385)).*
10.21	Amended and Restated Employment Agreement by and among the Company, the Bank and Luis Massiani, dated April 3, 2019 (incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed on April 5, 2019 (File No. 001-35385)).*
10.22	Amended and Restated Employment Agreement by and among the Company, the Bank and Rodney Whitwell, dated April 3, 2019 (incorporated by reference to Exhibit 10.3 of the Company's Current Report on Form 8-K filed on April 5, 2019 (File No. 001-35385)).*
10.23	Amended and Restated Employment Agreement by and among the Company, the Bank and Michael E. Finn, dated April 3, 2019 (incorporated by reference to Exhibit 10.4 of the Company's Current Report on Form 8-K filed on April 5, 2019 (File No. 001-35385)).*

10.24	Amended and Restated Employment Agreement by and among the Company, the Bank and James P. Blose, dated April 3, 2019 (incorporated by reference to Exhibit 10.5 of the Company's Current Report on Form 8-K filed on April 5, 2019 (File No. 001-35385)).*
10.25	Amended and Restated Employment Agreement by and among the Company, the Bank and Thomas Geisel, dated April 3, 2019 (incorporated by reference to Exhibit 10.6 of the Company's Quarterly Report on Form 10-Q filed on May 3, 2019 (File No. 001-35385)).*
10.26	Amended and Restated Employment Agreement by and among the Company, the Bank and Brian Edwards, dated April 3, 2019 (incorporated by reference to Exhibit 10.7 of the Company's Quarterly Report on Form 10-Q filed on May 3, 2019 (File No. 001-35385)).*
10.27	Amended and Restated Employment Agreement by and among the Company, the Bank and Javier Evans, dated April 3, 2019 (incorporated by reference to Exhibit 10.8 of the Company's Quarterly Report on Form 10-Q filed on May 3, 2019 (File No. 001-35385)).*
10.28	Supplemental Equity Award to Jack Kopnisky (incorporated by reference to Exhibit 10.21 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
10.29	Supplemental Equity Award to Luis Massiani (incorporated by reference to Exhibit 10.22 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
10.30	Supplemental Equity Award to Rodney Whitwell (incorporated by reference to Exhibit 10.24 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
10.31	Supplemental Equity Award to Michael Finn (incorporated by reference to Exhibit 10.25 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
10.32	Supplemental Equity Award to James Blose (incorporated by reference to Exhibit 10.27 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
10.33	Supplemental Equity Award to Thomas Geisel (incorporated by reference to Exhibit 10.23 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
10.34	Supplemental Equity Award to Brian Edwards (incorporated by reference to Exhibit 10.26 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
10.35	Supplemental Equity Award to Javier Evans (incorporated by reference to Exhibit 10.28 of the Company's Annual Report on Form 10-K filed on March 1, 2019 (File No. 001-35385)).*
21	Subsidiaries of Registrant (filed herewith).
23	Consent of Crowe LLP (filed herewith).
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
32	Certification Pursuant to 18 U.S.C. Section 1350, as amended by Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).
101.INS	XBRL Instance Document (filed herewith)
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: February 28, 2020

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: February 28, 2020

By: */s/ Luis Massiani*
Luis Massiani
Senior Executive Vice President
Chief Financial Officer
Principal Financial Officer
(Principal Accounting Officer)
Date: February 28, 2020

By: */s/ Richard O'Toole*
Richard O'Toole
Chairman of the Board of Directors
Date: February 28, 2020

By:	*/s/ Mona Aboelnaga Kanaan*	By:	*/s/ John P. Cahill*	By:	*/s/ Navy E. Djonovic*
	Mona Aboelnaga Kanaan		John P. Cahill		Navy E. Djonovic
	Director		Director		Director
Date:	February 28, 2020	Date:	February 28, 2020	Date:	February 28, 2020
By:	*/s/ Fernando Ferrer*	By:	*/s/ Robert S. Giambrone*	By:	*/s/ James J. Landy*
	Fernando Ferrer		Robert S. Giambrone		James J. Landy
	Director		Director		Director
Date:	February 28, 2020	Date:	February 28, 2020	Date:	February 28, 2020
By:	*/s/ Maureen B. Mitchell*	By:	*/s/ Patricia M. Nazemetz*	By:	*/s/ Ralph F. Palleschi*
	Maureen B. Mitchell		Patricia M. Nazemetz		Ralph F. Palleschi
	Director		Director		Director
Date:	February 28, 2020	Date:	February 28, 2020	Date:	February 28, 2020
By:	*/s/ Burt B. Steinberg*	By:	*/s/ William E. Whiston*		
	Burt B. Steinberg		William E. Whiston		
	Director		Director		
Date:	February 28, 2020	Date:	February 28, 2020		

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

Mona Aboelnaga Kanaan
Managing Partner
K6 Investments LLC

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

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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

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, 2019 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 505005
Louisville, KY 40233-5005

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/#Home

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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