UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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, 2020

OR

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

For the transition period from to

Commission File No. 001-07511

STATE STREET CORPORATION

(Exact name of registrant as specified in its charter)

MA	**04-2456637**
(State or other jurisdiction of incorporation)	(I.R.S. Employer Identification No.)
One Lincoln Street	
Boston, MA	**02111**
(Address of principal executive offices)	(Zip Code)

(617) 786-3000

(Registrant's telephone number, including area code)

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, $1 par value per share	STT	New York Stock Exchange
Depositary Shares, each representing a 1/4,000th ownership interest in a share of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series D, without par value per share	STT.PRD	New York Stock Exchange
Depositary Shares, each representing a 1/4,000th ownership interest in a share of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series G, without par value per share	STT.PRG	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 Section 15(d) of the Act. Yes ☐ No ☒

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See 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	☐	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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). ☐

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the per share price ($63.55) at which the common equity was last sold as of the last business day of the registrant's most recently completed second fiscal quarter (June 30, 2020) was approximately $22.34 billion.

The number of shares of the registrant's common stock outstanding as of January 29, 2021 was 351,786,357.

Portions of the following documents are incorporated by reference into Parts of this Report on Form 10-K, to the extent noted in such Parts, as indicated below:

(1) The registrant's definitive Proxy Statement for the 2021 Annual Meeting of Shareholders to be filed pursuant to Regulation 14A on or before April 30, 2021 (Part III).

STATE STREET CORPORATION
ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED
December 31, 2020

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Forward-Looking Statements

This Form 10-K, as well as other reports and proxy materials submitted by us under the Securities Exchange Act of 1934, registration statements filed by us under the Securities Act of 1933, our annual report to shareholders and other public statements we may make, may contain statements (including statements in our Management's Discussion and Analysis included in such reports, as applicable) that are considered “forward-looking statements” within the meaning of U.S. securities laws, including statements about our goals and expectations regarding our business, financial and capital condition, results of operations, strategies, cost savings and transformation initiatives, investment portfolio performance, dividend and stock purchase programs, outcomes of legal proceedings, market growth, acquisitions, joint ventures and divestitures, client growth and new technologies, services and opportunities, as well as industry, governmental, regulatory, economic and market trends, initiatives and developments, the business environment and other matters that do not relate strictly to historical facts.

Terminology such as “plan,” “expect,” “intend,” “objective,” “forecast,” “outlook,” “believe,” “priority,” “anticipate,” “estimate,” “seek,” “may,” “will,” “trend,” “target,” “strategy” and “goal,” or similar statements or variations of such terms, are intended to identify forward-looking statements, although not all forward-looking statements contain such terms.

Forward-looking statements are subject to various risks and uncertainties, which change over time, are based on management's expectations and assumptions at the time the statements are made and are not guarantees of future results. Management's expectations and assumptions, and the continued validity of the forward-looking statements, are subject to change due to a broad range of factors affecting the U.S. and global economies, regulatory environment and the equity, debt, currency and other financial markets, as well as factors specific to State Street and its subsidiaries, including State Street Bank. Factors that could cause changes in the expectations or assumptions on which forward-looking statements are based cannot be foreseen with certainty and include the factors described under the headings "Risk Factors Summary" and "Risk Factors" and elsewhere in this Form 10-K, including under "Management's Discussion and Analysis."

Actual outcomes and results may differ materially from what is expressed in our forward-looking statements and from our historical financial results due to the factors discussed in this section and elsewhere in this Form 10-K or disclosed in our other SEC filings. Forward-looking statements in this Form 10-K should not be relied on as representing our expectations or assumptions as of any time subsequent to the time this Form 10-K is filed with the SEC. We undertake no obligation to revise our forward-looking statements after the time they are made. The factors discussed herein are not intended to be a complete statement of all risks and uncertainties that may affect our businesses. We cannot anticipate all developments that may adversely affect our business or operations or our consolidated results of operations, financial condition or cash flows.

Forward-looking statements should not be viewed as predictions and should not be the primary basis on which investors evaluate State Street. Any investor in State Street should consider all risks and uncertainties disclosed in our SEC filings, including our filings under the Securities Exchange Act of 1934, in particular our annual reports on Form 10-K, our quarterly reports on Form 10-Q and our current reports on Form 8-K, or registration statements filed under the Securities Act of 1933, all of which are accessible on the SEC's website at *www.sec.gov* or on the “Investor Relations” section of our corporate website at *www.statestreet.com*.

Risk Factors Summary

The following is a summary of the material risks we are exposed to in the course of our business activities. The below summary does not contain all of the information that may be important to you, and you should read the below summary together with the more detailed discussion of risks set forth under the heading "Risk Factors," as well as elsewhere in this Form 10-K under the heading "Management's Discussion and Analysis."

Strategic Risks

- We are subject to intense competition, which could negatively affect our profitability;
- We are subject to significant pricing pressure and variability in our financial results and our AUC/A and AUM;
- Our development and completion of new products and services, including State Street Alpha, may involve costs and dependencies and expose us to increased risk;
- Our business may be negatively affected by our failure to update and maintain our technology infrastructure;
- The COVID-19 pandemic continues to create significant risks and uncertainties for our business;
- Acquisitions, strategic alliances, joint ventures and divestitures, and the integration, retention and development of the benefits of our acquisitions, pose risks for our business;
- The integration of CRD may be more difficult, costly or time consuming than expected, and the anticipated benefits and cost synergies may not be fully realized; and

- Competition for qualified members of our workforce is intense, and we may not be able to attract and retain the highly skilled people we need to support our business.

Financial Market Risks

- We could be adversely affected by geopolitical, economic and market conditions;
- We have significant International operations, and disruptions in European and Asian economies could have an adverse effect on our consolidated results of operations or financial condition;
- Our investment securities portfolio, consolidated financial condition and consolidated results of operations could be adversely affected by changes in the financial markets;
- Our business activities expose us to interest rate risk;
- We assume significant credit risk to counterparties, who may also have substantial financial dependencies with other financial institutions, and these credit exposures and concentrations could expose us to financial loss;
- Our fee revenue represents a significant portion of our consolidated revenue and is subject to decline based on, among other factors, the investment activities of our clients;
- If we are unable to effectively manage our capital and liquidity, our consolidated financial condition, capital ratios, results of operations and business prospects could be adversely affected;
- We may need to raise additional capital or debt in the future, which may not be available to us or may only be available on unfavorable terms; and
- If we experience a downgrade in our credit ratings, or an actual or perceived reduction in our financial strength, our borrowing and capital costs, liquidity and reputation could be adversely affected.

Compliance and Regulatory Risks

- Our business and capital-related activities, including common share repurchases, may be adversely affected by capital and liquidity standards required as a result of capital stress testing;
- We face extensive and changing government regulation in the jurisdictions in which we operate, which may increase our costs and compliance risks;
- We are subject to enhanced external oversight as a result of the resolution of prior regulatory or governmental matters;
- Our businesses may be adversely affected by government enforcement and litigation;
- We are subject to various legal proceedings relating to the manner in which we have invoiced certain expenses, and the outcome of which could materially adversely affect our results of operations or harm our business or reputation;
- Any misappropriation of the confidential information we possess could have an adverse impact on our business and could subject us to regulatory actions, litigation and other adverse effects;
- Our calculations of risk exposures, total RWA and capital ratios depend on data inputs, formulae, models, correlations and assumptions that are subject to change, which could materially impact our risk exposures, our total RWA and our capital ratios from period to period;
- Changes in accounting standards may adversely affect our consolidated financial statements;
- Changes in tax laws, rules or regulations, challenges to our tax positions and changes in the composition of our pre-tax earnings may increase our effective tax rate; and
- The transition away from LIBOR may result in additional costs and increased risk exposure.

Operational Risks

- Our control environment may be inadequate, fail or be circumvented, and operational risks could adversely affect our consolidated results of operations;
- Cost shifting to non-U.S. jurisdictions and outsourcing may expose us to increased operational risk and reputational harm and may not result in expected cost savings;
- If we, or the third parties with which we do business, experience failures, attacks or unauthorized access to our or their respective information technology systems or facilities, or disruptions to our continuous operations, this could result in significant costs, reputational damage and limits on our business activities;
- Long-term contracts expose us to pricing and performance risk;
- Our businesses may be negatively affected by adverse publicity or other reputational harm;
- We may not be able to protect our intellectual property;
- The quantitative models we use to manage our business may contain errors that could result in material harm;

• Our reputation and business prospects may be damaged if our clients incur substantial losses or are restricted in redeeming their interests in investment pools that we sponsor or manage;

• The impacts of climate change could adversely affect our business operations; and

• We may incur losses as a result of unforeseen events including terrorist attacks, natural disasters, the emergence of a new pandemic or acts of embezzlement.

PART I

ITEM 1. BUSINESS

GENERAL

State Street Corporation, referred to as the Parent Company, is a financial holding company organized in 1969 under the laws of the Commonwealth of Massachusetts. Our executive offices are located at One Lincoln Street, Boston, Massachusetts 02111 (telephone (617) 786-3000). For purposes of this Form 10-K, unless the context requires otherwise, references to “State Street,” “we,” “us,” “our” or similar terms mean State Street Corporation and its subsidiaries on a consolidated basis. The Parent Company is a source of financial and managerial strength to our subsidiaries. Through our subsidiaries, including our principal banking subsidiary, State Street Bank and Trust Company, referred to as State Street Bank, we provide a broad range of financial products and services to institutional investors worldwide, with $38.79 trillion of AUC/A and $3.47 trillion of AUM as of December 31, 2020.

As of December 31, 2020, we had consolidated total assets of $314.71 billion, consolidated total deposits of $239.80 billion, consolidated total shareholders' equity of $26.20 billion and over 39,000 employees. We operate in more than 100 geographic markets worldwide, including the U.S., Canada, Europe, the Middle East and Asia.

On the “Investor Relations” section of our corporate website at *www.statestreet.com*, we make available, free of charge, all reports we electronically file with, or furnish to, the SEC including our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as any amendments to those reports, as soon as reasonably practicable after those documents have been filed with, or furnished to, the SEC. These documents are also accessible on the SEC’s website at *www.sec.gov*. We have included the website addresses of State Street and the SEC in this report as inactive textual references only. Information on those websites is not incorporated by reference in this Form 10-K.

We have Corporate Governance Guidelines, as well as written charters for the Examining and Audit Committee, the Executive Committee, the Human Resources Committee, the Nominating and Corporate Governance Committee, the Risk Committee and the Technology and Operations Committee of our Board of Directors, or Board, and a Code of Ethics for senior financial officers, a Standard of Conduct for Directors and a Standard of Conduct for our employees. Each of these documents is posted on the "Investor Relations" section of our website under "Corporate Governance."

We provide additional disclosures required by applicable bank regulatory standards, including supplemental qualitative and quantitative information with respect to regulatory capital (including market risk associated with our trading activities) and the liquidity coverage ratio, summary results of State Street-run stress tests which we conduct under the Dodd-Frank Act and resolution plan disclosures required under the Dodd-Frank Act. These additional disclosures are available on the “Investor Relations” section of our website under "Filings and Reports."

We use acronyms and other defined terms for certain business terms and abbreviations, as defined on the acronyms list and glossary under Item 8 in this Form 10-K.

BUSINESS DESCRIPTION

Overview

We conduct our business primarily through State Street Bank, which traces its beginnings to the founding of the Union Bank in 1792. State Street Bank's current charter was authorized by a special Act of the Massachusetts Legislature in 1891, and its present name was adopted in 1960. State Street Bank operates as a specialized bank, referred to as a trust or custody bank, that services and manages assets on behalf of its institutional clients.

Our clients include mutual funds, collective investment funds and other investment pools, corporate and public retirement plans, insurance companies, foundations, endowments and investment managers.

LINES OF BUSINESS

We have two lines of business: Investment Servicing and Investment Management.

Investment Servicing

Our Investment Servicing line of business performs core custody and related value-added functions, such as providing institutional investors with clearing, settlement and payment services. Our financial services and products allow our large institutional investor clients to execute financial transactions on a daily basis in markets across the globe. As most institutional investors cannot economically or efficiently build their own technology and operational processes necessary to facilitate their global securities settlement needs, our role as a

global trust and custody bank is generally to aid our clients to efficiently perform services associated with the clearing, settlement and execution of securities transactions and related payments.

Our Investment Servicing products and services include: custody; product accounting; daily pricing and administration; master trust and master custody; depotbank services (a fund oversight role created by non-U.S. regulation); record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance and enhanced custody products; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; performance, risk and compliance analytics; and financial data management to support institutional investors.

Included within our Investment Servicing line of business is Charles River Systems, Inc. (CRD), which we acquired in October 2018. The Charles River Investment Management solution is a technology offering which is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. With the acquisition of CRD, we took the first step in building our front-to-back platform, State Street AlphaSM (State Street Alpha). Today, our State Street Alpha platform combines portfolio management, trading and execution, advanced data aggregation, analytics and compliance tools, and integration with other industry platforms and providers.

We provide some or all of the Investment Servicing integrated products and services to clients in the U.S. and in many other markets, including, among others, Australia, Cayman Islands, France, Germany, Hong Kong, Ireland, Italy, Japan, Luxembourg, South Korea and the U.K. As of December 31, 2020, we serviced AUC/A of approximately $28.25 trillion in the Americas, approximately $8.10 trillion in Europe and the Middle East and approximately $2.45 trillion in the Asia-Pacific region[1].

Investment Management

Our Investment Management line of business, through State Street Global Advisors, provides a broad range of investment management strategies and products for our clients. Our investment management strategies and products span the risk/reward spectrum for equity, fixed income and cash assets, including core and enhanced indexing, multi-asset strategies, active quantitative and fundamental active capabilities and alternative investment strategies. Our AUM is currently primarily weighted to indexed strategies. In addition, we provide a breadth of services and solutions, including environmental, social and governance investing, defined benefit and defined contribution and Global Fiduciary Solutions (formerly Outsourced Chief Investment Officer). State Street Global Advisors is also a provider of ETFs, including the SPDR® ETF brand. While management fees are primarily determined by the values of AUM and the investment strategies employed, management fees reflect other factors as well, including the benchmarks specified in the respective management agreements related to performance fees. As of December 31, 2020, State Street Global Advisors had AUM of approximately $3.47 trillion.

Additional information about our lines of business is provided under “Line of Business Information” included in our Management's Discussion and Analysis, and in Note 24 to the consolidated financial statements in this Form 10-K. Additional information about our non-U.S. activities is included in Note 26 to the consolidated financial statements in this Form 10-K.

COMPETITION

We operate in a highly competitive environment in all areas of our business globally. Our competitors include a broad range of financial institutions and servicing companies, including other custodial banks, deposit-taking institutions, investment management firms, insurance companies, mutual funds, broker/dealers, investment banks, benefits consultants, investment analytics businesses, business service and software companies and information services firms. As our businesses grow and markets evolve, we may encounter increasing and new forms of competition around the world.

We believe that many key factors drive competition in the markets for our business. Technological expertise, economies of scale, required levels of capital, pricing, quality and scope of services, and sales and marketing are critical to our Investment Servicing line of business. For our Investment Management line of business, key competitive factors include expertise, experience, availability of related service offerings, quality of service, price, efficiency of our products and services, and performance.

Our competitive success may depend on our ability to develop and market new and innovative services, to adopt or develop new technologies, to implement efficiencies into our operational processes, to bring new services to market in a timely fashion at competitive prices, to integrate existing and future products and services effectively into State Street Alpha, to continue to expand our relationships with existing clients, and to attract new clients.

We are a systemically important financial institution (SIFI) and are subject to extensive

[1] Geographic mix is generally based on the domicile of the entity servicing the funds and is not necessarily representative of the underlying asset mix.

regulation and supervision with respect to our operations and activities. Not all of our competitors have similarly been designated as systemically important nor are all of them subject to the same degree of regulation as a bank or financial holding company, and therefore some of our competitors may not be subject to the same limitations, requirements and standards with respect to their operations and activities. Most other financial institutions designated as systemically important have substantially greater financial resources and a broader base of operations than we do and are, consequently, in a better competitive position to manage and bear the costs of this enhanced regulatory requirement. See "Supervision and Regulation" in this Item for more information.

HUMAN RESOURCES

Our employees are a core asset and a key driver of our long-term performance. Our employees drive the company's value proposition, innovate better ways to serve our clients and act as custodians of our reputation. We seek to empower our employees by providing development and learning opportunities to keep our personnel engaged and help our teams reach their full potential, by promoting an inclusive and diverse workplace and by improving productivity and efficiency. We first measure our executives' business and technical performance, and then may further adjust their compensation, based on their risk performance and their performance against critical leadership behaviors and culture traits that align with our human capital management strategy.

In 2020, the COVID-19 pandemic had a significant impact on how we managed our human capital. Nearly all of our workforce began working remotely, reaching approximately 90% in April 2020, and we instituted safety protocols and procedures for the essential employees who returned to work on site. During this period of uncertainty for our employees, we committed in the first quarter of 2020 that no workforce reductions would occur in 2020, other than for performance or conduct reasons. Due to the net impact of hiring and attrition levels, both of which we monitor closely, our workforce at the end of 2020 was up 1% compared to 2019 at approximately 39,000 employees, 67% of whom are located outside the U.S. Moreover, approximately 90% of responding employees indicated during an all-employee survey that they were proud of the way the company is responding to the crisis.

Reflecting the key role of human capital in our business strategy, in 2020, we renamed the Board of Directors' Executive Compensation Committee as the Human Resources Committee and highlighted in its charter the Committee's oversight responsibilities for human capital management, including recruitment, retention and inclusion and diversity initiatives. We also established the Enterprise Talent Management Committee, a management-level committee, consisting of senior leaders of our organization, which oversees our global business activities. The Enterprise Talent Management Committee provides leadership, input and advisory oversight for all aspects of our global talent related initiatives that support achievement of our strategic priority to become a high-performing organization.

Our Culture and Values

Our culture and values help to define us as a company and are embodied in the following culture traits we expect of our employees:

- Choose to Own It;
- Break Through Silos;
- Deliver Results with Integrity and Speed;
- Do Better Every Day; and
- Care for Our Colleagues, Clients and Community.

We believe that an inclusive and diverse culture where all employees feel valued and engaged makes State Street a desirable place to work, helps us to attract key talent and retain employees as they grow in their careers and fosters an environment that enhances each individual's productivity and professional satisfaction.

The integrity and ethical decision-making of our employees is also paramount for our culture. We encourage employees to speak up if they see behavior that is inconsistent with our Standard of Conduct and values, and we provide multiple channels for them to do so. Our goal is to promote ethical conduct by treating minor policy breaches as learning opportunities, with major policy breaches and misconduct treated promptly, professionally, and seriously.

Compensation Philosophy

Our overall aim with respect to compensation is to reward and motivate high-performing employees and to provide competitive incentive opportunities, encouraging employees to learn and grow in their careers. Compensation is typically comprised of fixed compensation, which reflects individual skills and abilities relative to role requirements, and variable compensation, which is designed to link total compensation opportunities to organizational, business line, risk management and individual performance. Our compensation program is intended to drive our business strategy by differentiating pay based on performance against annual objectives.

Development and Learning

Professional development and employee learning are key elements of our talent retention strategy. We seek to align our learning and development programs with our long-term strategy by offering skills enhancement targeting the rapidly changing, technology-centric demands of the financial services industry to our workforce. We also provide

targeted professional development opportunities and new roles for key talent, which we believe helps to deepen our employees' skillsets and provides them with a broader perspective on the organization. To help leverage our internal talent, we launched an internal talent marketplace during 2020. The talent marketplace is an innovative way for employees to access new roles, skills, and opportunities, and for managers to recruit internal talent. By broadening every employee's access to roles and by showing managers the full breadth of talent at State Street, our goal is to provide better pathways to long-term success for all employees.

Inclusion and Diversity

While inclusion and diversity have long been a focus for our company, we are working to accelerate progress against our racial/ethnic diversity goals and build more equity through all of our talent processes and within our communities via "10 Actions Against Racism and Inequality," which we announced in July 2020. These concrete actions are intended to address racial and social injustice by improving inclusion and diversity within our own organization and advocating for the same in our industry. While we have taken many steps to address inequality and racism in our organization, in our communities, and through our asset stewardship program, we have more work to do. This includes our plan to increase the representation, development, and advancement of Black and Latinx employees and working with our Board of Directors to add Black and Latinx directors by 2022. More details on the "10 Actions" are available on our website.

At the end of 2020, our global workforce was 54.5% male and 45.2% female, and women represented 30.1% of our leadership (defined as senior vice president level and above). In the U.S., 30% of our workforce self-identified as employees of color. We also publish our demographic data in our EEO-1 report, which is included in our Corporate Responsibility Report (renamed as our 'Environmental, Social and Governance Report' for 2020), and can be found in the Values section of our website.

Organizational Effectiveness

Driving improvements in both individual and organizational productivity is a key ongoing focus of our overall human capital management strategy. We seek to enhance the value each employee is able to contribute by investing in new technologies, designing more effective organizational structures, improving processes and operating models, optimizing our global footprint, and aligning incentives to outcomes. We believe that improving the productivity of our workforce will yield more engaged and higher performing employees and better products and services for our clients.

Additional Information

Additional information on our human capital management strategy, including detailed demographic data, will be contained in our 2020 Environmental, Social and Governance Report, which we expect to make available on our website by April 30, 2021.

SUPERVISION AND REGULATION

We are registered with the Federal Reserve as a bank holding company pursuant to the Bank Holding Company Act of 1956. The Bank Holding Company Act generally limits the activities in which bank holding companies and their non-banking subsidiaries may engage to managing or controlling banks and to a range of activities that are considered to be closely related to banking. Bank holding companies that have elected to be treated as financial holding companies, such as the Parent Company, may engage in a broader range of activities considered to be "financial in nature." The regulatory limits on our activities also apply to non-banking entities that we are deemed to "control" for purposes of the Bank Holding Company Act, which may include companies of which we own or control 5% or more of a class of voting shares. The Federal Reserve may order a bank holding company to terminate any activity, or its ownership or control of a non-banking subsidiary, if the Federal Reserve finds that the activity, ownership or control constitutes a serious risk to the financial safety, soundness or stability of a banking subsidiary or is inconsistent with sound banking principles or statutory purposes. The Bank Holding Company Act also requires a bank holding company to obtain prior approval of the Federal Reserve before it acquires substantially all the assets of any bank, or ownership or control of more than 5% of the voting shares of any bank.

The Parent Company has elected to be treated as a financial holding company and, as such, may engage in a broader range of non-banking activities than permitted for bank holding companies and their subsidiaries that have not elected to become financial holding companies. Financial holding companies may engage directly or indirectly, either de novo or by acquisition, in activities that are defined by the Federal Reserve to be financial in nature, provided that the financial holding company gives the Federal Reserve after-the-fact notice of the new activities. Activities defined to be financial in nature include, but are not limited to: providing financial or investment advice; underwriting; dealing in or making markets in securities; making merchant banking investments, subject to significant limitations; and any activities previously found by the Federal Reserve to be closely related to banking. In order to maintain our status as a financial holding company, we and each of our U.S. depository institution subsidiaries are expected to be well capitalized and well managed, as defined in applicable regulations and determined in part by the

results of regulatory examinations, and must comply with Community Reinvestment Act obligations. Failure to maintain these standards may result in restrictions on our activities and may ultimately permit the Federal Reserve to take enforcement actions against us and restrict our ability to engage in activities defined to be financial in nature. Currently, under the Bank Holding Company Act, we may not be able to engage in new activities or acquire shares or control of other businesses.

In response to the 2008 financial crisis, as well as other factors, such as technological and market changes, both the scope of the laws and regulations and the intensity of the supervision to which our business is subject has increased. Regulatory enforcement and fines have also increased across the banking and financial services sector. Many of these changes have occurred as a result of the Dodd-Frank Act and its implementing regulations, most of which are now in place. Subsequently, in May 2018, the Economic Growth, Regulatory Relief and Consumer Protection Act (EGRRCPA) was enacted. The EGRRCPA's revisions to the U.S. financial regulatory framework have altered certain laws and regulations applicable to us and other major financial services firms. Irrespective of any regulatory change, we expect that our business will remain subject to extensive regulation and supervision.

In addition, increased regulatory requirements and initiatives have been and are being implemented internationally with respect to financial institutions, including the implementation of the Basel III rule (refer to "Regulatory Capital Adequacy and Liquidity Standards" in this "Supervision and Regulation" section and under "Capital" in "Financial Condition" in our Management's Discussion and Analysis in this Form 10-K for a discussion of Basel III), the European Commission's Investment Firm Review and Central Securities Depositories Regulation, as well as upcoming proposals for a review of the Alternative Investment Fund Managers Directive and proposals under the Capital Markets Union Action Plan.

Many aspects of our business are subject to regulation by other U.S. federal and state governmental and regulatory agencies and self-regulatory organizations (including securities exchanges), and by non-U.S. governmental and regulatory agencies and self-regulatory organizations. Some aspects of our public disclosure, corporate governance principles and internal control systems are subject to the Sarbanes-Oxley Act of 2002 (SOX), the Dodd-Frank Act and regulations and rules of the SEC and the New York Stock Exchange.

Regulatory Capital Adequacy and Liquidity Standards

Basel III Rule

We, as an advanced approaches banking organization, are subject to the Basel III framework in the U.S. The provisions of the Basel III rule related to minimum capital requirements, regulatory capital buffers and deductions and adjustments to regulatory capital were fully implemented as of January 1, 2019. We are also subject to the market risk capital rule jointly issued by U.S. banking regulators to implement the changes to the market risk capital framework in the U.S.

As required by the Dodd-Frank Act, we, as an advanced approaches banking organization, are subject to a "capital floor," also referred to as the Collins Amendment, in the assessment of our regulatory capital adequacy, including the capital conservation buffer and countercyclical capital buffer described below in this "Supervision and Regulation" section. Our risk-based capital ratios for regulatory assessment purposes are the lower of each ratio calculated under the standardized approach and the advanced approaches.

Risk Weighted Assets

The Basel III rule provides for two frameworks for the calculation of RWA for purposes of bank regulatory compliance: the "standardized" approach and the "advanced" approaches, which are applicable to advanced approaches banking organizations, like us.

The standardized approach prescribes standardized risk weights for certain on- and off-balance sheet exposures in the calculation of RWA. The advanced approaches consist of the Advanced Internal Ratings-Based Approach (AIRB) used for the calculation of RWA related to credit risk and the Advanced Measurement Approach (AMA) used for the calculation of RWA related to operational risk.

In November 2019, the Federal Reserve and the other U.S. federal banking agencies (U.S. Agencies) issued a final rule that, among other things, implements the standardized approach for counterparty credit risk (SA-CCR), a new methodology for calculating the exposure amount for derivative contracts. Under the final rule, which becomes effective on January 1, 2022, we will have the option to use the SA-CCR or the Internal Model Methodology (IMM) to measure the exposure amount of our cleared and uncleared derivative transactions under our advanced approaches calculation. We will be required to determine the amount of these exposures using the SA-CCR under our standardized approach capital calculation. Due to the nature of our trading activities, the impact of the final rule may have a greater proportional impact on our RWA than on some of our G-SIB peers. In addition, under the final rule we will be required to use a simplified formula to determine the RWA amount of our central counterparty default fund contributions.

Minimum Risk-Based Capital Requirements

Among other things, the Basel III rule (as amended) requires:

- a minimum CET1 risk-based capital ratio of 4.5% and a minimum SLR of 3% for advanced approaches banking organizations;
- a minimum Tier 1 risk-based capital ratio of 6%;
- a minimum total capital ratio of 8%; and
- the stress capital and countercyclical capital buffers, referenced below, as well as a G-SIB surcharge and the enhanced SLR (which acts as an SLR buffer) described in "Capital" in "Financial Condition" in our Management's Discussion and Analysis in this Form 10-K.

Under the Basel III rule, our total regulatory capital is composed of three tiers: CET1 capital, Tier 1 capital (which includes CET1 capital), and Tier 2 capital. The total of Tier 1 and Tier 2 capital, adjusted as applicable, is referred to as total regulatory capital.

CET1 capital is composed of core capital elements, such as qualifying common shareholders' equity and related surplus plus retained earnings and the cumulative effect of foreign currency translation plus net unrealized gains (losses) on debt and equity securities classified as AFS, less treasury stock and less goodwill and other intangible assets, net of related deferred tax liabilities. Tier 1 capital is composed of CET1 capital plus additional Tier 1 capital instruments which, for us, includes four series of preferred equity outstanding as of December 31, 2020. Tier 2 capital includes certain eligible subordinated long-term debt instruments. Total regulatory capital consists of Tier 1 capital and Tier 2 capital.

Certain other items, if applicable, must be deducted from Tier 1 and Tier 2 capital, including certain investments in the capital of unconsolidated banking, financial and insurance entities and the amount of expected credit losses that exceeds recorded allowances for loan and other credit losses. Expected credit losses are calculated for wholesale credit exposures by formula in conformity with the Basel III rule.

G-SIB Surcharge

The eight U.S. bank holding companies deemed to be G-SIBs, including us, are required to calculate the G-SIB surcharge annually according to two methods, and be bound by the higher of the two:

- Method 1: Assesses systemic importance based upon five equally-weighted components: size, interconnectedness, complexity, cross-jurisdictional activity and substitutability; or
- Method 2: Alters the calculation from Method 1 by factoring in a short-term wholesale funding score in place of substitutability and applying a 2x multiplier to the sum of the five components.

Method 2 is the binding methodology for us as of December 31, 2020, and our applicable surcharge for 2021 was calculated to be 1.0% based on a calculation date of December 31, 2019.

Stress Capital Buffer

On March 4, 2020, the U.S. Agencies issued the Stress Capital Buffer (SCB) final rule that replaces, under the standardized approach, the capital conservation buffer (2.5%) with an SCB calculated as the difference between the institution's starting and lowest projected CET1 ratio under the CCAR severely adverse scenario plus planned common stock dividend payments (as a percentage of RWA) from the fourth through seventh quarter of the CCAR planning horizon. The SCB requirement, which became effective October 1, 2020, can be no less than 2.5% of RWA. On June 25, 2020, we were notified by the Federal Reserve of our preliminary SCB at the minimum of 2.5% for the period of October 1, 2020 through September 30, 2021, which was later finalized on August 10, 2020. For additional information about the SCB final rule, refer to "Capital Planning, Stress Tests and Dividends" in this "Supervision and Regulation" section.

Under the SCB final rule, a banking organization would be able to make capital distributions (subject to other regulatory constraints, such as regulatory review of its capital plans) and discretionary bonus payments without specified limitations, as long as it maintains the required capital conservation buffer of 2.5% plus the applicable G-SIB surcharge (plus any potentially applicable countercyclical capital buffer) over the minimum required risk-based capital ratios and leverage based requirements. From time to time, under certain economic conditions, banking regulators may establish a minimum countercyclical capital buffer up to a maximum of 2.5% of total RWA. The countercyclical capital buffer was initially set by banking regulators at zero, and has not been increased since its inception.

Assuming a countercyclical buffer of 0%, the minimum capital ratios as of January 1, 2021, including a capital conservation buffer and an SCB of 2.5% for advanced and standardized approaches, respectively, and a G-SIB surcharge of 1.0%, are 8.0% for CET1 capital, 9.5% for Tier 1 risk-based capital and 11.5% for total risk-based capital, in order for us to make capital distributions and discretionary bonus payments without limitation.

Leverage Ratios

We are subject to a minimum Tier 1 leverage ratio and a supplementary leverage ratio. The Tier 1 leverage ratio is based on Tier 1 capital and adjusted quarterly average on-balance sheet assets. The Tier 1 leverage ratio differs from the SLR primarily in that the denominator of the Tier 1 leverage ratio is a quarterly average of on-balance sheet assets, while the SLR additionally includes off-balance sheet exposures. We must maintain a minimum Tier 1 leverage ratio of 4%.

We are also subject to a minimum SLR of 3%, and as a U.S. G-SIB, we must maintain a 2% SLR buffer in order to avoid any limitations on distributions to shareholders and discretionary bonus payments to certain executives. If we do not maintain this buffer, limitations on these distributions and discretionary bonus payments would be increasingly stringent based upon the extent of the shortfall.

In November 2019, pursuant to the EGRRCPA, the U.S. Agencies adopted a final rule that establishes a deduction for central bank deposits from a custodial banking organization's total leverage exposure for purpose of calculating the SLR and which is not applicable to total leverage exposure under the calculation of Tier 1 leverage. This deduction is equal to the lesser of (i) the total amount of funds the custodial banking organization and its consolidated subsidiaries have on deposit at qualifying central banks and (ii) the total amount of client funds on deposit at the custodial banking organization that are linked to fiduciary or custodial and safekeeping accounts. The rule became effective on April 1, 2020. For the quarter ended December 31, 2020, we excluded $76.7 billion of average balances held on deposit at central banks from the denominator used in the calculation of our SLR based on this custodial banking exclusion. The TLAC and LTD that State Street is required to hold under SLR-based requirements reflect the exclusion of certain central bank balances as a consequence of the rule.

In addition, on May 15, 2020, the U.S. banking regulators issued an interim final rule temporarily permitting, until March 31, 2021, banking organizations to exclude U.S. Treasury securities and deposits at Federal Reserve Banks from the calculation of the SLR denominator. While we already receive the benefit of excluding central bank deposits pursuant to the final rule implementing the EGRRCPA, we have further excluded U.S. Treasury securities, in the amount of $13.60 billion of average balances pursuant to this temporary relief. See "Subsidiaries" in this section for further discussion of the impact of the final rule on State Street Bank.

The SA-CCR final rule adopted in November 2019, which becomes effective on January 1, 2022, also requires us to incorporate the SA-CCR into the calculation of our total leverage exposure for the purpose of calculating SLR.

On April 11, 2018, the Federal Reserve proposed modifications to the SLR that would replace the current 2% SLR buffer applicable to us with an SLR buffer equal to 50% of our applicable G-SIB capital surcharge. The Federal Reserve has not finalized these proposed modifications.

Selected Recent Regulatory Developments Summary

Final Rule Issued	Final Rule Effective Date	Description
March 2020	October 1, 2020	The U.S. Agencies issued the SCB final rule that replaced, under the standardized approach, the capital conservation buffer of 2.5% with an SCB calculated as the difference between the institution's starting and lowest projected CET1 ratio under the CCAR severely adverse scenario plus planned common stock dividend payments (as a percentage of RWA) from the fourth through seventh quarter of the CCAR planning horizon. The SCB requirement can be no less than 2.5% of RWA. For additional information about the SCB final rule, refer to "Stress Capital Buffer" and "Capital Planning, Stress Tests and Dividends" in this "Supervision and Regulation" section.
September 2020	December 28, 2020	Following the launch of the MMLF program, which we participate in, the Federal Reserve issued an interim final rule on March 19, 2020 (followed by a final rule on September 29, 2020), allowing Bank Holding Companies (BHCs) to exclude assets purchased through the MMLF program from their RWA, total leverage exposure and average total consolidated assets. For the quarter ended December 31, 2020, we deducted $4.2 billion of MMLF program average HTM securities.
August 2020	January 1, 2021	In March 2020, the U.S. Agencies issued an interim final rule (followed by a final rule in August 2020) that revised the definition of eligible retained income for all U.S. banking organizations, including us. The revised definition of eligible retained income makes any automatic limitations on capital distributions that could apply to us under the federal banking agencies' capital or TLAC rules take effect on a more gradual basis in the event that a banking organization's capital, leverage or TLAC ratios were to decline below regulatory requirements, including applicable regulatory capital buffers.
October 2020	April 1, 2021	The U.S. Agencies issued a final rule that will require us and State Street Bank to make certain deductions from regulatory capital for investments in certain unsecured debt instruments, including eligible LTD under the TLAC rule, issued by us and other U.S. and foreign G-SIBs.
October 2020	July 1, 2021	In October 2020, the U.S. Agencies issued a final rule implementing the Basel Committee on Banking Supervision's (BCBS) NSFR in the United States, which will apply to us and State Street Bank. The final rule requires large banking organizations to maintain an amount of available stable funding, which is a weighted measure of a company's funding sources over a one-year time horizon, calculated by applying standardized weightings to the company's equity and liabilities based on their expected stability, that is no less than the amount of required stable funding, which is calculated by applying standardized weightings to assets, derivatives exposures and certain other items based on their liquidity characteristics.
November 2019	January 1, 2022	The U.S. Agencies issued a final rule that, among other things, implements the standardized approach for counterparty credit risk (SA-CCR), a new methodology for calculating the exposure amount for derivative contracts under the U.S. regulatory capital rules. Under the final rule, we will have the option to use the SA-CCR or the Internal Model Methodology (IMM) to measure the exposure amount of our cleared and uncleared derivative transactions under our advanced approaches calculation. We will be required to determine the amount of these exposures using the SA-CCR under our standardized approach capital calculation. Due to the nature of our trading activities, the impact of the final rule may have a greater proportional impact on our RWA than on some of our G-SIB peers. In addition, under the final rule we will be required to use a simplified formula to determine the RWA amount of our central counterparty default fund contributions. The final rule also requires us to incorporate the SA-CCR into the calculation of our total leverage exposure for the purpose of calculating SLR.

As a systemically important financial institution, we are subject to enhanced supervision and prudential standards. Our status as a G-SIB has also resulted in heightened prudential and conduct expectations of our U.S. and international regulators with respect to our capital and liquidity management and our compliance and risk oversight programs. These heightened expectations have increased our regulatory compliance costs, including personnel, technology and systems, as well as significant additional implementation and related costs to enhance our regulatory compliance programs. Regulatory compliance requirements are anticipated to remain at least at the elevated levels we have experienced over the past several years.

Failure to meet current and future regulatory capital requirements could subject us to a variety of enforcement actions, including the termination of State Street Bank's deposit insurance by the FDIC, and to certain restrictions on our business, including those that are described above in this “Supervision and Regulation” section.

Not all of our competitors have similarly been designated as systemically important nor are all of them subject to the same degree of regulation as a bank or financial holding company, and therefore some of our competitors may not be subject to the same additional capital requirements.

For additional information about our regulatory capital position and our regulatory capital adequacy, as well as current and future regulatory capital requirements, refer to "Capital" in “Financial Condition" in our Management's Discussion and Analysis, and Note 16 to the consolidated financial statements in this Form 10-K.

Total Loss-Absorbing Capacity

In 2016, the Federal Reserve released its final rule on TLAC, LTD and clean holding company requirements for U.S. domiciled G-SIBs, such as us. The requirements are intended to improve the resiliency and resolvability of certain U.S. banking organizations through enhanced prudential standards. The TLAC rule imposes: (1) external TLAC requirements (i.e., combined eligible Tier 1 regulatory capital and LTD); (2) separate external LTD requirements; and (3) clean holding company requirements that impose restrictions on certain types of liabilities and limit non-TLAC related third party liabilities to 5% of external TLAC.

Among other things, the TLAC rule required us to comply with minimum requirements for external TLAC and external LTD effective January 1, 2019. Specifically, as of January 2021, we must hold

(1) combined eligible Tier 1 regulatory capital and LTD in the amount equal to the greater of 21.5% of total RWA (18.0% minimum plus a 2.5% capital conservation buffer plus a G-SIB surcharge calculated for these purposes under Method 1 of 1.0% plus any applicable counter-cyclical buffer, which is currently 0%) and 9.5% of total leverage exposure (7.5% minimum plus the enhanced SLR buffer of 2.0%), as defined by the SLR rule; and

(2) qualifying external LTD equal to the greater of 7.0% of RWA (6.0% minimum plus a G-SIB surcharge calculated for these purposes under method 2 of 1.0%) and 4.5% of total leverage exposure, as defined by the SLR rule.

Liquidity Coverage Ratio and Net Stable Funding Ratio

In addition to capital standards, the Basel III framework introduced two quantitative liquidity standards: the LCR and the NSFR.

We are subject to the rule issued by the U.S. Agencies implementing the BCBS LCR in the U.S. The LCR is intended to promote the short-term resilience of internationally active banking organizations, like us, to improve the banking industry's ability to absorb shocks arising from market stress over a 30 calendar day period and improve the measurement and management of liquidity risk.

The LCR measures an institution’s HQLA against its net cash outflows under a prescribed stress environment. We report LCR to the Federal Reserve daily and are required to calculate and maintain an LCR that is equal to or greater than 100%. In addition, we publicly disclose certain qualitative and quantitative information about our LCR consistent with the requirements of the Federal Reserve's final rule.

Compliance with the LCR has required that we maintain an investment portfolio that contains an adequate amount of HQLA. In general, HQLA investments generate a lower investment return than other types of investments, resulting in a negative impact on our NII and our NIM. In addition, the level of HQLA we are required to maintain under the LCR is dependent upon our client relationships and the nature of services we provide, which may change over time. Deposits resulting from certain services provided (“operational deposits”) are treated as more resilient during periods of stress than other deposits. As a result, if balances of operational deposits increased relative to our total client deposit base, we would expect to require less HQLA in order to maintain our LCR. Conversely, if balances of operational deposits decreased relative to our total client deposit base, we would expect to require more HQLA. On May 5, 2020, the U.S. banking agencies issued a rule that modifies the LCR rule to neutralize the impact on LCR of the advances made by the

MMLF (and Paycheck Protection Liquidity Facility) and the exposures securing such advances.

In October 2020, the U.S. Agencies issued a final rule implementing the BCBS's NSFR in the United States. The final rule requires large banking organizations to maintain an amount of available stable funding, which is a weighted measure of a company's funding sources over a one-year time horizon, calculated by applying standardized weightings to the company's equity and liabilities based on their expected stability, that is no less than the amount of required stable funding, which is calculated by applying standardized weightings to assets, derivatives exposures and certain other items based on their liquidity characteristics. As a U.S. G-SIB, we will be required to maintain an NSFR that is equal to or greater than 100%. The final rule will become effective as of July 1, 2021. The final rule will also require us to publicly disclose our quarterly NSFR on a semiannual basis beginning in 2023.

Capital Planning, Stress Tests and Dividends

Pursuant to the Dodd-Frank Act, the Federal Reserve has adopted capital planning and stress test requirements for large bank holding companies, including us, which form part of the Federal Reserve's annual CCAR framework. The Federal Reserve conducts its own stress tests of our business operations using supervisory models, the results of which it uses to calibrate our annual SCB, subject to a minimum of 2.5%. In addition, under the Federal Reserve's capital plan rule, we must conduct periodic stress testing of our business operations and submit an annual capital plan to the Federal Reserve, taking into account the results of separate stress tests designed by us and by the Federal Reserve. The Federal Reserve conducts a qualitative assessment of our capital plan as part of the CCAR process to evaluate the strength of our capital planning practices, including our ability to identify, measure, and determine the appropriate amount of capital for our risks, and controls and governance supporting capital planning.

On March 4, 2020, the Federal Reserve issued a final rule to integrate its annual capital planning and stress testing requirements with certain ongoing regulatory capital requirements. The final rule, which applies to certain bank holding companies, including us, introduced an SCB and related changes to the capital planning and stress testing processes. The SCB became effective on October 1, 2020.

In the standardized approach, the SCB replaced the capital conservation buffer of 2.5%. The standardized approach SCB equals the greater of (i) 2.5%; and (ii) the maximum decline in our CET1 capital ratio under the severely adverse scenario over the supervisory stress test measurement period, plus the ratio of (a) the sum of the dollar amount of our planned common stock dividends for the fourth through seventh quarters of the supervisory stress test projection period to (b) our projected RWA for the quarter in which our projected CET1 capital ratio reaches its minimum in the supervisory stress test. Regulatory capital requirements under the standardized approach include the SCB, as summarized above, as well as our G-SIB capital surcharge and any applicable countercyclical capital buffer.

The final rule made related changes to capital planning and stress testing processes for bank holding companies subject to the SCB requirement. In particular, the final rule assumes that bank holding companies maintain a constant level of assets and RWA throughout the supervisory stress test projection period. In addition, under the final rule the supervisory stress test no longer assumes that bank holding companies make all nine quarters of planned capital distributions under stress, although the SCB incorporates the dollar amount of four quarters of planned common stock dividends, as described above.

The final rule did not change regulatory capital requirements under the advanced approaches, the Tier 1 leverage ratio or the SLR.

On June 25, 2020, we were notified by the Federal Reserve of the results from the 2020 DFAST stress test, including our preliminary SCB of 2.5%. On August 10, 2020, the Federal Reserve announced that our final SCB effective October 1, 2020 is 2.5%, resulting in no change to our existing regulatory capital requirements.

Although the final SCB rule changed the effect of the CCAR process so that the SCB applied to our baseline capital measures, rather than CCAR, is the source of our stress-based capital requirements, we continue to be subject to capital plan requirements and the CCAR process. Under the capital planning and CCAR requirements, our annual capital plan must include a description of all of our planned capital actions over a nine-quarter planning horizon, including any capital qualifying instruments, any capital distributions, such as payments of dividends on, or repurchases of, our stock, and any similar action that the Federal Reserve determines could affect our consolidated capital. The capital plan must include a discussion of how we will maintain capital above the minimum regulatory capital ratios, including the minimum ratios under the Basel III rule, and serve as a source of strength to State Street Bank under supervisory stress scenarios. Changes in our strategy, merger or acquisition activity or unanticipated uses of capital could result in a change in our capital plan and its associated capital actions, including capital raises or modifications to planned capital actions, such as repurchases of our stock, and may require resubmission of the capital plan to the Federal Reserve if, among other reasons, we would not meet our regulatory capital requirements after making the proposed capital distribution.

In addition to its capital planning requirements, the Federal Reserve has the authority to prohibit or to limit the payment of dividends, the repurchase of common stock, or other capital actions that reduce capital by the banking organizations it supervises, including the Parent Company and State Street Bank, if, in the Federal Reserve's opinion, the capital action would constitute an unsafe or unsound practice in light of the financial condition of the banking organization. All of these policies and other requirements could affect our ability to pay dividends and repurchase our stock or require us to provide capital assistance to State Street Bank and any other banking subsidiary. Our common stock and other stock dividends, including the declaration, timing and amount thereof, remain subject to consideration and approval by our Board of Directors at the relevant times.

In connection with our 2019 capital plan, our Board approved a common stock purchase program authorizing the purchase of up to $2.0 billion of our common stock from July 1, 2019 through June 30, 2020 (the 2019 Program). We repurchased a total of $1.0 billion of our common stock in the third and fourth quarters of 2019 under the 2019 Program and a total of $500 million of our common stock in the first quarter of 2020 under the 2019 Program. On March 16, 2020, we, along with the other U.S. G-SIBs, suspended common share repurchases and maintained this suspension through the fourth quarter of 2020 in response to the COVID-19 pandemic. This suspension was consistent with limitations imposed by the Federal Reserve beginning in the second quarter of 2020.

On June 25, 2020, the Federal Reserve announced distribution limitations for CCAR banking organizations, including us, during the third quarter of 2020. On September 30, 2020, the Federal Reserve announced that it would extend the limitations for the fourth quarter of 2020. The limitations prohibited us from making any capital distribution (excluding any capital distribution arising from the issuance of a capital instrument eligible for inclusion in the numerator of a regulatory capital ratio), unless otherwise approved by the Federal Reserve. During the third and fourth quarters of 2020, CCAR banking organizations were, however, authorized to make share repurchases relating to issuances of common stock related to employee stock ownership plans; provided that the organization did not increase the amount of its common stock dividends, to pay common stock dividends that did not exceed an amount equal to the average of the organization's net income for the four preceding calendar quarters, unless otherwise specified by the Federal Reserve; and to make scheduled payments on additional Tier 1 and Tier 2 capital instruments.

Due to the economic challenges created by the COVID-19 pandemic, the Federal Reserve required all participating CCAR banks to resubmit their capital plans under updated scenarios that were released by the Federal Reserve on September 17, 2020.

We resubmitted our 2020 Capital Plan and received results from the Federal Reserve on December 18, 2020. In addition to providing results, the Federal Reserve also announced modifications to the applicable distribution limitations for CCAR banking organizations, including us, that would be in effect for the first quarter of 2021. The modified limitations continue to prohibit any capital distribution (excluding any capital distribution arising from the issuance of a capital instrument eligible for inclusion in the numerator of a regulatory capital ratio), unless otherwise approved by the Federal Reserve. During the first quarter of 2021, CCAR banking organizations that are U.S. bank holding companies, including us, are, however, authorized to:

- pay common stock dividends and make share repurchases that, in the aggregate, do not exceed an amount equal to the average of the organization's net income for the four preceding calendar quarters, provided that the organization does not increase the amount of its common stock dividends to be larger than the level paid in the second quarter of 2020;
- make share repurchases that equal the amount of share issuances related to expensed employee compensation; and
- redeem and make scheduled payments on additional Tier 1 and Tier 2 capital instruments.

The modified restrictions allow us to resume common share repurchases in the first quarter of 2021, and in January 2021 our Board approved a first quarter 2021 repurchase program for the purchase of up to $475 million of our common stock through March 31, 2021.

When permitted, stock purchases may be made using various types of mechanisms, including open market purchases, accelerated share repurchases or transactions off market, and may be made under Rule 10b5-1 trading programs. The timing of stock purchases, types of transactions and number of shares purchased will depend on several factors, including market conditions and State Street's capital positions, financial performance and investment opportunities. Our common stock purchase programs do not have specific price targets and may be suspended at any time. We may employ third-party broker/dealers to acquire shares on the open market in connection with our common stock purchase programs. The common stock purchase program does not have specific price targets and may be suspended at any time.

The Federal Reserve, under the Dodd-Frank Act, previously required us to conduct semi-annual State Street-run stress tests and to publicly disclose the summary results of our State Street-run stress

tests under the severely adverse economic scenario. We are also required to undergo an annual supervisory stress test conducted by the Federal Reserve. The EGRRCPA modifies certain aspects of these stress-testing requirements, reducing the number of scenarios in the Federal Reserve's supervisory stress test from three to two and modifying our obligation to perform company-run stress-tests from semi-annually to annually. The Federal Reserve adopted a final rule in October 2019 that, among other things, implemented this modification.

The Volcker Rule

We are subject to the Volcker Rule and implementing regulations. The Volcker Rule prohibits banking entities, including us and our affiliates, from engaging in certain prohibited proprietary trading activities, as defined in the Volcker Rule regulations, subject to exemptions for market-making related activities, risk-mitigating hedging, underwriting and certain other activities. The Volcker Rule also requires banking entities to either restructure or divest certain ownership interests in, and relationships with, covered funds (as such terms are defined in the Volcker Rule regulations).

The Volcker Rule regulations require banking entities to establish extensive programs designed to promote compliance with the restrictions of the Volcker Rule. We have established a compliance program which we believe complies with the Volcker Rule regulations as currently in effect. Our compliance program restricts our ability in the future to service certain types of funds, in particular covered funds for which State Street Global Advisors acts as an advisor and certain types of trustee relationships. Consequently, Volcker Rule compliance entails both the cost of a compliance program and loss of certain revenue and future opportunities.

In October 2019, the Federal Reserve and the other federal financial regulatory agencies responsible for the Volcker Rule regulations adopted an interagency final rule that revised certain elements of those regulations. The changes focused on proprietary trading, including the metrics reporting requirements and certain requirements imposed in connection with permitted market making, underwriting and risk-mitigating hedging activities, including market-making in and underwriting of covered funds. These revisions became effective on January 1, 2020, with compliance required by January 1, 2021. The agencies responsible for the Volcker Rule regulations adopted a separate interagency final rule in June 2020 focused on the covered funds provisions which generally prohibit any banking entity from acquiring or retaining an ownership interest in, sponsoring, or having certain relationships with, a hedge fund or private equity fund. These revisions became effective on October 1, 2020. These revisions do not have a material impact on us.

Enhanced Prudential Standards

The Dodd-Frank Act, as amended by the EGRRCPA, establishes a systemic risk regime to which large bank holding companies with $100 billion or more in consolidated assets, such as us, are subject. The Federal Reserve is required to tailor the application of the enhanced prudential standards to bank holding companies based on their size, complexity, risk profile and other factors. U.S. G-SIBs, such as us, are expected to remain subject to the most stringent requirements, including heightened capital, leverage, liquidity and risk management requirements and single-counterparty credit limits (SCCL).

The FSOC can recommend prudential standards, reporting and disclosure requirements for SIFIs to the Federal Reserve, and must approve any finding by the Federal Reserve that a financial institution poses a grave threat to financial stability and must undertake mitigating actions. The FSOC is also empowered to designate systemically important payment, clearing and settlement activities of financial institutions, subjecting them to prudential supervision and regulation, and, assisted by the Office of Financial Research within the U.S. Department of the Treasury, can gather data and reports from financial institutions, including us.

Under the Federal Reserve's enhanced prudential standards regulation under the Dodd-Frank Act, as amended by the EGRRCPA, we are required to comply with various liquidity-related risk management standards and maintain a liquidity buffer of unencumbered highly liquid assets based on the results of internal liquidity stress testing. This liquidity buffer is in addition to other liquidity requirements, such as the LCR and, when effective, the NSFR. The regulations also establish requirements and responsibilities for our risk committee and mandate risk management standards.

On June 14, 2018, the Federal Reserve finalized rules that established SCCL for large banking organizations. U.S. G-SIBs, including us, are subject to a limit of 15% of Tier 1 capital for aggregate net credit exposures to any "major counterparty" (defined to include other U.S. G-SIBs, foreign G-SIBs and non-bank systemically important financial institutions supervised by the Federal Reserve). In addition, we are subject to a limit of 25% of Tier 1 capital for aggregate net credit exposures to any other unaffiliated counterparty. The final SCCL rules became effective for us on January 1, 2020.

The Federal Reserve has established a rule that imposes contractual requirements on certain "qualified financial contracts" to which U.S. G-SIBs, including us, and their subsidiaries are parties. Under

the rule, certain qualified financial contracts generally must expressly provide that transfer restrictions and default rights against a U.S. G-SIB, or subsidiary of a U.S. G-SIB, are limited to the same extent as they would be under the Federal Deposit Insurance Act and Title II of the Dodd-Frank Act and their implementing regulations. In addition, certain qualified financial contracts may not, among other things, permit the exercise of any cross-default right against a U.S. G-SIB or subsidiary of a U.S. G-SIB based on an affiliate's entry into insolvency, resolution or similar proceedings, subject to certain creditor protections. There is a phased-in compliance schedule based on counterparty type, and the first compliance date was January 1, 2019.

The systemic-risk regime also provides that for U.S. G-SIBs deemed to pose a grave threat to U.S. financial stability, the Federal Reserve, upon an FSOC vote, must limit that institution's ability to merge, restrict its ability to offer financial products, require it to terminate activities, impose conditions on activities or, as a last resort, require it to dispose of assets. Upon a grave threat determination by the FSOC, the Federal Reserve must issue rules that require financial institutions subject to the systemic-risk regime to maintain a debt-to-equity ratio of no more than 15 to 1 if the FSOC considers it necessary to mitigate the risk of the grave threat. The Federal Reserve also has the ability to establish further standards, including those regarding contingent capital, enhanced public disclosures and limits on short-term debt, including off-balance sheet exposures.

Recovery and Resolution Planning

We are required to periodically submit a plan for rapid and orderly resolution in the event of material financial distress or failure, commonly referred to as a resolution plan or a living will, to the Federal Reserve and the FDIC under Section 165(d) of the Dodd-Frank Act. Through resolution planning, we seek, in the event of our insolvency, to maintain State Street Bank's role as a key infrastructure provider within the financial system, while minimizing risk to the financial system and maximizing value for the benefit of our stakeholders. We have and will continue to focus management attention and resources to meet regulatory expectations with respect to resolution planning.

We submitted our updated 2019 165(d) resolution plan describing our preferred resolution strategy to the Federal Reserve and FDIC (the Agencies) before July 1, 2019, and our resolution strategy is materially consistent with our prior resolution strategy. In reviewing the 2019 plan, the Agencies noted meaningful improvements over prior plan submissions. The Agencies did not identify any deficiencies in the 2019 plan, but did identify one shortcoming related to the implementation of governance mechanisms. We submitted to the Agencies our plan to remediate this shortcoming in line with the expected timeframe. In addition to the above letter, the Federal Reserve and FDIC jointly issued a final rule that was published in the Federal Register on November 1, 2019. This final rule revised the implementation requirements under the Dodd- Frank Act's resolution planning provisions by means of establishing a biennial filing cycle for the U.S. G-SIBs, including State Street. This cycle alternates between a targeted resolution plan, followed two years later by a full resolution plan. The Agencies have published the scope for the upcoming targeted resolution plan to include the core elements of resolution planning and some specific firm level information, including impacts from the COVID-19 pandemic. The next resolution plan is due on July 1, 2021.

In the event of material financial distress or failure, our preferred resolution strategy is the SPOE Strategy. The SPOE Strategy provides that prior to the bankruptcy of the Parent Company and pursuant to a support agreement among the Parent Company, SSIF (a direct subsidiary of the Parent Company), our Beneficiary Entities (as defined below) and certain of our other entities, SSIF is obligated, up to its available resources, to recapitalize and/or provide liquidity to State Street Bank and the other entities benefiting from such capital and/or liquidity support (collectively with State Street Bank, "Beneficiary Entities"), in amounts designed to prevent the Beneficiary Entities from themselves entering into resolution proceedings. Following the recapitalization of, or provision of liquidity to the Beneficiary Entities, the Parent Company would enter into a bankruptcy proceeding under the U.S. Bankruptcy Code. The Beneficiary Entities and our other subsidiaries would be transferred to a newly organized holding company held by a reorganization trust for the benefit of the Parent Company's claimants.

Under the support agreement, the Parent Company pre-funded SSIF by contributing certain of its assets (primarily its liquid assets, cash deposits, investments in intercompany debt, investments in marketable securities and other cash and non-cash equivalent investments) to SSIF at the time it entered into the support agreement and will continue to contribute such assets, to the extent available, on an ongoing basis. In consideration for these contributions, SSIF has agreed in the support agreement to provide capital and liquidity support to the Parent Company and all of the Beneficiary Entities in accordance with the Parent Company's capital and liquidity policies. Under the support agreement, the Parent Company is only permitted to retain cash needed to meet its upcoming obligations and to fund expected expenses during a potential bankruptcy proceeding. SSIF has provided the Parent

Company with a committed credit line and issued (and may issue) one or more promissory notes to the Parent Company (the "Parent Company Funding Notes") that together are intended to allow the Parent Company to continue to meet its obligations throughout the period prior to the occurrence of a "Recapitalization Event" (as defined below). The support agreement does not obligate SSIF to maintain any specific level of resources and SSIF may not have sufficient resources to implement the SPOE Strategy.

In the event a Recapitalization Event occurs, the obligations outstanding under the Parent Company Funding Notes would automatically convert into or be exchanged for capital contributed to SSIF. The obligations of the Parent Company and SSIF under the support agreement are secured through a security agreement that grants a lien on the assets that the Parent Company and SSIF would use to fulfill their obligations under the support agreement to the Beneficiary Entities. SSIF is a distinct legal entity separate from the Parent Company and the Parent Company's other affiliates.

In accordance with our policies, we are required to monitor, on an ongoing basis, the capital and liquidity needs of State Street Bank and our other Beneficiary Entities. To support this process, we have established a trigger framework that identifies key actions that would need to be taken or decisions that would need to be made if certain events tied to our financial condition occur. In the event that we experience material financial distress, the support agreement requires us to model and calculate certain capital and liquidity triggers on a regular basis to determine whether or not the Parent Company should commence preparations for a bankruptcy filing and whether or not a Recapitalization Event has occurred.

Upon the occurrence of a Recapitalization Event: (1) SSIF would not be authorized to provide any further liquidity to the Parent Company; (2) the Parent Company would be required to contribute to SSIF any remaining assets it is required to contribute to SSIF under the support agreement (which specifically exclude amounts designated to fund expected expenses during a potential bankruptcy proceeding); (3) SSIF would be required to provide capital and liquidity support to the Beneficiary Entities to support such entities' continued operation to the extent of its available resources and consistent with the support agreement; and (4) the Parent Company would be expected to commence Chapter 11 proceedings under the U.S. Bankruptcy Code. No person or entity, other than a party to the support agreement, should rely on any of our affiliates being or remaining a Beneficiary Entity or receiving capital or liquidity support pursuant to the support agreement, including in evaluating any of our entities from a creditor's perspective or determining whether to enter into a contractual relationship with any of our entities.

A "Recapitalization Event" is defined under the support agreement as the earlier occurrence of: (1) one or more capital and liquidity thresholds being breached or (2) the authorization by the Parent Company's Board of Directors for the Parent Company to commence bankruptcy proceedings. The thresholds are set at levels intended to provide for the availability of sufficient capital and liquidity to enable an orderly resolution without extraordinary government support. The SPOE Strategy and the obligations under the support agreement may result in the recapitalization of State Street Bank and the commencement of bankruptcy proceedings by the Parent Company at an earlier stage of financial stress than might otherwise occur without such mechanisms in place. An expected effect of the SPOE Strategy and applicable TLAC regulatory requirements is that our losses will be imposed on the Parent Company shareholders and the holders of long-term debt and other forms of TLAC securities currently outstanding or issued in the future by the Parent Company, as well as on any other Parent Company creditors, before any of our losses are imposed on the holders of the debt securities of the Parent Company's operating subsidiaries or any of their depositors or creditors, or before U.S. taxpayers are put at risk.

State Street Bank is also required to submit periodically to the FDIC a plan for resolution in the event of its failure, referred to as an Insured Depository Institution plan. In November 2018, the FDIC announced that until the FDIC completed revisions to its IDI plan requirements, no IDI plans would be required to be filed. In January 2021, the FDIC lifted the moratorium on IDI plan filings for IDIs with $100 billion or more in assets, including State Street Bank. In lifting the moratorium, the FDIC stated that it will provide at least 12 months' advance notice prior to requiring submission of an institution's next IDI plan.

Additionally, we are required to submit a recovery plan for State Street to the Federal Reserve. This plan includes detailed governance triggers and contingency actions that can be implemented in a timely manner in the event of extreme financial distress in those entities.

Orderly Liquidation Authority

Under the Dodd-Frank Act, certain financial companies, including bank holding companies such as the Parent Company, and certain covered subsidiaries, can be subjected to the orderly liquidation authority which went into effect in 2010. For the FDIC to be appointed as our receiver, two-thirds of the FDIC Board and two-thirds of the Federal Reserve Board must recommend appointment, and the U.S. Treasury Secretary, in consultation with the U.S. President, must then make certain extraordinary

financial distress and systemic risk determinations. Absent such actions, we, as a bank holding company, would remain subject to the U.S. Bankruptcy Code.

The orderly liquidation authority went into effect in 2010, and rulemaking is proceeding incrementally, with some regulations now finalized and others planned but not yet proposed. If the FDIC were appointed as the receiver of the Parent Company pursuant to the orderly liquidation authority, the FDIC would have considerable powers to resolve the Parent Company, including: (1) the power to remove officers and directors responsible for the Parent Company's failure and to appoint new directors and officers; (2) the power to assign assets and liabilities to a third party or bridge financial company without the need for creditor consent or prior court review; (3) the ability to differentiate among similarly situated creditors, subject to a minimum recovery right to receive at least what they would have received in bankruptcy liquidation; and (4) broad powers to administer the claims process to determine distributions from the assets of the receivership to creditors not transferred to a third party or bridge financial institution.

In 2013, the FDIC released its proposed SPOE strategy for resolution of a SIFI under the orderly liquidation authority. The FDIC's release outlines how it would use its powers under the orderly liquidation authority to resolve a SIFI by placing its top-tier U.S. holding company in receivership and keeping its operating subsidiaries open and out of insolvency proceedings by transferring the operating subsidiaries to a new bridge holding company, recapitalizing the operating subsidiaries and imposing losses on the shareholders and creditors of the holding company in receivership according to their statutory order of priority.

Derivatives

Title VII of the Dodd-Frank Act imposed a comprehensive regulatory structure on the OTC derivatives market, including requirements for clearing, exchange trading, capital, margin, reporting and record-keeping. Title VII also requires certain persons to register as a major swap participant, a swap dealer or a securities-based swap dealer. The CFTC, the SEC, and other U.S. regulators have largely implemented key provisions of Title VII, although certain final regulations have only been in place a short period of time and others have not been finalized. Through this rulemaking process, these regulators collectively have adopted or proposed, among other things, regulations relating to reporting and record-keeping obligations, margin and capital requirements, the scope of registration and the central clearing and exchange trading requirements for certain OTC derivatives. The CFTC has also issued rules to enhance the oversight of clearing and trading entities. The CFTC, along with other regulators, including the Federal Reserve, have also issued rules with respect to margin requirements for uncleared derivatives transactions.

State Street Bank has registered provisionally with the CFTC as a swap dealer. As a provisionally registered swap dealer, State Street Bank is subject to significant regulatory obligations regarding its swap activity and the supervision, examination and enforcement powers of the CFTC and other regulators. The CFTC has granted State Street Bank a limited-purpose swap dealer designation. Under this limited-purpose designation, interest rate swap activity engaged in by State Street Bank's Global Treasury group is not subject to certain of the swap regulatory requirements otherwise applicable to swaps entered into by a registered swap dealer, subject to a number of conditions. For all other swap transactions, our swap activities remain subject to all applicable swap dealer regulations.

Subsidiaries

The Federal Reserve is the primary federal banking agency responsible for regulating us and our subsidiaries, including State Street Bank, with respect to both our U.S. and non-U.S. operations. Our banking subsidiaries are subject to supervision and examination by various regulatory authorities and have regulatory requirements that may differ from State Street Corporation.

State Street Bank

State Street Bank is a member of the Federal Reserve System, its deposits are insured by the FDIC and it is subject to applicable federal and state banking laws and to supervision and examination by the Federal Reserve, as well as by the Massachusetts Commissioner of Banks, the FDIC, and the regulatory authorities of those states and countries in which State Street Bank operates a branch.

As with the Parent Company, State Street Bank is considered an advanced approaches banking organization subject to the Basel III framework in the U.S. and is also subject to the market risk capital rule jointly issued by U.S. Agencies to implement the changes to the market risk capital framework in the U.S. As required by the Dodd-Frank Act, State Street Bank, as an advanced approaches banking organization, is subject to a "capital floor," also referred to as the Collins Amendment, in the assessment of its regulatory capital adequacy, including the capital conservation buffer and countercyclical capital buffer described above in this "Supervision and Regulation" section.

Under the Basel III rule, State Street Bank's regulatory capital calculations, including any additions or deductions from capital for regulatory purposes, are consistent with the calculations of the Parent Company.

Similar to our Parent Company, State Street Bank is subject to the Tier 1 leverage ratio and the supplementary leverage ratio. However, as State Street Bank is the insured depository institution subsidiary of one of the eight US G-SIBs, it is required to maintain a minimum Tier 1 leverage ratio of 5% and a minimum SLR of 6% to be considered well-capitalized.

Furthermore, for the purposes of calculating the SLR ratio, State Street Bank is similarly subject to a final rule adopted by the U.S. Agencies that establishes a deduction for central bank deposits from a custodial banking organization's total leverage exposure. For the quarter ended December 31, 2020, State Street Bank excluded $76.7 billion of average balances held on deposit at central banks from the denominator used in the calculation of our SLR based on this custodial banking exclusion. In addition, State Street Bank is temporarily permitted, until March 31, 2021, to elect to exclude U.S. Treasury securities from the calculation of the SLR denominator, provided that, in order to make such an election, it must request regulatory approval before making capital distributions, including paying dividends to its parent company, as long as the exclusion is in effect. State Street Bank elected not to take this temporary exclusion and accordingly did not exclude U.S. Treasury securities from the calculation of the SLR denominator.

Pursuant to the BCBS NSFR final rule, as a subsidiary of a U.S. G-SIB, State Street Bank will be similarly required to maintain an NSFR that is equal to or greater than 100%.

We and our subsidiaries that are not subsidiaries of State Street Bank are affiliates of State Street Bank under federal banking laws, which impose restrictions on various types of transactions, including loans, extensions of credit, investments or asset purchases by or from State Street Bank, on the one hand, to us and those of our subsidiaries, on the other. Transactions of this kind between State Street Bank and its affiliates generally are limited with respect to each affiliate to 10% of State Street Bank's capital and surplus, as defined by the aforementioned banking laws, are limited in the aggregate for all affiliates to 20% of State Street Bank's capital and surplus, and in some cases are also subject to strict collateral requirements. Derivatives, securities borrowing and securities lending transactions between State Street Bank and its affiliates became subject to these restrictions pursuant to the Dodd-Frank Act. The Dodd-Frank Act also expanded the scope of transactions required to be collateralized. In addition, the Volcker Rule generally prohibits similar transactions between the Parent Company or any of its affiliates and covered funds for which we or any of our affiliates serve as the investment manager, investment adviser, commodity trading advisor or sponsor and other covered funds organized and offered pursuant to specific exemptions in the Volcker Rule regulations.

Federal law also requires that certain transactions by a bank with affiliates be on terms and under circumstances, including credit standards, that are substantially the same, or at least as favorable to the bank, as those prevailing at the time for comparable transactions involving other non-affiliated companies. Alternatively, in the absence of comparable transactions, the transactions must be on terms and under circumstances, including credit standards, that in good faith would be offered to, or would apply to, non-affiliated companies.

State Street Bank is also prohibited from engaging in certain tie-in arrangements in connection with any extension of credit or lease or sale of property or furnishing of services. Federal law provides for a depositor preference on amounts realized from the liquidation or other resolution of any depository institution insured by the FDIC.

Other Subsidiaries

Our other subsidiary trust companies are subject to supervision and examination by the OCC, the Federal Reserve or by the appropriate state banking regulatory authorities of the states in which they are organized and operate. Our non-U.S. banking subsidiaries are subject to regulation by the regulatory authorities of the countries in which they operate.

Our subsidiaries, State Street Global Advisors FM and State Street Global Advisors Ltd., act as investment advisers to investment companies registered under the Investment Company Act of 1940. State Street Global Advisors FM, incorporated in Massachusetts in 2001 and headquartered in Boston, Massachusetts, is registered with the SEC as an investment adviser under the Investment Advisers Act of 1940 and is registered with the CFTC as a commodity trading adviser and pool operator. State Street Global Advisors Ltd., incorporated in 1990 as a U.K. limited company and domiciled in the U.K., is also registered with the SEC as an investment adviser under the Investment Advisers Act of 1940. State Street Global Advisors Ltd. is also authorized and regulated by the United Kingdom Financial Conduct Authority (U.K. FCA) and is an investment firm under the Markets in Financial Instruments Directive. Our subsidiary, State Street Global Advisors Asia Limited, a Hong Kong incorporated company, is registered as an investment adviser with the SEC and additionally is licensed by the Securities and Futures Commission of Hong Kong to perform a variety of activities, including asset management. State Street Global Advisors Asia Limited also holds permits as a qualified foreign institutional Investor (QFII) and a renminbi qualified foreign institutional investor (RQFII), approved by the Securities Regulatory Commission in the People's Republic of

China, and in Korea is registered with the Financial Services Commission as a cross-border investment advisory company and a cross-border discretionary investment management company. In addition, a major portion of our investment management activities are conducted by State Street Global Advisors Trust Company, which is a subsidiary of State Street Bank and a Massachusetts chartered limited purpose trust company subject to the supervision of the Massachusetts Commissioner of Banks and the Federal Reserve with respect to these activities.

Many aspects of our investment management activities are subject to federal and state laws and regulations primarily intended to benefit the investment holder, rather than our shareholders. These laws and regulations generally grant supervisory agencies and bodies broad administrative powers, including the power to limit or restrict us from conducting our investment management activities in the event that we fail to comply with such laws and regulations, and examination authority. Our business related to investment management and trusteeship of collective trust funds and separate accounts offered to employee benefit plans is subject to the Employee Retirement Income Security Act (ERISA), and is regulated by the U.S. DOL.

We have three subsidiaries that operate as a U.S. broker/dealer and are registered as such with the SEC, are subject to regulation by the SEC (including the SEC's net capital rule) and are members of the Financial Industry Regulatory Authority, a self-regulatory organization. State Street Global Advisors Funds Distributors, LLC operates as a limited purpose broker/dealer that provides distributing and related marketing activities for U.S. mutual funds and ETFs associated with State Street Global Advisors. State Street Global Advisors Funds Distributors, LLC also may privately offer certain State Street Global Advisors advised funds. State Street Global Markets, LLC is a U.S. broker/dealer that provides agency execution services. We also acquired Charles River Brokerage, LLC, a U.S. broker/dealer, as part of our acquisition of CRD. In addition, we have a subsidiary, SwapEX, LLC, registered with the CFTC in the U.S. as a swap execution facility.

Our businesses, including our investment management and securities businesses, are also regulated extensively by non-U.S. governments, securities exchanges, self-regulatory organizations, central banks and regulatory bodies, especially in those jurisdictions in which we maintain an office. For instance, among others, the U.K. FCA and the United Kingdom Prudential Regulation Authority regulate our activities in the U.K.; the Central Bank of Ireland regulates our activities in Ireland; the German Federal Financial Supervisory Authority regulates our activities in Germany; the Commission de Surveillance du Secteur Financier regulates our activities in Luxembourg; our German banking group is also subject to direct supervision by the European Central Bank under the ECB Single Supervisory Mechanism; the Securities and Futures Commission regulates our asset management activities in Hong Kong; the Australian Prudential Regulation Authority and the Australian Securities and Investments Commission regulate our activities in Australia; and the Financial Services Agency and the Bank of Japan regulate our activities in Japan. We have established policies, procedures and systems designed to comply with the requirements of these organizations. However, as a global financial services institution, we face complexity, costs and risks related to regulation.

The majority of our non-U.S. asset servicing operations are conducted pursuant to the Federal Reserve's Regulation K through State Street Bank’s Edge Act subsidiary or through international branches of State Street Bank. An Edge Act corporation is a corporation organized under federal law that conducts foreign business activities. In general, banks may not make investments in their Edge Act corporations (and similar state law corporations) that exceed 20% of their capital and surplus, as defined in the relevant banking regulations, and the investment of any amount in excess of 10% of capital and surplus requires the prior approval of the Federal Reserve.

In addition to our non-U.S. operations conducted pursuant to Regulation K, we also make new investments abroad directly (through us or through our non-banking subsidiaries) pursuant to the Federal Reserve's Regulation Y, or through international bank branch expansion, neither of which is subject to the investment limitations applicable to Edge Act subsidiaries.

Additionally, Massachusetts has its own bank holding company statute, under which we, among other things, may be required to obtain prior approval by the Massachusetts Board of Bank Incorporation for an acquisition of more than 5% of any additional bank's voting shares, or for other forms of bank acquisitions.

Anti-Money Laundering and Financial Transparency

We and certain of our subsidiaries are subject to the Bank Secrecy Act of 1970, as amended by the USA PATRIOT Act of 2001, and related regulations, which contain AML and financial transparency provisions and which require implementation of an AML compliance program, including processes for verifying client identification and monitoring client transactions and detecting and reporting suspicious activities. AML laws outside the U.S. contain similar requirements. We have implemented policies, procedures and internal controls that are designed to

promote compliance with applicable AML laws and regulations. AML laws and regulations applicable to our operations may be more stringent than similar requirements applicable to our non-regulated competitors or financial institutions principally operating in other jurisdictions. Compliance with applicable AML and related requirements is a common area of review for financial regulators, and any failure by us to comply with these requirements could result in fines, penalties, lawsuits, regulatory sanctions, difficulties in obtaining governmental approvals, restrictions on our business activities or harm to our reputation.

Deposit Insurance

The Dodd-Frank Act made permanent the general $250,000 deposit insurance limit for insured deposits. The FDIC's Deposit Insurance Fund (DIF) is funded by assessments on FDIC-insured depository institutions. The FDIC assesses DIF premiums based on an insured depository institution's average consolidated total assets, less the average tangible equity of the insured depository institution during the assessment period. For larger institutions, such as State Street Bank, assessments are determined based on regulatory ratings and forward-looking financial measures to calculate the assessment rate, which is subject to adjustments by the FDIC, and the assessment base.

The FDIC is required to determine whether and to what extent adjustments to the assessment base are appropriate for "custody banks" that satisfy specified institutional eligibility criteria. The FDIC has concluded that certain liquid assets could be excluded from the deposit insurance assessment base of custody banks. This has the effect of reducing the amount of DIF insurance premiums due from custody banks. State Street Bank qualifies as a custody bank for this purpose. The custody bank assessment adjustment may not exceed total transaction account deposits identified by the institution as being directly linked to a fiduciary or custody and safekeeping asset.

Prompt Corrective Action

The FDIC Improvement Act of 1991 requires the appropriate federal banking regulator to take "prompt corrective action" with respect to a depository institution if that institution does not meet certain capital adequacy standards, including minimum capital ratios. While these regulations apply only to banks, such as State Street Bank, the Federal Reserve is authorized to take appropriate action against a parent bank holding company, such as our Parent Company, based on the under-capitalized status of any banking subsidiary. In certain instances, we would be required to guarantee the performance of a capital restoration plan if one of our banking subsidiaries were undercapitalized.

Support of Subsidiary Banks

Under Federal Reserve regulations, a bank holding company such as our Parent Company is required to act as a source of financial and managerial strength to its banking subsidiaries. This requirement was added to the Federal Deposit Insurance Act by the Dodd-Frank Act. This means that we have a statutory obligation to commit resources to State Street Bank and any other banking subsidiary in circumstances in which we otherwise might not do so absent such a requirement. In the event of bankruptcy, any commitment by us to a federal bank regulatory agency to maintain the capital of a banking subsidiary will be assumed by the bankruptcy trustee and will be entitled to a priority payment.

Insolvency of an Insured U.S. Subsidiary Depository Institution

If the FDIC is appointed the conservator or receiver of an FDIC-insured U.S. subsidiary depository institution, such as State Street Bank, upon its insolvency or certain other events, the FDIC has the ability to transfer any of the depository institution's assets and liabilities to a new obligor without the approval of the depository institution's creditors, enforce the terms of the depository institution's contracts pursuant to their terms or repudiate or disaffirm contracts or leases to which the depository institution is a party. Additionally, the claims of holders of deposit liabilities and certain claims for administrative expenses against an insured depository institution would be afforded priority over other general unsecured claims against such an institution, including claims of debt holders of the institution and, under current interpretation, depositors in non-U.S. branches and offices, in the liquidation or other resolution of such an institution by any receiver. As a result, such persons would be treated differently from and could receive, if anything, substantially less than the depositors in U.S. offices of the depository institution.

Cyber Risk Management

In October 2016, the Federal Reserve, FDIC and OCC issued an advance notice of proposed rulemaking regarding enhanced cyber risk management standards, which would apply to a wide range of large financial institutions and their third-party service providers, including us and our banking subsidiaries. The proposed standards would expand existing cyber-security regulations and guidance to focus on cyber risk governance and management; management of internal and external dependencies; and incident response, cyber resilience and situational awareness. In addition, the proposal contemplates more stringent standards for institutions with systems that are critical to the financial sector. Although the FDIC and OCC in 2019 each withdrew

the advance notice of proposed rulemaking, the Federal Reserve has not withdrawn the advance notice and may still propose such a rule.

Further discussion of cyber-security risk management is provided in "Information Technology Risk Management" included in our Management's Discussion and Analysis in this Form 10-K.

ECONOMIC CONDITIONS AND GOVERNMENT POLICIES

Economic policies of the U.S. government and its agencies influence our operating environment. Monetary policy conducted by the Federal Reserve directly affects the level of interest rates, which may affect overall credit conditions of the economy. Monetary policy is applied by the Federal Reserve through open market operations in U.S. government securities, changes in reserve requirements for depository institutions, and changes in the discount rate and availability of borrowing from the Federal Reserve. Government regulation of banks and bank holding companies is intended primarily for the protection of depositors of the banks, rather than for the shareholders of the institutions and therefore may, in some cases, be adverse to the interests of those shareholders. We are similarly affected by the economic policies of non-U.S. government agencies, such as the ECB.

STATISTICAL DISCLOSURE BY BANK HOLDING COMPANIES

The following information included under Items 6, 7 and 8 in this Form 10-K, is incorporated by reference herein:

“Selected Financial Data” table (Item 6) - presents return on average common equity, return on average assets, common dividend payout and equity-to-assets ratios.

“Distribution of Average Assets, Liabilities and Shareholders’ Equity; Interest Rates and Interest Differential” table (Item 8) - presents consolidated average balance sheet amounts, related fully taxable-equivalent interest earned and paid, related average yields and rates paid and changes in fully taxable-equivalent interest income and interest expense for each major category of interest-earning assets and interest-bearing liabilities.

“Investment Securities” section included in our Management's Discussion and Analysis (Item 7) and Note 3, “Investment Securities,” to the consolidated financial statements (Item 8) - disclose information regarding book values, market values, maturities and weighted-average yields of securities (by category).

“Loans and Leases” section included in our Management’s Discussion and Analysis (Item 7) and Note 4, “Loans,” to the consolidated financial statements (Item 8) - disclose our policy for placing loans and leases on non-accrual status and distribution of loans, loan maturities and sensitivities of loans to changes in interest rates.

“Loans and Leases” and “Cross-Border Outstandings” sections of Management’s Discussion and Analysis (Item 7) - disclose information regarding our cross-border outstandings and other loan concentrations.

“Credit Risk Management” section included in Management’s Discussion and Analysis (Item 7) and Note 4, “Loans,” to the consolidated financial statements (Item 8) - present the allocation of the allowance for credit losses, and a description of factors which influenced management’s judgment in determining amounts of additions or reductions to the allowance, if any, charged or credited to results of operations.

“Distribution of Average Assets, Liabilities and Shareholders’ Equity; Interest Rates and Interest Differential” table (Item 8) - discloses deposit information.

Note 8, “Short-Term Borrowings,” to the consolidated financial statements (Item 8) - discloses information regarding our short-term borrowings.

ITEM 1A. RISK FACTORS

Risk Factors

In the normal course of our business activities, we are exposed to a variety of risks. The following is a discussion of material risk factors applicable to us. Additional information about our risk management framework is included under “Risk Management” in Management’s Discussion and Analysis in this Form 10-K. Additional risks beyond those described in our Management's Discussion and Analysis or in the following discussion may apply to our activities or operations as currently conducted, or as we may conduct them in the future, or in the markets in which we operate or may in the future operate.

Strategic Risks

We are subject to intense competition in all aspects of our business, which could negatively affect our ability to maintain or increase our profitability.

The markets in which we operate across all facets of our business are both highly competitive and global. These markets are changing as a result of new and evolving laws and regulations applicable to financial services institutions. Regulatory-driven market changes cannot always be anticipated, and may adversely affect the demand for, and profitability of, the products and services that we offer. In addition, new market entrants and competitors may address changes in the markets more rapidly than we do, may have materially greater resources to invest in infrastructure and product development than we do, or may provide clients with a more attractive offering of products and services, adversely affecting our

business. Our efforts to develop and market new products, particularly in the "Fintech" sector, may position us in new markets with pre-existing competitors with strong market position. We have also experienced, and anticipate that we will continue to experience, significant pricing pressure in many of our core businesses, particularly our custodial and investment management services. This pricing pressure has and may continue to impact our revenue growth and operational margins and may limit the positive impact of new client demand and growth in AUC/A. Many of our businesses compete with other domestic and international banks and financial services companies, such as custody banks, investment advisors, broker/dealers, outsourcing companies and data processing companies. Further consolidation within the financial services industry could also pose challenges to us in the markets we serve, including potentially increased downward pricing pressure across our businesses.

Some of our competitors including our competitors in core services, have substantially greater capital resources than we do, are not subject to as stringent capital or other regulatory requirements as we are, or may not be as constrained as we are by these requirements due to the relative size of our balance sheet. In some of our businesses, we are service providers to significant competitors. These competitors are in some instances significant clients, and the retention of these clients involves additional risks, such as the avoidance of actual or perceived conflicts of interest and the maintenance of high levels of service quality and intra-company confidentiality. The ability of a competitor to offer comparable or improved products or services at a lower price would likely negatively affect our ability to maintain or increase our profitability. Many of our core services are subject to contracts that have relatively short terms or may be terminated by our client after a short notice period. In addition, pricing pressures as a result of the activities of competitors, client pricing reviews, and rebids, as well as the introduction of new products, may result in a reduction in the prices we can charge for our products and services.

We are subject to variability in our assets under custody and/or administration and assets under management, and in our financial results, due to the significant size of many of our institutional clients, and are also subject to significant pricing pressure due to the considerable market influence exerted by those clients.

Our clients include institutional investors, such as mutual funds, collective investment funds, UCITS, hedge funds and other investment pools, corporate and public retirement plans, insurance companies, foundations, endowments and investment managers. In both our asset servicing and asset management businesses, we endeavor to attract institutional investors controlling large and diverse pools of assets, as those clients typically have the opportunity to benefit from the full range of our expertise and service offerings. Due to the large pools of assets controlled by these clients, the loss or gain of one client, or even a portion of the assets controlled by one client, could have a significant effect on our AUC/A or our AUM, as applicable, in the relevant period. Loss of all or a portion of the servicing of a client's assets can occur for a variety of reasons. For example, as a result of a decision to diversify providers, one of our large asset servicing clients has advised us it expects to move a significant portion of its ETF assets currently with State Street to one or more other providers, pending necessary approvals. The transition is expected to begin in 2022 but will principally occur in 2023. For the year ended December 31, 2020, the fee revenue associated with the transitioning assets represented approximately 1.5% of our total fee revenue. Our AUM or AUC/A are also affected by decisions by institutional owners to favor or disfavor certain investment instruments or categories. Similarly, if one or more clients change the asset class in which a significant portion of assets are invested (e.g., by shifting investments from emerging markets to the U.S.), those changes could have a significant effect on our results of operations in the relevant period, as our fee rates often change based on the type of asset classes we are servicing or managing. As our fee revenue is significantly impacted by our levels of AUC/A and AUM, changes in levels of different asset classes could have a corresponding significant effect on our results of operations in the relevant period. Large institutional clients also, by their nature, are often able to exert considerable market influence, and this, combined with strong competitive forces in the markets for our services, has resulted in, and may continue to result in, significant pressure to reduce the fees we charge for our services in both our asset servicing and asset management lines of business. Our strategy of focusing our efforts on the segments of the market for investor services represented by very large asset managers and asset owners causes us to be particularly impacted by this industry trend. Many of these large clients are also under competitive and regulatory pressures that are driving them to manage the expenses that they and their investment products incur more aggressively, which in turn exacerbates their pressures on our fees.

Development and completion of new products and services, including State Street Alpha, may impose costs on us, involve dependencies on third parties and may expose us to increased operational and model risk.

Our financial performance depends, in part, on our ability to develop and market new and innovative services and to adopt or develop new technologies that differentiate our products or provide cost efficiencies, while avoiding increased related

expenses. This dependency is exacerbated in the current “FinTech” environment, where financial institutions are investing significantly in evaluating new technologies, such as distributed ledger technology (“Blockchain"), and developing potentially industry-changing products, services and standards. For example, in 2018, we acquired CRD, and are leveraging the capabilities acquired to create State Street Alpha by combining with offerings from our Investment Servicing business line. The introduction of new products and services can require significant time and resources, including regulatory approvals and the development and implementation of technical data management, control and model validation requirements and effective security and resiliency elements. New products and services, such as State Street Alpha, often also involve dependencies on third parties to, among other things, access innovative technologies, develop new distribution channels or form collaborative product and service offerings, and can require complex strategic alliances and joint venture relationships. Substantial risks and uncertainties are associated with the introduction of new products and services, strategic alliances and joint ventures, including rapid technological change in the industry, our ability to access technical, data and other information from our clients, significant and ongoing investments required to bring new products and services to market in a timely manner at competitive prices, sharing of benefits in those relationships, conflicts with existing business partners and clients, protection of intellectual property, the competition for employees with the necessary expertise and experience and sales and other materials that fully and accurately describe the product or service and its underlying risks and are compliant with applicable regulations. New products or services may fail to operate or perform as expected and may not be suitable for the intended client or may not produce anticipated efficiencies, savings or benefits for either the client or us. Our failure to manage these risks and uncertainties also exposes us to enhanced risk of operational lapses, which may result in the recognition of financial statement liabilities. Regulatory and internal control requirements, capital requirements, competitive alternatives, vendor relationships and shifting market preferences may also determine if such initiatives can be brought to market in a manner that is timely and attractive to our clients. Failure to successfully manage all of the above risks in the development and implementation of new products or services, including completion of State Street Alpha, could have a material adverse effect on our business and reputation, consolidated results of operations or financial condition.

Our business may be negatively affected by our failure to update and maintain our technology infrastructure.

In order to maintain and grow our business, we must make strategic decisions about our current and future business plans and effectively execute upon those plans. Strategic initiatives that we are currently developing or executing against include cost initiatives, enhancements and efficiencies to our operational processes, improvements to existing and new service offerings, targeting for sales growth certain segments of the markets for investor services and asset management, and enhancements to existing and development of new information technology and other systems. Implementing strategic programs and creating cost efficiencies involves certain strategic, technological and operational risks. Many features of our present initiatives include investment in systems integration and new technologies and also the development of new, and the evolution of existing, methods and tools to accelerate the pace of innovation, the introduction of new services and enhancements to the resiliency of our systems and operations. These initiatives also may result in increased or unanticipated costs or earnings volatility, may take longer than anticipated to implement and may result in increases in operating losses, inadvertent data disclosures or other operating errors. In implementing these programs, we may have material dependencies on third parties. The transition to new operating processes and technology infrastructure may also cause disruptions in our relationships with clients and employees or loss of institutional understanding and may present other unanticipated technical or operational hurdles. In addition, the relocation to or expansion of servicing activities and other operations in different geographic regions or vendors may entail client, regulatory and other third party data use, storage and security challenges, as well as other regulatory compliance, business continuity and other considerations. As a result, we may not achieve some or all of the anticipated cost savings or other benefits and may experience unanticipated challenges from clients, regulators or other parties or reputational harm. In addition, some systems development initiatives may not have access to significant resources or management attention and, consequently, may be delayed or unsuccessful. Many of our systems require enhancements to meet the requirements of evolving regulation, to enhance security and resiliency and decommission obsolete technologies, to permit us to optimize our use of capital or to reduce the risk of operating error. In addition, the implementation of our State Street Alpha platform and integration of CRD requires substantial systems development and expense. We may not have the

resources to pursue all of these objectives simultaneously.

The COVID-19 Pandemic Continues to Create Significant Risks and Uncertainties for Our Business.

The extent to which the COVID-19 pandemic continues to impact our business, results of operations, and financial condition, as well as our regulatory capital and liquidity ratios and other regulatory requirements in the United States and internationally, will depend on future developments, which are highly uncertain and cannot be predicted, including the scope and duration of the pandemic, the effectiveness of our work from home arrangements and staffing levels in operational facilities, challenges associated with our return to office plans such as maintaining a safe office environment and integrating at-home and in-office staff, the impact of market participants on which we rely, actions taken by governmental authorities and other third parties in response to the pandemic and the impact of equity market valuations and extended sales and implementation cycles for some clients on our service and management fee revenue.

The COVID-19 pandemic has negatively impacted the global economy, caused fluctuations in equity market valuations, at times decreased liquidity in fixed income markets, created significant volatility and disruption in financial markets, increased unemployment levels and disrupted global supply chains. This has created, at peak periods of volatility, extraordinary demand on our transaction processing capabilities in our asset servicing business and volatility in our foreign exchange and asset management businesses. The market and economic uncertainty has also increased the risks inherent in our activities as a credit provider to investment pools and other institutional investors and caused us to increase our provision for credit losses. In addition, our and other market participants' reliance upon work from home capabilities, and the potential inability to maintain critical staff in our operational facilities, including facilities in the United States, the United Kingdom, Germany, China, India and Poland, present risks associated with our and local infrastructure, increasingly restrictive local regulations, illness, quarantine, the sustainability of a work from home environment and increased risk of cyber-security attacks. Any material or extended disruption of our ability to deliver services or meet our responsibilities in the settlement of securities or other market activities is likely to result in operating losses, loss of revenue or penalties under our service contracts which may have a material adverse impact on our results of operation and financial condition. Moreover, governmental actions in response to the pandemic are meaningfully influencing the interest rate environment, which has reduced, and may continue to reduce, our net interest income and net interest margin.

In March 2020, we announced, together with the other U.S.-based G-SIBs, that we temporarily suspended our common stock repurchase program, in light of the COVID-19 pandemic. Subsequently, in connection with a requirement for all CCAR banking organizations, including State Street, to participate in additional supervisory capital stress tests due to the challenges created by the COVID-19 pandemic, the Federal Reserve limited the ability of all CCAR banking organizations to make capital distributions for the remainder of 2020. As a result, we did not return capital to shareholders in the form of common stock repurchases during the nine months ended December 31, 2020. In December 2020, we announced, following the results of the additional stress test, that we have been authorized to continue to pay common stock dividends at current levels and to resume purchasing common shares in the first quarter of 2021 in the aggregate amount up to the average of our quarterly net income during 2020. However, there can be no assurance the Federal Reserve will not require additional stress testing, modify existing or apply new limitations on distributions of capital to shareholders or introduce new or additional regulatory actions, restrictions or requirements in connection with the COVID-19 pandemic or associated market or industry developments. Where permitted consistent with regulatory standards, the timing of stock purchases, types of transactions and number of shares purchased under our stock purchase programs will depend on several factors, including market conditions and our capital positions, financial performance and investment opportunities. Our common stock purchase programs do not have specific price targets and may be suspended at any time.

Acquisitions, strategic alliances, joint ventures and divestitures pose risks for our business.

As part of our business strategy, we acquire complementary businesses and technologies, enter into strategic alliances and joint ventures and divest portions of our business. We undertake transactions of varying sizes to, among other reasons, expand our geographic footprint, access new clients, distribution channels, technologies or services, develop closer or more collaborative relationships with our business partners, efficiently deploy capital or leverage cost savings or other business or financial opportunities. We may not achieve the expected benefits of these transactions, which could result in increased costs, lowered revenues, ineffective deployment of capital, regulatory concerns, exit costs or diminished competitive position or reputation.

Transactions of this nature also involve a number of risks and financial, accounting, tax, regulatory, strategic, managerial, operational, cultural and employment challenges, which could adversely affect our consolidated results of operations and

financial condition. For example, the businesses that we acquire or our strategic alliances or joint ventures may under-perform relative to the price paid or the resources committed by us; we may not achieve anticipated revenue growth or cost savings; or we may otherwise be adversely affected by acquisition-related charges. The intellectual property of an acquired business may be an important component of the value that we agree to pay for it. However, such acquisitions are subject to the risks that the acquired business may not own the intellectual property that we believe we are acquiring, that the intellectual property is dependent on licenses from third parties, that the acquired business infringes on the intellectual property rights of others, that the technology does not have the acceptance in the marketplace that we anticipated or that the technology requires significant investment to remain competitive. Similarly, such acquisitions present risks on our ability to retain the acquired talent, which may be essential to achieve our objectives in the acquisition. The integration of an acquired business's information technology infrastructure into ours has in the past and may in the future also expose us to additional security and resiliency risks. Further, past acquisitions have resulted in the recognition of goodwill and other significant intangible assets in our consolidated statement of condition. For example, we recorded goodwill and intangible assets of approximately $2.46 billion associated with our acquisition of CRD in 2018. These assets are not eligible for inclusion in regulatory capital under applicable requirements. In addition, we may be required to record impairment in our consolidated statement of income in future periods if we determine that the value of these assets has declined.

Through our acquisitions or joint ventures, we may also assume unknown or undisclosed business, operational, tax, regulatory and other liabilities, fail to properly assess known contingent liabilities or assume businesses with internal control deficiencies. While in most of our transactions we seek to mitigate these risks through, among other things, due diligence, indemnification provisions or insurance, these or other risk-mitigating provisions we put in place may not be sufficient to address these liabilities and contingencies and involve credit and execution risks associated with successfully seeking recourse from a third party, such as the seller or an insurance provider. Other major financial services firms have recently paid significant penalties to resolve government investigations into matters conducted in significant part by acquired entities.

Various regulatory approvals or consents, formal or informal, are generally required prior to closing of these transactions, which may include approvals, non-objections or regulatory exceptions from the Federal Reserve and other domestic and non-U.S. regulatory authorities. These regulatory authorities may impose conditions on the completion of the acquisition or require changes to its terms that materially affect the terms of the transaction or our ability to capture some of the opportunities presented by the transaction, or may not approve the transaction. Any such conditions, or any associated regulatory delays, could limit the benefits of the transaction. Acquisitions or joint ventures we announce may not be completed if we do not receive the required regulatory approvals, if regulatory approvals are significantly delayed or if other closing conditions are not satisfied.

The integration and the retention and development of the benefits of our acquisitions result in risks to our business and other uncertainties.

In recent years, we have undertaken several acquisitions, including our 2018 acquisition of CRD and our 2016 acquisition of the General Electric Asset Management (GEAM) business. The integration of acquisitions presents risks that differ from the risks associated with our ongoing operations. Integration activities are complicated and time consuming and can involve significant unforeseen costs. We may not be able to effectively assimilate services, technologies, key personnel or businesses of acquired companies into our business or service offerings as anticipated, and we may not achieve related revenue growth or cost savings. We also face the risk of being unable to retain, or cross-sell our products or services to, the clients of acquired companies or joint ventures and the risk of being unable to cross-sell acquired products or services to our existing clients. In particular, some clients, including significant clients, of an acquired business may have the right to transition their business to other providers on short notice for convenience, fiduciary or other reasons and may take the opportunity of the acquisition or market, commercial, relationship, service satisfaction or other developments following the acquisition to terminate, reduce or renegotiate the fees or other terms of our relationship. Any such client losses, reductions or renegotiations likely will reduce the expected benefits of the acquisition, including revenues, cross-selling opportunities and market share, cause impairment to goodwill and other intangibles or result in reputational harm, which effects could be material, and we may not have recourse against the seller of the business or the client. The risk of client loss is even greater where the client is a competitor of ours. Acquisitions of technology firms can involve extensive information technology integration, with associated risk of defects, security breaches and resiliency lapses and product enhancement and development activities, the costs of which can be difficult to estimate, as well as heightened cultural and compliance concerns in

integrating an unregulated firm into a bank regulatory environment. Acquisitions of Investment Servicing businesses entail information technology systems conversions, which involve operational risks, as well as fiduciary and other risks associated with client retention. Acquisitions of Asset Management businesses similarly involve fiduciary and similar risks associated with client retention, distribution channels and additional servicing opportunities. Joint ventures involve all of these risks, as well as risks associated with shared control and decision-making (even in majority-owned situations), minority rights and exit rights, which can delay, challenge or foreclose execution on material opportunities or initiatives, create regulatory risks and limit divestment opportunities.

With any acquisition, the integration of the operations and resources of the businesses could result in the loss of key employees, the disruption of our and the acquired company's ongoing businesses or inconsistencies in standards, controls, procedures or policies that could adversely affect our ability to maintain relationships with clients, business partners or employees, maintain regulatory compliance or achieve the anticipated benefits of the acquisition. Integration efforts may also divert management attention and resources.

Integration of CRD and its business, operations and employees with our own may be more difficult, costly or time consuming than expected, and the anticipated benefits and cost synergies of the acquisition may not be fully realized, which could adversely impact our business operations, financial condition and results of operations.

We completed our acquisition of CRD on October 1, 2018. The success of the acquisition, including the achievement of anticipated growth opportunities and cost synergies of the acquisition, continues to be subject to a number of uncertainties and will depend, in part, on our ability to successfully combine and integrate CRD's business into our business in an efficient and effective manner. The combined company may face significant challenges in implementing such integration, including challenges related to:

- integrating CRD's business into our own in a manner that permits the combined company to achieve the cost and operating synergies anticipated to result from the acquisition, which could result in the anticipated benefits of the acquisition not being realized partly or wholly in the time frame currently anticipated or at all;
- retaining CRD's clients, some of which are our competitors;
- retaining key management and technical personnel;
- integrating CRD's software solutions with our existing products and services and related operations and systems, including performance, risk and compliance analytics, investment manager operations outsourcing, accounting, administration and custody;
- accelerating the development of enhancements to the features and functions of CRD's software solutions;
- coordinating and integrating our internal operations, compensation programs, policies and procedures, and corporate structures;
- potential unknown liabilities and unforeseen or increased costs and expenses;
- the possibility of faulty assumptions underlying expectations regarding potential synergies and the integration process;
- incurring significant acquisition-related costs and expenses associated with combining our operations; and
- performance shortfalls as a result of the diversion of management's attention and resources caused by integrating the companies' operations.

Any of these factors could result in our failure to realize the anticipated benefits of the acquisition, on the expected timeline or at all, and could adversely impact our business operations, financial condition and results of operations.

Competition for qualified members of our workforce is intense, and we may not be able to attract and retain the highly skilled people we need to support our business.

Our success depends, in large part, on our ability to attract and retain key personnel. Competition for the best people in most activities in which we engage can be intense, and we may not be able to hire people or retain them, particularly in light of challenges associated with compensation restrictions applicable, or which may become applicable, to banks and some asset managers and that are not applicable to other financial services firms in all jurisdictions or to technology firms, generally. The unexpected loss of services of key personnel in business units, control functions, information technology, operations or other areas could have a material adverse impact on our business because of their skills, their knowledge of our markets, operations and clients, their years of industry experience and, in some cases, the difficulty of promptly finding qualified replacement personnel. Similarly, the loss of key personnel, either individually or as a group, could adversely affect our clients' perception of our ability to continue to manage certain types of investment management mandates to provide other services to

them or to maintain a culture of innovation and proficiency.

Financial Market Risks

Geopolitical and economic conditions and developments could adversely affect us, particularly if we face increased uncertainty and unpredictability in managing our businesses.

Global financial markets can suffer from substantial volatility, illiquidity and disruption, particularly as a result of geopolitical disruptions, slower economic growth and a shifting monetary policy stance from key central banks. If such volatility, illiquidity or disruption were to result in an adverse economic environment in the U.S. or internationally or result in a lack of confidence in the financial stability of major developed or emerging markets, such developments could have an adverse effect on our business, as well as the businesses of our clients and our significant counterparties, and could also increase the difficulty and unpredictability of aligning our business strategies, our infrastructure and our operating costs in light of uncertain market and economic conditions. These risks could be compounded by tighter monetary policy conditions, disruptions to free trade and political uncertainty in the U.S. and internationally.

Market disruptions can adversely affect our consolidated results of operations if the value of our AUC/A or AUM decline, while the costs of providing the related services remain constant or increase. They may also result in investor preference trends towards asset classes and markets deemed more secure, such as cash or non-emerging markets, with respect to which our fee rates are often lower. These factors could reduce the profitability of our asset-based fee revenue and could also adversely affect our transaction-based revenue, such as revenues from securities finance and foreign exchange activities, and the volume of transactions that we execute for or with our clients. Further, the degree of volatility in foreign exchange rates can affect our foreign exchange trading revenue. In general, increased currency volatility tends to increase our market risk but also increases our opportunity to generate foreign exchange revenue. Conversely, periods of lower currency volatility tend to decrease our market risk but also decrease our foreign exchange revenue.

In addition, as our business grows globally and a significant percentage of our revenue is earned (and of our expenses paid) in currencies other than U.S. dollars, our exposure to foreign currency volatility could affect our levels of consolidated revenue, our consolidated expenses and our consolidated results of operations, as well as the value of our investment in our non-U.S. operations and our non-U.S. investment portfolio holdings. The extent to which changes in the strength of the U.S. dollar relative to other currencies affect our consolidated results of operations, including the degree of any offset between increases or decreases to both revenue and expenses, will depend upon the nature and scope of our operations and activities in the relevant jurisdictions during the relevant periods, which may vary from period to period.

As our product offerings expand, in part as we seek to take advantage of perceived opportunities arising under various regulatory reforms and resulting market changes, the degree of our exposure to various market and credit risks will evolve, potentially resulting in greater revenue volatility.

Our businesses have significant International operations, and disruptions in European and Asian economies could have an adverse effect on our consolidated results of operations or financial condition.

European economic growth has faced significant impacts from the COVID-19 pandemic, notably with growth in the European Union expected to contract markedly in 2021. New or continued economic deterioration will renew concerns about sovereign debt sustainability, interdependencies among financial institutions and sovereigns, and political and other risks despite stimulus from central banks. Continued uncertainty in the external environment has led to increased concern around the near- to medium-term outlook for economic progress in the regions in which we operate, including Europe and Asia.

In addition, uncertainty around implications of the United Kingdom's exit from the E.U., known as Brexit, and related developments, present risks which include potential negative impacts to economic activity or to cooperation in the future relationship between the U.K. and E.U. and the resulting consequences for market access for financial services. In order to conform to anticipated restrictions on activity between the E.U. and the U.K. following Brexit, we have developed and implemented plans that seek to maintain our servicing and operational capabilities, in all material respects, independent of the final outcome. There can be no assurance, however, that our plans will address effectively, in whole or in part, all potential contingencies associated with Brexit or that we may not experience additional costs or inefficiencies associated with our European activities or client dissatisfaction, delays in receiving regulatory approvals or other difficulties in executing our regional strategy.

Given the scope of our International operations, economic or market uncertainty, volatility, illiquidity or disruption resulting from these and related factors could have a material adverse impact on our

consolidated results of operations or financial condition.

Our investment securities portfolio, consolidated financial condition and consolidated results of operations could be adversely affected by changes in market factors, including interest rates, credit spreads and credit performance.

Our investment securities portfolio represented approximately 35% of our total assets as of December 31, 2020. The gross interest income associated with our investment portfolio represented approximately 14% of our total gross revenue for the year ended December 31, 2020 and has represented as much as 31% of our total gross revenue in the fiscal years since 2007. As such, our consolidated financial condition and results of operations are materially exposed to the risks associated with our investment portfolio, including changes in interest rates, credit spreads, credit performance (including risk of default), credit ratings, our access to liquidity, foreign exchange markets and mark- to-market valuations, and our ability to profitably manage changes in repayment rates of principal with respect to our portfolio securities. The continued low interest rate environment that has persisted since the financial crisis began in mid-2007 limits our ability to achieve a NIM consistent with our prior historical averages. In addition, certain regulatory liquidity standards, such as the LCR, require that we maintain minimum levels of HQLA in our investment portfolio, which generally generate lower rates of return than other investment assets. This has resulted in increased levels of HQLA as a percentage of our investment portfolio and an associated negative impact on our NII and our NIM. As a result we may not be able to attain our prior historical levels of NII and NIM. For additional information regarding these liquidity requirements, refer to the "Liquidity Coverage Ratio and Net Stable Funding Ratio" section of "Supervision and Regulation" in Business in this Form 10-K. We may enter into derivative transactions to hedge or manage our exposure to interest rate risk, as well as other risks, such as foreign exchange risk and credit risk. Derivative instruments that we hold for these or other purposes may not achieve their intended results and could result in unexpected losses or stresses on our liquidity or capital resources.

Our investment securities portfolio represents a greater proportion of our consolidated statement of condition and our loan portfolio represents a smaller proportion (approximately 9% of our total assets as of December 31, 2020), in comparison to many other major financial institutions. In some respects, the accounting and regulatory treatment of our investment securities portfolio may be less favorable to us than a more traditional held-for-investment lending portfolio. For example, under the Basel III rule, after-tax changes in the fair value of AFS investment securities, such as those which represent a majority of our investment portfolio, are included in Tier 1 capital. Since loans held for investment are not subject to a fair value accounting framework, changes in the fair value of loans (other than expected credit losses) are not similarly included in the determination of Tier 1 capital under the Basel III rule. Due to this differing treatment, we may experience increased variability in our Tier 1 capital relative to other major financial institutions whose loan-and-lease portfolios represent a larger proportion of their consolidated total assets than ours.

Additional risks associated with our investment portfolio include:

- *Asset class concentration*. Our investment portfolio continues to have significant concentrations in several classes of securities, including agency residential MBS, commercial MBS and other ABS, and securities with concentrated exposure to consumers. These classes and types of securities experienced significant liquidity, valuation and credit quality deterioration during the financial crisis that began in mid-2007. We also hold non-U.S. government securities, non-U.S. MBS and ABS with exposures to European countries, whose sovereign-debt markets have experienced increased stress at times since 2011 and may continue to experience stress in the future. For further information, refer to the risk factor titled *"Our businesses have significant European operations, and disruptions in European economies could have an adverse effect on our consolidated results of operations or financial condition".* Further, we hold a portfolio of U.S. state and municipal bonds, the value of which may be affected by the budget deficits that a number of states and municipalities currently face, resulting in risks associated with this portfolio.

- *Effects of market conditions*. If market conditions deteriorate, our investment portfolio could experience a decline in market value, whether due to a decline in liquidity or an increase in the yield required by investors to hold such securities, regardless of our credit view of our portfolio holdings. In addition, in general, deterioration in credit quality, or changes in management's expectations regarding repayment timing or in management's investment intent to hold securities to maturity, in each case with respect to our portfolio holdings, could result in recognition of an allowance for expected credit losses or in impairment. Similarly, if a material portion of our investment portfolio were to experience credit deterioration, our

capital ratios as calculated pursuant to the Basel III rule could be adversely affected. This risk is greater with portfolios of investment securities that contain credit risk than with holdings of U.S. Treasury securities.

- *Effects of interest rates*. Our investment portfolio is further subject to changes in both U.S. and non-U.S. (primarily in Europe) interest rates, and could be negatively affected by changes in those rates, whether or not expected. This is particularly true in the case of a quicker-than-anticipated increase in interest rates, which would decrease market values in the near-term, or monetary policy that results in persistently low or negative rates of interest on certain investments. The latter has been the case, for example, with respect to ECB monetary policy, including negative interest rates in some jurisdictions, with associated negative effects on our investment portfolio reinvestment, NII and NIM. The effect on our NII has been exacerbated by the effects in recent fiscal years of the strong U.S. dollar relative to other currencies, particularly the Euro. If European interest rates remain low or decrease and the U.S. dollar strengthens relative to the Euro, the negative effects on our NII likely will continue or increase. The overall level of NII can also be impacted by the size of our deposit base, as further increases in interest rates could lead to reduced deposit levels and also lower overall NII. Further, a reduction in deposit levels could increase the requirements under the regulatory liquidity standards requiring us to invest a greater proportion of our investment portfolio holdings in HQLA that have lower yields than other investable assets. See also, “Our business activities expose us to interest rate risk” in this section.

Our business activities expose us to interest rate risk.

In our business activities, we assume interest rate risk by investing short-term deposits received from our clients in our investment portfolio of longer- and intermediate-term assets. Our NII and NIM are affected by among other things, the levels of interest rates in global markets, changes in the relationship between short- and long-term interest rates, the direction and speed of interest rate changes and the asset and liability spreads relative to the currency and geographic mix of our interest-earning assets and interest-bearing liabilities. These factors are influenced, among other things, by a variety of economic and market forces and expectations, including monetary policy and other activities of central banks, such as the Federal Reserve and ECB, that we do not control. Our ability to anticipate changes in these factors or to hedge the related on- and off-balance sheet exposures, and the cost of any such hedging activity, can significantly influence the success of our asset-and-liability management activities and the resulting level of our NII and NIM. The impact of changes in interest rates and related factors will depend on the relative duration and fixed- or floating-rate nature of our assets and liabilities. Sustained lower interest rates, a flat or inverted yield curve and narrow credit spreads generally have a constraining effect on our NII. In addition, our ability to change deposit rates in response to changes in interest rates and other market and related factors is limited by client relationship considerations. For additional information about the effects on interest rates on our business, refer to the Market Risk Management section, "Asset-and-Liability Management Activities" in our Management's Discussion and Analysis in this Form 10-K.

We assume significant credit risk to counterparties, many of which are major financial institutions. These financial institutions and other counterparties may also have substantial financial dependencies with other financial institutions and sovereign entities. These credit exposures and concentrations could expose us to financial loss.

The financial markets are characterized by extensive interdependencies among numerous parties, including banks, central banks, broker/dealers, insurance companies and other financial institutions. These financial institutions also include collective investment funds, such as mutual funds, UCITS and hedge funds that share these interdependencies. Many financial institutions, including collective investment funds, also hold, or are exposed to, loans, sovereign debt, fixed-income securities, derivatives, counterparty and other forms of credit risk in amounts that are material to their financial condition. As a result of our own business practices and these interdependencies, we and many of our clients have concentrated counterparty exposure to other financial institutions and collective investment funds, particularly large and complex institutions, sovereign issuers, mutual funds, UCITS and hedge funds. Although we have procedures for monitoring both individual and aggregate counterparty risk, significant individual and aggregate counterparty exposure is inherent in our business, as our focus is on servicing large institutional investors.

In the normal course of our business, we assume concentrated credit risk at the individual obligor, counterparty or group level. Such concentrations may be material and can often exceed 10% of our consolidated total shareholders' equity. Our material counterparty exposures change daily,

and the counterparties or groups of related counterparties to which our risk exposure exceeds 10% of our consolidated total shareholders' equity are also variable during any reported period; however, our largest exposures tend to be to other financial institutions.

Concentration of counterparty exposure presents significant risks to us and to our clients because the failure or perceived weakness of our counterparties (or in some cases of our clients' counterparties) has the potential to expose us to risk of financial loss. Changes in market perception of the financial strength of particular financial institutions or sovereign issuers can occur rapidly, are often based on a variety of factors and are difficult to predict.

This was observed during the financial crisis that began in 2007-2008, when economic, market, political and other factors contributed to the perception of many financial institutions and sovereign issuers as being less credit worthy. This led to credit downgrades of numerous large U.S. and non-U.S. financial institutions and several sovereign issuers (which exposure stressed the perceived creditworthiness of financial institutions, many of which invest in, accept collateral in the form of, or value other transactions based on the debt or other securities issued by sovereigns) and substantially reduced value and liquidity in the market for their credit instruments. These or other factors could again contribute to similar consequences or other market risks associated with reduced levels of liquidity. As a result, we may be exposed to increased counterparty risks, either resulting from our role as principal or because of commitments we make in our capacity as agent for some of our clients.

Additional areas where we experience exposure to credit risk include:

- *Short-term credit*. The degree of client demand for short-term credit tends to increase during periods of market turbulence, which may expose us to further counterparty-related risks. For example, investors in collective investment vehicles for which we act as custodian may experience significant redemption activity due to adverse market or economic news. Our relationship with our clients and the nature of the settlement process for some types of payments may result in the extension of short-term credit in such circumstances. We also provide committed lines of credit to support such activity. For some types of clients, we provide credit to allow them to leverage their portfolios, which may expose us to potential loss if the client experiences investment losses or other credit difficulties.

- *Industry and country risks*. In addition to our exposure to financial institutions, we are from time to time exposed to concentrated credit risk at an industry or country level. This concentration risk also applies to groups of unrelated counterparties that may have similar investment strategies involving one or more particular industries, regions, or other characteristics. These unrelated counterparties may concurrently experience adverse effects to their performance, liquidity or reputation due to events or other factors affecting such investment strategies. Though potentially not material individually (relative to any one such counterparty), our credit exposures to such a group of counterparties could expose us to a single market or political event or a correlated set of events that, in the aggregate, could have a material adverse impact on our business.

- *Subcustodian risks*. Our use of unaffiliated subcustodians exposes us to credit risk, in addition to other risks, such as operational risk, dependencies on credit extensions and risks of the legal systems of the jurisdictions in which the subcustodians operate, each of which may be material. Our operating model exposes us to risk of unaffiliated sub-custodians to a degree greater than some of our competitors who have banking operations in more jurisdictions than we do. Our sub-custodians operate in all jurisdictions in which our clients invest, including emerging and other underdeveloped markets that entail heightened risks. These risks are amplified due to evolving regulatory requirements with respect to our financial exposures in the event those subcustodians are unable to return clients' assets, including, in some regulatory regimes, such as the E.U.'s UCITS V directive, requirements that we be responsible for resulting losses suffered by our clients. We may agree to similar or more stringent standards with clients that are not subject to such regulations. Our subcustodians are also large, global financial institutions with whom we have other credit exposures. This credit exposure to these financial institutions or subcustodians may limit the financial relationship we may have with these counterparties.

- *Settlement risks*. We are exposed to settlement risks, particularly in our payments and foreign exchange activities. Those activities may lead to extension of credit and consequent losses in the event of a

counterparty breach or an operational error, including the failure to provide credit. Due to our membership in several industry clearing or settlement exchanges, we may be required to guarantee obligations and liabilities, or provide financial support, in the event that other members do not honor their obligations or default. Moreover, not all of our counterparty exposure is secured, and even when our exposure is secured, the realizable value of the collateral may have declined by the time we exercise our rights against that collateral. This risk may be particularly acute if we are required to sell the collateral into an illiquid or temporarily-impaired market or with respect to clients protected by sovereign immunity. We are exposed to risk of short-term credit or overdraft of our clients in connection with the process to facilitate settlement of trades and related foreign exchange activities, particularly when contractual settlement has been agreed with our clients. The occurrence of overdrafts at peak volatility could create significant credit exposure to our clients depending upon the value of such clients' collateral at the time.

• *Securities lending and repurchase agreement indemnification*. On behalf of clients enrolled in our securities lending program, we lend securities to banks, broker/dealers and other institutions. In the event of a failure of the borrower to return such securities, we typically agree to indemnify our clients for the amount by which the fair market value of those securities exceeds the proceeds of the disposition of the collateral posted by the borrower in connection with such transaction. We also lend and borrow securities as riskless principal, and in connection with those transactions receive a security interest in securities held by the borrowers in their securities portfolios and advance cash or securities as collateral to securities lenders. Borrowers are generally required to provide collateral equal to a contractually agreed percentage equal to or in excess of the fair market value of the loaned securities. As the fair market value of the loaned securities or collateral changes, additional collateral is provided by the borrower or collateral is returned to the borrower. In addition, our agency securities lending clients often purchase securities or other financial instruments from financial counterparties, including broker/dealers, under repurchase arrangements, frequently as a method of reinvesting the cash collateral they receive from lending their securities. Under these arrangements, the counterparty is obligated to repurchase these securities or financial instruments from the client at the same price (plus an agreed rate of return) at some point in the future. The value of the collateral is intended to exceed the counterparty's payment obligation, and collateral is adjusted daily to account for shortfall under, or excess over, the agreed-upon collateralization level. As with the securities lending program, we agree to indemnify our clients from any loss that would arise on a default by the counterparty under these repurchase arrangements if the proceeds from the disposition of the securities or other financial assets held as collateral are less than the amount of the repayment obligation by the client's counterparty. In such instances of counterparty default, for both securities lending and repurchase agreements, we, rather than our client, are exposed to the risks associated with collateral value.

• *Repurchase and resale transactions*. We enter into repurchase and resale transactions in eligible securities with sponsored clients and with other FICC members and, pursuant to FICC Government Securities Division rules, submit, novate and net the transactions. We may sponsor clients to clear their eligible repurchase transactions with FICC, backed by our guarantee to FICC of the prompt and full payment and performance of our sponsored member clients' respective obligations. Although we obtain a security interest from our sponsored clients in the collateral that they receive, we are exposed to the associated risks, including insufficiency of the value of collateral.

• *Stable value arrangements*. We enter into stable value wrap derivative contracts with unaffiliated stable value funds that allow a stable value fund to provide book value coverage to its participants. During the 2008 financial crisis, the book value of obligations under many of these contracts exceeded the market value of the underlying portfolio holdings. Concerns regarding the portfolio of investments protected by such contracts, or regarding the investment manager overseeing such an investment option, may result in redemption demands from stable value products covered by benefit-responsive contracts at a time when the portfolio's market value is less than its book value, potentially exposing us to risk of loss.

• *Private equity subscription finance credit facilities.* We provide credit facilities to private equity funds. The portfolio consists of capital call lines of credit, the repayment of which is dependent on the receipt of capital calls from the underlying limited partner investors in the funds managed by these firms.

• *U.S. municipal obligations remarketing credit facilities*. We provide credit facilities in connection with the remarketing of U.S. municipal obligations, potentially exposing us to credit exposure to the municipalities issuing such bonds and contingent liquidity risk.

• *Leveraged loans*. In recent years, we have increased our investment in leveraged loans, both in the U.S. and in Europe. We invest in these loans to non-investment grade borrowers through participation in loan syndications in the non-investment grade lending market. We rate these loans as "speculative" under our internal risk-rating framework, and these loans have significant exposure to credit losses relative to higher-rated loans. We are therefore at a higher risk of default with respect to these investments relative to other of our investments activities. In addition, unlike other financial institutions that may have an active role in managing individual loan compliance, our investment in these loans is generally as a passive investor with limited control. As this portfolio grows and becomes more seasoned, our allowance for credit losses related to these loans may increase through additional provisions for credit losses.

• *Commercial Real Estate*. We finance commercial and multi-family properties, which serve as collateral for our loans. Although collateralized, these loans may become under-secured if the value of the collateral was over-estimated or changes. Loan payments are dependent on the successful operation and management of the underlying collateral property to generate sufficient cash flow to repay the loan in a timely fashion. A material decline in real estate markets or economic conditions could negatively impact value or property performance, which could adversely impact timely loan repayment, which may result in increased provision for credit losses on loans, and actual losses, either of which would have an adverse impact on our net income. We seek to minimize these risks by maintaining lending policies and procedures and underwriting standards, however, there can be no assurance that these will protect us from credit-related losses or delinquencies.

• *Unavailability of netting*. We are generally not able to net exposures across counterparties that are affiliated entities and may not be able in all circumstances to net exposures to the same legal entity across multiple products. As a consequence, we may incur a loss in relation to one entity or product even though our exposure to an entity's affiliates or across product types is over-collateralized. In some cases, for example in our securities finance and foreign exchange activities, we are able to enter into netting agreements that allow us to net offsetting exposures and payment obligations against one another. In the event we become unable, due to operational constraints, actions by regulators, changes in accounting principles, law or regulation (or related interpretations) or other factors, to net some or all of our offsetting exposures and payment obligations under those agreements, we would be required to gross up our assets and liabilities on our statement of condition and our calculation of RWA, accordingly. This would result in a potentially material increase in our regulatory ratios, including LCR, and present increased credit, liquidity, asset-and-liability management and operational risks, some of which could be material.

Under currently prevailing regulatory restrictions on credit exposure we are required to limit our exposures to specific issuers or counterparties or groups of counterparties, including financial institutions and sovereign issuers. These credit exposure restrictions have and may further adversely affect certain of our businesses, may require that we expand our credit exposure to a broader range of issuers and counterparties, including issuers and counterparties that represent increased credit risk, may reduce or foreclose our ability to enter into advantageous transactions or ventures with particular counterparties and may require that we modify our operating models or the policies and practices we use to manage our consolidated statement of condition. The effects of these considerations may increase when evaluated under a stressed environment in stress testing, including CCAR. In addition, we are an adherent to the International Swaps and Derivatives Association 2015 Universal Resolution Stay Protocol and as such are subject to restrictions against the exercise of rights and remedies against fellow adherents, including other major financial institutions, in the event they or an affiliate of theirs enters into resolution. Although our overall business is subject to these factors, several of our activities are particularly

sensitive to them including our currency trading business and our securities finance business.

Given the limited number of strong counterparties in the current market, we are not able to mitigate all of our and our clients' counterparty credit risk.

Fee revenue represents a significant majority of our consolidated revenue and is subject to decline, among other things, in the event of a reduction in, or changes to, the level or type of investment activity by our clients.

We rely primarily on fee-based services to derive our revenue. This contrasts with commercial banks that may rely more heavily on interest-based sources of revenue, such as loans. During 2020 total fee revenue represented approximately 81% of our total revenue. Fee revenue generated by our Investment Servicing and Investment Management businesses is augmented by foreign exchange trading services, securities finance and software and processing fee revenue. The level of these fees is influenced by several factors, including the mix and volume of our AUC/A and our AUM, the value and type of securities positions held (with respect to assets under custody) and the volume of our clients' portfolio transactions, and the types of products and services used by our clients.

In addition, our clients include institutional investors, such as mutual funds, collective investment funds, UCITS, hedge funds and other investment pools, corporate and public retirement plans, insurance companies, foundations, endowments and investment managers. Economic, market or other factors that reduce the level or rates of savings in or with those institutions, either through reductions in financial asset valuations or through changes in investor preferences, could materially reduce our fee revenue and have a material adverse effect on our consolidated results of operations.

If we are unable to effectively manage our capital and liquidity, including by continuously attracting deposits and other short-term funding, our consolidated financial condition, including our regulatory capital ratios, our consolidated results of operations and our business prospects, could be adversely affected.

Liquidity management, including on an intra-day basis, is critical to the management of our consolidated statement of condition and to our ability to service our client base. We generally use our liquidity to:

- meet clients' demands for return of their deposits;
- extend credit to our clients in connection with our investor services businesses; and
- fund the pool of long- and intermediate-term assets that are included in the investment securities and loan portfolio carried in our consolidated statement of condition.

Because the demand for credit by our clients, particularly settlement related extensions of credit, is difficult to predict and control, and may be at its peak at times of disruption in the securities markets, and because the average maturity of our investment securities and loan portfolios is longer than the contractual maturity of our client deposit base, we need to continuously attract, and are dependent on access to, various sources of short-term funding. Since the 2008 financial crisis, the level of client deposits held by us has tended to increase during times of market disruption; however, since such deposits are considered to be transitory, we have historically deposited so-called excess deposits with U.S. and non-U.S. central banks and in other highly liquid but low-yielding instruments. These levels of excess client deposits, when they manifest, have increased our NII but have adversely affected our NIM.

In managing our liquidity, our primary source of short-term funding is client deposits, which are predominantly transaction-based deposits by institutional investors. Our ability to continue to attract these deposits, and other short-term funding sources such as certificates of deposit, is subject to variability based on a number of factors, including volume and volatility in global financial markets, the interest rates that we are prepared to pay for these deposits, the loss or gain of one or more clients, client interest in reducing non-interest bearing deposits, the perception of safety of these deposits or short-term obligations relative to alternative short-term investments available to our clients, including the capital markets, and the classification of certain deposits for regulatory purposes and related discussions we may have from time to time with clients regarding better balancing our clients' cash management needs with our economic and regulatory objectives.

The Parent Company is a non-operating holding company and generally maintains only limited cash and other liquid resources at any time primarily to meet anticipated near-term obligations. To effectively manage our liquidity we routinely transfer assets among affiliated entities, subsidiaries and branches. Internal or external factors, such as regulatory requirements and standards, including resolution planning and restrictions on dividend distributions, influence our liquidity management and may limit our ability to effectively transfer liquidity internally which could, among other things, restrict our ability to fund operations, dividends or stock repurchases or pay interest on debt securities or require us to seek

external and potentially more costly capital and impact our liquidity position.

In addition, while not obligations of ours, the investment products that we manage for third parties may be exposed to liquidity risks. These products may be funded on a short-term basis or the clients participating in these products may have a right to the return of cash or assets on limited notice. These business activities include, among others, securities finance collateral pools, money market and other short-term investment funds and liquidity facilities utilized in connection with municipal bond programs. If clients demand a return of their cash or assets, particularly on limited notice, and these investment pools do not have the liquidity to support those demands, we could be forced to sell investment securities held by these asset pools at unfavorable prices, damaging our reputation as a service provider and potentially exposing us to claims related to our management of the pools.

The availability and cost of credit in short-term markets are highly dependent on the markets' perception of our liquidity and creditworthiness. Our efforts to monitor and manage our liquidity risk, including on an intra-day basis, may not be successful or sufficient to deal with dramatic or unanticipated changes in the global securities markets or other event-driven reductions in liquidity. As a result of such events, among other things, our cost of funds may increase, thereby reducing our NII, or we may need to dispose of a portion of our investment securities portfolio, which, depending on market conditions, could result in a loss from such sales of investment securities being recorded in our consolidated statement of income.

We may need to raise additional capital or debt in the future, which may not be available to us or may only be available on unfavorable terms.

We may need to raise additional capital or debt in order to maintain our credit ratings, in response to regulatory changes, including capital rules, or for other purposes, including financing acquisitions and joint ventures. For example, in November 2019, January 2020 and March 2020, we issued additional long-term debt in order to maintain levels to satisfy internal and regulatory requirements, and in September 2018 and July 2018 we issued preferred stock and common stock, respectively, to finance our acquisition of CRD.

However, our ability to access the capital markets, if needed, on a timely basis or at all will depend on a number of factors, such as the state of the financial markets and securities law requirements and standards. In the event of rising interest rates, disruptions in financial markets, negative perceptions of our business or our financial strength, or other factors that would increase our cost of borrowing, we cannot be sure of our ability to raise additional capital or debt, if needed, on terms acceptable to us. Any diminished ability to raise additional capital or debt, if needed, could adversely affect our business and our ability to implement our business plan, capital plan and strategic goals, including the financing of acquisitions and joint ventures and our efforts to maintain regulatory compliance.

Any downgrades in our credit ratings, or an actual or perceived reduction in our financial strength, could adversely affect our borrowing costs, capital costs and liquidity position and cause reputational harm.

Major independent rating agencies publish credit ratings for our debt obligations based on their evaluation of a number of factors, some of which relate to our performance and other corporate developments, including financings, acquisitions and joint ventures, and some of which relate to general industry conditions. We anticipate that the rating agencies will continue to review our ratings regularly based on our consolidated results of operations and developments in our businesses, including regulatory considerations such as resolution planning. One or more of the major independent credit rating agencies have in the past downgraded, and may in the future downgrade, our credit ratings, or have negatively revised their outlook for our credit ratings. The current market and regulatory environment and our exposure to financial institutions and other counterparties, including sovereign entities, increase the risk that we may not maintain our current ratings, and we cannot provide assurance that we will continue to maintain our current credit ratings. Downgrades in our credit ratings may adversely affect our borrowing costs, our capital costs and our ability to raise capital and, in turn, our liquidity. A failure to maintain an acceptable credit rating may also preclude us from being competitive in various products.

Additionally, our counterparties, as well as our clients, rely on our financial strength and stability and evaluate the risks of doing business with us. If we experience diminished financial strength or stability, actual or perceived, due to the effects of market or regulatory developments, announced or rumored business developments, consolidated results of operations, a decline in our stock price or a downgrade to our credit rating, our counterparties may be less willing to enter into transactions, secured or unsecured, with us, our clients may reduce or place limits on the level of service we provide to them or seek to transfer the business, in whole or in part, to other service providers or our prospective clients may select other service providers. Any or, all of these may have adverse effects on our business and reputation.

The risk that we may be perceived as less creditworthy than other market participants is higher as a result of recent market developments, which include an environment in which the consolidation, and in some instances failure, of financial institutions, including major global financial institutions, has resulted in a smaller number of much larger counterparties and competitors. If our counterparties perceive us to be a less viable counterparty, our ability to enter into financial transactions on terms acceptable to us or our clients, on our or our clients' behalf, will be materially compromised. If our clients reduce their deposits with us or select other service providers for all or a portion of the services we provide to them, our revenues will decrease accordingly.

Compliance and Regulatory Risks

Our business and capital-related activities, including our ability to return capital to shareholders and repurchase our capital stock, may be adversely affected by our implementation of regulatory capital and liquidity standards that we must meet or as a result of regulatory capital stress testing.

Basel III and Dodd-Frank Act

We are required to calculate our risk-based capital ratios under both the Basel III advanced approaches and the Basel III standardized approach, and we are subject to the more stringent of the risk-based capital ratios calculated under the advanced approaches and those calculated under the standardized approach in the assessment of our capital adequacy.

In implementing various aspects of these capital regulations, we are making interpretations of the regulatory intent. The Federal Reserve may determine that we are not in compliance with the capital rules and may require us to take actions to come into compliance that could adversely affect our business operations, our regulatory capital structure, our capital ratios or our financial performance, or otherwise restrict our growth plans or strategies. In addition, banking regulators could change the Basel III rule or their interpretations as they apply to us, including changes to these standards or interpretations made in regulations implementing provisions of the Dodd-Frank Act, which could adversely affect us and our ability to comply with the Basel III rule.

Along with the Basel III rule, banking regulators also introduced additional requirements, such as the SLR, LCR and the recently finalized NSFR, each of which presents compliance risks.

For example, the specification of the various elements of the NSFR in the final rule could have a material effect on our business activities, including the management and composition of our investment securities portfolio and our ability to extend credit through committed facilities, loans to our clients or our principal securities lending activities. In addition, further capital and liquidity requirements are being implemented or are under consideration by U.S. and international banking regulators. Any of these rules, or any additional regulatory initiatives introduced under the new administration, could have a material effect on our capital and liquidity planning and related activities, including the management and composition of our investment securities portfolio and our ability to extend committed contingent credit facilities to our clients. The full effects of these rules, and of other regulatory initiatives related to capital or liquidity, on us and State Street Bank are subject to further regulatory guidance, action or rule-making.

Systemic Importance

As a G-SIB, we are generally subject to the most stringent provisions under the Basel III rule. For example, we are subject to the Federal Reserve's rules on the implementation of capital surcharges for U.S. G-SIBs, and on TLAC, LTD and clean holding company requirements for U.S. G-SIBs which we refer to as the "TLAC rule". For additional information on these requirements, refer to the “Regulatory Capital Adequacy and Liquidity Standards” section under “Supervision and Regulation” in Business in this Form 10-K.

Not all of our competitors have similarly been designated as systemically important nor are all of them subject to the same degree of regulation as a bank or financial holding company, and therefore some of our competitors are not subject to the same additional capital requirements.

Comprehensive Capital Analysis and Review

We are required by the Federal Reserve to conduct periodic stress testing of our business operations and to develop an annual capital plan as part of the Federal Reserve's CCAR process. The stress testing and CCAR processes, the severity and other characteristics of which may evolve from year-to-year, are used by the Federal Reserve to evaluate our management of capital and the adequacy of our regulatory capital and to determine the SCB that we must maintain above our minimum regulatory capital requirements in order for us to make capital distributions and discretionary bonuses without limitation. The results of the stress testing and CCAR processes are difficult to predict due, among other things, to the Federal Reserve's use of proprietary stress models that differ from our internal models. The results of the Federal Reserve’s supervisory stress tests may result in an increase in our SCB requirement. The amounts of the planned capital actions in our capital plan in any year, including stock repurchases and dividends, may be substantially reduced from the amounts included in prior capital

plans. These reductions may reflect changes in one or more different factors, including our business prospects and related capital needs, our capital position, proposed acquisitions or other uses of capital, the models used in our capital planning process, the supervisory models used by the Federal Reserve to stress our balance sheet, the Federal Reserve's hypothetical economic scenarios for the CCAR process, the Federal Reserve's CCAR instructions and the Federal Reserve's supervisory expectations for the capital planning process. Any of these potential events could require us, as applicable, to revise our stress-testing or capital management approaches, resubmit our capital plan or postpone, cancel or alter our planned capital actions. In addition, changes in our business strategy, merger or acquisition activity or uses of capital could result in a change in our capital plan and its associated capital actions, and may require us to resubmit our capital plan to the Federal Reserve and recalculate our SCB requirement. We are also subject to asset quality reviews and stress testing by the ECB and in the future we may be subject to similar reviews and testing by other regulators.

Our implementation of capital and liquidity requirements, including our capital plan, may not be approved or may be objected to by the Federal Reserve, and the Federal Reserve may impose capital requirements in excess of our expectations or require us to maintain levels of liquidity that are higher than we may expect and which may adversely affect our consolidated revenues. In the event that our implementation of capital and liquidity requirements under regulatory initiatives or our current capital structure are determined not to conform with current and future capital requirements, our ability to deploy capital in the operation of our business or our ability to distribute capital to shareholders or to repurchase our capital stock may be constrained, and our business may be adversely affected. In addition, we may choose to forgo business opportunities, due to their impact on our capital plan or stress tests, including CCAR and our SCB requirement. Likewise, in the event that regulators in other jurisdictions in which we have banking subsidiaries determine that our capital or liquidity levels do not conform with current and future regulatory requirements, our ability to deploy capital, our levels of liquidity or our business operations in those jurisdictions may be adversely affected.

For additional information about the above matters, refer to "Regulatory Capital Adequacy and Liquidity Standards" section under "Supervision and Regulation" in Business and "Capital" section under "Financial Condition" in our Management's Discussion and Analysis in this Form 10-K.

We face extensive and changing government regulation in the U.S. and in non-U.S. jurisdictions in which we operate, which may increase our costs and expose us to risks related to compliance.

Most of our businesses are subject to extensive regulation by multiple regulatory bodies, and many of the clients to which we provide services are themselves subject to a broad range of regulatory requirements. These regulations may affect the scope of, and the manner and terms of delivery of, our services. As a financial institution with substantial international operations, we are subject to extensive regulation and supervisory oversight, both inside and outside of the U.S. This regulation and supervisory oversight affects, among other things, the scope of our activities and client services, our capital and organizational structure, our ability to fund the operations of our subsidiaries, our lending practices, our dividend policy, our common stock purchase actions, the manner in which we market our services, our acquisition activities and our interactions with foreign regulatory agencies and officials.

In particular, we are registered with the Federal Reserve as a bank holding company pursuant to the Bank Holding Company Act of 1956. The Bank Holding Company Act generally limits the activities in which we and our non-banking subsidiaries may engage to managing or controlling banks and to activities considered to be closely related to banking. As a bank holding company that has elected to be treated as a financial holding company under the Bank Holding Company Act, we and some of our non-banking subsidiaries may also engage in a broader range of activities considered to be "financial in nature." Financial holding company status may be denied if we and our banking subsidiaries do not remain well capitalized and well managed or fail to comply with Community Reinvestment Act obligations. Currently, under the Bank Holding Company Act, we may not be able to engage in new activities or acquire shares or control of other businesses.

We are unable to predict what, if any, changes to the regulatory environment may be enacted by Congress, both chambers of which are now under Democratic control, or the new presidential administration and what the impact of any such changes will be on our results of operations or financial condition, including increased expenses or changes in the demand for our services or our ability to engage in transactions to expand our business, or on the U.S.-domestic or global economies or financial markets.

Moreover, the turnover of the presidential administration is expected to result in certain changes in the leadership and senior staffs of the federal banking agencies. Such changes are likely to impact the rulemaking, supervision, examination and enforcement priorities and policies of the agencies.

The potential impact of any changes in agency personnel, policies and priorities on the financial services sector, including us, cannot be predicted at this time.

We expect that our business will remain subject to extensive regulation and supervision. Several other aspects of the regulatory environment in which we operate, and related risks, are discussed below. Additional information is provided under "Supervision and Regulation" in Business in this Form 10-K.

Resolution Planning

We are required to periodically submit a plan for rapid and orderly resolution in the event of material financial distress or failure commonly referred to as a resolution plan or a living will to the Federal Reserve and the FDIC under Section 165(d) of the Dodd-Frank Act. Through resolution planning, we seek, in the event of insolvency, to maintain State Street Bank's role as a key infrastructure provider within the financial system, while minimizing risk to the financial system and maximizing value for the benefit of our stakeholders. Significant management attention and resources are required in an effort to meet regulatory expectations with respect to resolution planning.

In the event of material financial distress or failure, our preferred resolution strategy is the SPOE Strategy. Our resolution plan, including our implementation of the SPOE Strategy with a secured support agreement, involves important risks, including that: (1) the SPOE Strategy and the obligations under the related secured support agreement may result in the recapitalization of and/or provision of liquidity to State Street Bank and our other material entities and the commencement of bankruptcy proceedings by the Parent Company at an earlier stage of financial stress than might otherwise occur without such mechanisms in place; (2) an expected effect of the SPOE Strategy, together with applicable TLAC regulatory requirements, is that our losses will be imposed on Parent Company shareholders and the holders of long-term debt and other forms of TLAC securities currently outstanding or issued in the future by the Parent Company, as well as on any other Parent Company creditors, before any of our losses are imposed on the holders of the debt securities of State Street Bank or certain of the Parent Company's other operating subsidiaries or any of their depositors or creditors and before U.S. taxpayers are put at risk; (3) there can be no assurance that there would be sufficient recapitalization resources available to ensure that State Street Bank and our other material entities are adequately capitalized following the triggering of the requirements to provide capital and/or liquidity under the support agreement; and (4) there can be no assurance that credit rating agencies, in response to our resolution plan or the support agreement, will not downgrade, place on negative watch or change their outlook on our debt credit ratings, generally or on specific debt securities. Additional information about the SPOE Strategy, including related risks, is provided under "Recovery and Resolution Planning" in Business in this Form 10-K.

Systemic Importance

Our qualification in the U.S. as a SIFI, and our designation by the Financial Stability Board as a G-SIB, to which certain regulatory capital surcharges may apply, subjects us to incrementally higher capital and prudential requirements, increased scrutiny of our activities and potential additional regulatory requirements or heightened regulatory expectations as compared to those applicable to some of the financial institutions with which we compete as a custodian or asset manager. This qualification and designation also has significantly increased, and may continue to increase, our expenses associated with regulatory compliance, including personnel and systems, as well as implementation and related costs to enhance our programs.

Global and Non-U.S. Regulatory Requirements

The breadth of our business activities, together with the scope of our global operations and varying business practices in relevant jurisdictions, increase the complexity and costs of meeting our regulatory compliance obligations, including in areas that are receiving significant regulatory scrutiny. We are, therefore, subject to related risks of non-compliance, including fines, penalties, lawsuits, regulatory sanctions, difficulties in obtaining governmental approvals, limitations on our business activities or reputational harm, any of which may be significant. For example, the global nature of our client base requires us to comply with complex laws and regulations of multiple jurisdictions relating to economic sanctions and money laundering. In addition, we are required to comply not only with the U.S. Foreign Corrupt Practices Act, but also with the applicable anti-corruption laws of other jurisdictions in which we operate. Further, our global operating model requires that we comply with information security, resiliency and outsourcing oversight requirements, including with respect to affiliated entities, of multiple jurisdictions and enable our clients to comply with information security, resiliency and outsourcing oversight requirements imposed upon them. Regulatory scrutiny of compliance with these and other laws and regulations is increasing and may, in some respects, impede the implementation of our global operating model that is central to both delivery of client service requirements and cost efficiency. We sometimes face inconsistent laws and regulations across the various jurisdictions in which we operate. The evolving regulatory landscape may interfere with our ability to conduct our operations, with our pursuit of a common global operating model or with our ability to compete effectively with other financial

institutions operating in those jurisdictions or which may be subject to different regulatory requirements than apply to us. In particular, non-U.S. regulations and initiatives that may be inconsistent or conflict with current or proposed regulations in the U.S. could create increased compliance and other costs that would adversely affect our business, operations or profitability. Geopolitical events such as the U.K.'s exit from the European Union also have the potential to increase the complexity and cost of regulatory compliance.

In addition to U.S. regulatory initiatives, we are further affected by non-U.S. regulatory initiatives, including the implementation of the finalized Basel prudential framework and the European Commission's Investment Firm Review and Central Securities Depositories Regulation, as well as proposals for a review of the AIFM Directive and proposals under the Capital Markets Union Action Plan. Recent, proposed or potential regulations in the U.S. and E.U. with respect to short-term wholesale funding, such as repurchase agreements or securities lending, or other non-bank finance activities, could also adversely affect not only our own operations but also the operations of the clients to which we provide services. Concerns regarding the liquidity and valuation of prime money market funds and similar products may adversely impact the cash management products we offer. In addition, anti-competitive, voting power, governance and other concerns with passive investment strategies continue to be the subject of legislative and regulatory debate which could significantly impact both our asset management business and the clients that we service.

Consequences of Regulatory Environment and Compliance Risks

Domestic and international regulatory reform could limit our ability to pursue certain business opportunities, increase our regulatory capital requirements, alter the risk profile of certain of our core activities and impose additional costs on us, otherwise adversely affect our business, our consolidated results of operations or financial condition and have other negative consequences, including, a reduction of our credit ratings. Different countries may respond to the market and economic environment in different and potentially conflicting manners, which could increase the cost of compliance for us.

The evolving regulatory environment, including changes to existing regulations and the introduction of new regulations, may also contribute to decisions we may make to suspend, reduce or withdraw from existing businesses, activities, markets or initiatives. In addition to potential lost revenue associated with any such suspensions, reductions or withdrawals, any such suspensions, reductions or withdrawals may result in significant restructuring or related costs or exposures.

If we do not comply with governmental regulations, we may be subject to fines, penalties, lawsuits, delays, or difficulties in obtaining regulatory approvals or restrictions on our business activities or harm to our reputation, which may significantly and adversely affect our business operations and, in turn, our consolidated results of operations. The willingness of regulatory authorities to impose meaningful sanctions, and the level of fines and penalties imposed in connection with regulatory violations, have increased substantially since the 2008 financial crisis. Regulatory agencies may, at times, limit our ability to disclose their findings, related actions or remedial measures. Similarly, many of our clients are subject to significant regulatory requirements and retain our services in order for us to assist them in complying with those legal requirements. Changes in these regulations can significantly affect the services that we are asked to provide, as well as our costs.

Adverse publicity and damage to our reputation arising from the failure or perceived failure to comply with legal, regulatory or contractual requirements could affect our ability to attract and retain clients. If we cause clients to fail to comply with any regulatory requirements, we may be liable to them for losses and expenses that they incur. In recent years, regulatory oversight and enforcement have increased substantially, imposing additional costs and increasing the potential risks associated with our operations. If this regulatory trend continues, it could continue to adversely affect our operations and, in turn, our consolidated results of operations and financial condition.

For additional information, see the risk factor *"Our businesses may be adversely affected by government enforcement and litigation."*

We are subject to enhanced external oversight as a result of certain agreements entered into in connection with the resolution of prior regulatory or governmental matters.

In connection with the resolution of certain proceedings relating to our having charged six clients of our transition management business during 2010 and 2011 amounts in excess of the contractual terms, in January 2017, we entered into a deferred prosecution agreement with the Department of Justice and the United States Attorney for the DOJ under which we agreed to retain an independent compliance and ethics monitor for a term which has now been extended to 2021 (subject to further extension) to, among other things, review and monitor the effectiveness of our compliance controls and business ethics and make related recommendations, and in September 2017, we entered into a settlement

agreement with the SEC that also requires us to retain an independent ethics and compliance consultant. We have retained a monitor who is fulfilling our obligations under both the deferred prosecution agreement and the SEC settlement. Responding to the monitor's requests entails significant cost and management attention and we are, in general, required to implement remediation plans to address any of the monitor's recommendations. These recommendations may require substantial cost and effort to remediate and, even when consistent with our own control enhancement objectives, may reflect differences in approach, timing and cost than we may independently intend. Under the deferred prosecution agreement we also have a heightened obligation promptly to report issues involving potential or alleged fraudulent activities to the DOJ.

As a result of the enhanced inspections and monitoring activities to which we are subject under these agreements, governmental authorities may identify areas in which we may need to take actions, which may be significant, to enhance our regulatory compliance or risk management practices. Such remedial actions may entail significant cost, management attention, and systems development and such efforts may affect our ability to expand our business until such remedial actions are completed. These actions may be in addition to remedial measures required by the Federal Reserve and other financial regulators following examinations as a result of increased prudential expectations regarding our compliance programs, culture and risk management. Our failure to implement enhanced compliance and risk management procedures in a manner and in a time frame deemed to be responsive by the applicable regulatory authority could adversely impact our relationship with such regulatory authority and could lead to restrictions on our activities or other sanctions. Moreover, the identification of new or additional facts and circumstances suggesting inappropriate or non-compliant conduct, whether identified by the monitor or a regulatory authority, in the course of an inspection, or independently by us could lead to new governmental proceedings or the re-opening of matters that were previously resolved. The presence of the monitor, as well as governmental programs rewarding whistleblowing, may also increase the instances of current or former employees alleging that certain practices are inconsistent with our legal or regulatory obligations.

Our businesses may be adversely affected by government enforcement and litigation.

The businesses in which we operate are highly-regulated and subject to extensive external scrutiny that may be directed generally to participants in the businesses or markets in which we are involved or may be specifically directed at us, including as a result of whistleblower and qui tam claims. In the course of our business, we are frequently subject to various regulatory, governmental and law enforcement inquiries, investigative demands and subpoenas, and from time to time, our clients, or the government on its own behalf or on behalf of our clients or others, make claims and take legal action relating to, among other things, our performance of our fiduciary, contractual or regulatory responsibilities. Often, the announcement of any such matters, or of any settlement of a claim or action, whether it involves us or others in our industry, may spur the initiation of similar claims by other clients or governmental parties. Regulatory authorities have, and are likely to continue to, initiate cross industry reviews when a material issue is identified at a financial institution. Such inquiries involve costs and management time and may lead to proceedings relating to our own activities.

Regardless of the outcome of any governmental enforcement or litigation matter, responding to such matters is time-consuming and expensive and can divert the attention of senior management. Governmental enforcement and litigation matters can involve claims for disgorgement, demands for substantial monetary damages, the imposition of civil or criminal penalties, and the imposition of remedial sanctions or other required changes in our business practices, any of which could result in increased expenses, loss of client demand for our products or services, or harm to our reputation. The exposure associated with any proceedings that may be threatened, commenced or filed against us could have a material adverse effect on our consolidated results of operations for the period in which we establish a reserve with respect to such potential liability or upon our reputation. In government settlements since the 2008 financial crisis, the fines imposed by authorities have increased substantially and may exceed in some cases the profit earned or harm caused by the regulatory or other breach. For example, in connection with the resolution of the transition management matter, we agreed to pay a fine of £22.9 million (approximately $37.8 million) to the U.K. FCA in 2014 and fines of $32.3 million to each of the DOJ and the SEC in 2017. As a further example, we paid an aggregate of $575 million in 2016 to resolve a series of investigations and governmental and private claims alleging that our indirect foreign exchange rates prior to 2008 were not adequately disclosed or were otherwise improper. These matters have also resulted in regulatory focus on the manner in which we charge clients and related disclosures. This focus may lead to increased and prolonged governmental inquiries and client, qui tam and whistleblower claims associated with the amount and disclosure of compensation we receive for our products and services.

Moreover, U.S. and certain international governmental authorities have increasingly brought criminal actions against financial institutions, and criminal prosecutors have increasingly sought and obtained criminal guilty pleas, deferred prosecution agreements or other criminal sanctions from financial institutions. For example, in 2017 we entered into a deferred prosecution agreement with the U.S. Department of Justice in connection with the resolution of the transition management matter, and such agreement could increase the likelihood that governmental authorities will seek criminal sanctions against us in pending or future legal proceedings. See the risk factor "*We are subject to various legal proceedings relating to the manner in which we have invoiced certain expenses, and the outcome of such proceedings could materially adversely affect our results of operations, or harm our business or reputation*." Government authorities may also pursue criminal claims against current or former employees, and these matters can, among other things, involve continuing reputational harm to us. For example, four of our former employees were indicted by U.S. prosecutors on charges of criminal conspiracy in connection with their involvement in the transition management matter. Two of these individuals pled guilty, and a third was convicted in 2018.

In many cases, we are required or may choose to report inappropriate or non-compliant conduct to the authorities, and our failure or delay to do so may represent an independent regulatory violation or be treated as an indication of non-cooperation with governmental authorities. Even when we promptly report a matter, we may nonetheless experience regulatory fines, liabilities to clients, harm to our reputation or other adverse effects. Moreover, our settlement or other resolution of any matter with any one or more regulators or other applicable party may not forestall other regulators or parties in the same or other jurisdictions from pursuing a claim or other action against us with respect to the same or a similar matter.

For more information about current contingencies relating to legal proceedings, see Note 13 to the consolidated financial statements in this Form 10-K. The resolution of certain pending or potential legal or regulatory matters could have a material adverse effect on our consolidated results of operations for the period in which the relevant matter is resolved or an accrual is determined to be required, on our consolidated financial condition or on our reputation.

In view of the inherent difficulty of predicting the outcome of legal and regulatory matters, we cannot provide assurance as to the outcome of any pending or potential matter or, if determined adversely against us, the costs associated with any such matter, particularly where the claimant seeks very large or indeterminate damages or where the matter presents novel legal theories, involves a large number of parties, involves the discretion of governmental authorities in seeking sanctions or negotiated resolution or is at a preliminary stage. We may be unable to accurately estimate our exposure to the risks of legal and regulatory contingencies when we record reserves for probable and estimable loss contingencies. As a result, any reserves we establish may not be sufficient to cover our actual financial exposure. Similarly, our estimates of the aggregate range of reasonably possible loss for legal and regulatory contingencies are based upon then-available information and are subject to significant judgment and a variety of assumptions and known and unknown uncertainties. The matters underlying the estimated range will change from time to time, and actual results may vary significantly from the estimate at any time.

We are subject to various legal proceedings relating to the manner in which we have invoiced certain expenses, and the outcome of such proceedings could materially adversely affect our results of operations or harm our business or reputation.

In 2015, we determined we had incorrectly invoiced clients for certain expenses. We have reimbursed most of our affected customers for those expenses, and we have implemented enhancements to our billing processes. In connection with our enhancements to our billing processes, we continue to review historical billing practices and may from time to time identify additional remediation. In 2017, we identified an additional area of incorrect expense billing associated with mailing services in our retirement services business. We currently expect the cumulative total of our payments to customers for these invoicing errors, including the error in the retirement services business, to be at least $370 million, all of which has been paid or is accrued. However, we may identify additional remediation costs. See the risk factor "*Our efforts to improve our billing processes and practices are ongoing and may result in the identification of additional billing errors*."

In March 2017, a purported class action was commenced against us alleging that our invoicing practices violated duties owed to retirement plan customers under ERISA. In addition, we have received a purported class action demand letter alleging that our invoicing practices were unfair and deceptive under Massachusetts law. A class of customers, or particular customers, may assert that we have not paid to them all amounts incorrectly invoiced, and may seek double or treble damages under Massachusetts law.

We are also cooperating with investigations by governmental and regulatory authorities on these

matters, including the civil and criminal divisions of the DOJ and the DOL, which reviews could result in significant fines or other sanctions, civil and criminal, against us. In June 2019, we reached an agreement with the SEC to settle its claims that we violated the recordkeeping provisions of Section 34(b) of the Investment Company Act of 1940 and caused violations of Section 31(a) of the Investment Company Act and Rules 31a-1(a) and 31a-1(b) thereunder in connection with our overcharges of customers which are registered investment companies. In reaching this settlement, we neither admitted nor denied the claims contained in the SEC's order, and agreed to pay a civil monetary penalty of $40 million. Also in June 2019, we reached an agreement with the Massachusetts Attorney General's office to resolve its claims related to this matter. In reaching this settlement, we neither admitted nor denied the claims in the order, and agreed to pay a civil monetary penalty of $5.5 million. The costs associated with these settlements were within our related previously established accruals for loss contingencies. The SEC and Massachusetts Attorney General's office settlements both recognize that the payment of $48.8 million in disgorgement and interest is satisfied by our direct reimbursements of our customers.

In January 2020, the DOJ outlined a framework for a possible resolution of their review. We are discussing the terms of a potential settlement of this matter with the DOJ. Separately, we have inquired of the DOL as to the status of their review but have not entered into settlement discussions with the DOL. There can be no assurance that any settlement with the DOJ or DOL will be reached on financial or other terms acceptable to us or at all. The aggregate amount of penalties that may potentially be imposed upon us in connection with the resolution of all outstanding investigations into our historical billing practices is not currently known. We have established a legal accrual with respect to the pending governmental investigations and civil litigation with respect to this matter; however, our ultimate liability with respect to this matter might be significantly in excess of our current accrual. Government authorities have significant discretion in criminal and civil matters as to the fines and other penalties they may seek to impose. Any resolution of the DOJ and DOL claims may involve penalties that could be a significant percentage, or a multiple of, all or a portion of the overcharge. The severity of such fines or penalties could take into account factors such as the amount or duration of our incorrect invoicing and the government's or regulators' assessment of the conduct of our employees, as well as prior conduct such as that which resulted in our January 2017 deferred prosecution agreement and settlement of civil claims regarding our indirect FX business.

The outcome of any of these proceedings and, in particular, any criminal sanction could materially adversely affect our results of operations and could have significant additional consequences for our business and reputation.

Our efforts to improve our billing processes and practices are ongoing and may result in the identification of additional billing errors.

In 2015, we determined we had incorrectly invoiced some of our Investment Servicing clients for certain expenses. At that time, we began the process of remediating these errors, improving our billing processes and controls in the asset servicing business and other businesses, and testing these improved billing processes and controls. We are continuing to standardize, enhance, and, where necessary, replace and enhance controls and invest in new billing infrastructure. The objective of this billing transformation program is to obtain greater billing accuracy and timeliness. Because of the scale of our business, identifying and remediating all weaknesses and inefficiencies in our billing processes cannot be implemented concurrently. Accordingly, the costs to remediate billing errors which may be discovered in that process, would likely be incurred over a period that we are now unable accurately to determine. As we work through this process, we have discovered and may continue to discover areas where we believe our billing processes need improvement, where we believe we have made billing errors with respect to particular customers and categories of fees and expenses, and where we believe billing arrangements between ourselves and particular customers should be clarified. Such discoveries may lead to increased expense and decreased revenues, the need to remediate prior billing errors, government investigations, or litigation that may materially impact our business, financial results and reputation.

Any theft, loss, damage to or other misappropriation or inadvertent disclosure of, or inappropriate access to, the confidential information we possess could have an adverse impact on our business and could subject us to regulatory actions, litigation and other adverse effects.

Our businesses and relationships with clients are dependent on our ability to maintain the confidentiality of our and our clients' trade secrets and other confidential information (including client transactional and holdings data and personal data about our clients, our clients' clients and our employees). Unauthorized access, or failure of our controls with respect to granting access to our systems, has in the past occurred and may in the future occur, resulting in theft, loss, damage to or other misappropriation of such information. In

addition, our and our vendors' personnel have in the past and may in the future inadvertently or deliberately disclose client or other confidential information. Any theft, loss, damage to other misappropriation or inadvertent disclosure of confidential information could have a material adverse impact on our competitive position, our relationships with our clients and our reputation and could subject us to regulatory inquiries, enforcement and fines, civil litigation and possible financial liability or costs. To the extent any of these events involve personal information, the risks of enhanced regulatory scrutiny and the potential financial liabilities are exacerbated, particularly under data protection regulations such as the GDPR.

Our calculations of credit, market and operational risk exposures, total RWA and capital ratios for regulatory purposes depend on data inputs, formulae, models, correlations and assumptions that are subject to change over time, which changes, in addition to our consolidated financial results, could materially impact our risk exposures, our total RWA and our capital ratios from period to period.

To calculate our credit, market and operational risk exposures, our total RWA and our capital ratios for regulatory purposes, the Basel III rule involves the use of current and historical data, including our own loss data and similar information from other industry participants, market volatility measures, interest rates and spreads, asset valuations, credit exposures and the creditworthiness of our counterparties. These calculations also involve the use of quantitative formulae, statistical models, historical correlations and significant assumptions. We refer to the data, formulae, models, correlations and assumptions, as well as our related internal processes, as our "advanced systems." While our advanced systems are generally quantitative in nature, significant components involve the exercise of judgment based on, among other factors, our and the financial services industry's evolving experience. Any of these judgments or other elements of our advanced systems may not, individually or collectively, precisely represent or calculate the scenarios, circumstances, outputs or other results for which they are designed or intended. Collectively, they represent only our estimate of associated risk.

In addition, our advanced systems are subject to update and periodic revalidation in response to changes in our business activities and our historical experiences, forces and events experienced by the market broadly or by individual financial institutions, changes in regulations and regulatory interpretations and other factors, and are also subject to continuing regulatory review and approval. For example, a significant operational loss experienced by another financial institution, even if we do not experience a related loss, could result in a material change in the output of our advanced systems and a corresponding material change in our risk exposures, our total RWA and our capital ratios compared to prior periods. An operational loss that we experience could also result in a material change in our capital requirements for operational risk under the advanced approaches, depending on the severity of the loss event, its characterization among the seven Basel-defined UOM, and the stability of the distributional approach for a particular UOM. This change in our capital requirements could be without direct correlation to the effects of the loss event or the timing of such effects on our results of operations. Due to the influence of changes in our advanced systems, whether resulting from changes in data inputs, regulation or regulatory supervision or interpretation, specific to us or more general market, or individual financial institution-specific, activities or experiences, or other updates or factors, we expect that our advanced systems and our credit, market and operational risk exposures, our total RWA and our capital ratios calculated under the Basel III rule will change, and may be volatile, over time, and that those latter changes or volatility could be material as calculated and measured from period to period.

Changes in accounting standards may adversely affect our consolidated financial statements.

New accounting standards, or changes to existing accounting standards, resulting both from initiatives of the FASB as well as changes in the interpretation of existing accounting standards potentially could affect our consolidated results of operations, cash flows and financial condition. These changes can materially affect how we record and report our consolidated results of operations, cash flows, financial condition and other financial information. In some cases, we could elect, or be required, to apply a new or revised standard retroactively, resulting in the revised treatment of certain transactions or activities, and, in some cases, the revision of our consolidated financial statements for prior periods. For additional information regarding changes in accounting standards, refer to the "Recent Accounting Developments" section of Note 1 to the consolidated financial statements in this Form 10-K.

Changes in tax laws, rules or regulations, challenges to our tax positions with respect to historical transactions, and changes in the composition of our pre-tax earnings may increase our effective tax rate and thus adversely affect our consolidated financial statements.

Our businesses can be directly or indirectly affected by new tax legislation, the expiration of existing tax laws or the interpretation of existing tax laws worldwide. The U.S. federal and state governments, including Massachusetts, and

jurisdictions around the world continue to review proposals to amend tax laws, rules and regulations applicable to our businesses that could have a negative impact on our capital or after-tax earnings. In the normal course of our business, we are subject to review by U.S. and non-U.S. tax authorities. A review by any such authority could result in an increase in our recorded tax liability. In addition to the aforementioned risks, our effective tax rate is dependent on the nature and geographic composition of our pre-tax earnings and could be negatively affected by changes in these factors.

The market transition away from broad use of the London Interbank Offered Rate (LIBOR) as an interest rate benchmark may impose additional costs on us and may expose us to increased operational, model and financial risk.

Globally, regulators have advised large banks to assess the risks and to prepare for transition from LIBOR to alternative rates ahead of year end 2021. Our financial performance depends, in part, on our ability to adapt to market changes promptly, while avoiding increased related expenses or operational errors. Substantial risks and uncertainties are associated with the market transition away from the use of LIBOR as a critical interest rate benchmark used to determine amounts payable under, and the value of, financial instruments and contracts.

Due to our dependencies on LIBOR, the failure or inability to timely plan and implement a LIBOR transition program to maintain operational continuity and minimize economic impact for our clients, ourselves and other stakeholders could negatively impact our business and financial performance. Those dependencies include LIBOR-based securities and loans held in our investment portfolio, LIBOR-based preferred stock and long-term debt issued by us and LIBOR-based client fee schedules and deposit pricing. Also, our internal models which support decision making and risk management will require adjustments, which may cause weaknesses in the underlying model, inadequate assumptions or lead to reliance on poor or inaccurate data. Assets held by our customers in their investment portfolios or in the investment portfolios we manage for others have LIBOR-based terms. We need to enhance our processes and systems to account for the new alternative rates-based instruments as they come to market, the transition of LIBOR-based instruments to their fallback language and uncertainty as to how such instruments should be valued where such fallback language is unclear. These process and systems requirements could adversely impact our business, which in some instances is dependent on critical inputs from third parties, who themselves must timely adapt to the market changes and failure to implement the terms of those instruments in a manner consistent with customer expectation could lead to disputes and operational issues. Failure or perceived failure to adequately prepare for LIBOR transition could affect our ability to attract and retain clients. Uncertainty relative to external developments necessary for the market transition away from LIBOR but outside of our control could further increase the costs and risks of the transition for us or our subsidiaries and have an adverse impact on our operational and financial performance.

Operational Risks

Our controls and procedures may fail or be circumvented, our risk management policies and procedures may be inadequate, and operational risks could adversely affect our consolidated results of operations.

We have in the past failed and may in the future fail to identify and manage risks related to a variety of aspects of our business, including, but not limited to cyber-security, information technology risk, operational risk and resiliency, interest rate risk, foreign exchange risk, trading risk, fiduciary risk, legal and compliance risk, liquidity risk and credit risk. We have adopted various controls, procedures, policies and systems to monitor and manage risk. We cannot provide assurance that those controls, procedures, policies and systems are or will be adequate to identify and manage internal and external risks, including risks related to service providers, in our various businesses. The risk of individuals, either employees or contractors, engaging in conduct harmful or misleading to clients or to us, such as consciously circumventing established control mechanisms to exceed trading or investment management limitations, committing fraud or improperly selling products or services to clients, is particularly challenging to manage through a control framework. In addition, we are subject to increased resiliency risk, requiring continuous reinvestment, enhancement and improvement in and of our information technology and operational infrastructure, controls and personnel which may not be effectively or timely deployed or integrated. Moreover, the financial and reputational impact of control or conduct failures can be significant. Persistent or repeated issues with respect to controls, information technology and operational resiliency or individual conduct have raised and may in the future raise concerns among regulators regarding our culture, governance and control environment. There can be no assurance that our efforts to address such risks will be effective. While we seek to contractually limit our financial exposure to operational risk, the degree of protection that we are able to achieve varies, and our potential exposure may be greater than the revenue we anticipate that we will earn from servicing our clients.

In addition, our businesses and the markets in which we operate are continuously evolving. We will need to make additional investments to develop the operational infrastructure and to enhance our compliance and risk management capabilities to support these businesses, which may increase the operating expenses of such businesses. Moreover, we may fail to identify or fully understand the implications of changes in our businesses or the financial markets and fail to adequately or timely enhance our risk framework to address those changes. To the extent that our risk framework is ineffective, either because it fails to keep pace with changes in the financial markets, regulatory or industry requirements, technology and cyber-security developments, our businesses, our counterparties, clients or service providers or for other reasons, we could incur losses, suffer reputational damage or find ourselves out of compliance with applicable regulatory or contractual mandates or expectations, and subject to regulatory inquiry or action against us.

Operational risk is inherent in all of our business activities. As a leading provider of services to institutional investors, we provide a broad array of services, including research, investment management, trading services and investment servicing that expose us to operational risk. In addition, these services generate a broad array of complex and specialized servicing, confidentiality and fiduciary requirements, many of which involve the opportunity for human, systems or process errors. We face the risk that the control policies, procedures and systems we have established to comply with our operational or security requirements will fail, will be inadequate or will become outdated. We also face the potential for loss resulting from inadequate or failed internal processes, employee supervision or monitoring mechanisms, service-provider processes or other systems or controls, which could materially affect our future consolidated results of operations. Given the volume and magnitude of transactions we process on a daily basis, operational losses represent a potentially significant financial risk for our business. Operational errors that result in us remitting funds to a failing or bankrupt entity may be irreversible, and may subject us to losses.

We may also be subject to disruptions from external events that are wholly or partially beyond our control, which could cause delays or disruptions to operational functions, including information processing and financial market settlement functions. In addition, our clients, vendors and counterparties could suffer from such events. Should these events affect us, or the clients, vendors or counterparties with which we conduct business, our consolidated results of operations could be negatively affected. When we record balance sheet accruals for probable and estimable loss contingencies related to operational losses, we may be unable to accurately estimate our potential exposure, and any accruals we establish to cover operational losses may not be sufficient to cover our actual financial exposure, which could have a material adverse effect on our consolidated results of operations.

Cost shifting to non-U.S. jurisdictions and outsourcing may expose us to increased operational risk and reputational harm and may not result in expected cost savings.

We manage expenses by migrating certain business processes and business support functions to lower-cost geographic locations, such as India, Poland and China, and by outsourcing to vendors and joint ventures in various jurisdictions. This effort exposes us to the risk that we may not maintain service quality, control and effective management or business resiliency within these operations during and after transitions. These migrations also involve risks that our outsourcing vendors or joint ventures may not comply with their servicing and other contractual obligations to us, including with respect to indemnification and information security, and to the risk that we may not satisfy applicable regulatory responsibilities regarding the management and oversight of outsourcing providers, joint ventures and other third parties. Our geographic footprint also exposes us to the relevant macroeconomic, political, legal and similar risks generally involved in doing business in the jurisdictions in which we establish lower-cost locations or joint ventures or in which our outsourcing vendors locate their operations, particularly in locations where we have a concentration of our operational activities, such as India, Poland and China. The increased elements of risk that arise from certain operating processes being conducted in some jurisdictions could lead to an increase in reputational risk. During periods of transition of operations, greater operational risk and client concerns exist with respect to maintaining a high level of service delivery and business resiliency. The extent and pace at which we are able to move functions to lower-cost locations, joint ventures and outsourcing providers may also be affected by political, regulatory and client acceptance issues, including with respect to data use, storage and security. Such relocation or outsourcing of functions also entails costs, such as technology, real estate and restructuring expenses, which may offset or exceed the expected financial benefits of the relocation or outsourcing. In addition, the financial benefits of lower-cost locations and of outsourcings may diminish over time or could be offset in the event that the U.S. or other jurisdictions impose tax, trade barrier or other measures which seek to discourage the use of lower cost jurisdictions.

Any failures of or damage to, attack on or unauthorized access to our information technology systems or facilities or disruptions to our continuous operations, including the systems, facilities or operations of third parties with which we do business, such as resulting from cyber-attacks, could result in significant costs, reputational damage and limits on our ability to conduct our business activities.

Our businesses depend on information technology infrastructure, both internal and external, to, among other things, record and process a large volume of increasingly complex transactions and other data, in many currencies, on a daily basis, across numerous and diverse markets and jurisdictions and to maintain that data securely. In recent years, several financial services firms have suffered successful cyber-attacks launched both domestically and from abroad, resulting in the disruption of services to clients, loss or misappropriation of sensitive or private data and reputational harm. We also have been subjected to cyber-attacks, and although we have not to our knowledge suffered a material breach or suspension of our systems, it is possible that we could suffer such a breach or suspension in the future or that we may be unaware of a prior attack. Cyber-threats are sophisticated and continually evolving. We may not implement effective systems and other measures to effectively identify, detect, prevent, mitigate, recover from or remediate the full diversity of cyber-threats or improve and adapt such systems and measures as such threats evolve and advance.

A cyber-security incident, or a failure to protect our technology infrastructure, systems and information and our clients and others' information against cyber-security threats, could result in the theft, loss, unauthorized access to, disclosure, misuse or alteration of information, system failures or outages or loss of access to information. The expectations of our clients and regulators with respect to the resiliency of our systems and the adequacy of our control environment with respect to such systems has and is expected to increase as the risk of cyber-attacks, which is presently elevated due to the current work-from-home environment, and the consequences of those attacks become more pronounced. We may not be successful in meeting those expectations or in our efforts to identify, detect, prevent, mitigate and respond to such cyber-incidents or for our systems to recover in a manner that does not disrupt our ability to provide services to our clients. The failure to maintain an adequate technology infrastructure and applications with effective cyber-security controls could impact operations, adversely affect our financial results, result in loss of business, damage our reputation or impact our ability to comply with regulatory obligations, leading to regulatory fines and sanctions. We may be required to expend significant additional resources to modify, investigate or remediate vulnerabilities or other exposures arising from cyber-security threats.

Our computer, communications, data processing, networks, backup, business continuity, disaster recovery or other operating, information or technology systems, facilities and activities have suffered and in the future may suffer disruptions or otherwise fail to operate properly or become disabled, overloaded or damaged as a result of a number of factors, including events that are wholly or partially beyond our control, which can adversely affect our ability to process transactions, provide services or maintain systems availability, maintain information security, compliance and internal controls or otherwise appropriately conduct our business activities. For example, in addition to cyber-attacks, there could be sudden increases in transaction or data volumes, electrical or telecommunications outages, natural disasters, or employee or contractor error or malfeasance. Third parties may also attempt to place individuals within State Street or fraudulently induce employees, vendors, clients or other users of our systems to disclose sensitive information in order to gain access to our data or that of our clients or other parties. Any such disruptions or failures may require us, among other things, to reconstruct lost data (which may not be possible), reimburse our clients' costs associated with such disruption or failure, result in loss of client business or damage our information technology infrastructure or systems or those of our clients or other parties. While we have not in the past suffered material harm or other adverse effects from such disruptions or failures, we may not successfully prevent, respond to or recover from such disruptions or failures in the future, and any such disruption or failure could adversely impact our ability to conduct our businesses, damage our reputation and cause losses, potentially materially.

The third parties with which we do business, which facilitate our business activities, to whom we outsource operations or other activities, from whom we receive products or services or with whom we otherwise engage or interact, including financial intermediaries and technology infrastructure and service providers, are also susceptible to the foregoing risks (including the third parties with which they are similarly interconnected or on which they otherwise rely), and our or their business operations and activities have been and may in the future be adversely affected, perhaps materially, by failures, terminations, errors or malfeasance by, or attacks or constraints on, one or more financial, technology, infrastructure or government institutions or intermediaries with whom we or they are interconnected or conduct business.

In particular, we, like other financial services firms, will continue to face increasing cyber-threats, including computer viruses, malicious code, distributed denial of service attacks, phishing attacks, ransomware, hacker attacks, limited availability of services, unauthorized access, information security breaches or employee or contractor error or malfeasance that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of our, our clients' or other parties' confidential, personal, proprietary or other information or otherwise disrupt, compromise or damage our or our clients' or other parties' business assets, operations and activities. These and similar types of threats are occurring globally with greater frequency and intensity, and we may not anticipate or implement effective preventative measures against, or identify and detect one or more, such threats, particularly because the techniques used change frequently or may not be recognized until after they are launched. Our status as a global SIFI likely increases the risk that we are targeted by such cyber-security threats. In addition, some of our service offerings, such as data warehousing, may also increase the risk we are, and the consequences of being, so targeted. We may be required to expend significant additional resources to modify, investigate or remediate vulnerabilities or other exposures arising from cyber-security threats. We therefore could experience significant related costs and legal and financial exposures, including lost or constrained ability to provide our services or maintain systems availability to clients, regulatory inquiries, enforcements, actions and fines, litigation, damage to our reputation or property and enhanced competition.

Due to our dependence on technology and the important role it plays in our business operations, we are attempting to improve and update our information technology infrastructure, among other things: (1) as some of our systems are approaching the end of their useful life, are redundant or do not share data without reconciliation; (2) to be more efficient, meet increasing client and regulatory security, resiliency and other expectations and support opportunities of growth; and (3) to enhance resiliency and maintain business continuity. Updating these systems involves material costs and often involves implementation, integration and security risks, including risks that we may not adequately anticipate the market or technological trends, regulatory expectations or client needs or experience unexpected challenges that could cause financial, reputational and operational harm. Failing to properly respond to and invest in changes and advancements in technology can limit our ability to attract and retain clients, prevent us from offering similar products and services as those offered by our competitors, impair our ability to maintain continuous operations, inhibit our ability to meet regulatory requirements and subject us to regulatory inquires.

Long-term contracts expose us to pricing and performance risk.

We frequently enter into long-term client servicing contracts in our Investment Servicing business. These include outsourcing and other core services contracts and can involve information technology development. These arrangements generally set forth our fee schedule for the term of the contract and, absent a change in service requirements, do not permit us to re-price the contract for changes in our costs or for market pricing. The long-term contracts for these relationships require, in some cases, considerable up-front investment by us, including technology and conversion costs, and carry the risk that pricing for the products and services we provide might not prove adequate to generate expected operating margins over the term of the contracts.

The profitability of these contracts is largely a function of our ability to accurately calculate pricing for our services, efficiently assume our contractual responsibilities in a timely manner, control our costs and maintain the relationship with the client for an adequate period of time to recover our up-front investment. Our estimate of the profitability of these arrangements can be adversely affected by declines in or inaccurate projections of the assets under the clients' management, whether due to general declines in the securities markets or client-specific issues. In addition, the profitability of these arrangements may be based on our ability to cross-sell additional services to these clients, and we may be unable to do so. In addition, such contracts may permit early termination or reduction in services in the event that certain service levels are not met, which termination or service reduction may result in loss of upfront investment in onboarding the client.

Performance risk exists in each contract, given our dependence on successful conversion and implementation onto our own operating platforms of the service activities provided. Our failure to meet specified service levels or implementation timelines may also adversely affect our revenue from such arrangements, or permit early termination of the contracts by the client. If the demand for these types of services were to decline, we could see our revenue decline.

Our businesses may be negatively affected by adverse publicity or other reputational harm.

Our relationship with many of our clients is predicated on our reputation as a fiduciary and a service provider that adheres to the highest standards of ethics, service quality and regulatory compliance, as well as a leading provider of the products and services we offer. Adverse publicity, regulatory actions

or fines, litigation, operational failures, loss of client opportunities or market share or the failure to meet client expectations or fiduciary or other obligations could materially and adversely affect our reputation, our ability to attract and retain clients or key employees or our sources of funding for the same or other businesses. For example, over the past decade we have experienced adverse publicity with respect to our indirect foreign exchange trading, and this adverse publicity has contributed to a shift of client volume to other foreign exchange execution methods. Similarly, governmental actions and reputational issues in our transition management business in the U.K. have adversely affected our transition management revenue and, with criminal convictions or guilty pleas of three of our former employees in 2018 and the deferred prosecution agreement we entered into with the DOJ in early 2017 and the related SEC settlement, these effects have the potential to continue. The client invoicing matter we announced in late 2015 has had similar effects. For additional information about these matters, see the risk factor "*Our businesses may be adversely affected by government enforcement and litigation*."

Preserving and enhancing our reputation also depends on maintaining systems, procedures and controls that address known risks and regulatory requirements, as well as our ability to timely identify, understand and mitigate additional risks that arise due to changes in our businesses and the marketplaces in which we operate, the regulatory environment and client expectations.

We may not be able to protect our intellectual property, and we are subject to claims of third-party intellectual property rights.

Our potential inability to protect our intellectual property and proprietary technology effectively may allow competitors to duplicate our technology and products and may adversely affect our ability to compete with them. To the extent that we do not protect our intellectual property effectively through patents, maintaining trade secrets or other means in all of the jurisdictions in which we operate or market our products and services, other parties, including former employees, with knowledge of our intellectual property may seek to exploit our intellectual property for their own or others' advantage. In addition, we may infringe on claims of third-party patents, and we may face intellectual property challenges from other parties, including clients or service providers with whom we may engage in the development or implementation of other products, services or solutions or to whose information we may have access for limited permitted purposes but with whom we also compete. The risk of such infringement is enhanced in the current competitive “Fintech” environment, particularly with respect to our development of new products and services containing significant technology elements and dependencies, any of which could become the subject of an infringement claim. We may not be successful in defending against any such challenges or in obtaining licenses to avoid or resolve any intellectual property disputes. Third-party intellectual rights, valid or not, may also impede our deployment of the full scope of our products and service capabilities in all jurisdictions in which we operate or market our products and services.

The quantitative models we use to manage our business may contain errors that result in inadequate risk assessments, inaccurate valuations or poor business decisions, and lapses in disclosure controls and procedures or internal control over financial reporting could occur, any of which could result in material harm.

We use quantitative models to help manage many different aspects of our businesses. As an input to our overall assessment of capital adequacy, we use models to measure the amount of credit risk, market risk, operational risk, interest rate risk and liquidity risk we face. During the preparation of our consolidated financial statements, we sometimes use models to measure the value of asset and liability positions for which reliable market prices are not available. We also use models to support many different types of business decisions including trading activities, hedging, asset-and-liability management and whether to change business strategy. Weaknesses in the underlying model, inadequate model assumptions, normal model limitations, inappropriate model use, weaknesses in model implementation or poor data quality, could result in unanticipated and adverse consequences, including material loss and material non-compliance with regulatory requirements or expectations. Because of our widespread usage of models, potential weaknesses in our MRM practices pose an ongoing risk to us.

We also may fail to accurately quantify the magnitude of the risks we face. Our measurement methodologies rely on many assumptions and historical analyses and correlations. These assumptions may be incorrect, and the historical correlations on which we rely may not continue to be relevant. Consequently, the measurements that we make for regulatory purposes may not adequately capture or express the true risk profiles of our businesses. Moreover, as businesses and markets evolve, our measurements may not accurately reflect this evolution. While our risk measures may indicate sufficient capitalization, they may underestimate the level of capital necessary to conduct our businesses.

Additionally, our disclosure controls and procedures may not be effective in every circumstance, and, similarly, it is possible we may

identify a material weakness or significant deficiency in internal control over financial reporting. Any such lapses or deficiencies may materially and adversely affect our business and consolidated results of operations or consolidated financial condition, restrict our ability to access the capital markets, require us to expend significant resources to correct the lapses or deficiencies, expose us to regulatory or legal proceedings, subject us to fines, penalties or judgments or harm our reputation.

Our reputation and business prospects may be damaged if our clients incur substantial losses in investment pools that we sponsor or manage or are restricted in redeeming their interests in these investment pools.

We manage assets on behalf of clients in several forms, including in collective investment pools, money market funds, securities finance collateral pools, cash collateral and other cash products and short-term investment funds. Our management of collective investment pools on behalf of clients exposes us to reputational risk and operational losses. If our clients incur substantial investment losses in these pools, receive redemptions as in-kind distributions rather than in cash, or experience significant under-performance relative to the market or our competitors' products, our reputation could be significantly harmed, which harm could significantly and adversely affect the prospects of our associated business units. Because we often implement investment and operational decisions and actions over multiple investment pools to achieve scale, we face the risk that losses, even small losses, may have a significant effect in the aggregate.

Within our Investment Management business, we manage investment pools, such as mutual funds and collective investment funds that generally offer our clients the ability to withdraw their investments on short notice, generally daily or monthly. This feature requires that we manage those pools in a manner that takes into account both maximizing the long-term return on the investment pool and retaining sufficient liquidity to meet reasonably anticipated liquidity requirements of our clients. The importance of maintaining liquidity varies by product type, but it is a particularly important feature in money market funds and other products designed to maintain a constant net asset value of $1.00. In the past, we have imposed restrictions on cash redemptions from the agency lending collateral pools, as the per-unit market value of those funds' assets had declined below the constant $1.00 the funds employ to effect purchase and redemption transactions. Both the decline of the funds' net asset value below $1.00 and the imposition of restrictions on redemptions had a significant client, reputational and regulatory impact on us, and the recurrence of such or similar circumstances in the future could adversely impact our consolidated results of operations and financial condition. We have also in the past continued to process purchase and redemption of units of investment products designed to maintain a constant net asset value at $1.00 although the fair market value of the fund's assets were less than $1.00. If in the future we were to continue to process purchases and redemptions from such products at $1.00 when the fair market value of our collateral pools' assets is less than $1.00, we could be exposed to significant liability.

If higher than normal demands for liquidity from our clients were to occur, managing the liquidity requirements of our collective investment pools could become more difficult. If such liquidity problems were to recur, our relationships with our clients may be adversely affected, and, we could, in certain circumstances, be required to consolidate the investment pools into our consolidated statement of condition; levels of redemption activity could increase; and our consolidated results of operations and business prospects could be adversely affected. In addition, if a money market fund that we manage were to have unexpected liquidity demands from investors in the fund that exceeded available liquidity, the fund could be required to sell assets to meet those redemption requirements, and selling the assets held by the fund at a reasonable price, if at all, may then be difficult.

Because of the size of the investment pools that we manage, we may not have the financial ability or regulatory authority to support the liquidity or other demands of our clients. Any decision by us to provide financial support to an investment pool to support our reputation in circumstances where we are not statutorily or contractually obligated to do so could result in the recognition of significant losses, could adversely affect the regulatory view of our capital levels or plans and could, in some cases, require us to consolidate the investment pools into our consolidated statement of condition. Any failure of the pools to meet redemption requests, or under-performance of our pools relative to similar products offered by our competitors, could harm our business and our reputation.

We may incur losses arising from our investments in sponsored investment funds, which could be material to our consolidated results of operations in the periods incurred.

In the normal course of business, we manage various types of sponsored investment funds through State Street Global Advisors. The services we provide to these sponsored investment funds generate management fee revenue, as well as servicing fees from our other businesses. From time to time, we may invest in the funds, which we refer to as seed

capital, in order for the funds to establish a performance history for newly launched strategies. These funds may meet the definition of variable interest entities, as defined by U.S. GAAP, and if we are deemed to be the primary beneficiary of these funds, we may be required to consolidate these funds in our consolidated financial statements under U.S. GAAP. The funds follow specialized investment company accounting rules which prescribe fair value for the underlying investment securities held by the funds.

In the aggregate, we expect any financial losses that we realize over time from these seed investments to be limited to the actual amount invested in the consolidated fund. However, in the event of a fund wind-down, gross gains and losses of the fund may be recognized for financial accounting purposes in different periods during the time the fund is consolidated but not wholly owned. Although we expect the actual economic loss to be limited to the amount invested, our losses in any period for financial accounting purposes could exceed the value of our economic interests in the fund and could exceed the value of our initial seed capital investment.

In instances where we are not deemed to be the primary beneficiary of the sponsored investment fund, we do not include the funds in our consolidated financial statements. Our risk of loss associated with investment in these unconsolidated funds primarily represents our seed capital investment, which could become realized as a result of poor investment performance. However, the amount of loss we may recognize during any period would be limited to the carrying amount of our investment.

Climate change may increase the frequency and severity of major weather events and could adversely affect our business operations.

Our businesses and the activities of our clients, business partners and the financial infrastructure on which we and they rely could be adversely affected by major weather events or other disruptions caused by climate change affecting the regions, countries and locations in which we or they have operations or other interests. Potential events or disruptions of this nature include significant rainfall, flooding, increased frequency or intensity of wildfires, prolonged drought, rising sea levels and rising heat index. These events or disruptions, alone or in combination, also have the potential to strain or deplete infrastructure and response capabilities with respect to other weather events, such as hurricanes and other storms. The occurrence of any one or more of these events may negatively affect our or our clients', business partners' or financial infrastructure providers' facilities, operations or personnel or may otherwise disrupt our or their business activities, including our or their provision of products and services or the value of our or their portfolio investments, perhaps materially. These consequences, including a material reduction in asset values affecting the levels of our AUC/A or AUM, could materially adversely affect our results of operations. In addition, climate change-related legislative and regulatory initiatives may result in operational changes and expenditures that could adversely affect us. Our reputation may also be damaged if we do not, or are perceived not to, effectively prepare for the potential business and operational risks associated with climate change.

We may incur losses as a result of unforeseen events including terrorist attacks, natural disasters, the emergence of a new pandemic or acts of embezzlement.

Acts of terrorism, natural disasters or the emergence of a new pandemic could significantly affect our business. We have instituted disaster recovery and continuity plans to address risks from terrorism, natural disasters and pandemic; however, anticipating or addressing all potential contingencies is not possible for events of this nature. Acts of terrorism, either targeted or broad in scope, or natural disasters could damage our physical facilities, harm our employees and disrupt our operations. A pandemic, or concern about a possible pandemic, could lead to operational difficulties and impair our ability to manage our business. Acts of terrorism, natural disasters and pandemics could also negatively affect our clients, counterparties and service providers, as well as result in disruptions in general economic activity and the financial markets.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our headquarters is located at State Street Financial Center, One Lincoln Street, Boston, Massachusetts, a 36-story leased office building. Various divisions of our two lines of business, as well as support functions, occupy space in this building. We occupy two buildings located in Quincy, Massachusetts, one of which we own and one of which we lease, along with the Channel Center, another leased office building located in Boston, all of which function as our principal facilities.

We occupy a total of approximately 6.5 million square feet of office space and related facilities worldwide, of which approximately 5.5 million square feet are leased. The following table provides information on certain of our office space and related facilities:

Principal Properties[1]	City	State/ Country	Owned/ Leased
U.S. and Canada:			
State Street Financial Center	Boston	MA	Leased
Channel Center	Boston	MA	Leased
District Avenue	Burlington	MA	Leased
Heritage Drive	Quincy	MA	Leased
John Adams Building	Quincy	MA	Owned
Grafton Data Center	Grafton	MA	Owned
Westborough Data Center	Westborough	MA	Owned
Summer Street	Stamford	CT	Leased
Pennsylvania Avenue	Kansas City	MO	Leased
Adelaide Street East	Toronto	Canada	Leased
Europe, Middle East and Africa:			
Churchill Place	London	England	Leased
Sir John Rogerson's Quay	Dublin	Ireland	Leased
Via Ferrante Aporti	Milan	Italy	Leased
Kirchberg	Luxembourg	Luxembourg	Leased
Titanium Tower	Gdansk	Poland	Leased
BIG	Krakow	Poland	Leased
CBK	Krakow	Poland	Leased
Asia Pacific:			
San Dun	Hangzhou	China	Leased
Tian Tang	Hangzhou	China	Leased
Ecoworld 6B	Bangalore	India	Leased
Ecoworld 7	Bangalore	India	Leased
Knowledge City Salarpuria	Hyderabad	India	Leased

[1] We lease other properties in the above regions which consists of 41 locations in the U.S. and Canada, 29 locations in Europe, Middle East and Africa (EMEA) and 38 locations in Asia Pacific.

ITEM 3. LEGAL PROCEEDINGS

The information required by this Item is provided under "Legal and Regulatory Matters" in Note 13 to the consolidated financial statements in this Form 10-K, and is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following table presents certain information with respect to each of our executive officers as of February 19, 2021.

Name	Age	Position
Ronald P. O'Hanley	64	Chairman, President and Chief Executive Officer
Eric W. Aboaf	56	Executive Vice President and Chief Financial Officer
Ian W. Appleyard	56	Executive Vice President, Global Controller and Chief Accounting Officer
Francisco Aristeguieta	55	Executive Vice President and Chief Executive Officer of State Street Institutional Services
Andrew J. Erickson	51	Executive Vice President, Chief Productivity Officer and Head of International
Kathryn M. Horgan	55	Executive Vice President and Chief Human Resources and Citizenship Officer
Andrew P. Kuritzkes	60	Executive Vice President and Chief Risk Officer
Louis D. Maiuri	56	Executive Vice President and Chief Operating Officer
David C. Phelan	63	Executive Vice President, General Counsel and Secretary
Michael L. Richards	62	Executive Vice President and Chief Administrative Officer
Cyrus Taraporevala	54	President and Chief Executive Officer, State Street Global Advisors

All executive officers are appointed by the Board of Directors and hold office at the discretion of the Board. No family relationships exist among any of our directors and executive officers.

Mr. O'Hanley joined State Street in April 2015 and since January 1, 2019 has served as the President and Chief Executive Officer. He was appointed Chairman of the Board effective January 1, 2020. Prior to this role Mr. O'Hanley served as President and Chief Operating Officer from November 2017 to December 2018 and served as Vice Chairman from January 1, 2017 to November 2017. He served as the Chief Executive Officer and President of State Street Global Advisors, the investment management arm of State Street Corporation, from April 2015 to November 2017. Prior to joining State Street, Mr. O'Hanley was president of Asset Management & Corporate Services for Fidelity Investments, a financial and mutual fund services corporation, from 2010 to February 2014. From 1997 to 2010, Mr. O'Hanley served in various positions at Bank of New York Mellon, a global banking and financial services corporation, serving as president and chief executive officer of BNY Asset Management in Boston from 2007 to 2010.

Mr. Aboaf joined State Street in December 2016 as Executive Vice President and has served as Executive Vice President and Chief Financial Officer since February 2017. Prior to joining State Street, Mr. Aboaf served as chief financial officer of Citizens Financial Group, a financial services and retail banking firm, from April 2015 to December 2016, with responsibility for all finance functions and corporate development. From 2003 to March 2015, he served in several senior management positions for Citigroup, a global investment banking and financial services corporation, including as global treasurer and as the chief financial officer of the institutional client group, which included the custody business.

Mr. Appleyard joined State Street in May 2018 as Executive Vice President, Global Controller and Chief Accounting Officer. Prior to joining State Street, Mr. Appleyard served as managing director in group finance for Credit Suisse, a provider of financial services, from May 2013 to April 2018 and held several senior management positions with Credit Suisse after joining in September 2008. Prior to Credit Suisse, Mr. Appleyard held senior positions at HSBC and JPMorgan.

Mr. Aristeguieta joined State Street in July 2019 and since June 2020 has served as Chief Executive Officer of State Street Institutional Services. Prior to this role, he served as Executive Vice President and Chief Executive Officer of International Business from July 2019 to June 2020. Prior to joining State Street, Mr. Aristeguieta was Chief Executive Officer of Citigroup Asia, an international investment banking and financial services provider, from June 2015 to June 2019. Prior to that role, he served as Chief Executive Officer of Citigroup Latin America from January 2013 to June 2015 and before that he led Citigroup's Transaction Services Group in Latin America encompassing securities servicing, trade and cash management, and served as vice chairman of Banco de Chile.

Mr. Erickson joined State Street in April 1991 and since June 2020 has served as Executive Vice President, Chief Productivity Officer and head of State Street's International business. Prior to this role, he served as Executive Vice President and head of the Global Services business from November 2017 to June 2020. Prior to this role and commencing in June 2016, he served as Executive Vice President and head of Investment Services business in the Americas. Prior to that role, Mr. Erickson was the head of the Global Services business in Asia Pacific from April 2014 to June 2016 and prior to that was head of North Asia for Global Services from 2010 to April 2014. Mr. Erickson has also held several other

positions within State Street during his over 25 years with State Street.

Ms. Horgan joined State Street in April 2009 and has served as Executive Vice President and Chief Human Resources and Citizenship Officer since March 2017. Prior to this role, she served as Chief Operating Officer for State Street's Global Human Resources division from 2011 to March 2017 and since 2012 has served as an Executive Vice President. Prior to 2011, Ms. Horgan served as the Senior Vice President of Human Resources for State Street Global Advisors. Before joining State Street, Ms. Horgan was the Executive Vice President of human resources for Old Mutual Asset Management, a global, diversified multi-boutique asset management company, from 2006 to 2009.

Mr. Kuritzkes joined State Street in 2010 as Executive Vice President and Chief Risk Officer. Prior to joining State Street, Mr. Kuritzkes was a partner at Oliver, Wyman & Company, an international management consulting firm, and led the firm's Public Policy practice in North America. He joined Oliver, Wyman & Company in 1988, was a managing director in the firm's London office from 1993 to 1997, and served as vice chairman of Oliver, Wyman & Company globally from 2000 until the firm's acquisition by MMC in 2003. From 1986 to 1988, he worked as an economist and lawyer for the Federal Reserve Bank of New York.

Mr. Maiuri joined State Street in October 2013 and since February 2019 has served as Executive Vice President and Chief Operating Officer. Prior to this role, Mr. Maiuri served as Executive Vice President and head of State Street Global Markets from June 2016 to February 2019 and head of State Street Global Exchange from July 2015 to January 2017. From 2013 to July 2015, he led State Street's Securities Finance division. Before joining State Street, Mr. Maiuri served as executive vice president and deputy chief executive officer of asset servicing at BNY Mellon, a global banking and financial services corporation, from 2009 to 2013.

Mr. Phelan joined State Street in 2006 as Executive Vice President and General Counsel. In July 2020, Mr. Phelan's responsibilities were expanded to include State Street's regulatory, security and corporate administration functions globally. He also serves as State Street's Corporate Secretary. Prior to joining State Street, Mr. Phelan served as a senior partner at Wilmer Cutler Pickering Hale and Dorr LLP from 1993 to 2006.

Mr. Richards joined State Street in June 2014 and since April 2020 has served as Executive Vice President and Chief Administrative Officer. Prior to that role, he served as Executive Vice President and General Auditor from June 2014 to April 2020. Prior to joining State Street, Mr. Richards was a partner at Ernst & Young and was responsible for managing their Banking Capital Markets practice in the United States.

Mr. Taraporevala joined State Street in April 2016 and since November 2017 has served as President and Chief Executive Officer of State Street Global Advisors. He joined State Street Global Advisors as Executive Vice President and Global Head of Product and Marketing. Prior to joining State Street Global Advisors, Mr. Taraporevala was the head of Retail Managed Accounts and Life Insurance & Annuities for Fidelity Investments from 2012 to October 2015. Prior to that, Mr. Taraporevala held senior leadership roles at BNY Mellon Asset Management, including executive director of North American distribution.

PART II

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

MARKET FOR REGISTRANT'S COMMON EQUITY

Our common stock is listed on the New York Stock Exchange under the ticker symbol STT. There were 2,295 shareholders of record as of January 31, 2021.

In June 2019, our Board approved a common stock purchase program authorizing the purchase of up to $2.0 billion of our common stock from July 1, 2019 through June 30, 2020 (the 2019 Program). On March 16, 2020, we, along with the other U.S. G-SIBs, suspended common share repurchases and maintained this suspension through the fourth quarter of 2020 in response to the COVID-19 pandemic. This suspension was consistent with limitations imposed by the Federal Reserve beginning in the second quarter of 2020. As a result, we had no repurchases of our common stock in the second, third or fourth quarters of 2020. In December 2020, the Federal Reserve issued results of the 2020 resubmission stress tests and authorized us to continue to pay common stock dividends at current levels and to resume repurchasing common shares in the first quarter of 2021, subject to certain limitations (together with common stock dividends) based primarily on average 2020 quarterly net income. In January 2021, our Board authorized a share repurchase program for the purchase of up to $475 million of our common stock through March 31, 2021. Stock purchases may be made using various types of mechanisms, including open market purchases or transactions off market, and may be made under Rule 10b5-1 trading programs. The timing of stock purchases, types of transactions and number of shares purchased will depend on several factors, including market conditions, our capital position, our financial performance and investment

opportunities. Our common stock purchase program does not have specific price targets and may be suspended at any time. We may employ third-party broker/dealers to acquire shares on the open market in connection with our common stock purchase programs. The common stock purchase program does not have specific price targets and may be suspended at any time.

Additional information about our common stock, including Board authorization with respect to purchases by us of our common stock, is provided under "Capital" in “Financial Condition” in our Management's Discussion and Analysis and in Note 15 to the consolidated financial statements in this Form 10-K, and is incorporated herein by reference.

RELATED STOCKHOLDER MATTERS

As a bank holding company, our Parent Company is a legal entity separate and distinct from its principal banking subsidiary, State Street Bank, and its non-banking subsidiaries. The right of the Parent Company to participate as a shareholder in any distribution of assets of State Street Bank upon its liquidation, reorganization or otherwise is subject to the prior claims by creditors of State Street Bank, including obligations for federal funds purchased and securities sold under repurchase agreements and deposit liabilities.

Payment of dividends by State Street Bank is subject to the provisions of the Massachusetts banking law, which provide that State Street Bank's Board of Directors may declare, from State Street Bank's "net profits," as defined below, cash dividends annually, semi-annually or quarterly (but not more frequently) and can declare non-cash dividends at any time. Under Massachusetts banking law, for purposes of determining the amount of cash dividends that are payable by State Street Bank, “net profits” is defined as an amount equal to the remainder of all earnings from current operations plus actual recoveries on loans and investments and other assets, after deducting from the total thereof all current operating expenses, actual losses, accrued dividends on preferred stock, if any, and all federal and state taxes.

No dividends may be declared, credited or paid so long as there is any impairment of State Street Bank's capital stock. The approval of the Massachusetts Commissioner of Banks is required if the total of all dividends declared by State Street Bank in any calendar year would exceed the total of its net profits for that year combined with its retained net profits for the preceding two years, less any required transfer to surplus or to a fund for the retirement of any preferred stock.

Under Federal Reserve regulations, the approval of the Federal Reserve would be required for the payment of dividends by State Street Bank if the total amount of all dividends declared by State Street Bank in any calendar year, including any proposed dividend, would exceed the total of its net income for such calendar year as reported in State Street Bank's *Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices Only - FFIEC 031*, commonly referred to as the “Call Report,” as submitted through the Federal Financial Institutions Examination Council and provided to the Federal Reserve, plus its “retained net income” for the preceding two calendar years. For these purposes, “retained net income,” as of any date of determination, is defined as an amount equal to State Street Bank's net income (as reported in its Call Reports for the calendar year in which retained net income is being determined) less any dividends declared during such year. In determining the amount of dividends that are payable, the total of State Street Bank's net income for the current year and its retained net income for the preceding two calendar years is reduced by any net losses incurred in the current or preceding two-year period and by any required transfers to surplus or to a fund for the retirement of preferred stock.

Prior Federal Reserve approval also must be obtained if a proposed dividend would exceed State Street Bank's “undivided profits” (retained earnings) as reported in its Call Reports. State Street Bank may include in its undivided profits amounts contained in its surplus account, if the amounts reflect transfers of undivided profits made in prior periods and if the Federal Reserve's approval for the transfer back to undivided profits has been obtained.

Under the PCA provisions adopted pursuant to the FDIC Improvement Act of 1991, State Street Bank may not pay a dividend when it is deemed, under the PCA framework, to be under-capitalized, or when the payment of the dividend would cause State Street Bank to be under-capitalized. If State Street Bank is under-capitalized for purposes of the PCA framework, it must cease paying dividends for so long as it is deemed to be under-capitalized. Once earnings have begun to improve and an adequate capital position has been restored, dividend payments may resume in accordance with federal and state statutory limitations and guidelines.

Currently, any payment of future common stock dividends by our Parent Company to its shareholders is subject to the review of our capital plan by the Federal Reserve in connection with its CCAR process. Information about dividends declared by our Parent Company and dividends from our subsidiary banks is provided under "Capital" in “Financial Condition” in our Management's Discussion and Analysis, and in Note 15 to the consolidated financial statements in this Form 10-K, and is incorporated herein by reference. Future dividend payments of State Street Bank and our non-banking subsidiaries cannot be determined at this time. In addition, refer to “Capital Planning, Stress Tests and Dividends” in "Supervision and Regulation" in Business in this Form 10-K and the risk factor “*Our business and capital-related activities, including our ability to return capital to shareholders and repurchase our capital stock, may be adversely affected by our implementation of regulatory capital and liquidity standards that we must meet or in the event our capital plan or post-stress capital ratios are determined to be insufficient as a result of regulatory capital stress testing*” in Risk Factors in this Form 10-K.

Information about our equity compensation plans is in Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters, and in Note 18 to the consolidated financial statements in this Form 10-K, and is incorporated herein by reference.

SHAREHOLDER RETURN PERFORMANCE PRESENTATION

The graph presented below compares the cumulative total shareholder return on our common stock to the cumulative total return of the S&P 500 Index, the S&P Financial Index and the KBW Bank Index over a five-year period. The cumulative total shareholder return assumes the investment of $100 in our common stock and in each index on December 31, 2015. It also assumes reinvestment of common stock dividends.

The S&P Financial Index is a publicly available, capitalization-weighted index, comprised of 65 of the Standard & Poor’s 500 companies, representing 25 diversified financial services companies, 22 insurance companies and 18 banking companies. The KBW Bank Index is a modified cap-weighted index consisting of 24 exchange-listed stocks, representing national money center banks and leading regional institutions.



	2015	2016	2017	2018	2019	2020
State Street Corporation	$ 100	$ 120	$ 153	$ 101	$ 131	**$ 124**
S&P 500 Index	100	112	136	130	171	**203**
S&P Financial Index	100	123	150	130	172	**169**
KBW Bank Index	100	129	152	125	171	**153**

ITEM 6. SELECTED FINANCIAL DATA

(Dollars in millions, except per share amounts or where otherwise noted)

YEARS ENDED DECEMBER 31:	2020[1]	2019[1]	2018[1]	2017	2016
Total fee revenue	**$ 9,499**	$ 9,147	$ 9,454	$ 9,001	$ 8,200
Net interest income	**2,200**	2,566	2,671	2,304	2,084
Total other income	**4**	43	6	(39)	7
Total revenue	**11,703**	11,756	12,131	11,266	10,291
Provision for credit losses[2]	**88**	10	15	2	10
Total expenses	**8,716**	9,034	9,015	8,269	8,077
Income before income tax expense	**2,899**	2,712	3,101	2,995	2,204
Income tax expense (benefit)	**479**	470	508	839	67
Net income from non-controlling interest	**—**	—	—	—	1
Net income	**$ 2,420**	$ 2,242	$ 2,593	$ 2,156	$ 2,138
Adjustments to net income[3]	**(163)**	(233)	(189)	(184)	(175)
Net income available to common shareholders	**$ 2,257**	$ 2,009	$ 2,404	$ 1,972	$ 1,963
PER COMMON SHARE:					
Earnings per common share:					
Basic	**$ 6.40**	$ 5.43	$ 6.46	$ 5.26	$ 5.01
Diluted	**6.32**	5.38	6.39	5.19	4.96
Cash dividends declared	**2.08**	1.98	1.78	1.60	1.44
Closing market price (at year end)	**72.78**	79.10	63.07	97.61	77.72
AS OF DECEMBER 31:					
Investment securities	**$ 111,276**	$ 95,597	$ 87,062	$ 97,579	$ 97,167
Average total interest-earning assets	**228,874**	181,891	185,637	191,235	199,184
Total assets	**314,706**	245,610	244,596	238,392	242,689
Deposits	**239,798**	181,872	180,360	184,896	187,163
Long-term debt	**13,805**	12,509	11,093	11,620	11,430
Total shareholders' equity	**26,200**	24,431	24,737	22,270	21,193
Assets under custody and/or administration (in billions)	**38,791**	34,358	31,620	33,119	28,771
Assets under management (in billions)	**3,467**	3,116	2,511	2,782	2,468
Number of employees	**39,439**	39,103	40,142	36,643	33,783
RATIOS:					
Return on average common shareholders' equity	**10.0 %**	9.4 %	12.1 %	10.5 %	10.4 %
Return on average assets	**0.9**	1.0	1.2	1.0	0.9
Common dividend payout	**32.9**	36.8	27.6	30.2	28.5
Average common equity to average total assets	**8.3**	9.6	8.9	8.6	8.2
Net interest margin, fully taxable-equivalent basis	**0.97**	1.42	1.47	1.29	1.13
Common equity tier 1 ratio[4]	**12.3**	11.7	11.7	11.9	11.6
Tier 1 capital ratio[4]	**14.4**	14.5	15.5	15.0	14.7
Total capital ratio[4]	**15.3**	15.6	16.3	16.0	16.0
Tier 1 leverage ratio[5]	**6.4**	6.9	7.2	7.3	6.5
Supplementary leverage ratio[6]	**8.1**	6.1	6.3	6.5	5.9

[1] CRD was acquired on October 1, 2018. 2018 includes results of CRD for one quarter. 2019 and 2020 include results of CRD for a full year. Additional information about CRD is included in our Management's Discussion and Analysis.

[2] We adopted ASU 2016-13, Financial Instruments-Credit Losses (ASC 326): Measurement of Credit Losses on Financial Instruments, on January 1, 2020. Please refer to Note 1 to the consolidated financial statements in this Form 10-K for additional information.

[3] Amounts represent preferred stock dividends and the allocation of earnings to participating securities using the two-class method.

[4] The capital ratios presented are calculated in conformity with the applicable regulatory guidance in effect as of each period end. The reportable ratios represent the lower of each of the risk-based capital ratios under both the standardized approach and the advanced approaches. Refer to Note 16 to the consolidated financial statements in this Form 10-K.

[5] The Tier 1 leverage ratio was calculated in conformity with the Basel III rule.

[6] The SLR was calculated using the tier 1 capital as calculated under the SLR provisions of the Basel III rule.

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

GENERAL

As of December 31, 2020, we had consolidated total assets of $314.71 billion, consolidated total deposits of $239.80 billion, consolidated total shareholders' equity of $26.20 billion and over 39,000 employees. We operate in more than 100 geographic markets worldwide, including the U.S., Canada, Europe, the Middle East and Asia.

Our operations are organized into two lines of business, Investment Servicing and Investment Management, which are defined based on products and services provided.

Investment Servicing provides services for institutional clients, including mutual funds, collective investment funds and other investment pools, corporate and public retirement plans, insurance companies, investment managers, foundations and endowments worldwide. Products include: custody; product accounting; daily pricing and administration; master trust and master custody; depotbank services (a fund oversight role created by non-U.S. regulation); record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance and enhanced custody products; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; performance, risk and compliance analytics; and financial data management to support institutional investors.

Included within our Investment Servicing line of business is CRD, which we acquired in October 2018. The Charles River Investment Management solution is a technology offering which is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. With the acquisition of CRD, we took the first step in building our front-to-back platform, State Street Alpha. Today our State Street Alpha platform combines portfolio management, trading and execution, advanced data aggregation, analytics and compliance tools, and integration with other industry platforms and providers.

Investment Management, through State Street Global Advisors, provides a broad range of investment management strategies and products for our clients. Our investment management strategies and products span the risk/reward spectrum for equity, fixed income and cash assets, including core and enhanced indexing, multi-asset strategies, active quantitative and fundamental active capabilities and alternative investment strategies. Our AUM is currently primarily weighted to indexed strategies. In addition, we provide a breadth of services and solutions, including environmental, social and governance investing, defined benefit and defined contribution and Global Fiduciary Solutions (formerly Outsourced Chief Investment Officer). State Street Global Advisors is also a provider of ETFs, including the SPDR® ETF brand. While management fees are primarily determined by the values of AUM and the investment strategies employed, management fees reflect other factors as well, including the benchmarks specified in the respective management agreements related to performance fees.

For financial and other information about our lines of business, refer to "Line of Business Information" in this Management's Discussion and Analysis and Note 24 to the consolidated financial statements in this Form 10-K.

This Management's Discussion and Analysis should be read in conjunction with the consolidated financial statements and accompanying notes to consolidated financial statements in this Form 10-K. Certain previously reported amounts presented in this Form 10-K have been reclassified to conform to current-period presentation.

We prepare our consolidated financial statements in conformity with U.S. GAAP. The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions in its application of certain accounting policies that materially affect the reported amounts of assets, liabilities, equity, revenue and expenses.

The significant accounting policies that require us to make judgments, estimates and assumptions that are difficult, subjective or complex about matters that are uncertain and may change in subsequent periods include:

- accounting for fair value measurements;
- allowance for credit losses;
- impairment of goodwill and other intangible assets; and
- contingencies.

These significant accounting policies require the most subjective or complex judgments, and underlying estimates and assumptions could be subject to revision as new information becomes available. Additional information about these significant accounting policies is included under

"Significant Accounting Estimates" in this Management's Discussion and Analysis.

Certain financial information provided in this Form 10-K, including this Management's Discussion and Analysis, is prepared on both a U.S. GAAP, or reported basis, and a non-GAAP basis, including certain non-GAAP measures used in the calculation of identified regulatory ratios. We measure and compare certain financial information on a non-GAAP basis, including information that management uses in evaluating our business and activities. Non-GAAP financial information should be considered in addition to, and not as a substitute for or superior to, financial information prepared in conformity with U.S. GAAP. Any non-GAAP financial information presented in this Form 10-K, including this Management's Discussion and Analysis, is reconciled to its most directly comparable currently applicable regulatory ratio or U.S. GAAP-basis measure. We further believe that our presentation of fully taxable-equivalent NII, a non-GAAP measure, which reports non-taxable revenue, such as interest income associated with tax-exempt investment securities, on a fully taxable-equivalent basis, facilitates an investor's understanding and analysis of our underlying financial performance and trends.

This Management's Discussion and Analysis contains statements that are considered "forward-looking statements" within the meaning of U.S. securities laws. Forward-looking statements include statements about our goals and expectations regarding our business, financial and capital condition, results of operations, strategies, cost savings and transformation initiatives, investment portfolio performance, dividend and stock purchase programs, outcomes of legal proceedings, market growth, acquisitions, joint ventures and divestitures, client growth and new technologies, services and opportunities, as well as industry, governmental, regulatory, economic and market trends, initiatives and developments, the business environment and other matters that do not relate strictly to historical facts. These forward-looking statements involve certain risks and uncertainties which could cause actual results to differ materially. We undertake no obligation to revise the forward-looking statements contained in this Management's Discussion and Analysis to reflect events after the time we file this Form 10-K with the SEC. Additional information about forward-looking statements and related risks and uncertainties is provided in "Forward-Looking Statements", "Risk Factors Summary" and "Risk Factors" in this Form 10-K.

We provide additional disclosures required by applicable bank regulatory standards, including supplemental qualitative and quantitative information with respect to regulatory capital (including market risk associated with our trading activities) and the liquidity coverage ratio, summary results of State Street-run stress tests which we conduct under the Dodd-Frank Act and resolution plan disclosures required under the Dodd-Frank Act. These additional disclosures are available on the "Investor Relations" section of our website under "Filings and Reports."

In this Form 10-K, we reference various information and materials available on our corporate website. We have included our website address in this report as an inactive textual reference only. Information on our website is not incorporated by reference in this Form 10-K.

We use acronyms and other defined terms for certain business terms and abbreviations, as defined on the acronyms list and glossary in this Form 10-K.

OVERVIEW OF FINANCIAL RESULTS

TABLE 1: OVERVIEW OF FINANCIAL RESULTS

(Dollars in millions, except per share amounts)	Years Ended December 31, 2020	2019	2018
Total fee revenue[1]	**$ 9,499**	$ 9,147	$ 9,454
Net interest income	**2,200**	2,566	2,671
Total other income	**4**	43	6
Total revenue[1]	**11,703**	11,756	12,131
Provision for credit losses[2]	**88**	10	15
Total expenses[1]	**8,716**	9,034	9,015
Income before income tax expense	**2,899**	2,712	3,101
Income tax expense	**479**	470	508
Net income	**$ 2,420**	$ 2,242	$ 2,593
Adjustments to net income:			
Dividends on preferred stock[3]	**$ (162)**	$ (232)	$ (188)
Earnings allocated to participating securities[4]	**(1)**	(1)	(1)
Net income available to common shareholders	**$ 2,257**	$ 2,009	$ 2,404
Earnings per common share:			
Basic	**$ 6.40**	$ 5.43	$ 6.46
Diluted	**6.32**	5.38	6.39
Average common shares outstanding (in thousands):			
Basic	**352,865**	369,911	371,983
Diluted	**357,106**	373,666	376,476
Cash dividends declared per common share	**$ 2.08**	$ 1.98	$ 1.78
Return on average common equity	**10.0 %**	9.4 %	12.1 %
Pre-tax margin	**24.8**	23.1	25.6

[1] CRD contributed approximately $420 million and $248 million in total revenue and total expenses, respectively, in 2020, approximately $385 million and $201 million in total revenue and total expenses, respectively, in 2019 and approximately $119 million and $39 million in total revenue and total expenses, respectively, in 2018, which reflects their results from October 1, 2018, the date of acquisition, through December 31, 2018.

[2] We adopted ASU 2016-13, Financial Instruments-Credit Losses (ASC 326): Measurement of Credit Losses on Financial Instruments, on January 1, 2020. Please refer to Note 1 to the consolidated financial statements in this Form 10-K for additional information.

[3] Additional information about our preferred stock dividends is provided in Note 15 to the consolidated financial statements in this Form 10-K.

[4] Represents the portion of net income available to common equity allocated to participating securities, composed of unvested and fully vested SERP (Supplemental executive retirement plans) shares and fully vested deferred director stock awards, which are equity-based awards that contain non-forfeitable rights to dividends, and are considered to participate with the common stock in undistributed earnings.

The following "Financial Results and Highlights" section provides information related to significant events, as well as highlights of our consolidated financial results for the year ended December 31, 2020 presented in Table 1: Overview of Financial Results. More detailed information about our consolidated financial results, including the comparison of our financial results for the year ended December 31, 2020 to those for the year ended December 31, 2019, is provided under "Consolidated Results of Operations", "Line of Business Information" and "Capital" which follows these sections, as well as in our consolidated financial statements in this Form 10-K.

The comparison of our financial results for the year ended December 31, 2019 to those for the year ended December 31, 2018 is included in our Management's Discussion and Analysis in the Annual Report on Form 10-K for the fiscal year ended December 31, 2019 filed with the SEC on February 20, 2020.

In this Management's Discussion and Analysis, where we describe the effects of changes in FX rates, those effects are determined by applying applicable weighted average FX rates from the relevant 2019 period to the relevant 2020 period results.

Financial Results and Highlights

- 2020 financial performance:
  - EPS of $6.32 in 2020 increased 17% compared to $5.38 in 2019.
  - In 2020, return on equity of 10.0% increased from 9.4% in 2019, primarily due to an increase in net income available to common shareholders. Pre-tax margin of 24.8% in 2020 increased from 23.1% in 2019, primarily due to a decrease in total expenses.
  - Operating leverage was 3.0% points in 2020. Operating leverage represents the difference between the percentage change in total revenue and the percentage change in total expenses, in each case relative to the prior year period.
- The impact of the COVID-19 pandemic, including the actions we took to support our clients, the financial markets and the broader economy, is reflected in our 2020 results:
  - We experienced higher levels of client deposits and record client FX trading volume.
  - We continued to onboard new clients and managed elevated transaction volumes in the first half of the year.
  - We supported our clients' liquidity needs through our participation in the Money Market Mutual Fund Liquidity Facility (MMLF) and are custodian and administrator for four Federal Reserve Programs: Commercial Paper Funding Facility, Main Street Lending Program, and Primary and Secondary Markets Corporate Credit Facilities.
  - Having moved up to approximately 90% of our workforce to a remote working environment in the first half of 2020, we developed a safe and measured framework to reopen offices and are establishing a "Workplace of the Future" plan, leveraging technology and a hybrid work from home model, with approximately 80% of our employees continuing to work remotely as of December 31, 2020.

Revenue

- Total revenue was flat in 2020 compared to 2019, as the increase in total fee revenue was offset by a decline in NII. Total fee revenue increased 4% in 2020 compared to 2019, primarily driven by increases in servicing fees, management fees, foreign exchange trading services and software and processing fees, partially offset by lower securities finance revenue.
- Servicing fee revenue increased 2% in 2020 compared to 2019, primarily due to higher average market levels and client activity, primarily in the first half of 2020, partially offset by normal pricing headwinds. FX rates impacted servicing fees positively by 1% in 2020, relative to 2019.
- Management fee revenue increased 3% in 2020 compared to 2019, primarily due to higher average market levels and ETF and cash net inflows, partially offset by net institutional outflows.
- Foreign exchange trading services increased 29% in 2020 compared to 2019 primarily due to elevated market volatility and record client FX volumes.
- Securities finance revenue decreased 24% in 2020 compared to 2019, reflecting decreases in enhanced custody balances due to client deleveraging and lower agency lending revenues due to lower spreads.
- Software and processing fees revenue increased 2% in 2020 compared to 2019 primarily driven by higher CRD revenues.

- Total revenues contributed by CRD in 2020 were approximately $420 million, including $406 million in software and processing fees and $14 million in brokerage and other trading services, within foreign exchange trading services. CRD revenue with affiliated entities, which is eliminated in our consolidated financial statements, was $39 million and $18 million in 2020 and 2019, respectively.

- NII decreased 14% in 2020 compared to 2019, primarily due to lower market rates, partially offset by higher client deposits balances, higher loans and investment portfolio growth.

Provision for Credit Losses

- We adopted ASU 2016-13, Financial Instruments - Credit Losses (ASC 326): Measurement of Credit Losses on Financial Instruments, on January 1, 2020, which replaces the incurred loss methodology with an expected credit loss methodology that is referred to as the CECL methodology. The impact of transitioning to ASC 326 on the consolidated financial statements was an increase in the allowance for credit losses and a decrease in retained earnings of $3 million. We recorded a provision for credit losses of $88 million in 2020, which reflects the impact of credit migration within our loan portfolio, as well as a downward revision in management's economic outlook reflecting the impact of the COVID-19 pandemic.
- In 2019, we recorded a provision for credit losses of $10 million under the incurred loss methodology.

Expenses

- Total expenses decreased 4% in 2020 compared to 2019, primarily reflecting on-going expense management initiatives and lower notable items.
- 2020 notable items included:
  - repositioning charges of approximately $133 million, consisting of $82 million of compensation and employee benefits expenses and $51 million of occupancy costs, in order to further drive automation of processes and organizational simplification, enablement of workforce rationalization and reduction of our real estate footprint by approximately 13% of our total square footage;
  - acquisition and restructuring costs of approximately $50 million, primarily related to CRD;
  - accrual release of approximately $9 million; and
  - costs of $9 million due to the redemption of all outstanding Series C non-cumulative perpetual preferred stock representing the difference between the redemption value and the net carrying value of the preferred stock.
- 2019 notable items included:
  - repositioning charges of approximately $110 million;
  - legal and related expenses of approximately $172 million;
  - acquisition and restructuring costs of approximately $77 million, primarily related to CRD;
  - gain of approximately $44 million on the extinguishment of approximately $297 million of our outstanding floating rate junior subordinated debentures due 2047 following a cash tender offer; and
  - costs of $22 million due to the redemption of all outstanding Series E non-cumulative perpetual preferred stock representing the difference between the redemption value and the net carrying value of the preferred stock.
- Total expenses contributed by CRD in 2020 and 2019 were approximately $248 million and $201 million, respectively, including $183 million and $148 million in compensation and employee benefits and $65 million and $53 million in other expense lines, respectively. In addition, CRD-related expenses in 2020 and 2019 included $66 million and $65 million, respectively, in amortization of other intangible assets.

AUC/A and AUM

- AUC/A increased 13% as of December 31, 2020 compared to December 31, 2019, primarily due to higher period-end market levels, net new business installations and client flows. In 2020, newly announced asset servicing mandates totaled approximately $787 billion, with an increasing proportion incorporating State Street Alpha. Servicing assets remaining to be installed in future periods totaled approximately $436 billion as of December 31, 2020.

- AUM increased 11% as of December 31, 2020 compared to December 31, 2019, primarily due to higher period-end market levels and net inflows from ETFs and cash, partially offset by institutional net outflows.

Capital

- In 2020, we returned a total of approximately $1.23 billion to our shareholders in the form of common stock dividends and share purchases. On March 16, 2020, we, along with the other U.S. G-SIBs, suspended common share repurchases through the fourth quarter of 2020 in response to the COVID-19 pandemic. This suspension was consistent with limitations imposed by the Federal Reserve beginning in the second quarter of 2020.
- We declared aggregate common stock dividends of $2.08 per share, totaling $734 million in 2020, compared to $1.98 per share, totaling $728 million in 2019.
- In 2020, we acquired 6.5 million shares of common stock at an average per share cost of $77.35 and an aggregate cost of approximately $500 million. In 2019, we acquired 24.9 million shares of common stock at an average per share cost of $64.30 and an aggregate cost of approximately $1.6 billion. These purchases were all conducted under share purchase programs approved by our Board of Directors.
- As required by the Federal Reserve, we and other participating CCAR banks resubmitted our capital plans by November 2, 2020 under updated scenarios provided by the Federal Reserve due to the COVID-19 pandemic. Effective December 2020, the Federal Reserve has authorized us to continue to pay common stock dividends at current levels and to resume repurchasing common shares in the first quarter of 2021, subject to certain limitations (together with common stock dividends) based primarily on average 2020 quarterly net income. In January 2021, our Board authorized a share repurchase program for the purchase of up to $475 million of our common stock through March 31, 2021.
- Our CET1 capital ratio increased to 12.3% as of December 31, 2020 compared to 11.7% as of December 31, 2019, primarily due to higher retained earnings, partially offset by an increase in risk weighted assets primarily due to higher client lending activity. Our Tier 1 leverage ratio decreased to 6.4% as of December 31, 2020 compared to 6.9% as of December 31, 2019 due to an increase in adjusted average assets driven by higher deposits, partially offset by higher retained earnings. As of December 31, 2020, standardized capital ratios were binding. As of December 31, 2019, advanced approaches capital ratios were binding.

Capital Redemptions

- We redeemed all outstanding Series C non-cumulative perpetual preferred stock on March 15, 2020 at an aggregate redemption price of $500 million ($100,000 per share equivalent to $25.00 per depositary share) plus accrued and unpaid dividends.
- On January 14, 2021, we announced that we will redeem on March 15, 2021 an aggregate of $500 million, or 5,000 of the 7,500 outstanding shares of our non-cumulative perpetual preferred stock, Series F, for cash at a redemption price of $100,000 per share (equivalent to $1,000 per depositary share) plus all declared and unpaid dividends. A cash dividend of $953.38 per share of Series F Preferred Stock (or approximately $9.5338 per depositary share) has been declared for the period from December 15, 2020 up to but not including March 15, 2021 (the "March Dividend"). The March Dividend will be paid separately to the holders of record of the Series F Preferred Stock as of March 1, 2021 in the customary manner. Accordingly, there will not be any declared and unpaid dividends included in the redemption price.

Debt Issuances

- On January 24, 2020, we issued $750 million aggregate principal amount of 2.400% Senior Notes due 2030.
- On March 26, 2020, we issued $750 million aggregate principal amount of 2.825% Fixed-to-Floating Rate Senior Notes due 2023, $500 million aggregate principal amount of 2.901% Fixed-to-Floating Rate Senior Notes due 2026 and $500 million aggregate principal amount of 3.152% of Fixed-to-Floating Rate Senior Notes due 2031.

CONSOLIDATED RESULTS OF OPERATIONS

This section discusses our consolidated results of operations for 2020 compared to 2019 and should be read in conjunction with the consolidated financial statements and accompanying notes to the consolidated financial statements in this Form 10-K.

Total Revenue

TABLE 2: TOTAL REVENUE

	Years Ended December 31,				
(Dollars in millions)	**2020**	**2019**	**2018**	**% Change 2020 vs. 2019**	**% Change 2019 vs. 2018**
Fee revenue:					
Servicing fees	**$ 5,167**	$ 5,074	$ 5,421	2 %	(6) %
Management fees[1]	**1,880**	1,824	1,899	3	(4)
Foreign exchange trading services[1][2]	**1,363**	1,058	1,153	29	(8)
Securities finance	**356**	471	543	(24)	(13)
Software and processing fees[2]	**733**	720	438	2	64
Total fee revenue[2][3]	**9,499**	9,147	9,454	4	(3)
Net interest income:					
Interest income	**2,575**	3,941	3,662	(35)	8
Interest expense	**375**	1,375	991	(73)	39
Net interest income	**2,200**	2,566	2,671	(14)	(4)
Other income:					
Gains (losses) related to investment securities, net	**4**	(1)	9	nm	nm
Other income	**—**	44	(3)	nm	nm
Total other income	**4**	43	6	nm	nm
Total revenue[2]	**$ 11,703**	$ 11,756	$ 12,131	—	(3)

[1] Certain fees associated with our GLD ETFs have been reclassified from foreign exchange trading services to management fees to better reflect the nature of those fees. Prior periods have been reclassified to conform to current-period presentation. These fees were approximately $81 million, $53 million and $48 million in 2020, 2019 and 2018, respectively.

[2] CRD contributed approximately $420 million in total revenue in 2020, approximately $385 million in total revenue in 2019 and approximately $119 million in total revenue in 2018, which reflects their results from October 1, 2018, the date of acquisition, through December 31, 2018.

[3] The impact of State Street Global Advisors Money Market Fund fee waivers on total fee revenue was less than $10 million for 2020, 2019 and 2018.

[nm] Not meaningful

Fee Revenue

Table 2: Total Revenue, provides the breakout of fee revenue for the years ended December 31, 2020, 2019 and 2018. Servicing and management fees collectively made up approximately 74%, 75% and 77% of the total fee revenue in 2020, 2019 and 2018, respectively.

Servicing Fee Revenue

Generally, our servicing fee revenues are affected by several factors including changes in market valuations, client activity and asset flows, net new business and the manner in which we price our services. We provide a range of services to our clients, including core custody services, accounting, reporting and administration and middle office services, and the nature and mix of services provided affects our servicing fees. The basis for fees will differ across regions and clients.

Changes in Market Valuations

Our servicing fee revenue is impacted by both our levels and the geographic and product mix of our AUC/A. Increases or decreases in market valuations have a corresponding impact on the level of our AUC/A and servicing fee revenues, though the degree of impact will vary depending on asset types and classes and geography of assets held within our clients' portfolios.

Over the five years ended December 31, 2020, we estimate that worldwide market valuations impacted our servicing fee revenues by approximately (1)% to 5% annually and approximately 2% and 0% in 2020 and 2019, respectively. See Table 3: Daily Averages, Month-End Averages and Year-End Equity Indices for selected indices. While the specific indices presented are indicative of general market trends, the asset types and classes relevant to individual client portfolios can and do differ, and the performance of associated relevant indices and of client portfolios can therefore differ from the performance of the indices presented. In addition, our asset classifications may differ from those industry classifications presented.

Assuming that all other factors remain constant, including client activity and asset flows and pricing, we estimate, using relevant information as of December 31, 2020 that a 10% increase or decrease in worldwide equity

valuations, on a weighted average basis, over the relevant periods for which our servicing fees are calculated, would result in a corresponding change in our total servicing fee revenues, on average and over multiple quarters, of approximately 3%. We estimate, similarly assuming all other factors constant and using relevant information as of December 31, 2020, that changes in worldwide fixed income markets, which on a weighted average basis and over time are typically less volatile than worldwide equity markets, have a smaller impact on our servicing fee revenues on average and over time.

TABLE 3: DAILY AVERAGES, MONTH-END AVERAGES AND YEAR-END EQUITY INDICES[1]

	Daily Averages of Indices			Month-End Averages of Indices			Year-End Indices		
	Years Ended December 31,			Years Ended December 31,			Years Ended December 31,		
	2020	2019	% Change	2020	2019	% Change	2020	2019	% Change
S&P 500®	**3,218**	2,913	10 %	**3,217**	2,938	9 %	**3,756**	3,231	16 %
MSCI EAFE®	**1,854**	1,892	(2)	**1,841**	1,903	(3)	**2,148**	2,037	5
MSCI® Emerging Markets	**1,059**	1,036	2	**1,052**	1,043	1	**1,291**	1,115	16

[1] The index names listed in the table are service marks of their respective owners.

TABLE 4: YEAR-END DEBT INDICES[1]

	As of December 31,		
	2020	2019	% Change
Barclays Capital U.S. Aggregate Bond Index®	**2,392**	2,225	8 %
Barclays Capital Global Aggregate Bond Index®	**559**	512	9

[1] The index names listed in the table are service marks of their respective owners.

Client Activity and Asset Flows

Client activity and asset flows are impacted by the number of transactions we execute on behalf of our clients, including FX settlements, equity and derivative trades, and wire transfer activity, as well as actions by our clients to change the asset class in which their assets are invested. Our servicing fee revenues are impacted by a number of factors, including transaction volumes, asset levels and asset classes in which funds are invested, as well as industry trends associated with these client-related activities.

Our clients may change the asset classes in which their assets are invested, based on their market outlook, risk acceptance tolerance or other considerations. Over the five years ended December 31, 2020, we estimate that client activity and asset flows, together, impacted our servicing fee revenues by approximately (1)% to 2% annually and approximately 2% and (1)% in 2020 and 2019, respectively, with the impact for 2020 largely in the first half of the year. See Table 5: Industry Asset Flows for selected asset flow information. While the asset flows presented are indicative of general market trends, the asset types and classes relevant to individual client portfolios can and do differ, and our flows may differ from those market trends. In addition, our asset classifications may differ from those industry classifications presented.

TABLE 5: INDUSTRY ASSET FLOWS

	Years Ended December 31,	
(In billions)	**2020**	**2019**
North America - (US Domiciled) - Morningstar Direct Market Data[1][2][3]		
Long-Term Funds[4]	**$ (103.7)**	$ 256.5
Money Market	**677.7**	516.3
Exchange-Traded Fund	**280.2**	204.2
Total ICI Flows	**$ 854.2**	$ 977.0
Europe -Morningstar Direct Market Data[1][2][5]		
Long-Term Funds[4]	**$ 373.5**	$ 373.2
Money Market	**224.4**	105.7
Exchange-Traded Fund	**108.0**	118.9
Total Broadridge Flows	**$ 705.9**	$ 597.8

[1] Industry data is provided for illustrative purposes only. It is not intended to reflect our activity or our clients' activity and is indicative of only segments of the entire industry.
[2] Source: Morningstar. The data includes long-term mutual funds, ETFs and money market funds. Mutual fund data represents estimates of net new cash flow, which is new sales minus redemptions combined with net exchanges, while ETF data represents net issuance, which is gross issuance less gross redemptions. Data for Fund of Funds, Feeder funds and Obsolete funds were excluded from the series to prevent double counting. Data is from the Morningstar Direct Asset Flows database.
[3] The year ended December 31, 2020 data for North America (US domiciled) includes Morningstar direct actuals for January 2020 through November 2020 and Morningstar direct estimates for December 2020.
[4] The long-term fund flows reported by Morningstar direct in North America are composed of US domiciled market flows mainly in Equities, Allocation and Fixed-Income asset classes. The long-term fund flows reported by Morningstar direct in EMEA are composed of the European market flows mainly in Equities, Allocation and Fixed-Income asset classes.
[5] The year ended December 31, 2020 data for Europe is on a rolling twelve month basis for December 2019 through November 2020, sourced by Morningstar.

Net New Business

Over the five years ended December 31, 2020, net new business, which includes business both won and lost, has affected our servicing fee revenues by approximately 2% on average with a range of 0% to 3% annually and approximately 0% and 0% in 2020 and 2019, respectively. Gross investment servicing mandates were $787 billion in 2020 and $1.3 trillion per year on average over the past five years. Over the five years ended December 31, 2020, gross annual investment servicing mandates ranged from $750 billion to nearly $2.0 trillion.

New business impacting servicing fees can include: custody; product accounting; daily valuation and administration; record-keeping; cash management; and other services. Revenues associated with new servicing mandates may vary based on the breadth of services provided, the time required to install the assets, and the types of assets installed.

Revenues associated with new mandates are not reflected in our servicing fee revenue until the assets have been installed. Our installation timeline, in general, can range from 6 to 36 months, with the average installation timeline being approximately 9 to 12 months over the past 2 years. Our more complex installations, including new State Street Alpha mandates, will generally be on the longer end of that range.

Pricing

The industry in which we operate has historically faced pricing pressure, and our servicing fee revenues are also affected by such pressures today. Consequently, no assumption should be drawn as to future revenue run rate from announced servicing wins, as the amount of revenue associated with AUC/A can vary materially. On average, over the five years ended December 31, 2020, we estimate that pricing pressure with respect to existing clients has impacted our servicing fees by approximately (2)% annually, with the impact ranging from (1)% to (4)% in any given year, and approximately (2)% in 2020 and (4)% in 2019. Pricing concessions can be a part of a contract renegotiation with a client including terms that may benefit us, such as extending the terms of our relationship with the client, expanding the scope of services that we provide or reducing our dependency on manual processes through the standardization of the services we provide. The timing of the impact of additional revenue generated by anticipated additional services, and the amount of revenue generated, may differ from the impact of pricing concessions on existing services due to the necessary time required to onboard those new services, the nature of those services and client investment practices. These same market pressures also impact the fees we negotiate when we win business from new clients.

In order to offset the typical client attrition and normal pricing headwinds, we estimate that we need at least $1.5 trillion of new AUC/A per year; although, notwithstanding increases in AUC/A, servicing fees remain subject to several factors, including changes in market valuations, client activity and asset flows, the manner in which we price our services, the nature of the assets being serviced and the type of services and the other factors described in this Form 10-K.

Historically, and based on an indicative sample of revenue, we estimate that approximately 55%, on average, of our servicing fee revenues have been variable due to changes in asset valuations including changes in daily average valuations of AUC/A; another 15%, on average, of our servicing fees are impacted by the volume of activity in the funds we serve; and the remaining approximately 30% of our servicing fees tend not to be variable in nature nor impacted by market fluctuations or values.

The impact of the above, client activity and asset flows, net new business and pricing, noted drivers of our servicing fee revenue will vary depending on the mix of products and services we provide to our clients. The full impact of changes in market valuations and the volume of activity in the funds may not be fully reflected in our servicing fee revenues in the periods in which the changes occur, particularly in periods of higher volatility.

Management Fee Revenue

Management fees generally are affected by our level of AUM, which we report based on month-end valuations. Management fees for certain components of managed assets, such as ETFs, mutual funds and UCITS, are affected by daily average valuations of AUM. Management fee revenue is more sensitive to market valuations than servicing fee revenue, as a higher proportion of the underlying services provided, and the associated management fees earned, are dependent on equity and fixed-income security valuations. Additional factors, such as the relative mix of assets managed, may have a significant effect on our management fee revenue. While certain management fees are directly determined by the values of AUM and the investment strategies employed, management fees may reflect other factors, including performance fee arrangements, as well as our relationship pricing for clients. In addition, in a prolonged low-interest rate environment, such as we are currently experiencing, we have waived and may in the future waive certain fees for our clients for money market products.

Asset-based management fees for passively managed products, to which our AUM is currently primarily weighted, are generally charged at a lower fee on AUM than for actively managed products.

Actively managed products may also include performance fee arrangements which are recorded when the fee is earned, based on predetermined benchmarks associated with the applicable account's performance.

In light of the above, we estimate, using relevant information as of December 31, 2020 and assuming that all other factors remain constant, including the impact of business won and lost and client flows, that:

- A 10% increase or decrease in worldwide equity valuations, on a weighted average basis, over the relevant periods for which our management fees are calculated, would result in a corresponding change in our total management fee revenues, on average and over multiple quarters, of approximately 5%; and
- A 10% increase or decrease in worldwide fixed-income valuations, on a weighted average basis, over the relevant periods for which our management fees are calculated, would result in a corresponding change in our total management fee revenues, on average and over multiple quarters, of approximately 4%.

Daily averages, month-end averages and year-end indices demonstrate worldwide changes in equity and debt markets that affect our management fee revenue. Year-end indices affect the values of AUM as of those dates. See Table 3: Daily Averages, Month-End Averages and Year-End Equity Indices for selected indices.

Additional information about fee revenue is provided under "Line of Business Information" included in this Management's Discussion and Analysis.

Net Interest Income

See Table 2: Total Revenue, for the breakout of interest income and interest expense for the years ended December 31, 2020, 2019 and 2018.

NII is defined as interest income earned on interest-earning assets less interest expense incurred on interest-bearing liabilities. Interest-earning assets, which principally consist of investment securities, interest-bearing deposits with banks, loans, resale agreements and other liquid assets, are financed primarily by client deposits, short-term borrowings and long-term debt.

NIM represents the relationship between annualized FTE NII and average total interest-earning assets for the period. It is calculated by dividing FTE NII by average interest-earning assets. Revenue that is exempt from income taxes, mainly earned from certain investment securities (state and political subdivisions), is adjusted to a FTE basis using the U.S. federal and state statutory income tax rates.

NII on a FTE basis decreased in 2020 compared to 2019, primarily due to lower market rates, partially offset by higher client deposits, core loan and investment securities balances.

Investment securities net premium amortization, which is included in interest income, was $575 million in 2020 compared to $434 million in 2019 and $391 million in 2018. The increase is primarily driven by higher MBS premium amortization as a result of lower interest rates and faster prepayments. As of December 31, 2020, 2019 and 2018, approximately 61%, 60% and 52%, respectively, of unamortized premiums, net of discounts, was related to mortgage-backed securities.

Interest income related to debt securities is recognized in our consolidated statement of income using the effective interest method, or on a basis approximating a level rate of return over the contractual or estimated life of the security. The rate of return considers any non-refundable fees or costs, as well as purchase premiums or discounts, resulting in amortization or accretion, accordingly. The amortization of premiums and accretion of discounts are adjusted for prepayments when they occur, which primarily impact mortgage-backed securities.

The following table presents the investment securities amortizable purchase premium net of discount accretion for the periods indicated:

TABLE 6: INVESTMENT SECURITIES NET PREMIUM AMORTIZATION

	Years Ended December 31,		
(Dollars in millions)	**2020**	**2019**	**2018**
Unamortized premiums, net of discounts at period end	**$ 1,909**	$ 1,585	$ 1,575
Net premium amortization[1]	**575**	434	391
Investment securities duration (years)[2]	**3.0**	2.7	3.1

[1] Net of discount accretion on MMLF HTM securities.

[2] Excluding investment securities purchased under the MMLF program, the investment securities portfolio duration is 3.1 years in 2020.

Money Market Mutual Fund Liquidity Facility

In March 2020, in response to the economic impact of the COVID-19 pandemic, the Federal Reserve established the MMLF program in order to enhance the liquidity and functioning of crucial money markets. Through the establishment of the MMLF program, the Federal Reserve Bank of Boston makes loans available to eligible financial institutions secured by high-quality assets purchased by the financial institution from money market mutual funds. The MMLF program was authorized through December 31, 2020. We are supporting our clients' liquidity needs through this program, following its adoption on March 18, 2020. As a result of the asset purchases (including negotiable CDs, municipals and asset-backed commercial paper), our participation in the facility was $8.2 billion on average in 2020, and earned $16 million of NII, but was dilutive to NIM in 2020. The purchases are match funded through Federal Reserve borrowings and the assets are posted as collateral. The borrowing is non-recourse, meaning that the Federal Reserve has taken on the credit risk of the assets purchased. The purchased securities are classified as held-to-maturity and have a maturity of less than 12 months. MMLF related assets do not impact our risk-based and leverage capital ratios.

See Table 7: Average Balances and Interest Rates - Fully Taxable-Equivalent Basis, for the breakout of NII on a FTE basis for the years ended December 31, 2020, 2019 and 2018.

TABLE 7: AVERAGE BALANCES AND INTEREST RATES - FULLY TAXABLE-EQUIVALENT BASIS[1]

	Years Ended December 31,								
	2020			2019			2018		
(Dollars in millions; fully taxable-equivalent basis)	Average Balance	Interest Revenue/Expense	Rate	Average Balance	Interest Revenue/Expense	Rate	Average Balance	Interest Revenue/ Expense	Rate
Interest-bearing deposits with banks	$ 76,588	$ 76	.10 %	$ 48,500	$ 416	.86 %	$ 54,328	$ 387	.71 %
Securities purchased under resale agreements[2]	3,452	126	3.64	2,506	364	14.54	2,901	335	11.55
Trading account assets	878	—	—	884	1	.11	1,051	—	—
Investment securities:									
Investment securities available for sale	58,036	761	1.31	51,853	1,035	1.98	47,855	1,007	2.08
Investment securities held-to-maturity	42,956	830	1.93	39,915	974	2.44	40,215	920	2.29
Investment securities held-to-maturity purchased under money market liquidity facility	8,183	117	1.43	—	—	—	—	—	—
Total Investment securities	109,175	1,708	1.56	91,768	2,009	2.19	88,070	1,927	2.19
Loans and leases	27,525	627	2.28	24,073	775	3.22	23,573	698	2.96
Other interest-earning assets	11,256	55	.49	14,160	395	2.79	15,714	372	2.37
Average total interest-earning assets	$ 228,874	$ 2,592	1.13	$ 181,891	$ 3,960	2.18	$ 185,637	$ 3,719	2.00
Interest-bearing deposits:									
U.S.	$ 87,444	$ 114	.13 %	$ 67,547	$ 539	.80 %	$ 54,953	$ 256	.47 %
Non-U.S.[3]	68,806	(231)	(.34)	61,301	124	.20	70,623	107	.15
Total interest-bearing deposits[3][4]	156,250	(117)	(.07)	128,848	663	.51	125,576	363	.29
Securities sold under repurchase agreements	2,615	4	.14	1,616	31	1.90	2,048	13	.62
Short-term borrowings under money market liquidity facility	8,207	101	1.22	—	—	—	—	—	—
Other short-term borrowings	2,226	18	.78	1,524	21	1.37	1,327	17	1.28
Long-term debt	14,371	312	2.17	11,474	414	3.61	10,686	389	3.64
Other interest-bearing liabilities	3,176	57	1.82	4,103	246	6.00	4,956	209	4.20
Average total interest-bearing liabilities	$ 186,845	$ 375	.20	$ 147,565	$ 1,375	.93	$ 144,593	$ 991	.68
Interest rate spread			.93 %			1.25 %			1.32 %
Net interest income, fully taxable-equivalent basis		$ 2,217			$ 2,585			$ 2,728	
Net interest margin, fully taxable-equivalent basis			.97 %			1.42 %			1.47 %
Tax-equivalent adjustment		(17)			(19)			(57)	
Net interest income, GAAP basis		$ 2,200			$ 2,566			$ 2,671	

[1] Rates earned/paid on interest-earning assets and interest-bearing liabilities include the impact of hedge activities associated with our asset and liability management activities where applicable.
[2] Reflects the impact of balance sheet netting under enforceable netting agreements of approximately $100.45 billion, $86.67 billion and $35.74 billion for the years ended December 31, 2020, 2019 and 2018, respectively. Excluding the impact of netting, the average interest rates would be approximately 0.12%, 0.41% and 0.87% for the years ended December 31, 2020, 2019 and 2018, respectively.
[3] Average rate includes the impact of FX swap costs of approximately ($63) million, $153 million and $106 million for the years ended December 31, 2020, 2019 and 2018, respectively. Average rates for total interest-bearing deposits excluding the impact of FX swap costs were (0.03)%, 0.40% and 0.20% for the years ended December 31, 2020, 2019 and 2018, respectively.

[4] Total deposits averaged $193.22 billion compared to $158.26 billion and $161.41 billion for 2019 and 2018, respectively.

Changes in the components of interest-earning assets and interest-bearing liabilities are discussed in more detail below. Additional information about the components of interest income and interest expense is provided in Note 17 to the consolidated financial statements in this Form 10-K.

Average total interest-earning assets were $228.87 billion in 2020 compared to $181.89 billion in 2019. The increase is primarily due to higher interest-bearing deposits with banks and investment securities.

Interest-bearing deposits with banks averaged $76.59 billion in 2020 compared to $48.50 billion in 2019. These deposits primarily reflect our maintenance of cash balances at the Federal Reserve, the European Central Bank (ECB) and other non-U.S. central banks. The higher levels of average cash balances with central banks reflect higher levels of client deposits.

Securities purchased under resale agreements averaged $3.45 billion in 2020 compared to $2.51 billion in 2019. The impact of balance sheet netting increased to $100.45 billion on average in 2020 compared to $86.67 billion in 2019. We maintain an agreement with Fixed Income Clearing Corporation (FICC), a clearing organization that enables us to net all securities sold under repurchase agreements against those purchased under resale agreements with counterparties that are also members of the clearing organization. The increase in average balance sheet netting in 2020 compared to 2019 is primarily due to the expansion of our FICC program and new client activity.

We have been a sponsoring member within FICC since 2005. FICC expanded the service in 2017, and since then, we have increased our participation each year. We enter into repurchase and resale transactions in eligible securities with sponsored clients and with other FICC members and, pursuant to FICC Government Securities Division rules, submit, novate and net the transactions. We may sponsor clients to clear their eligible repurchase transactions with FICC, backed by our guarantee to FICC of the prompt and full payment and performance of our sponsored member clients' respective obligations. We obtain a security interest from our sponsored clients in the high quality securities collateral that they receive, which is designed to mitigate our potential exposure to FICC.

Average investment securities increased to $109.18 billion in 2020 from $91.77 billion in 2019 primarily driven by the MMLF program, MBS balances and foreign government bonds. The growth reflects our deployment of higher structural deposit levels that resulted from the COVID-19 pandemic.

Loans averaged $27.53 billion in 2020 compared to $24.07 billion in 2019. Average core loans, which exclude overdrafts and highlight our efforts to grow our lending portfolio, averaged $24.04 billion in 2020 compared to $19.95 billion in 2019.

Average other interest-earning assets, largely associated with our enhanced custody business, decreased to $11.26 billion in 2020 from $14.16 billion in 2019, primarily driven by a reduction in the level of cash collateral posted. Enhanced custody is our securities financing business where we act as principal with respect to our custody clients and generate securities finance revenue. The NII earned on these transactions is generally lower than the interest earned on other alternative investments.

Aggregate average total interest-bearing deposits increased to $156.25 billion in 2020 from $128.85 billion in 2019. Average U.S. interest-bearing deposits increased as a result of the market uncertainty due to the COVID-19 pandemic, the level of global interest rates and new deposit gathering initiatives. While deposits levels moderated in the second half of 2020, deposits levels remained elevated throughout 2020 and we expect deposits to remain elevated within the current environment of low interest rates and continued expansion of the money supply by the Federal Reserve. Future deposit levels will be influenced by the underlying asset servicing business, client deposit behavior and market conditions, including the general levels of U.S. and non-U.S. interest rates.

Average other short-term borrowings, typically associated with our tax-exempt investment program, increased to $2.23 billion in 2020 from $1.52 billion in 2019.

Average long-term debt was $14.37 billion in 2020 compared to $11.47 billion in 2019. These amounts reflect issuances, redemptions and maturities of senior debt during the respective periods, including the issuance of $750 million of senior debt in January 2020 and $1.75 billion in March 2020.

Average other interest-bearing liabilities were $3.18 billion in 2020 compared to $4.10 billion in 2019. Other interest-bearing liabilities primarily reflect our level of cash collateral received from clients in connection with our enhanced custody business, which is presented on a net basis where we have enforceable netting agreements.

Several factors could affect future levels of NII and NIM, including the volume and mix of client deposits and funding sources; central bank actions; balance sheet management activities; changes in the level and slope of U.S. and non-U.S. interest rates; revised or proposed regulatory capital or liquidity standards, or interpretations of those standards; the yields earned on securities purchased compared to the yields earned on securities sold or matured and changes in the type and amount of credit or other loans we extend.

Based on market conditions and other factors, including regulatory standards, we continue to reinvest the majority of the proceeds from pay-downs and maturities of investment securities in highly-rated U.S. and non-U.S. securities, such as federal agency MBS, sovereign debt securities and U.S. Treasury and agency securities. The pace at which we reinvest and the types of investment securities purchased will depend on the impact of market conditions, the implementation of regulatory standards, including interpretation of those standards and other factors over time. We expect these factors and the levels of global interest rates to impact our reinvestment program and future levels of NII and NIM.

Provision for Credit Losses

In January 2020, we adopted ASU 2016-13, *Financial Instruments - Credit Losses (ASC 326): Measurement of Credit Losses on Financial Instruments*, which replaced the incurred loss methodology with an expected loss methodology that is referred to as the CECL methodology. The impact of transitioning to ASC 326 on the consolidated financial statements was an increase in the allowance for credit losses and a decrease in retained earnings of $3 million as of January 1, 2020. In 2020, we recorded a provision of $88 million for credit losses related to loans and financial assets held at amortized cost and off-balance sheet commitments based on the CECL methodology, reflecting both downward credit migration within our loan portfolio and revision in management's economic outlook reflecting the impact of the COVID-19 pandemic. This compares to a $10 million provision for credit losses in 2019 and $15 million in 2018, which were under the incurred loss model.

Additional information is provided under "Loans and Leases" in "Financial Condition" in this Management's Discussion and Analysis and in Note 4 to the consolidated financial statements in this Form 10-K.

Expenses

Table 8: Expenses, provides the breakout of expenses for the years ended December 31, 2020, 2019 and 2018.

TABLE 8: EXPENSES

	Years Ended December 31,				
(Dollars in millions)	2020	2019	2018	% Change 2020 vs. 2019	% Change 2019 vs. 2018
Compensation and employee benefits[1]	**$ 4,450**	$ 4,541	$ 4,780	(2) %	(5) %
Information systems and communications	**1,550**	1,465	1,324	6	11
Transaction processing services	**978**	983	985	(1)	—
Occupancy	**489**	470	500	4	(6)
Amortization of other intangible assets[1]	**234**	236	226	(1)	4
Acquisition costs	**54**	79	31	(32)	155
Restructuring charges, net	**(4)**	(2)	(7)	100	(71)
Other:					
Professional services	**364**	321	357	13	(10)
Other	**601**	941	819	(36)	15
Total other	**965**	1,262	1,176	(24)	7
Total expenses[1]	**$ 8,716**	$ 9,034	$ 9,015	(4)	—
Number of employees at year-end	**39,439**	39,103	40,142	1	(3)

[1] CRD contributed approximately $248 million in total expenses in 2020, approximately $201 million in total expenses in 2019 and approximately $39 million in total expenses in 2018, which reflects their results from October 1, 2018, the date of acquisition, through December 31, 2018.

Compensation and employee benefits expenses decreased 2% in 2020 compared to 2019, primarily due to lower headcount in high cost locations, lower contractor spend and lower repositioning charges, partially offset by higher incentive compensation.

Total headcount increased by approximately 1% as of December 31, 2020 compared to December 31, 2019, primarily driven by hires in global hubs, partially offset by a reduction in high cost locations.

Information systems and communications expenses increased 6% in 2020 compared to 2019. The increase was primarily related to higher software costs and technology infrastructure investments.

Transaction processing services expenses decreased 1% in 2020 compared to 2019, primarily due to higher vendor savings, partially offset by higher broker fees and sub-custody costs.

Occupancy expenses increased 4% in 2020 compared to 2019, primarily due to higher repositioning charges, partially offset by benefits from the advancement of our global footprint strategy.

Amortization of other intangible assets decreased 1% in 2020 compared to 2019.

Other expenses decreased 24% in 2020 compared to 2019, primarily driven by lower legal expenses, marketing and travel costs, partially offset by higher professional fees.

Acquisition Costs

We recorded approximately $54 million of acquisition costs in 2020 compared to $79 million in 2019 and $31 million in 2018, related to our acquisition of CRD. As we integrate CRD into our business, we expect to incur a total of approximately $225 million of acquisition costs through 2021, after which we will no longer distinguish certain CRD costs as acquisition costs. As of December 31, 2020, we have incurred $164 million of acquisition costs related to CRD. We expect to incur any remaining significant acquisition costs related to CRD in 2021.

Restructuring and Repositioning Charges

Repositioning Charges

Expenses for 2020 included a repositioning charge of $133 million, consisting of $82 million of compensation and employee benefits and $51 million of occupancy expenses. In January 2021, we announced that we expect to eliminate approximately 1,200 positions, mostly in middle management, which will be partially offset by in-sourcing and critical hires, during 2021. These actions are expected to result in savings of approximately $150 million in 2021 due to automation of processes and organizational simplification enabling workforce rationalization and reduction of our real estate footprint by approximately 13% of our total square footage. Total repositioning charges were $110 million in 2019.

The following table presents aggregate activity for repositioning charges and activity related to previous Beacon restructuring charges for the periods indicated:

TABLE 9: RESTRUCTURING AND REPOSITIONING CHARGES

(In millions)	Employee Related Costs	Real Estate Actions	Asset and Other Write-offs	Total
Accrual Balance at December 31, 2017	$ 166	$ 32	$ 3	$ 201
Accruals for Beacon	(7)	—	—	(7)
Accruals for Repositioning Charges	259	41	—	300
Payments and Other Adjustments	(115)	(36)	(2)	(153)
Accrual Balance at December 31, 2018	303	37	1	341
Accruals for Beacon	(2)	—	—	(2)
Accruals for Repositioning Charges	98	12	—	110
Payments and Other Adjustments	(209)	(42)	—	(251)
Accrual Balance at December 31, 2019	190	7	1	198
Accruals for Beacon	**(4)**	**—**	**—**	**(4)**
Accruals for Repositioning Charges	**82**	**51**	**—**	**133**
Payments and Other Adjustments	**(78)**	**(52)**	**(1)**	**(131)**
Accrual Balance at December 31, 2020	**$ 190**	**$ 6**	**$ —**	**$ 196**

Income Tax Expense

Income tax expense was $479 million in 2020 compared to $470 million in 2019. Our effective tax rate was 16.5% in 2020, compared to 17.3% in 2019. The effective tax rate for 2020 included a benefit from the use of foreign tax credits. The effective tax rate for 2019 included a benefit attributable to a foreign legal entity restructuring which was partially offset by legal accruals and limitations on foreign tax credit benefits.

Additional information regarding income tax expense, including unrecognized tax benefits and tax contingencies, are provided in Notes 13 and 22 to the consolidated financial statements in this Form 10-K.

LINE OF BUSINESS INFORMATION

Our operations are organized into two lines of business: Investment Servicing and Investment Management, which are defined based on products and services provided. The results of operations for these lines of business are not necessarily comparable with those of other companies, including companies in the financial services industry.

Investment Servicing, through State Street Institutional Services, State Street Global Markets, State Street Global Exchange and CRD, provides services for institutional clients, including mutual funds, collective investment funds and other investment pools, corporate and public retirement plans, insurance companies, investment managers, foundations and endowments worldwide. Products include: custody; product accounting; daily pricing and administration; master trust and master custody; depotbank services (a fund oversight role created by non-U.S. regulation); record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance and enhanced custody products; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; performance, risk and compliance analytics; and financial data management to support institutional investors.

Included within our Investment Servicing line of business is CRD, which we acquired in October 2018. The Charles River Investment Management solution is a technology offering which is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. With the acquisition of CRD, we took the first step in building our front-to-back platform, State Street Alpha. Today our State Street Alpha platform combines portfolio management, trading and execution, advanced data aggregation, analytics and compliance tools, and integration with other industry platforms and providers.

Investment Management, through State Street Global Advisors, provides a broad range of investment management strategies and products for our clients. Our investment management strategies and products span the risk/reward spectrum for equity, fixed income and cash assets, including core and enhanced indexing, multi-asset strategies, active quantitative and fundamental active capabilities and alternative investment strategies. Our AUM is currently primarily weighted to indexed strategies. In addition, we provide a breadth of services and solutions, including environmental, social and governance investing, defined benefit and defined contribution and Global Fiduciary Solutions (formerly Outsourced Chief Investment Officer). State Street Global Advisors is also a provider of ETFs, including the SPDR® ETF brand. While management fees are primarily determined by the values of AUM and the investment strategies employed, management fees reflect other factors as well, including the benchmarks specified in the respective management agreements related to performance fees.

For information about our two lines of business, as well as the revenues, expenses and capital allocation methodologies associated with them, refer to Note 24 to the consolidated financial statements in this Form 10-K.

Investment Servicing

TABLE 10: INVESTMENT SERVICING LINE OF BUSINESS RESULTS

	Years Ended December 31,				
(Dollars in millions, except where otherwise noted)	**2020**	**2019**	**2018**	**% Change 2020 vs. 2019**	**% Change 2019 vs. 2018**
Servicing fees	**$ 5,167**	$ 5,074	$ 5,429	2 %	(7) %
Foreign exchange trading services[1]	**1,299**	974	1,071	33	(9)
Securities finance	**342**	462	543	(26)	(15)
Software and processing fees[1]	**706**	691	443	2	56
Total fee revenue[1]	**7,514**	7,201	7,486	4	(4)
Net interest income	**2,211**	2,590	2,691	(15)	(4)
Total other income	**4**	43	6	nm	nm
Total revenue[1]	**9,729**	9,834	10,183	(1)	(3)
Provision for credit losses	**88**	10	15	780	(33)
Total expenses[1]	**7,071**	7,140	7,081	(1)	1
Income before income tax expense	**$ 2,570**	$ 2,684	$ 3,087	(4)	(13)
Pre-tax margin	**26 %**	27 %	30 %		
Average assets (in billions)	**$ 266.4**	$ 220.3	$ 220.2		

[1] CRD contributed approximately $420 million and $248 million in total revenue and total expenses, respectively, in 2020, approximately $385 million and $201 million in total revenue and total expenses, respectively, in 2019 and approximately $119 million and $39 million in total revenue and total expenses, respectively, in 2018, which reflects their results from October 1, 2018, the date of acquisition, through December 31, 2018.

nm Not meaningful

Servicing Fees

Servicing fees, as presented in Table 10: Investment Servicing Line of Business Results, increased 2% in 2020 compared to 2019 primarily due to higher average market levels and client activity, primarily in the first half of 2020, partially offset by normal pricing headwinds. FX rates impacted servicing fees positively by 1% in 2020 relative to 2019 and negatively by 1% in 2019 relative to 2018.

Servicing fees generated outside the U.S. were approximately 47% of total servicing fees in each of 2020, 2019 and 2018.

TABLE 11: ASSETS UNDER CUSTODY AND/OR ADMINISTRATION BY PRODUCT

(In billions)	**December 31, 2020**	**December 31, 2019**	**December 31, 2018**	**% Change 2020 vs. 2019**	**% Change 2019 vs. 2018**
Collective funds	**$ 10,878**	$ 9,796	$ 8,999	11 %	9 %
Mutual funds	**10,882**	9,221	7,912	18	17
Insurance and other products	**9,432**	8,417	8,220	12	2
Pension products	**7,599**	6,924	6,489	10	7
Total	**$ 38,791**	$ 34,358	$ 31,620	13	9

TABLE 12: ASSETS UNDER CUSTODY AND/OR ADMINISTRATION BY ASSET CLASS

(In billions)	**December 31, 2020**	**December 31, 2019**	**December 31, 2018**	**% Change 2020 vs. 2019**	**% Change 2019 vs. 2018**
Equities	**$ 21,626**	$ 19,301	$ 18,041	12 %	7 %
Fixed-income	**12,834**	10,766	9,758	19	10
Short-term and other investments	**4,331**	4,291	3,821	1	12
Total	**$ 38,791**	$ 34,358	$ 31,620	13	9

TABLE 13: ASSETS UNDER CUSTODY AND/OR ADMINISTRATION BY GEOGRAPHY[1]

(In billions)	December 31, 2020	December 31, 2019	December 31, 2018	% Change 2020 vs. 2019	% Change 2019 vs. 2018
Americas	$ 28,245	$ 25,018	$ 23,203	13 %	8 %
Europe/Middle East/Africa	8,101	7,325	6,699	11	9
Asia/Pacific	2,445	2,015	1,718	21	17
Total	$ 38,791	$ 34,358	$ 31,620	13	9

[1] Geographic mix is generally based on the domicile of the entity servicing the funds and is not necessarily representative of the underlying asset mix.

Asset servicing mandates newly announced in 2020 totaled approximately $787 billion, with an increasing proportion incorporating State Street Alpha, compared to $1.84 trillion in 2019. Servicing assets remaining to be installed in future periods totaled approximately $436 billion as of December 31, 2020, which will be reflected in AUC/A in future periods after installation and will generate servicing fee revenue in subsequent periods. The full revenue impact of such mandates will be realized over several quarters as the assets are installed and additional services are added over that period.

New asset servicing mandates may be subject to completion of definitive agreements, approval of applicable boards and shareholders and customary regulatory approvals. New asset servicing mandates and servicing assets remaining to be installed in future periods exclude certain new business which has been contracted, but for which the client has not yet provided permission to publicly disclose and the expected installation date extends beyond one quarter. These excluded assets, which from time to time may be significant, will be included in new asset servicing mandates and reflected in servicing assets remaining to be installed in the period in which the client provides its permission. Servicing mandates and servicing assets remaining to be installed in future periods are presented on a gross basis and therefore also do not include the impact of clients who have notified us during the period of their intent to terminate or reduce their relationship with us, which may from time to time be significant.

With respect to these new servicing mandates, once installed we may provide various services, including accounting, bank loan servicing, compliance reporting and monitoring, custody, depository banking services, FX, fund administration, hedge fund servicing, middle office outsourcing, performance and analytics, private equity administration, real estate administration, securities finance, transfer agency and wealth management services. Revenues associated with new servicing mandates may vary based on the breadth of services provided and the timing of installation, and the types of assets.

As a result of a decision to diversify providers, one of our large asset servicing clients has advised us it expects to move a significant portion of its ETF assets currently with State Street to one or more other providers, pending necessary approvals. We expect to continue as a significant service provider for this client after this transition and for the client to continue to be meaningful to our business. The transition is expected to begin in 2022 but will principally occur in 2023. For the year ended December 31, 2020, the fee revenue associated with the transitioning assets represented approximately 1.5% of our total fee revenue. The total revenue and income impact of this transition will depend upon a range of factors, including potential growth in our continuing business with the client and expense reductions associated with the transition.

For additional information about the impact of worldwide equity and fixed-income valuations on our fee revenue, as well as other key drivers of our servicing fee revenue, refer to "Fee Revenue" in "Consolidated Results of Operations" included in this Management's Discussion and Analysis.

Foreign Exchange Trading Services

Foreign exchange trading services revenue, as presented in Table 10: Investment Servicing Line of Business Results, increased 33% in 2020 compared to 2019, primarily due to higher volumes and market volatility. Foreign exchange trading services is composed of revenue generated by FX trading and revenue generated by brokerage and other trading services, which made up 68% and 32%, respectively, of foreign exchange trading services revenue in 2020.

We primarily earn FX trading revenue by acting as a principal market-maker through both "direct sales and trading" and "indirect FX trading."

- *Direct sales and trading*: Represent FX transactions at negotiated rates with clients and investment managers that contact our trading desk directly. These principal market-making activities include transactions for funds serviced by third party custodians or prime brokers, as well as those funds under custody with us.
- *Indirect FX trading*: Represents FX transactions with clients, for which we are the funds' custodian, or their investment managers, routed to our FX desk through our asset-servicing operation. We execute indirect FX trades as a principal at rates disclosed to our clients.

Our FX trading revenue is influenced by multiple factors, including: the volume and type of client FX transactions and related spreads; currency volatility, reflecting market conditions; and our management of exchange rate, interest rate and other market risks associated with our FX activities. The relative impact of these factors on our total FX trading revenues often differs from period to period. For example, assuming all other factors remain constant, increases or decreases in volumes or bid-offer spreads across product mix tend to result in increases or decreases, as the case may be, in client-related FX revenue.

Our clients that utilize indirect FX trading can, in addition to executing their FX transactions through dealers not affiliated with us, transition from indirect FX trading to either direct sales and trading execution, including our "Street FX" service, or to one of our electronic trading platforms. Street FX, in which we continue to act as a principal market-maker, enables our clients to define their FX execution strategy and automate the FX trade execution process, both for funds under custody with us as well as those under custody at another bank.

We also earn foreign exchange trading services revenue through "electronic FX services" and "other trading, transition management and brokerage revenue."

- Electronic FX services: Our clients may choose to execute FX transactions through one of our electronic trading platforms. These transactions generate revenue through a "click" fee.
- Other trading, transition management and brokerage revenue: As our clients look to us to enhance and preserve portfolio values, they may choose to utilize our Transition or Currency Management capabilities or transact with our Equity Trade execution group. These transactions, which are not limited to foreign exchange, generate revenue via commissions charged for trades transacted during the management of these portfolios.

Securities Finance

Our securities finance business consists of three components:

(1) an agency lending program for State Street Global Advisors managed investment funds with a broad range of investment objectives, which we refer to as the State Street Global Advisors lending funds;

(2) an agency lending program for third-party investment managers and asset owners, which we refer to as the agency lending funds; and

(3) security lending transactions which we enter into as principal, which we refer to as our enhanced custody business.

Securities finance revenue earned from our agency lending activities, which is composed of our split of both the spreads related to cash collateral and the fees related to non-cash collateral, is principally a function of the volume of securities on loan, the interest rate spreads and fees earned on the underlying collateral and our share of the fee split.

As principal, our enhanced custody business borrows securities from the lending client or other market participants and then lends such securities to the subsequent borrower, either our client or a broker/dealer. We act as principal when the lending client is unable to, or elects not to, transact directly with the market and execute the transaction and furnish the securities. In our role as principal, we provide support to the transaction through our credit rating. While we source a significant proportion of the securities furnished by us in our role as principal from third parties, we have the ability to source securities through assets under custody from clients who have designated us as an eligible borrower.

Securities finance revenue, as presented in Table 10: Investment Servicing Line of Business Results, decreased 26% in 2020 compared to 2019, reflecting decreases in enhanced custody balances due to client deleveraging and lower agency lending revenues due to lower spreads.

Market influences may continue to affect client demand for securities finance, and as a result our revenue from, and the profitability of, our securities lending activities in future periods. In addition, the constantly evolving regulatory environment, including revised or proposed capital and liquidity standards, interpretations of those standards, and our own balance sheet management activities, may influence modifications to the way in which we deliver our agency lending or enhanced custody businesses, the volume of our securities lending activity and related revenue and profitability in future periods.

Software and Processing Fees

Software and processing fees revenue includes diverse types of fees and revenue, including fees from software licensing and maintenance, fees from our structured products business and other revenue including equity income from our joint venture investments, gains and losses on sales of other assets, market-related adjustments and income associated with certain tax-advantaged investments.

Software and processing fees revenue, presented in Table 10: Investment Servicing Line of Business Results, increased 2% in 2020 compared to 2019 and reflects approximately $406 million from CRD in 2020. We acquired CRD on October 1, 2018. Revenue related to the front office solutions provided by CRD is primarily driven by the sale of term software licenses and software as service arrangements, including professional services such as consulting and implementation services, software support and maintenance. Approximately 50%-70% of revenue associated with a sale of software to be installed on-premise is recognized at a point in time when the customer benefits from obtaining access to and use of the software license, with the percentage varying based on the length of the contract and other contractual terms. The remainder of revenue for on-premise installations is recognized over the length of the contract as maintenance and other services are provided. Upon renewal of an on-premises software contract, the same pattern of revenue recognition is followed with 50%-70% recognized upon renewal and the balance recognized over the term of the contract. Revenue for a Software as a Service (SaaS) related arrangement, where the customer does not take possession of the software, is recognized over the term of the contract as services are provided. Upon renewal of a SaaS arrangement, revenue continues to be recognized as services are provided under the new contract. As a result of these differences in how portions of CRD revenue are accounted for, CRD revenue may vary more than other business units quarter to quarter. CRD contributed approximately $420 million in total revenue in 2020, compared to approximately $385 million in 2019, including approximately $370 million in software and processing fees and $15 million in brokerage and other trading services within foreign exchange trading services. The increase in revenue is primarily driven by SaaS revenue and professional services.

Amortization of tax advantage investments negatively impacted software and processing fees by approximately $88 million and $52 million in 2020 and 2019, respectively.

In addition, FX and market-related adjustments, which also includes certain fair value adjustments, impacted software and processing fees by approximately $26 million and $16 million in 2020 and 2019, respectively.

Expenses

Total expenses for Investment Servicing decreased 1% in 2020 compared to 2019, primarily due to on-going expense management initiatives, partially offset by technology infrastructure and operational investments. Total expenses contributed by CRD in 2020 were approximately $248 million, compared to $201 million in 2019. Additional information about expenses is provided under "Expenses" in "Consolidated Results of Operations" included in this Management's Discussion and Analysis.

Investment Management

TABLE 14: INVESTMENT MANAGEMENT LINE OF BUSINESS RESULTS

(Dollars in millions, except where otherwise noted)	Years Ended December 31, 2020	2019	2018	% Change 2020 vs. 2019	% Change 2019 vs. 2018
Management fees[1][2]	**$ 1,880**	$ 1,824	$ 1,899	3 %	(4) %
Foreign exchange trading services[1][3]	**64**	84	82	(24)	2
Securities finance	**14**	9	—	nm	nm
Software and processing fees[4]	**27**	29	(5)	nm	nm
Total fee revenue	**1,985**	1,946	1,976	2	(2)
Net interest income	**(11)**	(24)	(20)	(54)	20
Total revenue	**1,974**	1,922	1,956	3	(2)
Total expenses	**1,471**	1,535	1,544	(4)	(1)
Income before income tax expense	**$ 503**	$ 387	$ 412	30	(6)
Pre-tax margin	**25 %**	20 %	21 %		
Average assets (in billions)	**$ 2.9**	$ 3.0	$ 3.2		

[1] Certain fees associated with our GLD ETFs have been reclassified from Foreign exchange trading services to Management fees to better reflect the nature of those fees. Prior periods have been reclassified to conform to current-period presentation. These fees were approximately $81 million, $53 million and $48 million in 2020, 2019 and 2018, respectively.
[2] Includes revenues from SPDR® Gold Shares and SPDR® Gold MiniSharesSM Trust AUM where we are not the investment manager but act as the marketing agent.
[3] Includes revenue for reimbursements received for certain ETFs associated with State Street Global Advisors where we act as the distribution and marketing agent.
[4] Includes other revenue items that are primarily driven by equity market movements.
nm Not meaningful

Investment Management total revenue increased 3% in 2020 compared to 2019.

Management Fees

Management fees increased 3% in 2020 compared to 2019, primarily due to higher average market levels and ETF and cash net inflows, partially offset by net institutional outflows.

Management fees generated outside the U.S. were approximately 26% of total management fees in 2020 compared to approximately 27% in both 2019 and 2018.

TABLE 15: ASSETS UNDER MANAGEMENT BY ASSET CLASS AND INVESTMENT APPROACH

(In billions)	December 31, 2020	December 31, 2019	December 31, 2018	% Change 2020 vs. 2019	% Change 2019 vs. 2018
Equity:					
Active	**$ 83**	$ 88	$ 80	(6) %	10 %
Passive	**2,089**	1,903	1,464	10	30
Total equity	**2,172**	1,991	1,544	9	29
Fixed-income:					
Active	**92**	89	81	3	10
Passive	**441**	379	341	16	11
Total fixed-income	**533**	468	422	14	11
Cash[1]	**359**	324	287	11	13
Multi-asset-class solutions:					
Active	**26**	24	19	8	26
Passive	**164**	133	113	23	18
Total multi-asset-class solutions	**190**	157	132	21	19
Alternative investments[2]:					
Active	**23**	21	21	10	—
Passive	**190**	155	105	23	48
Total alternative investments	**213**	176	126	21	40
Total	**$ 3,467**	$ 3,116	$ 2,511	11	24

[1] Includes both floating- and constant-net-asset-value portfolios held in commingled structures or separate accounts.
[2] Includes real estate investment trusts, currency and commodities, including SPDR® Gold Shares and SPDR® Gold MiniSharesSM Trust. We are not the investment manager for the SPDR® Gold Shares and SPDR®Gold MiniSharesSM Trust, but act as the marketing agent.

TABLE 16: EXCHANGE-TRADED FUNDS BY ASSET CLASS[1]

(In billions)	December 31, 2020	December 31, 2019	December 31, 2018	% Change 2020 vs. 2019	% Change 2019 vs. 2018
Alternative Investments[2]	**$ 83**	$ 56	$ 43	48 %	30 %
Cash	**14**	9	9	56	—
Equity	**706**	618	482	14	28
Multi Asset	**1**	—	—	100	—
Fixed-Income	**102**	85	66	20	29
Total Exchange-Traded Funds	**$ 906**	$ 768	$ 600	18	28

[1] ETFs are a component of AUM presented in the preceding table.
[2] Includes real estate investment trusts, currency and commodities, including SPDR® Gold Shares and SPDR® Gold MiniSharesSM Trust. We are not the investment manager for the SPDR® Gold Shares and SPDR®Gold MiniSharesSM Trust, but act as the marketing agent.

TABLE 17: GEOGRAPHIC MIX OF ASSETS UNDER MANAGEMENT[1]

(In billions)	December 31, 2020	December 31, 2019	December 31, 2018	% Change 2020 vs. 2019	% Change 2019 vs. 2018
North America	**$ 2,414**	$ 2,115	$ 1,731	14 %	22 %
Europe/Middle East/Africa	**509**	493	421	3	17
Asia/Pacific	**544**	508	359	7	42
Total	**$ 3,467**	$ 3,116	$ 2,511	11	24

[1] Geographic mix is based on client location or fund management location.

TABLE 18: ACTIVITY IN ASSETS UNDER MANAGEMENT BY PRODUCT CATEGORY

(In billions)	Equity	Fixed-Income	Cash[1]	Multi-Asset-Class Solutions	Alternative Investments[2]	Total
Balance as of December 31, 2017	$ 1,745	$ 414	$ 330	$ 147	$ 146	$ 2,782
Long-term institutional flows, net[3]	(45)	12	—	(3)	(2)	(38)
Exchange-traded fund flows, net	(3)	7	6	—	(2)	8
Cash fund flows, net	—	—	(50)	—	—	(50)
Total flows, net	(48)	19	(44)	(3)	(4)	(80)
Market appreciation (depreciation)	(142)	(7)	3	(10)	(10)	(166)
Foreign exchange impact	(11)	(4)	(2)	(2)	(6)	(25)
Total market/foreign exchange impact	(153)	(11)	1	(12)	(16)	(191)
Balance as of December 31, 2018	$ 1,544	$ 422	$ 287	$ 132	$ 126	$ 2,511
Long-term institutional flows, net[3]	26	(7)	—	3	16	38
Exchange-traded fund flows, net	13	15	—	—	6	34
Cash fund flows, net	—	—	31	—	—	31
Total flows, net	39	8	31	3	22	103
Market appreciation (depreciation)	404	38	6	22	28	498
Foreign exchange impact	4	—	—	—	—	4
Total market/foreign exchange impact	408	38	6	22	28	502
Balance as of December 31, 2019	$ 1,991	$ 468	$ 324	$ 157	$ 176	$ 3,116
Long-term institutional flows, net[3]	**(99)**	**2**	**(1)**	**10**	**(12)**	**(100)**
Exchange-traded fund flows, net	**13**	**12**	**4**	**—**	**15**	**44**
Cash fund flows, net	**—**	**—**	**32**	**—**	**—**	**32**
Total flows, net	**(86)**	**14**	**35**	**10**	**3**	**(24)**
Market appreciation (depreciation)	**238**	**43**	**(1)**	**19**	**30**	**329**
Foreign exchange impact	**29**	**8**	**1**	**4**	**4**	**46**
Total market/foreign exchange impact	**267**	**51**	**—**	**23**	**34**	**375**
Balance as of December 31, 2020	**$ 2,172**	**$ 533**	**$ 359**	**$ 190**	**$ 213**	**$ 3,467**

[1] Includes both floating- and constant-net-asset-value portfolios held in commingled structures or separate accounts.

[2] Includes real estate investment trusts, currency and commodities, including SPDR® Gold Shares and SPDR® Gold MiniSharesSM Trust. We are not the investment manager for the SPDR® Gold Shares and SPDR®Gold MiniSharesSM Trust, but act as the marketing agent.

[3] Amounts represent long-term portfolios, excluding ETFs.

Expenses

Total expenses for Investment Management decreased 4% in 2020 compared to 2019, primarily due to savings from on-going expense management initiatives.

Additional information about expenses is provided under "Expenses" in "Consolidated Results of Operations" included in this Management's Discussion and Analysis.

FINANCIAL CONDITION

The structure of our consolidated statement of condition is primarily driven by the liabilities generated by our Investment Servicing and Investment Management lines of business. Our clients' needs and our operating objectives determine balance sheet volume, mix and currency denomination. As our clients execute their worldwide cash management and investment activities, they utilize deposits and short-term investments that constitute the majority of our liabilities. These liabilities are generally in the form of interest-bearing transaction account deposits, which are denominated in a variety of currencies; non-interest-bearing demand deposits; and repurchase agreements, which generally serve as short-term investment alternatives for our clients.

Deposits and other liabilities resulting from client initiated transactions are invested in assets that generally have contractual maturities significantly longer than our liabilities; however, we evaluate the operational nature of our deposits and seek to maintain appropriate short-term liquidity of those liabilities that are not operational in nature and maintain longer-termed assets for our operational deposits. Our assets consist primarily of securities held in our AFS or HTM portfolios and short-duration financial instruments, such as interest-bearing deposits with banks and securities purchased under resale agreements. The actual mix of assets is determined by the characteristics of the client liabilities and our desire to maintain a well-diversified portfolio of high-quality assets.

TABLE 19: AVERAGE STATEMENT OF CONDITION[1]

	Years Ended December 31,		
(In millions)	**2020**	**2019**	**2018**
Assets:			
Interest-bearing deposits with banks	**$ 76,588**	$ 48,500	$ 54,328
Securities purchased under resale agreements	**3,452**	2,506	2,901
Trading account assets	**878**	884	1,051
U.S. Treasury and federal agencies:			
Direct obligations	**14,017**	14,249	16,226
Mortgage-and asset-backed securities	**46,799**	42,390	32,223
State and political subdivisions	**1,717**	1,869	5,481
Other investments:			
Asset-backed securities	**11,096**	9,734	13,323
Collateralized mortgage-backed securities and obligations	**682**	896	1,549
Other debt investments and equity securities	**26,681**	22,630	19,268
Investment securities held to maturity purchased under money market liquidity facility	**8,183**	—	—
Total Investment securities	**109,175**	91,768	88,070
Loans and leases	**27,525**	24,073	23,573
Other interest-earning assets	**11,256**	14,160	15,714
Average total interest-earning assets	**228,874**	181,891	185,637
Cash and due from banks	**3,849**	3,390	3,178
Other non-interest-earning assets	**36,611**	38,053	34,570
Average total assets	**$ 269,334**	$ 223,334	$ 223,385
Liabilities and shareholders' equity:			
Interest-bearing deposits:			
U.S.	**$ 87,444**	$ 67,547	$ 54,953
Non-U.S.	**68,806**	61,301	70,623
Total interest-bearing deposits[2]	**156,250**	128,848	125,576
Securities sold under repurchase agreements	**2,615**	1,616	2,048
Short-term borrowings under money market liquidity facility	**8,207**	—	—
Other short-term borrowings	**2,226**	1,524	1,327
Long-term debt	**14,371**	11,474	10,686
Other interest-bearing liabilities	**3,176**	4,103	4,956
Average total interest-bearing liabilities	**186,845**	147,565	144,593
Non-interest-bearing deposits[2]	**36,975**	29,414	35,832
Other non-interest-bearing liabilities	**20,464**	21,299	19,804
Preferred shareholders' equity	**2,569**	3,653	3,327
Common shareholders' equity	**22,481**	21,403	19,829
Average total liabilities and shareholders' equity	**$ 269,334**	$ 223,334	$ 223,385

[1] Additional information about our average statement of condition, primarily our interest-earning assets and interest-bearing liabilities, is provided in "Net Interest Income" included in this Management's Discussion and Analysis.

[2] Total deposits averaged $193.23 billion in 2020 compared to $158.26 billion and $161.41 billion in 2019 and 2018, respectively.

Investment Securities

TABLE 20: CARRYING VALUES OF INVESTMENT SECURITIES

	As of December 31,		
(In millions)	**2020**	**2019**	**2018**
Available-for-sale:			
U.S. Treasury and federal agencies:			
Direct obligations	**$ 6,575**	$ 3,487	$ 1,039
Mortgage-backed securities	**14,305**	17,838	15,968
Total U.S. Treasury and federal agencies	**20,880**	21,325	17,007
Asset-backed securities:			
Student loans[1]	**314**	531	541
Credit cards	**90**	89	583
Collateralized loan obligations	**2,966**	1,820	593
Total asset-backed securities	**3,370**	2,440	1,717
Non-U.S. debt securities:			
Mortgage-backed securities	**1,996**	1,980	1,682
Asset-backed securities	**2,291**	2,179	1,574
Government securities	**12,539**	12,373	12,793
Other	**12,903**	8,658	6,602
Total non-U.S. debt securities	**29,729**	25,190	22,651
State and political subdivisions	**1,548**	1,783	1,918
Collateralized mortgage obligations	**78**	104	197
Other U.S. debt securities	**3,443**	2,973	1,658
Total	**$ 59,048**	$ 53,815	$ 45,148
Held-to-maturity[2]:			
U.S. Treasury and federal agencies:			
Direct obligations	**$ 6,057**	$ 10,311	$ 14,794
Mortgage-backed securities	**36,883**	26,297	21,647
Total U.S. Treasury and federal agencies	**42,940**	36,608	36,441
Asset-backed securities:			
Student loans[1]	**4,774**	3,783	3,191
Credit cards	**—**	—	193
Other	**—**	—	1
Total asset-backed securities	**4,774**	3,783	3,385
Non-U.S. debt securities:			
Mortgage-backed securities	**303**	366	638
Asset-backed securities	**—**	—	223
Government securities	**342**	328	358
Other	**—**	—	46
Total non-U.S. debt securities	**645**	694	1,265
Collateralized mortgage obligations	**572**	697	823
Held-to-maturity under money market mutual fund liquidity facility[3]	**3,300**	—	—
Total	**$ 52,231**	$ 41,782	$ 41,914

[1] Primarily comprised of securities guaranteed by the federal government with respect to at least 97% of defaulted principal and accrued interest on the underlying loans.
[2] Includes securities at amortized cost or fair value on the date of transfer from AFS.
[3] Consists entirely of U.S. securities.

Additional information about our investment securities portfolio is provided in Note 3 to the consolidated financial statements in this Form 10-K.

We manage our investment securities portfolio to align with the interest rate and duration characteristics of our client liabilities and in the context of the overall structure of our consolidated statement of condition, in consideration of the global interest rate environment. We consider a well-diversified, high-credit quality investment securities portfolio to be an important element in the management of our consolidated statement of condition.

Average duration of our investment securities portfolio was 3.0 years and 2.7 years as of December 31, 2020 and December 31, 2019, respectively. The increase in securities duration is primarily driven by continued growth in the investment portfolio.

Approximately 92% and 90% of the carrying value of the portfolio was rated "AAA" or "AA" as of December 31, 2020 and December 31, 2019, respectively.

TABLE 21: INVESTMENT PORTFOLIO BY EXTERNAL CREDIT RATING (EXCLUDING SECURITIES PURCHASED UNDER THE MMLF PROGRAM)

	December 31, 2020	December 31, 2019
AAA[1]	**78 %**	77 %
AA	**14**	13
A	**4**	5
BBB	**4**	5
Below BBB	**—**	—
	100 %	100 %

[1] Includes U.S. Treasury and federal agency securities that are split-rated, "AAA" by Moody's Investors Service and "AA+" by Standard & Poor's and also includes Agency MBS securities which are not explicitly rated but which have an explicit or assumed guarantee from the U.S. government.

As of December 31, 2020 and December 31, 2019, the investment portfolio was diversified with respect to asset class composition. The following table presents the composition of these asset classes.

TABLE 22: INVESTMENT PORTFOLIO BY ASSET CLASS

	December 31, 2020	December 31, 2019
U.S. Agency Mortgage-backed securities	**39 %**	41 %
Foreign sovereign	**20**	19
U.S. Treasuries	**11**	14
Asset-backed securities	**11**	11
Other credit[1]	**19**	15
	100 %	100 %

[1] Includes the securities purchased under the MMLF program.

Non-U.S. Debt Securities

Approximately 27% of the aggregate carrying value of our investment securities portfolio was non-U.S. debt securities as of both December 31, 2020 and December 31, 2019.

TABLE 23: NON-U.S. DEBT SECURITIES

(In millions)	December 31, 2020	December 31, 2019
Available-for-sale:		
European[1]	$ 3,275	$ 2,101
Canada	3,163	2,611
France	2,829	2,223
Australia	2,809	2,409
Germany	2,155	1,944
Spain	1,642	1,531
Belgium	1,618	977
Austria	1,544	1,398
Netherlands	1,528	1,524
Ireland	1,226	1,235
Finland	1,222	846
United Kingdom	1,209	1,608
Asian[1]	1,165	581
Italy	1,014	1,113
Japan	560	1,363
Sweden	212	156
Hong Kong	162	617
Luxembourg	83	124
Brazil	74	93
Norway	22	51
Other[2]	2,217	685
Total	$ 29,729	$ 25,190
Held-to-maturity:		
Singapore	$ 342	$ 214
Australia	90	109
Spain	84	85
United Kingdom	84	126
Germany	—	112
Other[3]	45	48
Total	$ 645	$ 694

[1] Consists entirely of supranational bonds.

[2] Included approximately $2,166 million and $618 million as of December 31, 2020 and December 31, 2019, respectively, related to supranational bonds.

[3] Included approximately $45 million and $46 million as of December 31, 2020 and December 31, 2019, respectively, related to Italy and Portugal, all of which were related to MBS.

Approximately 80% and 74% of the aggregate carrying value of these non-U.S. debt securities was rated "AAA" or "AA" as of December 31, 2020 and December 31, 2019, respectively. The majority of these securities comprised senior positions within the security structures; these positions have a level of protection provided through subordination and other forms of credit protection. As of December 31, 2020 and December 31, 2019, approximately 21% and 27%, respectively, of the aggregate carrying value of these non-U.S. debt securities was floating-rate.

As of December 31, 2020, our non-U.S. debt securities had an average market-to-book ratio of 101.5%, and an aggregate pre-tax net unrealized gain of $439 million, composed of gross unrealized gains of $452 million and gross unrealized losses of $13 million. These unrealized amounts included:

- a pre-tax net unrealized gain of $375 million, composed of gross unrealized gains of $384 million and gross unrealized losses of $9 million, associated with non-U.S. AFS debt securities; and
- a pre-tax net unrealized gain of $64 million, composed of gross unrealized gains of $68 million and gross unrealized losses of $4 million, associated with non-U.S. HTM debt securities.

As of December 31, 2020, the underlying collateral for non-U.S. MBS and ABS primarily included U.K., Australian, Italian and Dutch mortgages. The securities listed under "Canada" were composed of Canadian government securities and provincial bonds, corporate debt and non-U.S. agency securities. The securities listed under "France" were composed of sovereign bonds, corporate debt, covered bonds, ABS and Non-U.S. agency securities. The securities listed under "Japan" were substantially composed of Japanese government securities.

Municipal Obligations

We carried approximately $1.5 billion of municipal securities classified as state and political subdivisions in our investment securities portfolio as of December 31, 2020, as shown in Table 20: Carrying Values of Investment Securities, all of which were classified as AFS. As of December 31, 2020, we also provided approximately $9.4 billion of credit and liquidity facilities to municipal issuers.

TABLE 24: STATE AND MUNICIPAL OBLIGORS[1]

(Dollars in millions)	Total Municipal Securities[2]	Credit and Liquidity Facilities[3]	Total	% of Total Municipal Exposure
December 31, 2020				
State of Issuer:				
Texas	$ 268	$ 2,282	$ 2,550	23 %
California	113	2,174	2,287	21
New York	297	1,363	1,660	15
Massachusetts	382	927	1,309	12
Total	$ 1,060	$ 6,746	$ 7,806	
December 31, 2019				
State of Issuer:				
Texas	$ 275	$ 2,345	$ 2,620	23 %
California	111	2,114	2,225	20
New York	283	1,531	1,814	16
Massachusetts	442	809	1,251	11
Total	$ 1,111	$ 6,799	$ 7,910	

[1] Represented 5% or more of our aggregate municipal credit exposure of approximately $11.06 billion and $11.32 billion across our businesses as of December 31, 2020 and December 31, 2019, respectively.

[2] Includes approximately $0.08 billion of municipal HTM MMLF securities.

[3] Includes municipal loans which are also presented within Table 26: U.S. and Non-U.S. Loans and Leases.

Our aggregate municipal securities exposure presented in Table 24: State and Municipal Obligors, was concentrated primarily with highly-rated counterparties, with approximately 87% of the obligors rated "AAA" or "AA" as of December 31, 2020. As of that date, approximately 26% and 74% of our aggregate municipal securities exposure was associated with general obligation and revenue bonds, respectively. The portfolios are also diversified geographically, with the states that represent our largest exposures widely dispersed across the U.S.

Additional information with respect to our assessment of impairment of our municipal securities is provided in Note 3 to the consolidated financial statements in this Form 10-K.

TABLE 25: CONTRACTUAL MATURITIES AND YIELDS

As of December 31, 2020	Under 1 Year		1 to 5 Years		6 to 10 Years		Over 10 Years		Total
(Dollars in millions)	Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield	Amount
Available-for-sale[1]:									
U.S. Treasury and federal agencies:									
Direct obligations	$ 1,661	.91 %	$ 2,771	.51 %	$ 2,143	1.54 %	$ —	— %	$ 6,575
Mortgage-backed securities	127	3.46	619	2.52	2,828	.90	10,731	3.19	14,305
Total U.S. treasury and federal agencies	1,788		3,390		4,971		10,731		20,880
Asset-backed securities:									
Student loans	115	1.77	90	.68	—	—	109	.35	314
Credit cards	—	—	—	—	90	.92	—	—	90
Collateralized loan obligations	76	1.19	1,077	1.26	838	1.36	975	1.50	2,966
Total asset-backed securities	191		1,167		928		1,084		3,370
Non-U.S. debt securities:									
Mortgage-backed securities	260	.67	527	.60	116	.53	1,093	1.08	1,996
Asset-backed securities	337	.61	1,247	.39	272	.56	435	.41	2,291
Government securities	3,151	.51	8,151	1.99	939	.77	298	.91	12,539
Other	1,329	2.14	9,652	1.01	1,752	.69	170	1.93	12,903
Total non-U.S. debt securities	5,077		19,577		3,079		1,996		29,729
State and political subdivisions[2]	136	6.26	626	5.39	559	5.39	227	5.78	1,548
Collateralized mortgage obligations	—	—	—	—	—	—	78	3.57	78
Other U.S. debt securities	452	2.90	2,896	2.38	95	2.53	—	—	3,443
Total	$ 7,644		$ 27,656		$ 9,632		$ 14,116		$ 59,048
Held-to-maturity[1]:									
U.S. Treasury and federal agencies:									
Direct obligations	$ 3,480	2.69 %	$ 2,555	1.79 %	$ —	— %	$ 22	.58 %	$ 6,057
Mortgage-backed securities	204	2.59	423	3.04	5,036	2.13	31,220	2.55	36,883
Total U.S. treasury and federal agencies	3,684		2,978		5,036		31,242		42,940
Asset-backed securities:									
Student loans	350	.50	155	.52	667	.82	3,602	1.11	4,774
Total asset-backed securities	350		155		667		3,602		4,774
Non-U.S. debt securities:									
Mortgage-backed securities	87	.60	23	1.02	—	—	193	.18	303
Government securities	342	.43	—	—	—	—	—	—	342
Total non-U.S. debt securities	429		23		—		193		645
Collateralized mortgage obligations	139	1.42	265	.94	21	1.22	147	1.32	572
Total	4,602		3,421		5,724		35,184		48,931
Held-to-maturity under money market mutual fund liquidity facility	3,300	1.39	—	—	—	—	—	—	3,300
Total held-to-maturity securities	$ 7,902		$ 3,421		$ 5,724		$ 35,184		$ 52,231

[1] The maturities of MBS, ABS and CMOs are based on expected principal payments.
[2] Yields were calculated on a FTE basis, using applicable statutory tax rates (21.0% as of December 31, 2020).

Loans and Leases

TABLE 26: U.S. AND NON- U.S. LOANS AND LEASES

	As of December 31,				
(In millions)	2020	2019	2018	2017	2016
Domestic[1]:					
Commercial and financial	**$ 19,036**	$ 18,762	$ 19,479	$ 18,696	$ 16,412
Commercial real estate	**2,096**	1,766	874	98	27
Lease financing[2]	**—**	—	—	267	338
Total domestic	**21,132**	20,528	20,353	19,061	16,777
Foreign[1]:					
Commercial and financial	**6,793**	5,781	5,436	3,837	2,476
Lease financing[2]	**—**	—	—	396	504
Total foreign	**6,793**	5,781	5,436	4,233	2,980
Total loans and leases[3][4]	**$ 27,925**	$ 26,309	$ 25,789	$ 23,294	$ 19,757
Average loans and leases	**$ 27,525**	$ 24,073	$ 23,573	$ 21,916	$ 19,013

[1] Domestic and foreign categorization is based on the borrower's country of domicile.
[2] We wound down our lease financing business in 2018.
[3] Includes $2,982 million and $3,256 million of overdrafts as of December 31, 2020 and December 31, 2019, respectively.
[4] As of December 31, 2020, floating rate loans totaled $22,537 million and fixed rate loans totaled $2,404 million.

The increase in domestic loans in the commercial and financial segment as of December 31, 2020 compared to December 31, 2019 was primarily driven by an increase in fund finance loans, partially offset by a decrease in securities finance loans.

As of December 31, 2020 and December 31, 2019, our leveraged loans totaled approximately $4.17 billion and $4.46 billion, respectively. We sold $353 million leveraged loans in 2020. We recorded a charge-off against the allowance for these loans prior to the sale of these loans of $41 million in 2020.

In addition, we had binding unfunded commitments as of December 31, 2020 and December 31, 2019 of $149 million and $176 million, respectively, to participate in such syndications. Additional information about these unfunded commitments is provided in Note 12 to the consolidated financial statements in this Form 10-K.

These leveraged loans, which are primarily rated "speculative" under our internal risk-rating framework (refer to Note 4 to the consolidated financial statements in this Form 10-K), are externally rated "BBB," "BB" or "B," with approximately 85% and 86% of the loans rated "BB" or "B" as of December 31, 2020 and December 31, 2019, respectively. Our investment strategy involves generally limiting our investment to larger, more liquid credits underwritten by major global financial institutions, applying our internal credit analysis process to each potential investment and diversifying our exposure by counterparty and industry segment. However, these loans have significant exposure to credit losses relative to higher-rated loans in our portfolio.

Additional information about all of our loan segments, as well as underlying classes, is provided in Note 4 to the consolidated financial statements in this Form 10-K.

No loans were modified in troubled debt restructurings as of both December 31, 2020 and December 31, 2019.

TABLE 27: CONTRACTUAL MATURITIES FOR LOANS

	As of December 31, 2020			
(In millions)	Under 1 year	1 to 5 years	Over 5 years	Total
Domestic:				
Commercial and financial	**$ 11,783**	**$ 5,763**	**$ 1,490**	**$ 19,036**
Commercial real estate	**43**	**571**	**1,482**	**2,096**
Total domestic	**11,826**	**6,334**	**2,972**	**21,132**
Foreign:				
Commercial and financial	**3,111**	**3,182**	**500**	**6,793**
Total foreign	**3,111**	**3,182**	**500**	**6,793**
Total loans	**$ 14,937**	**$ 9,516**	**$ 3,472**	**$ 27,925**

TABLE 28: CLASSIFICATION OF LOAN BALANCES DUE AFTER ONE YEAR

(In millions)	As of December 31, 2020
Loans with predetermined interest rates	**$ 2,327**
Loans with floating or adjustable interest rates	**10,658**
Total	**$ 12,985**

Allowance for credit losses

TABLE 29: ALLOWANCE FOR CREDIT LOSSES

	Years Ended December 31,				
(In millions)	2020	2019	2018	2017	2016
Allowance for credit losses:					
Beginning balance[1]	**$ 93**	$ 83	$ 72	$ 77	$ 66
Provision for credit losses (funded commitments)[2]	**83**	10	14	2	10
Provisions for credit losses (unfunded commitments)[3]	**3**	3	(1)	(6)	4
Provisions for credit losses (held-to-maturity securities and all other)	**2**	—	—	—	—
Charge-offs[4]	**(41)**	(3)	(1)	(1)	(3)
FX translation	**8**	(2)	(1)	—	—
Ending balance	**$ 148**	$ 91	$ 83	$ 72	$ 77

[1] Beginning January 1, 2020, we adopted ASU 2016-13. Prior to 2020, we recognized an allowance for loan losses under an incurred loss model. Upon adoption, we increased the allowance and reduced retained earnings by approximately $2 million. As such, the beginning balance differs from the December 31, 2019 ending balance. Please refer to Note 1 to the consolidated financial statements in this Form 10-K for additional information.
[2] The provision for credit losses is primarily related to commercial and financial loans.
[3] Prior to the adoption of ASU 2016-13, the provision for unfunded commitments was recorded within other expenses in the consolidated statement of income. Upon adoption of ASU 2016-13 in the first quarter of 2020, the provision for all assets within scope is recorded within the provision for credit losses in the consolidated statement of income.
[4] The charge-offs are related to commercial and financial loans.

As discussed above, we adopted ASU 2016-13 in January 2020. For additional information on this new standard, refer to Note 1 to the consolidated financial statements in this Form 10-K. The provision for credit losses related to loans and financial assets held at amortized cost, including investment securities classified as HTM and off-balance sheet commitments, was $88 million in 2020 based on the CECL methodology, compared to $10 million in 2019 (which was under the previous incurred loss model).

As of December 31, 2020, approximately $97 million of our allowance for credit losses was related to leveraged loans included in the commercial and financial segment compared to $61 million as of December 31, 2019, reflecting changes in reserving standards and economic outlook, as well as negative credit migration. As our view on current and future economic scenarios change, our allowance for credit losses related to these loans may be impacted through a change to the provisions for credit losses, reflecting credit migration within our loan portfolio, as well as changes in management's economic outlook as of year-end. The remaining $51 million and $13 million as of December 31, 2020 and 2019, respectively, was related to off-balance sheet commitments and other financial assets held at amortized cost, including investment securities held to maturity.

An allowance for credit losses is recognized on HTM securities upon acquisition of the security, and on AFS securities when the fair value and expected future cash flows of the investment securities are less than their amortized cost basis. Please refer to Note 3 to the consolidated financial statements in this Form 10-K for additional information. Our assessment of impairment involves an evaluation of economic and security-specific factors. Such factors are based on estimates, derived by management, which contemplate current market conditions and security-specific performance. To the extent that market conditions are worse than management's expectations or due to idiosyncratic bond performance, the credit-related component of impairment, in particular, could increase and would be recorded in the provision for credit losses. Additional information with respect to the allowance for credit losses, net impairment losses and gross unrealized losses is provided in Note 3 to the consolidated financial statements in this Form 10-K.

Cross-Border Outstandings

Cross-border outstandings are amounts payable to us by non-U.S. counterparties which are denominated in U.S. dollars or other non-local currency, as well as non-U.S. local currency claims not funded by local currency liabilities. Our cross-border outstandings consist primarily of deposits with banks; loans and lease financing, including short-duration advances; investment securities; amounts related to FX and interest rate contracts; and securities finance. In addition to credit risk, cross-border outstandings have the risk that, as a result of political or economic conditions in a country, borrowers may be unable to meet their contractual repayment obligations of principal and/or interest when due because of the unavailability of, or restrictions on, FX needed by borrowers to repay their obligations.

As market and economic conditions change, the major independent credit rating agencies may downgrade U.S. and non-U.S. financial institutions and sovereign issuers which have been, and may in the future be, significant counterparties to us, or whose financial instruments serve as collateral on which we rely for credit risk mitigation purposes, and may do so again in the future. As a result, we may be exposed to increased counterparty risk, leading to negative ratings volatility.

The cross-border outstandings presented in Table 30: Cross-border outstandings, represented approximately 30% and 28% of our consolidated total assets as of December 31, 2020 and December 31, 2019, respectively.

TABLE 30: CROSS-BORDER OUTSTANDINGS[1]

(In millions)	Investment Securities and Other Assets	Derivatives and Securities on Loan	Total Cross-Border Outstandings
December 31, 2020			
United Kingdom	**$ 18,880**	**$ 1,797**	**$ 20,677**
Japan	**19,537**	**560**	**20,097**
Germany	**18,734**	**2,163**	**20,897**
Canada	**5,997**	**3,113**	**9,110**
Australia	**5,790**	**2,908**	**8,698**
Luxembourg	**5,036**	**2,148**	**7,184**
France	**3,586**	**3,010**	**6,596**
December 31, 2019			
Germany	$ 20,968	$ 217	$ 21,185
United Kingdom	13,764	1,468	15,232
Japan	11,121	555	11,676
Luxembourg	3,399	668	4,067
Canada	2,955	783	3,738
Australia	3,100	597	3,697
France	2,813	240	3,053
Ireland	1,988	641	2,629
Switzerland	1,724	589	2,313
December 31, 2018			
Germany	$ 20,157	$ 489	$ 20,646
Japan	13,985	1,084	15,069
United Kingdom	12,623	1,176	13,799
Australia	4,217	1,349	5,566
Canada	3,010	1,507	4,517
Ireland	2,019	809	2,828
France	2,495	294	2,789
Luxembourg	2,033	710	2,743

[1] Cross-border outstandings included countries in which we do business, and which amounted to at least 1% of our consolidated total assets as of the dates indicated.

As of December 31, 2020, aggregate cross-border outstandings in each of Switzerland and Ireland amounted to between 0.75% and 1% of our consolidated assets, at approximately $3.13 billion and $2.93 billion, respectively. As of December 31, 2019, aggregate cross-border outstandings in the Netherlands amounted to between 0.75% and 1% of our consolidated assets, at approximately $1.89 billion. As of December 31, 2018, there were no countries whose aggregate cross-border outstandings amounted to between 0.75% and 1% of our consolidated assets.

Risk Management

General

In the normal course of our global business activities, we are exposed to a variety of risks, some inherent in the financial services industry, others more specific to our business activities. Our risk management framework focuses on material risks, which include the following:

- credit and counterparty risk;
- liquidity risk, funding and management;
- operational risk;
- information technology risk;
- market risk associated with our trading activities;
- market risk associated with our non-trading activities, which we refer to as asset and liability management, and which consists primarily of interest rate risk;
- strategic risk;
- model risk; and
- reputational, fiduciary and business conduct risk.

Many of these risks, as well as certain factors underlying each of these risks that could affect our businesses and our consolidated financial statements, are discussed in detail under "Risk Factors" in this Form 10-K.

The scope of our business requires that we balance these risks with a comprehensive and well-integrated risk management function. The identification, assessment, monitoring, mitigation and reporting of risks are essential to our financial performance and successful management of our businesses. These risks, if not effectively managed, can result in losses to us as well as erosion of our capital and damage to our reputation. Our approach, including Board and senior management oversight and a system of policies, procedures, limits, risk measurement and monitoring and internal controls, allows for an assessment of risks within a framework for evaluating opportunities for the prudent use of capital that appropriately balances risk and return.

Our objective is to optimize our return while operating at a prudent level of risk. In support of this objective, we have instituted a risk appetite framework that aligns our business strategy and financial objectives with the level of risk that we are willing to incur.

Our risk management is based on the following major goals:

- A culture of risk awareness that extends across all of our business activities;
- The identification, classification and quantification of our material risks;
- The establishment of our risk appetite and associated limits and policies, and our compliance with these limits;
- The establishment of a risk management structure at the "top of the house" that enables the control and coordination of risk-taking across the business lines;
- The implementation of stress testing practices and a dynamic risk-assessment capability;
- A direct link between risk and strategic-decision making processes and incentive compensation practices; and
- The overall flexibility to adapt to the ever-changing business and market conditions.

Our risk appetite framework outlines the quantitative limits and qualitative goals that define our risk appetite, as well as the responsibilities for measuring and monitoring risk against limits, and for reporting, escalating, approving and addressing exceptions. Our risk appetite framework is established by ERM, a corporate risk oversight group, in conjunction with the MRAC and the RC of the Board. The Board formally reviews and approves our risk appetite statement annually, or more frequently as required.

The risk appetite framework describes the level and types of risk that we are willing to accommodate in executing our business strategy, and also serves as a guide in setting risk limits across our business units. In addition to our risk appetite framework, we use stress testing as another important tool in our risk management practice. Additional information with respect to our stress testing process and practices is provided under "Capital" in this Management's Discussion and Analysis.

Governance and Structure

We have an approach to risk management that involves all levels of management, from the Board and its committees, including its E&A Committee, RC, the HRC and TOPS, to each business unit and each employee. We allocate responsibility for risk oversight so that risk/return decisions are made at an appropriate level, and are subject to robust and effective review and challenge. Risk management is the responsibility of each employee, and is implemented through three lines of defense: the business units, which own and manage the risks inherent in their business, are considered the first line of defense; ERM and other support functions, such as Compliance, Finance and Vendor Management, provide the second line of defense; and Corporate Audit, which assesses the effectiveness of the first two lines of defense.

The responsibilities for effective review and challenge reside with senior managers, management oversight committees, Corporate Audit and, ultimately, the Board and its committees. While we believe that our risk management program is effective in managing the risks in our businesses, internal and external factors may create risks that cannot always be identified or anticipated.

Corporate-level risk committees provide focused oversight, and establish corporate standards and policies for specific risks, including credit, sovereign exposure, market, liquidity, operational, information technology as well as new business products, regulatory compliance and ethics, vendor risk and model risks. These committees have been delegated the responsibility to develop recommendations and remediation strategies to address issues that affect or have the potential to affect us.

We maintain a risk governance committee structure which serves as the formal governance mechanism through which we seek to undertake the consistent identification, management and mitigation of various risks facing us in connection with its business activities. This governance structure is enhanced and integrated through multi-disciplinary involvement, particularly through ERM. The following chart presents this structure.



Enterprise Risk Management

The goal of ERM is to ensure that risks are proactively identified, well-understood and prudently managed in support of our business strategy. ERM provides risk oversight, support and coordination to allow for the consistent identification, measurement and management of risks across business units separate from the business units' activities, and is responsible for the formulation and maintenance of corporate-wide risk management policies and guidelines. In addition, ERM establishes and reviews limits and, in collaboration with business unit management, monitors key risks. Ultimately, ERM works to validate that risk-taking occurs within the risk appetite statement approved by the Board and conforms to associated risk policies, limits and guidelines.

The Chief Risk Officer (CRO) is responsible for our risk management globally, leads ERM and has a dual reporting line to our CEO and the Board's RC. ERM manages its responsibilities globally through a three-dimensional organization structure:

- "Vertical" business unit-aligned risk groups that support business managers with risk management, measurement and monitoring activities;
- "Horizontal" risk groups that monitor the risks that cross all of our business units (for example, credit and operational risk); and
- Risk oversight for international activities, which combines intersecting "Verticals" and "Horizontals" through a hub and spoke model to provide important regional and legal entity perspectives to the global risk framework.

Sitting on top of this three-dimensional organization structure is a centralized group responsible for the aggregation of risk exposures across the vertical, horizontal and regional dimensions, for consolidated reporting, for setting the corporate-level risk appetite framework and associated limits and policies, and for dynamic risk assessment across our business.

Board Committees

The Board has four committees which assist it in discharging its responsibilities with respect to risk management: the Risk Committee (RC), the Examining and Audit Committee (E&A Committee), the Human Resources Committee (HRC) and the Technology and Operations Committee (TOPS).

The RC is responsible for oversight related to the operation of our global risk management framework, including policies and procedures establishing risk management governance and processes and risk control infrastructure for our global operations. The RC is responsible for reviewing and discussing with management our assessment and management of all risks applicable to our operations, including credit, market, interest rate, liquidity, operational, regulatory, technology, business, compliance and reputation risks, and related policies.

In addition, the RC provides oversight of capital policies, capital planning and balance sheet management, resolution planning and monitors capital adequacy in relation to risk. The RC is also responsible for discharging the duties and obligations of the Board under applicable Basel and other regulatory requirements.

The E&A Committee oversees management's operation of our comprehensive system of internal controls covering the integrity of our consolidated financial statements and reports, compliance with laws, regulations and corporate policies. The E&A Committee acts on behalf of the Board in monitoring and overseeing the performance of Corporate Audit and in reviewing certain communications with banking regulators. The E&A Committee has direct responsibility for the appointment, compensation, retention, evaluation and oversight of the work of our independent registered public accounting firm, including sole authority for the establishment of pre-approval policies and procedures for all audit engagements and any non-audit engagements.

The HRC has direct responsibility for the oversight of human capital management, all compensation plans, policies and programs in which executive officers participate and incentive, retirement, welfare as well as equity plans in which certain of our other employees participate. In addition, the HRC oversees the alignment of our incentive compensation arrangements with our safety and soundness, including the integration of risk management objectives, and related policies, arrangements and control processes consistent with applicable related regulatory rules and guidance.

The TOPS leads and assists in the Board's oversight of technology and operational risk management and the role of these risks in executing our strategy and supporting our global business requirements. The TOPS reviews strategic initiatives from a technology and operational risk perspective and reviews and approves technology-related risk matters. In addition, TOPS reviews matters related to corporate information security and cyber-security programs, operational and technology resiliency, data and access management and third-party risk management.

Executive Management Committees

MRAC is the senior management decision-making body for risk and capital issues, and oversees our financial risks, our consolidated statement of condition, and our capital adequacy, liquidity and recovery and resolution planning. Its responsibilities include:

- The approval of the policies of our global risk, capital and liquidity management frameworks, including our risk appetite framework;
- The monitoring and assessment of our capital adequacy based on internal policies and regulatory requirements;
- The oversight of our firm-wide risk identification, model risk governance, stress testing and Recovery and Resolution Plan programs; and
- The ongoing monitoring and review of risks undertaken within the businesses, and our senior management oversight and approval of risk strategies and tactics.

MRAC is co-chaired by our CRO and Chief Financial Officer, who regularly present to the RC on developments in the risk environment and performance trends in our key business areas.

BCC provides oversight of our business conduct and culture risks and standards, our commitments to clients and others with whom we do business, and our potential reputational risks, on an enterprise-wide basis. Management considers adherence to high ethical standards to be critical to the success of our business and to our reputation. The BCC is co-chaired by our Chief Compliance Officer and our General Counsel.

TORC provides oversight of, and assesses the effectiveness of, corporate-wide technology and operational risk management programs, and reviews areas of improvement to manage and control technology and operational risk consistently across the organization. TORC is co-chaired by the Chief Operating Officer and the Chief Risk Officer.

Risk Committees

The following risk committees, under the oversight of the respective executive management committees, have focused responsibilities for oversight of specific areas of risk management:

Management Risk and Capital Committee

- ALCO is the senior corporate oversight and decision-making body for balance sheet strategy, Global Treasury business activities and risk management for interest rate risk, liquidity risk and non-trading market risk. ALCO's roles and responsibilities are designed to be complementary to, and in coordination with the MRAC, which approves the corporate risk appetite and associated balance sheet strategy;
- CRPC has primary responsibility for the oversight and review of credit and counterparty risk across business units, as well as oversight, review and approval of the credit risk policies and guidelines; the Committee consists of senior executives within ERM, and reviews policies and guidelines related to all aspects of our business which give rise to credit risk; our business units are also represented on the CRPC; credit risk policies and guidelines are reviewed periodically, but at least annually;
- TMRC reviews the effectiveness of, and approves, the market risk framework at least annually; it is the senior oversight and decision-making committee for risk management within our global markets businesses; the TMRC is responsible for the formulation of guidelines, strategies and workflows with respect to the measurement, monitoring and control of our trading market risk, and also approves market risk tolerance limits, collateral and margin policies and trading authorities; the TMRC meets regularly to monitor the management of our trading market risk activities;
- BOC provides oversight and governance over Basel related regulatory requirements, assesses compliance with respect to Basel regulations and approves all material methodologies and changes, policies and reporting;
- The Recovery and Resolution Planning Executive Review Board oversees the development of recovery and resolution plans as required by banking regulators;
- MRC monitors the overall level of model risk and provides oversight of the model governance process pertaining to financial models, including the validation of key models and the ongoing monitoring of model performance. The MRC may also, as appropriate, mandate remedial actions and compensating controls to be applied to models to address modeling deficiencies as well as other issues identified;
- The CCAR Steering Committee provides primary supervision of the stress tests performed in conformity with the Federal Reserve's CCAR process and the Dodd-Frank Act, and is responsible for the overall management, review, and approval of

all material assumptions, methodologies, and results of each stress scenario;

- The State Street Global Advisors Risk Committee is the most senior oversight and decision making committee for risk management within State Street Global Advisors; the committee is responsible for overseeing the alignment of State Street Global Advisors' strategy, and risk appetite, as well as alignment with our corporate-wide strategies and risk management standards; and
- The Country Risk Committee oversees the identification, assessment, monitoring, reporting and mitigation, where necessary, of country risks.
- The Regulatory Reporting Oversight Committee is responsible for providing oversight of regulatory reporting and related report governance processes and accountabilities.

Business Conduct Committee

- The Fiduciary Review Committee reviews and assesses the fiduciary risk management programs of those units in which we serve in a fiduciary capacity;
- The New Business and Product Approval Committee provides oversight of the evaluation of the risk inherent in proposed new products or services and new business, and extensions of existing products or services, evaluations including economic justification, material risk, compliance, regulatory and legal considerations, and capital and liquidity analyses;
- The Compliance and Ethics Committee provides review and oversight of our compliance programs, including our culture of compliance and high standards of ethical behavior;
- The Legal Entity Oversight Committee establishes standards with respect to the governance of our legal entities, monitors adherence to those standards, and oversees the ongoing evaluation of our legal entity structure, including the formation, maintenance and dissolution of legal entities; and
- The Conduct Standards Committee provides oversight of our enforcement of employee conduct standards.

Technology and Operational Risk Committee

- The Operational Risk Committee, along with the support of regional business or entity-specific working groups and committees, is responsible for oversight of our operational risk programs, including determining that the implementation of those programs is designed to identify, manage and control operational risk in an effective and consistent manner across the firm;
- The Technology Risk Committee is responsible for the global oversight, review and monitoring of operational, legal and regulatory compliance and reputational risk that may result in a significant change to our Information Technology risk profile or a material financial loss or reputational impact to global technology services. The Committee serves as a forum to provide regular reporting to TORC and escalate technology risk and control issues to TORC, as appropriate; and
- The Executive Information Security Committee provides direction for the Enterprise Information Security posture and program, including cyber-security protections, provides enterprise-wide oversight and assessment of the effectiveness of all Information Security Programs to promote that controls are measured and managed, and serves as an escalation point for cyber-security issues.
- The Enterprise Continuity Steering Committee considers matters pertaining to continuity and related risks, including oversight in determining the direction of the continuity program.
- The Vendor Management Lifecycle Executive Review Board oversees the end-to-end vendor management process to support operations in an efficient and sustainable manner, to oversee management of vendor-related risks, and to support compliance with regulatory standards.

Credit Risk Management

Core Policies and Principles

We define credit risk as the risk of financial loss if a counterparty, borrower or obligor, collectively referred to as a counterparty, is either unable or unwilling to repay borrowings or settle a transaction in accordance with underlying contractual terms. We assume credit risk in our traditional non-trading lending activities, such as overdrafts, loans and contingent commitments, in our investment securities portfolio, where recourse to a counterparty exists, and in our direct and indirect trading activities, such as securities purchased under a resale agreement, principal securities lending and foreign exchange and indemnified agency securities lending. We also assume credit risk in our day-to-day treasury and securities and other settlement operations, in the form

of deposit placements and other cash balances, with central banks or private sector institutions and fees receivables.

We distinguish between three major types of credit risk:

- Default risk - the risk that a counterparty fails to meet its contractual payment obligations;
- Country risk - the risk that we may suffer a loss, in any given country, due to any of the following reasons: deterioration of economic conditions, political and social upheaval, nationalization and appropriation of assets, government repudiation of indebtedness, exchange controls and disruptive currency depreciation or devaluation; and
- Settlement risk - the risk that the settlement or clearance of transactions will fail, which arises whenever the exchange of cash, securities and/or other assets is not simultaneous.

The acceptance of credit risk by us is governed by corporate policies and guidelines, which include standardized procedures applied across the entire organization. These policies and guidelines include specific requirements related to each counterparty's risk profile; the markets served; counterparty, industry and country concentrations; and regulatory compliance. These policies and procedures also implement a number of core principles, which include the following:

- We measure and consolidate credit risks to each counterparty, or group of counterparties, in accordance with a "one-obligor" principle that aggregates risks across our business units;
- ERM reviews and approves all extensions of credit, or material changes to extensions of credit (such as changes in term, collateral structure or covenants), in accordance with assigned credit-approval authorities;
- Credit-approval authorities are assigned to individuals according to their qualifications, experience and training, and these authorities are periodically reviewed. Our largest exposures require approval by the Credit Committee, a sub-committee of the CRPC. With respect to small and low-risk extensions of credit to certain types of counterparties, approval authority is granted to individuals outside of ERM;
- We seek to avoid or limit undue concentrations of risk. Counterparty (or groups of counterparties), industry, country and product-specific concentrations of risk are subject to frequent review and approval in accordance with our risk appetite;
- We determine the creditworthiness of counterparties through a detailed risk assessment, including the use of internal risk-rating methodologies;
- We review all extensions of credit and the creditworthiness of counterparties at least annually. The nature and extent of these reviews are determined by the size, nature and term of the extensions of credit and the creditworthiness of the counterparty; and
- We subject all corporate policies and guidelines to annual review as an integral part of our periodic assessment of our risk appetite.

Our corporate policies and guidelines require that the business units which engage in activities that give rise to credit and counterparty risk comply with procedures that promote the extension of credit for legitimate business purposes; are consistent with the maintenance of proper credit standards; limit credit-related losses; and are consistent with our goal of maintaining a strong financial condition.

Structure and Organization

The Credit and Global Markets Risk group within ERM is responsible for the assessment, approval and monitoring of credit risk across our business. The group is managed centrally, has dedicated teams in a number of locations worldwide across our businesses, and is responsible for related policies and procedures, and for our internal credit-rating systems and methodologies. In addition, the group, in conjunction with the business units, establishes measurements and limits to control the amount of credit risk accepted across its various business activities, both at the portfolio level and for each individual counterparty or group of counterparties, to individual industries, and also to counterparties by product and country of risk. These measurements and limits are reviewed periodically, but at least annually.

In conjunction with other groups in ERM, the Credit and Global Markets Risk group is jointly responsible for the design, implementation and oversight of our credit risk measurement and management systems, including data and assessment systems, quantification systems and the reporting framework.

Various key committees within our company are responsible for the oversight of credit risk and associated credit risk policies, systems and models.

All credit-related activities are governed by our risk appetite framework and our credit risk guidelines, which define our general philosophy with respect to credit risk and the manner in which we control, manage and monitor such risks.

The previously described CRPC (refer to "Risk Committees") has primary responsibility for the oversight, review and approval of the credit risk guidelines and policies. Credit risk guidelines and policies are reviewed periodically, but at least annually.

The Credit Committee, a sub-committee of the CRPC, has responsibility for assigning credit authority and approving the largest and higher-risk extensions of credit to individual counterparties or groups of counterparties.

CRPC provides periodic updates to MRAC and the Board's RC.

Credit Ratings

We perform initial and ongoing reviews to exercise due diligence on the creditworthiness of our counterparties when conducting any business with them or approving any credit limits.

This due diligence process generally includes the assignment of an internal credit rating, which is determined by the use of internally developed and validated methodologies, scorecards and a 15-grade rating scale. This risk-rating process incorporates the use of risk-rating tools in conjunction with management judgment; qualitative and quantitative inputs are captured in a replicable manner and, following a formal review and approval process, an internal credit rating based on our rating scale is assigned. Credit ratings are reviewed and approved by the Credit and Global Markets Risk group or designees within ERM. To facilitate comparability across the portfolio, counterparties within a given sector are rated using a risk-rating tool developed for that sector.

Our risk-rating methodologies are approved by the CRPC, after completion of internal model validation processes, and are subject to an annual review, including re-validation.

We generally rate our counterparties individually, although accounts defined by us as low-risk are rated on a pooled basis. We evaluate and rate the credit risk of our counterparties on an ongoing basis.

Risk Parameter Estimates

Our internal risk-rating system promotes a clear and consistent approach to the determination of appropriate credit risk classifications for our credit counterparties and exposures, tracking the changes in risk associated with these counterparties and exposures over time. This capability enhances our ability to more accurately calculate both risk exposures and capital, enabling better strategic decision making across the organization.

We use credit risk parameter estimates for the following purposes:

- The assessment of the creditworthiness of new counterparties and, in conjunction with our risk appetite statement, the development of appropriate credit limits for our products and services, including loans, foreign exchange, securities finance, placements and repurchase agreements;
- The use of an automated process for limit approvals for certain low-risk counterparties, as defined in our credit risk guidelines, based on the counterparty's probability-of-default, or PD, rating class;
- The development of approval authority matrices based on PD; riskier counterparties with higher PDs require higher levels of approval for a comparable PD and limit size compared to less risky counterparties with lower PDs;
- The analysis of risk concentration trends using historical PD and exposure-at-default, or EAD, data;
- The standardization of rating integrity testing by GCR using rating parameters;
- The determination of the level of management review of short-duration advances depending on PD; riskier counterparties with higher rating class values generally trigger higher levels of management escalation for comparable short-duration advances compared to less risky counterparties with lower rating-class values;
- The monitoring of credit facility utilization levels using EAD values and the identification of instances where counterparties have exceeded limits;
- The aggregation and comparison of counterparty exposures with risk appetite levels to determine if businesses are maintaining appropriate risk levels; and
- The determination of our regulatory capital requirements for the AIRB provided in the Basel framework.

Credit Risk Mitigation

We seek to limit our credit exposure and reduce any potential credit losses through the use of various types of credit risk mitigation. The Basel III final rule permits us to reflect the application of credit risk mitigation when it meets the standards outlined

therein. Examples of forms of credit risk mitigation include collateral, netting, guarantees and secured interest in non-financial assets. Where possible, we apply the recognition of collateral, guarantees and secured interest over non-financial assets to mitigate overall risk within our counterparty credit portfolio. While credit default swaps are permitted under the Basel III final rule, we do not actively use credit default swaps as a risk mitigation tool.

Collateral

In many parts of our business, we regularly require or agree for collateral to be received from or provided to clients and counterparties in connection with contracts that incur credit risk. In our trading businesses, this collateral is typically in the form of cash, as well as highly-rated and/or liquid securities (i.e. government securities and other bonds or equity securities). Credit risks in our non-trading and securities finance businesses are also often secured by bonds and equity securities and by other types of assets. Collateral serves to reduce the risk of loss inherent in an exposure by improving the prospect of recovery in the event of a counterparty default. However, rapidly changing market values of the collateral we hold, unexpected increases in the credit exposure to a client or counterparty, reductions in the value or change in the type of securities held by us, as well as operational errors or errors in the manner in which we seek to exercise our rights, may reduce the risk mitigation effects of collateral or result in other security interests not being effective to reduce potential credit exposure. While collateral is often an alternative source of repayment, it does not replace the requirement within our policies and guidelines for high-quality underwriting standards. We also may choose to incur credit exposure without the benefit of collateral or other risk mitigating credits rights.

Our credit risk guidelines require that the collateral we accept for risk mitigation purposes is of high quality, can be reliably valued and is supported by a valid security interest that permits liquidation if or when required. Generally, when collateral is of lower quality, more difficult to value or more challenging to liquidate, higher discounts to market values are applied for the purposes of measuring credit risk. For certain less liquid collateral, longer liquidation periods are assumed when determining the credit exposure.

All types of collateral are assessed regularly by ERM, as is the basis on which the collateral is valued. Our assessment of collateral, including the ability to liquidate collateral in the event of a counterparty default, and also with regard to market values of collateral under a variety of hypothetical market conditions, is an integral component of our assessment of risk and approval of credit limits. We also seek to identify, limit and monitor instances of "wrong-way" risk, where a counterparty's risk of default is positively correlated with the risk of our collateral eroding in value.

We maintain policies and procedures requiring that documentation used to collateralize a transaction is legal, valid, binding and enforceable in the relevant jurisdictions. We also conduct legal reviews to assess whether our documentation meets these standards on an ongoing basis.

Netting

Netting is a mechanism that allows institutions and counterparties to net offsetting exposures and payment obligations against one another through the use of qualifying master netting agreements. A master netting agreement allows for certain rights and remedies upon a counterparty default, including the right to net obligations arising under derivatives or other transactions under such agreement. In such an event, the netting of obligations would result in a single net claim owed by, or to, the counterparty. This is commonly referred to as "close-out netting," and is pursued wherever possible. We may also enter into master agreements that allow for the netting of amounts payable on a given day and in the same currency, reducing our settlement risk. This is commonly referred to as "payment netting," and is widely used in our foreign exchange activities.

As with collateral, we have policies and procedures in place to apply close-out and payment netting only to the extent that we have verified legal validity and enforceability of the master agreement. In the case of payment netting, operational constraints may preclude us from reducing settlement risk, notwithstanding the legal right to require the same under the master netting agreement. In the event we become unable, due to operational constraints, actions by regulators, changes in accounting principles, law or regulation (or related interpretations) or other factors, to net some or all of our offsetting exposures and payment obligations under those agreements, we would be required to gross up our assets and liabilities on our statement of condition and our calculation of RWA, accordingly. This would result in a potentially material change in our regulatory ratios, including LCR, and present increased credit, liquidity, asset-and-liability management and operational risks, some of which could be material.

Guarantees

A guarantee is a financial instrument that results in credit support being provided by a third party, (i.e., the protection provider) to the underlying obligor (the beneficiary of the provided protection) on account of an exposure owing by the obligor. The protection provider may support the underlying exposure either in whole or in part. Support of this kind may take different forms. Typical forms of guarantees provided

to us include financial guarantees, letters of credit, bankers' acceptances, purchase undertaking agreement contracts and insurance.

We have established a review process to evaluate guarantees under the applicable requirements of our policies and Basel III requirements. Governance for this evaluation is covered under policies and procedures that require regular reviews of documentation, jurisdictions and credit quality of protection providers.

Credit Limits

Central to our philosophy for our management of credit risk is the approval and imposition of credit limits, against which we monitor the actual and potential future credit exposure arising from our business activities with counterparties or groups of counterparties. Credit limits are a reflection of our risk appetite, which may be determined by the creditworthiness of the counterparty, the nature of the risk inherent in the business undertaken with the counterparty, or a combination of relevant credit factors. Our risk appetite for certain sectors and certain countries and geographic regions may also influence the level of risk we are willing to assume to certain counterparties.

The analysis and approval of credit limits is undertaken in a consistent manner across our businesses, although the nature and extent of the analysis may vary, based on the type, term and magnitude of the risk being assumed. Credit limits and underlying exposures are assessed and measured on both a gross and net basis where appropriate, with net exposure determined by deducting the value of any collateral held. For certain types of risk being assumed, we will also assess and measure exposures under a variety of hypothetical market conditions. Credit limit approvals across our business are undertaken by the Credit and Global Markets Risk group, by individuals to whom credit authority has been delegated, or by the Credit Committee.

Credit limits are re-evaluated annually, or more frequently as needed, and are revised periodically on prevailing and anticipated market conditions, changes in counterparty or country-specific credit ratings and outlook, changes in our risk appetite for certain counterparties, sectors or countries, and enhancements to the measurement of credit utilization.

Reporting

Ongoing active monitoring and management of our credit risk is an integral part of our credit risk management framework. We maintain management information systems to identify, measure, monitor and report credit risk across businesses and legal entities, enabling ERM and our businesses to have timely access to accurate information on credit limits and exposures. Monitoring is performed along the dimensions of counterparty, industry, country and product-specific risks to facilitate the identification of concentrations of risk and emerging trends.

Key aspects of this credit risk reporting structure include governance and oversight groups, policies that define standards for the reporting of credit risk, data aggregation and sourcing systems and separate testing of relevant risk reporting functions by Corporate Audit.

The Credit Portfolio Management group routinely assesses the composition of our overall credit risk portfolio for alignment with our stated risk appetite. This assessment includes routine analysis and reporting of the portfolio, monitoring of market-based indicators, the assessment of industry trends and developments and regular reviews of concentrated risks. The Credit Portfolio Management group is also responsible, in conjunction with the business units, for defining the appetite for credit risk in the major sectors in which we have a concentration of business activities. These sector-level risk appetite statements, which include counterparty selection criteria and granular underwriting guidelines, are reviewed periodically and approved by the CRPC.

Monitoring

Regular surveillance of credit and counterparty risks is undertaken by our business units, the Credit and Global Markets Risk group and designees with ERM, allowing for frequent and extensive oversight. This surveillance process includes, but is not limited to, the following components:

- *Annual Reviews*. A formal review of counterparties is conducted at least annually and includes a thorough review of operating performance, primary risk factors and our internal credit risk rating. This annual review also includes a review of current and proposed credit limits, an assessment of our ongoing risk appetite and verification that supporting legal documentation remains effective.

- *Interim Monitoring*. Monitoring of our largest and riskiest counterparties is undertaken more frequently, utilizing financial information, market indicators and other relevant credit and performance measures. The nature and extent of this interim monitoring is individually tailored to certain counterparties and/or industry sectors to identify material changes to the risk profile of a counterparty (or group of counterparties) and assign an updated internal risk rating in a timely manner.

We maintain an active "watch list" for all counterparties where we have identified a concern that the actual or potential risk of default has increased. The watch list status denotes a concern with some aspect of a counterparty's risk profile that warrants closer monitoring of the counterparty's financial performance and related risk factors. Our ongoing monitoring processes are designed to facilitate the early identification of counterparties whose creditworthiness is deteriorating; any counterparty may be placed on the watch list by ERM at its sole discretion.

Counterparties that receive an internal risk rating within a certain range on our rating scale are eligible for watch list designation. These risk ratings generally correspond with the non-investment grade or near non-investment grade ratings established by the major independent credit-rating agencies, and also include the regulatory classifications of "Special Mention," "Substandard," "Doubtful" and "Loss." Counterparties whose internal ratings are outside this range may also be placed on the watch list.

The Credit and Global Markets Risk group maintains primary responsibility for our watch list processes, and generates a monthly report of all watch list counterparties. The watch list is formally reviewed at least on a quarterly basis, with participation from senior ERM staff, and representatives from the business units and our corporate finance and legal groups as appropriate. These meetings include a review of individual watch list counterparties, together with credit limits and prevailing exposures, and are focused on actions to contain, reduce or eliminate the risk of loss to us. Identified actions are documented and monitored.

Controls

GCR provides a separate level of surveillance and oversight over the integrity of our credit risk management processes, including the internal risk-rating system. GCR reviews counterparty credit ratings for all identified sectors on an ongoing basis. GCR is subject to oversight by the CRPC, and provides periodic updates to the Board's RC.

Specific activities of GCR include the following:

- Perform separate and objective assessments of our credit and counterparty exposures to determine the nature and extent of risk undertaken by the business units;
- Execute periodic credit process and credit product reviews to assess the quality of credit analysis, compliance with policies, guidelines and relevant regulation, transaction structures and underwriting standards, and risk-rating integrity;
- Identify and monitor developing counterparty, market and/or industry sector trends to limit risk of loss and protect capital;
- Deliver regular and formal reporting to stakeholders, including exam results, identified issues and the status of requisite actions to remedy identified deficiencies;
- Allocate resources for specialized risk assessments (on an as-needed basis); and
- Liaise with assurance partners and regulatory personnel on matters relating to risk rating, reporting and measurement.

Allowance for Credit Losses

We maintain an allowance for credit losses to support our financial assets held at amortized cost. We also maintain an allowance for unfunded commitments and letters of credit to support our off-balance credit exposure. The two components together represent the allowance for credit losses. Review and evaluation of the adequacy of the allowance for credit losses is ongoing throughout the year, but occurs at least quarterly, and is based, among other factors, on our evaluation of the level of risk in the portfolio and the estimated effects of our forecasts on our counterparties. We utilize multiple economic scenarios, consisting of a baseline, upside and downside scenarios, to develop management's forecast of future expected losses.

The economic forecast utilized throughout 2020 reflects both downward credit migration within our loan portfolio and revision in management's economic outlook reflecting the impact of the COVID-19 pandemic. Allowance estimates remain subject to continued model and economic uncertainty and management may use qualitative adjustments. If future data and forecasts deviate relative to the forecasts utilized to determine our allowance for credit losses as of December 31, 2020, or if credit risk migration is higher or lower than forecasted for reasons independent of the economic forecast, our allowance for credit losses will also change.

Additional information about the allowance for credit losses is provided in Note 4 to the consolidated financial statements in this Form 10-K.

Liquidity Risk Management

Our liquidity framework contemplates areas of potential risk based on our activities, size and other appropriate risk-related factors. In managing liquidity risk we employ limits, maintain established metrics and early warning indicators and perform routine stress testing to identify potential liquidity needs. This process involves the evaluation of a combination of internal and external scenarios which assist us in measuring our liquidity position and in identifying potential increases in cash needs or decreases in

available sources of cash, as well as the potential impairment of our ability to access the global capital markets.

We manage our liquidity on a global, consolidated basis. We also manage liquidity on a stand-alone basis at our Parent Company, as well as at certain branches and subsidiaries of State Street Bank. State Street Bank generally has access to markets and funding sources limited to banks, such as the federal funds market and the Federal Reserve's discount window. The Parent Company is managed to a more conservative liquidity profile, reflecting narrower market access. Additionally, the Parent Company typically holds, or has direct access to, primarily through SSIF (a direct subsidiary of the Parent Company), as discussed in "Supervision and Regulation" in Business in this Form 10-K, enough cash to meet its current debt maturities and cash needs, as well as those projected over the next one-year period. Absent financial distress at the Parent Company, the liquid assets available at SSIF continue to be available to the Parent Company. As of December 31, 2020, the value of our Parent Company's net liquid assets totaled $492 million, compared with $428 million as of December 31, 2019, which amount does not include available liquidity through SSIF. As of December 31, 2020, our Parent Company and State Street Bank had approximately $1.50 billion of senior notes or subordinated debentures outstanding that will mature in the next twelve months.

As a SIFI, our liquidity risk management activities are subject to heightened and evolving regulatory requirements, including interpretations of those requirements, under specific U.S. and international regulations and also resulting from published and unpublished guidance, supervisory activities, such as stress tests, resolution planning, examinations and other regulatory interactions. Satisfaction of these requirements could, in some cases, result in changes in the composition of our investment portfolio, reduced NII or NIM, a reduction in the level of certain business activities or modifications to the way in which we deliver our products and services. If we fail to meet regulatory requirements to the satisfaction of our regulators, we could receive negative regulatory stress test results, incur a resolution plan deficiency or determination of a non-credible resolution plan or otherwise receive an adverse regulatory finding. Our efforts to satisfy, or our failure to satisfy, these regulatory requirements could materially adversely affect our business, financial condition or results of operations.

Governance

Global Treasury is responsible for our management of liquidity. This includes the day-to-day management of our global liquidity position, the development and monitoring of early warning indicators, key liquidity risk metrics, the creation and execution of stress tests, the evaluation and implementation of regulatory requirements, the maintenance and execution of our liquidity guidelines and contingency funding plan (CFP), and routine management reporting to ALCO, MRAC and the Board's RC.

Global Treasury Risk Management, part of ERM, provides separate oversight over the identification, communication and management of Global Treasury's risks in support of our business strategy. Global Treasury Risk Management reports to the CRO. Global Treasury Risk Management's responsibilities relative to liquidity risk management include the development and review of policies and guidelines; the monitoring of limits related to adherence to the liquidity risk guidelines and associated reporting.

Liquidity Framework

Our liquidity framework contemplates areas of potential risk based on our activities, size and other appropriate risk-related factors. In managing liquidity risk we employ limits, maintain established metrics and early warning indicators, and perform routine stress testing to identify potential liquidity needs. This process involves the evaluation of a combination of internal and external scenarios which assist us in measuring our liquidity position and in identifying potential increases in cash needs or decreases in available sources of cash, as well as the potential impairment of our ability to access the global capital markets.

We manage liquidity according to several principles that are equally important to our overall liquidity risk management framework:

- Structural liquidity management addresses liquidity by monitoring and directing the composition of our consolidated statement of condition. Structural liquidity is measured by metrics such as the percentage of total wholesale funds to consolidated total assets, and the percentage of non-government investment securities to client deposits. In addition, on a regular basis and as described below, our structural liquidity is evaluated under various stress scenarios.

- Tactical liquidity management addresses our day-to-day funding requirements and is largely driven by changes in our primary source of funding, which are client deposits. Fluctuations in client deposits may be supplemented with short-term borrowings, repurchase

agreements, FHLB products and certificates of deposit.

• Stress testing and contingent funding planning are longer-term strategic liquidity risk management practices. Regular and ad hoc liquidity stress testing are performed under various severe but plausible scenarios at the consolidated level and at significant subsidiaries, including State Street Bank. These tests contemplate severe market and events specific to us under various time horizons and severities. Tests contemplate the impact of material changes in key funding sources, credit ratings, additional collateral requirements, contingent uses of funding, systemic shocks to the financial markets and operational failures based on market and assumptions specific to us. The stress tests evaluate the required level of funding versus available sources in an adverse environment. As stress testing contemplates potential forward-looking scenarios, results also serve as a trigger to activate specific liquidity stress levels and contingent funding actions.

CFPs are designed to assist senior management with decision-making associated with any contingency funding response to a possible or actual crisis scenario. The CFPs define roles, responsibilities and management actions to be taken in the event of deterioration of our liquidity profile caused by either an event specific to us or a broader disruption in the capital markets. Specific actions are linked to the level of stress indicated by these measures or by management judgment of market conditions.

Liquidity Risk Metrics

In managing our liquidity, we employ early warning indicators and metrics. Early warning indicators are intended to detect situations which may result in a liquidity stress, including changes in our common stock price and the spread on our long-term debt. Additional metrics that are critical to the management of our consolidated statement of condition and monitored as part of our routine liquidity management include measures of our fungible cash position, purchased wholesale funds, unencumbered liquid assets, deposits and the total of investment securities and loans as a percentage of total client deposits.

Asset Liquidity

Central to the management of our liquidity is asset liquidity, which consists primarily of HQLA. HQLA is the amount of liquid assets that qualify for inclusion in the LCR. As a banking organization, we are subject to a minimum LCR under the LCR rule approved by U.S. banking regulators. The LCR is intended to promote the short-term resilience of internationally active banking organizations, like us, to improve the banking industry's ability to absorb shocks arising from market stress over a 30 calendar day period and improve the measurement and management of liquidity risk. The LCR measures an institution's HQLA against its net cash outflows. HQLA primarily consists of unencumbered cash and certain high quality liquid securities that qualify for inclusion under the LCR rule. The LCR was fully implemented beginning on January 1, 2017. We report LCR to the Federal Reserve daily. For the quarters ended December 31, 2020 and December 31, 2019, daily average LCR for the Parent Company was 108% and 110%, respectively. The average HQLA for the Parent Company under the LCR final rule definition was $143.61 billion and $100.23 billion, post-prescribed haircuts, for the quarters ended December 31, 2020 and December 31, 2019, respectively. The increase in average HQLA for the quarter ended December 31, 2020, compared to the quarter ended December 31, 2019, was primarily a result of the increase in MBS and supranational purchases.

We maintained average cash balances in excess of regulatory requirements governing deposits with the Federal Reserve of approximately $75.68 billion at the Federal Reserve, the ECB and other non-U.S. central banks for the quarter ended December 31, 2020, and $41.56 billion for the quarter ended December 31, 2019. The higher levels of average cash balances with central banks reflect higher levels of client deposits.

Liquid securities carried in our asset liquidity include securities pledged without corresponding advances from the Federal Reserve Bank of Boston (FRBB), the FHLB, and other non-U.S. central banks. State Street Bank is a member of the FHLB. This membership allows for advances of liquidity in varying terms against high-quality collateral, which helps facilitate asset-and-liability management. As of December 31, 2020 and December 31, 2019, we had no outstanding borrowings from the FHLB.

Access to primary, intra-day and contingent liquidity provided by these utilities is an important source of contingent liquidity with utilization subject to underlying conditions. As of December 31, 2020 and December 31, 2019, we had no outstanding primary credit borrowings from the FRBB discount window or any other central bank facility.

In addition to the securities included in our asset liquidity, we have significant amounts of other unencumbered investment securities. These securities are available sources of liquidity, although not as rapidly deployed as those included in our asset liquidity.

The average fair value of total unencumbered securities was $89.12 billion for the quarter ended December 31, 2020, compared to $76.94 billion for the quarter ended December 31, 2019.

Measures of liquidity include LCR and NSFR, which are described in "Supervision and Regulation" in Business in this Form 10-K.

Uses of Liquidity

Significant uses of our liquidity could result from the following: withdrawals of client deposits; draw-downs by our custody clients of lines of credit; advances to clients to settle securities transactions; increases in our investment and loan portfolios; or other permitted purposes. Such circumstances would generally arise under stress conditions including deterioration in credit ratings. A recurring use of our liquidity involves our deployment of HQLA from our investment portfolio to post collateral to financial institutions serving as sources of securities under our enhanced custody program.

We had unfunded commitments to extend credit with gross contractual amounts totaling $34.21 billion and $29.70 billion and standby letters of credit totaling $3.33 billion and $3.32 billion as of December 31, 2020 and December 31, 2019, respectively. These amounts do not reflect the value of any collateral. As of December 31, 2020, approximately 73% of our unfunded commitments to extend credit and 20% of our standby letters of credit expire within one year. Since many of our commitments are expected to expire or renew without being drawn upon, the gross contractual amounts do not necessarily represent our future cash requirements.

Information about our resolution planning and the impact actions under our resolution plans could have on our liquidity is provided in "Supervision and Regulation" in Business in this Form 10-K.

Funding

Deposits

We provide products and services including custody, accounting, administration, daily pricing, FX services, cash management, financial asset management, securities finance and investment advisory services. As a provider of these products and services, we generate client deposits, which have generally provided a stable, low-cost source of funds. As a global custodian, clients place deposits with our entities in various currencies. As of December 31, 2020, approximately 65% of our average total deposit balances were denominated in U.S. dollars, approximately 15% in EUR, 10% in GBP and 10% in all other currencies. As of December 31, 2019, approximately 60% of our average total deposit balances were denominated in U.S. dollars, approximately 20% in EUR, 10% in GBP and 10% in all other currencies.

Short-Term Funding

Our on-balance sheet liquid assets are also an integral component of our liquidity management strategy. These assets provide liquidity through maturities of the assets, but more importantly, they provide us with the ability to raise funds by pledging the securities as collateral for borrowings or through outright sales. In addition, our access to the global capital markets gives us the ability to source incremental funding from wholesale investors. As discussed earlier under "Asset Liquidity," State Street Bank's membership in the FHLB allows for advances of liquidity with varying terms against high-quality collateral.

Short-term secured funding also comes in the form of securities lent or sold under agreements to repurchase. These transactions are short-term in nature, generally overnight and are collateralized by high-quality investment securities. These balances were $3.41 billion and $1.10 billion as of December 31, 2020 and December 31, 2019, respectively.

State Street Bank currently maintains a line of credit with a financial institution of CAD $1.40 billion, or approximately $1.10 billion, as of December 31, 2020, to support its Canadian securities processing operations. The line of credit has no stated termination date and is cancelable by either party with prior notice. As of both December 31, 2020 and December 31, 2019, there was no balance outstanding on this line of credit.

Long-Term Funding

We have the ability to issue debt and equity securities under our current universal shelf registration statement to meet current commitments and business needs, including accommodating the transaction and cash management needs of our clients. The total amount remaining for issuance under the registration statement is $7 billion as of December 31, 2020. In addition, State Street Bank also has current authorization from the Board to issue up to $5 billion in unsecured senior debt.

On January 24, 2020, we issued $750 million aggregate principal amount of 2.400% Senior Notes due 2030 in a public offering.

On March 26, 2020, we issued $750 million aggregate principal amount of 2.825% Fixed-to-Floating Rate Senior Notes due 2023, $500 million aggregate principal amount of 2.901% Fixed-to-Floating Rate Senior Notes due 2026 and $500 million aggregate principal amount of 3.152% of Fixed-to-Floating Rate Senior Notes due 2031.

Agency Credit Ratings

Our ability to maintain consistent access to liquidity is fostered by the maintenance of high investment grade ratings as measured by the major independent credit rating agencies. Factors essential to maintaining high credit ratings include:

- diverse and stable core earnings;
- relative market position;
- strong risk management;
- strong capital ratios;
- diverse liquidity sources, including the global capital markets and client deposits;
- strong liquidity monitoring procedures; and
- preparedness for current or future regulatory developments.

High ratings limit borrowing costs and enhance our liquidity by:

- providing assurance for unsecured funding and depositors;
- increasing the potential market for our debt and improving our ability to offer products;
- serving markets; and
- engaging in transactions in which clients value high credit ratings.

A downgrade or reduction of our credit ratings could have a material adverse effect on our liquidity by restricting our ability to access the capital markets, which could increase the related cost of funds. In turn, this could cause the sudden and large-scale withdrawal of unsecured deposits by our clients, which could lead to draw-downs of unfunded commitments to extend credit or trigger requirements under securities purchase commitments; or require additional collateral or force terminations of certain trading derivative contracts.

A majority of our derivative contracts have been entered into under bilateral agreements with counterparties who may require us to post collateral or terminate the transactions based on changes in our credit ratings. We assess the impact of these arrangements by determining the collateral that would be required assuming a downgrade by all rating agencies. The additional collateral or termination payments related to our net derivative liabilities under these arrangements that could have been called by counterparties in the event of a downgrade in our credit ratings below levels specified in the agreements is provided in Note 10 to the consolidated financial statements in this Form 10-K. Other funding sources, such as secured financing transactions and other margin requirements, for which there are no explicit triggers, could also be adversely affected.

TABLE 31: CREDIT RATINGS

	As of December 31, 2020		
	Standard & Poor's	**Moody's Investors Service**	**Fitch**
State Street:			
Senior debt	**A**	**A1**	**AA-**
Subordinated debt	**A-**	**A2**	**A**
Junior subordinated debt	**BBB**	**A3**	**NR**
Preferred stock	**BBB**	**Baa1**	**BBB+**
Outlook	**Stable**	**Stable**	**Stable**
State Street Bank:			
Short-term deposits	**A-1+**	**P-1**	**F1+**
Long-term deposits	**AA-**	**Aa1**	**AA+**
Senior debt/Long-term issuer	**AA-**	**Aa3**	**AA**
Subordinated debt	**A**	**Aa3**	**A+**
Outlook	**Stable**	**Stable**	**Stable**

Contractual Cash Obligations and Other Commitments

The long-term contractual cash obligations included within Table 32: Long-Term Contractual Cash Obligations were recorded in our consolidated statement of condition as of December 31, 2020, except for the interest portions of long-term debt and finance leases.

TABLE 32: LONG-TERM CONTRACTUAL CASH OBLIGATIONS

December 31, 2020	Payments Due by Period				
(In millions)	Less than 1 year	1-3 years	4-5 years	Over 5 years	Total
Long-term debt[1][2]	$ 1,505	$ 3,623	$ 4,073	$ 4,501	$ 13,702
Operating leases	186	314	205	275	980
Finance lease obligations[2]	41	72	—	—	113
Tax liability	—	4	43	—	47
Total contractual cash obligations	$ 1,732	$ 4,013	$ 4,321	$ 4,776	$ 14,842

[1] Long-term debt excludes finance lease obligations (presented as a separate line item) and the effect of interest rate swaps. Interest payments were calculated at the stated rate with the exception of floating-rate debt, for which payments were calculated using the indexed rate in effect as of December 31, 2020.
[2] Additional information about contractual cash obligations related to long-term debt and operating and finance leases is provided in Notes 9 and 20 to the consolidated financial statements in this Form 10-K.

Total contractual cash obligations shown in Table 32: Long-Term Contractual Cash Obligations do not include:

- Obligations which will be settled in cash, primarily in less than one year, such as client deposits, federal funds purchased, securities sold under repurchase agreements and other short-term borrowings. Additional information about deposits, federal funds purchased, securities sold under repurchase agreements and other short-term borrowings is provided in Note 8 to the consolidated financial statements in this Form 10-K.
- Obligations related to derivative instruments because the derivative-related amounts recorded in our consolidated statement of condition as of December 31, 2020 did not represent the amounts that may ultimately be paid under the contracts upon settlement. Additional information about our derivative instruments is provided in Note 10 to the consolidated financial statements in this Form 10-K. We have obligations under pension and other post-retirement benefit plans, with additional information provided in Note 19 to the consolidated financial statements in this Form 10-K, which are not included in Table 32: Long-Term Contractual Cash Obligations.

TABLE 33: OTHER COMMERCIAL COMMITMENTS

	Duration of Commitment as of December 31, 2020				
(In millions)	Less than 1 year	1-3 years	4-5 years	Over 5 years	Total amounts committed[1]
Indemnified securities financing	$ 440,875	$ —	$ —	$ —	$ 440,875
Unfunded credit facilities	23,122	7,931	3,021	139	34,213
Standby letters of credit	662	1,529	1,139	—	3,330
Purchase obligations[2]	122	150	15	—	287
Total commercial commitments	$ 464,781	$ 9,610	$ 4,175	$ 139	$ 478,705

[1] Total amounts committed reflect participations to independent third parties, if any.
[2] Amounts represent obligations pursuant to legally binding agreements, where we have agreed to purchase products or services with a specific minimum quantity defined at a fixed, minimum or variable price over a specified period of time.

Additional information about the commitments presented in Table 33: Other commercial commitments, except for purchase obligations, is provided in Note 12 to the consolidated financial statements in this Form 10-K.

Operational Risk Management

Overview

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk encompasses fiduciary risk and legal risk. Fiduciary risk is defined as the risk that we fail to properly exercise our fiduciary duties in our provision of products or services to clients. Legal risk is the risk of loss resulting from failure to comply with laws and contractual obligations.

Operational risk is inherent in the performance of investment servicing and investment management activities on behalf of our clients. Whether it be fiduciary risk, risk associated with execution and processing or other types of operational risk, a consistent, transparent and effective operational risk framework is key to identifying, monitoring and managing operational risk.

We have established an operational risk framework that is based on three major goals:

- Strong, active governance;
- Ownership and accountability; and
- Consistency and transparency.

Governance

Our Board is responsible for the approval and oversight of our overall operational risk framework. It does so through its TOPS, which reviews our operational risk framework and approves our operational risk policy annually.

Our operational risk policy establishes our approach to our management of operational risk across our business. The policy identifies the responsibilities of individuals and committees charged with oversight of the management of operational risk, and articulates a broad mandate that supports implementation of the operational risk framework.

ERM and other control groups provide the oversight, validation and verification of the management and measurement of operational risk.

Executive management actively manages and oversees our operational risk framework through membership on various risk management committees, including MRAC, the BCC, TORC, the Operational Risk Committee, the Executive Information Security Steering Committee, the Enterprise Continuity Steering Committee, the Compliance and Ethics Committee, the Vendor Management Lifecycle Executive Review Board and the Fiduciary Review Committee, all of which ultimately report to the appropriate committee of the Board.

The Operational Risk Committee, chaired by the global head of Operational Risk and co-chaired by the FLOD Head of Business Risk Management, provides cross-business oversight of operational risk, operational risk programs and their implementation to identify, measure, manage and control operational risk in an effective and consistent manner and reviews and approves operational risk guidelines intended to maintain a consistent implementation of our corporate operational risk policy and framework.

Ownership and Accountability

We have implemented our operational risk framework to support the broad mandate established by our operational risk policy. This framework represents an integrated set of processes and tools that assists us in the management and measurement of operational risk, including our calculation of required capital and RWA.

The framework takes a comprehensive view and integrates the methods and tools used to manage and measure operational risk. The framework utilizes aspects of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework and other industry leading practices, and is designed foremost to address our risk management needs while complying with regulatory requirements. The operational risk framework is intended to provide a number of important benefits, including:

- A common understanding of operational risk management and its supporting processes;
- The clarification of responsibilities for the management of operational risk across our business;
- The alignment of business priorities with risk management objectives;
- The active management of risk and early identification of emerging risks;
- The consistent application of policies and the collection of data for risk management and measurement; and
- The estimation of our operational risk capital requirement.

The operational risk framework employs a distributed risk management infrastructure executed by ERM groups aligned with the business units, which are responsible for the implementation of the operational risk framework at the business unit level.

As with other risks, senior business unit management is responsible for the day-to-day operational risk management of their respective businesses. It is business unit management's responsibility to provide oversight of the

implementation and ongoing execution of the operational risk framework within their respective organizations, as well as coordination and communication with ERM.

Consistency and Transparency

A number of corporate control functions are directly responsible for implementing and assessing various aspects of our operational risk framework, with the overarching goal of consistency and transparency to meet the evolving needs of the business:

- The global head of Operational Risk, a member of the CRO's executive management team, leads ERM's corporate ORM group. ORM is responsible for the strategy, evolution and consistent implementation of our operational risk guidelines, framework and supporting tools across our business. ORM reviews and analyzes operational key risk information, events, metrics and indicators at the business unit and corporate level for purposes of risk management, reporting and escalation to the CRO, senior management and governance committees;
- ERM's Centralized Modeling and Analytics group develops and maintains operational risk capital estimation models, and ORM's Capital Analysis group calculates our required capital for operational risk;
- ERM's MVG independently validates the quantitative models used to measure operational risk, and ORM performs validation checks on the output of the model;
- CIS establishes the framework, policies and related programs to measure, monitor and report on information security risks, including the effectiveness of cyber-security program protections. CIS defines and manages the enterprise-wide information security program. CIS coordinates with Information Technology, control functions and business units to support the confidentiality, integrity and availability of corporate information assets. CIS identifies and employs a risk-based methodology consistent with applicable regulatory cyber-security requirements and monitors the compliance of our systems with information security policies; and
- Corporate Audit performs separate reviews of the application of operational risk management practices and methodologies utilized across our business.

Our operational risk framework consists of five components, each described below, which provide a working structure that integrates distinct risk programs into a continuous process focused on managing and measuring operational risk in a coordinated and consistent manner.

Risk Identification and Assessments

The objective of risk identification and assessments is to understand business unit strategy, risk profile and potential exposures. It is achieved through a series of risk assessments across our business using techniques for the identification, assessment and measurement of risk across a spectrum of potential frequency and severity combinations. Three primary risk assessment programs, which occur annually, augmented by other business-specific programs, are the core of this component:

- The risk and control assessment program seeks to understand the risks associated with day-to-day activities, and the effectiveness of controls intended to manage potential exposures arising from these activities. These risks are typically frequent in nature but generally not severe in terms of exposure;
- The Material Risk Identification process utilizes a bottom-up approach to identify our most significant risk exposures across all on- and off-balance sheet risk-taking activities. The program is specifically designed to consider risks that could have a material impact irrespective of their likelihood or frequency. This can include risks that may have an impact on longer-term business objectives, such as significant change management activities or long-term strategic initiatives;
- The Scenario Analysis program focuses on the set of risks with the highest severity and most relevance from a capital perspective. These are generally referred to as "tail risks," and serve as important benchmarks for our loss distribution approach model (see below); they also provide inputs into stress testing; and
- Business-specific programs to identify, assess and measure risk, including new business and product review and approval, new client screening, and, as deemed appropriate, targeted risk assessments.

Capital Analysis

The primary measurement tool used is an internally developed loss distribution approach (LDA) model. We use the LDA model to quantify required operational risk capital, from which we calculate RWA

related to operational risk. Such required capital and RWA totaled $3.53 billion and $44.15 billion, respectively, as of December 31, 2020, compared to $3.84 billion and $47.96 billion, respectively, as of December 31, 2019; refer to the "Capital" section in "Financial Condition," of this Management's Discussion and Analysis.

The LDA model incorporates the four required operational risk elements described below:

- Internal loss event data is collected from across our business in conformity with our operating loss policy that establishes the requirements for collecting and reporting individual loss events. We categorize the data into seven Basel-defined event types and further subdivide the data by business unit, as deemed appropriate. Each of these loss events are represented in a UOM which is used to estimate a specific amount of capital required for the types of loss events that fall into each specific category. Some UOMs are measured at the corporate level because they are not "business specific," such as damage to physical assets, where the cause of an event is not primarily driven by the behavior of a single business unit. Internal losses of $500 or greater are captured, analyzed and included in the modeling approach. Loss event data is collected using a corporate-wide data collection tool, which stores the data in a Loss Event Data Repository (LEDR) to support processes related to analysis, management reporting and the calculation of required capital. Internal loss event data provides our frequency and severity information to our capital calculation process for historical loss events experienced by us. Internal loss event data may be incorporated into our LDA model in a future quarter following the realization of the losses, with the timing and categorization dependent on the processes for model updates and, if applicable, model revalidation and regulatory review and related supervisory processes. An individual loss event can have a significant effect on the output of our LDA model and our operational risk RWA under the advanced approaches depending on the severity of the loss event, its categorization among the seven Basel-defined UOMs and the stability of the distributional approach for a particular UOM;
- External loss event data provides information with respect to loss event severity from other financial institutions to inform our capital estimation process of events in similar business units at other banking organizations. This information supplements the data pool available for use in our LDA model. Assessments of the sufficiency of internal data and the relevance of external data are completed before pooling the two data sources for use in our LDA model;
- Scenario analysis workshops are conducted across our business to inform management of the less frequent but most severe, or "tail," risks that the organization faces. The workshops are attended by senior business unit managers, other support and control partners and business-aligned risk management staff. The workshops are designed to capture information about the significant risks and to estimate potential exposures for individual risks should a loss event occur. The results of these workshops are used to make a comparison to our LDA model results to determine that our calculation of required capital considers relevant risk-related information; and
- Business environment and internal control factors are gathered as part of our scenario analysis program to inform the scenario analysis workshop participants of internal loss event data and business-relevant metrics, such as risk assessment program results, along with industry loss event data and case studies where appropriate. Business environment and internal control factors are those characteristics of a bank's internal and external operating environment that bear an exposure to operational risk. The use of this information indirectly influences our calculation of required capital by providing additional relevant data to workshop participants when reviewing specific UOM risks.

Monitoring, Reporting and Analytics

The objective of risk monitoring is to proactively monitor the changing business environment and corresponding operational risk exposure. It is achieved through a series of quantitative and qualitative monitoring tools that are designed to allow us to understand changes in the business environment, internal control factors, risk metrics, risk assessments, exposures and operating effectiveness, as well as details of loss events and progress on risk initiatives implemented to mitigate potential risk exposures.

Operational risk reporting is intended to provide transparency, thereby enabling management to manage risk, provide oversight and escalate issues in

a timely manner. It is designed to allow the business units, executive management, and the Board's control functions and committees to gain insight into activities that may result in risks and potential exposures. Reports are intended to identify business activities that are experiencing processing issues, whether or not they result in actual loss events. Reporting includes results of monitoring activities, internal and external examinations, regulatory reviews and control assessments. These elements combine in a manner designed to provide a view of potential and emerging risks facing us and information that details its progress on managing risks.

Effectiveness and Testing

The objective of effectiveness and testing is to verify that internal controls are designed appropriately, are consistent with corporate and regulatory standards, and are operating effectively. It is achieved through a series of assessments by both internal and external parties, including Corporate Audit, independent registered public accounting firms, business self-assessments and other control function reviews, such as a Sarbanes-Oxley Act of 2002 (SOX) testing program.

Consistent with our standard model validation process, the operational risk LDA model is subject to a detailed review, overseen by the MRC. In addition, the model is subject to a rigorous internal governance process. All changes to the model or input parameters, and the deployment of model updates, are reviewed and approved by the Operational Risk Committee, which has oversight responsibility for the model, with technical input from the MRC.

Documentation and Guidelines

Documentation and guidelines allow for consistency and repeatability of the various processes that support the operational risk framework across our business.

Operational risk guidelines document our practices and describe the key elements in a business unit's operational risk management program. The purpose of the guidelines is to set forth and define key operational risk terms, provide further detail on our operational risk programs, and detail the business units' responsibilities to identify, assess, measure, monitor and report operational risk. The guideline supports our operational risk policy.

Data standards have been established to maintain consistent data repositories and systems that are controlled, accurate and available on a timely basis to support operational risk management.

Information Technology Risk Management

Overview and Principles

We define technology risk as the risk associated with the use, ownership, operation, involvement, influence and adoption of information technology. Technology risk includes risks potentially triggered by technology non-compliance with regulatory obligations, information security and privacy incidents, business disruption, technology internal control and process gaps, technology operational events and adoption of new business technologies.

The principal technology risks within our technology risk policy and risk appetite framework include:

- Third party and vendor management risk;
- Business disruption and technology resiliency risk;
- Technology change management risk;
- Cyber and information security risk;
- Technology asset and configuration risk; and
- Technology obsolescence risk.

Governance

Our Board is responsible for the approval and oversight of our overall technology risk framework and program. It does so through its TOPS, which reviews and approves our technology risk policy and appetite framework annually.

Our technology risk policy establishes our approach to our management of technology risk across our business. The policy identifies the responsibilities of individuals and committees charged with oversight of the management of technology risk and articulates a broad mandate that supports implementation of the technology risk framework.

Risk control functions in the business are responsible for adopting and executing the information technology risk framework and reporting requirements. They do this, in part, by developing and maintaining an inventory of critical applications and supporting infrastructure, as well as identifying, assessing and measuring technology risk utilizing the technology risk framework. They are also responsible for monitoring and evaluating risk on a continual basis using key risk indicators, risk reporting and adopting appropriate risk responses to risk issues.

The Chief Technology Risk Officer, a member of the CRO's executive management team, leads the Enterprise Technology Risk Management (ETRM) function. ETRM is the separate risk function responsible for the technology risk strategy and appetite, and technology risk framework development and execution. ETRM also performs overall technology risk monitoring and reporting to the Board, and provides a separate view of the technology risk posture to executive leadership.

We manage technology risks by:

- Coordinating various risk assessment and risk management activities, including ERM operational risk programs;
- Establishing, through TORC and TOPS of the Board, the enterprise level technology risk and cyber risk appetite and limits;
- Producing enterprise level risk reporting, aggregation, dashboards, profiles and risk appetite statements;
- Validating appropriateness of reporting of information technology risks and risk acceptance to senior management risk committees and the Board;
- Promoting a strong technology risk culture through communication;
- Serving as an escalation and challenge point for technology risk policy guidance, expectations and clarifications;
- Assessing effectiveness of key enterprise information technology risk and internal control remediation programs; and
- Providing risk oversight, challenge and monitoring for the Global Continuity and Third Party Vendor Management Program, including the collection of risk appetite, metrics and KRIs, and reviewing issue management processes and consistent program adoption.

Cyber-Security Risk Management

Cyber-security risk is managed as part of our overall information technology risk framework as outlined above under the direction of our Chief Information Security Officer (CISO).

We recognize the significance of cyber-attacks and have taken steps to mitigate the risks associated with them. We have made significant investments in building a mature cyber-security program to leverage people, technology and processes to protect our systems and the data in our care. We have also implemented a program to help us better measure and manage the cyber-security risk we face when we engage with third parties for services.

All employees are required to adhere to our cyber-security policy and standards. Our centralized information security group provides education and training. This training includes a required annual online training class for all employees, multiple simulated phishing attacks and regular information security awareness materials.

We employ Information Security Officers to help the business better understand and manage their information security risks, as well as to work with the centralized Information Security team to drive awareness and compliance throughout the business.

We use independent third parties to perform ethical hacks of key systems to help us better understand the effectiveness of our controls and to better implement more effective controls, and we engage with third parties to conduct reviews of our overall program to help us better align our cyber-security program with what is required of a large financial services organization.

We have an incident response program in place that is designed to enable a well-coordinated response to mitigate the impact of cyber-attacks, recover from the attack and to drive the appropriate level of communication to internal and external stakeholders.

The TORC assesses and manages the effectiveness of our cyber-security program, which is overseen by the TOPS of our Board. The TOPS receives regular cyber-security updates throughout the year and is responsible for reviewing and approving the program on an annual basis.

Market Risk Management

Market risk is defined by U.S. banking regulators as the risk of loss that could result from broad market movements, such as changes in the general level of interest rates, credit spreads, foreign exchange rates or commodity prices. We are exposed to market risk in both our trading and certain of our non-trading, or asset-and-liability management, activities.

Information about the market risk associated with our trading activities is provided below under "Trading Activities." Information about the market risk associated with our non-trading activities, which consists primarily of interest rate risk, is provided below under "Asset-and-Liability Management Activities."

Trading Activities

In the conduct of our trading activities, we assume market risk, the level of which is a function of our overall risk appetite, business objectives and liquidity needs, our clients' requirements and market volatility and our execution against those factors.

We engage in trading activities primarily to support our clients' needs and to contribute to our overall corporate earnings and liquidity. In connection with certain of these trading activities, we enter into a variety of derivative financial instruments to support our clients' needs and to manage our interest rate and currency risk. These activities are generally intended to generate foreign exchange trading services revenue and to manage potential earnings volatility. In addition, we provide services related to derivatives in our role as both a manager and a servicer of financial assets.

Our clients use derivatives to manage the financial risks associated with their investment goals and business activities. With the growth of cross-border investing, our clients often enter into foreign exchange forward contracts to convert currency for international investments and to manage the currency risk in their international investment portfolios. As an active participant in the foreign exchange markets, we provide foreign exchange forward and option contracts in support of these client needs, and also act as a dealer in the currency markets.

As part of our trading activities, we assume positions in the foreign exchange and interest rate markets by buying and selling cash instruments and entering into derivative instruments, including foreign exchange forward contracts, foreign exchange and interest rate options and interest rate swaps, interest rate forward contracts and interest rate futures. As of December 31, 2020, the notional amount of these derivative contracts was $2.66 trillion, of which $2.65 trillion was composed of foreign exchange forward, swap and spot contracts. We seek to match positions closely with the objective of mitigating related currency and interest rate risk. All foreign exchange contracts are valued daily at current market rates.

Governance

Our assumption of market risk in our trading activities is an integral part of our corporate risk appetite. Our Board reviews and oversees our management of market risk, including the approval of key market risk policies and the receipt and review of regular market risk reporting, as well as periodic updates on selected market risk topics.

The previously described TMRC (refer to "Risk Committees") oversees all market risk-taking activities across our business associated with trading. The TMRC, which reports to MRAC, is composed of members of ERM, our global markets business and our Global Treasury group, as well as our senior executives who manage our trading businesses and other members of management who possess specialized knowledge and expertise. The TMRC meets regularly to monitor the management of our trading market risk activities.

Our business units identify, actively manage and are responsible for the market risks inherent in their businesses. A dedicated market risk management group within ERM, and other groups within ERM, work with those business units to assist them in the identification, assessment, monitoring, management and control of market risk, and assist business unit managers with their market risk management and measurement activities. ERM provides an additional line of oversight, support and coordination designed to promote the consistent identification, measurement and management of market risk across business units, separate from those business units' discrete activities.

The ERM market risk management group is responsible for the management of corporate-wide market risk, the monitoring of key market risks and the development and maintenance of market risk management policies, guidelines and standards aligned with our corporate risk appetite. This group also establishes and approves market risk tolerance limits and trading authorities based on, but not limited to, measures of notional amounts, sensitivity, VaR and stress. Such limits and authorities are specified in our trading and market risk guidelines which govern our management of trading market risk.

Corporate Audit separately assesses the design and operating effectiveness of the market risk controls within our business units and ERM. Other related responsibilities of Corporate Audit include the periodic review of ERM and business unit compliance with market risk policies, guidelines and corporate standards, as well as relevant regulatory requirements. We are subject to regular monitoring, reviews and supervisory exams of our market risk function by the Federal Reserve. In addition, we are regulated by, among others, the SEC, the Financial Industry Regulatory Authority and the U.S. Commodities Futures Trading Commission.

Risk Appetite

Our corporate market risk appetite is specified in policy statements that outline the governance, responsibilities and requirements surrounding the identification, measurement, analysis, management and communication of market risk arising from our trading activities. These policy statements also set forth the market risk control framework to monitor, support, manage and control this portion of our risk appetite. All groups involved in the management and control of market risk associated with trading activities are required to comply with the qualitative and quantitative elements of these policy statements. Our trading market risk control framework is composed of the following:

- A trading market risk management process led by ERM, separate from the business units' discrete activities;
- Defined responsibilities and authorities for the primary groups involved in trading market risk management;
- A trading market risk measurement methodology that captures correlation effects and allows aggregation of market risk across risk types, markets and business lines;
- Daily monitoring, analysis and reporting of market risk exposures associated

with trading activities against market risk limits;

- A defined limit structure and escalation process in the event of a market risk limit excess;
- Use of VaR models to measure the one-day market risk exposure of trading positions;
- Use of VaR as a ten-day-based regulatory capital measure of the market risk exposure of trading positions;
- Use of non-VaR-based limits and other controls;
- Use of stressed-VaR models, stress-testing analysis and scenario analysis to support the trading market risk measurement and management process by assessing how portfolios and global business lines perform under extreme market conditions;
- Use of back-testing as a diagnostic tool to assess the accuracy of VaR models and other risk management techniques; and
- A new product approval process that requires market risk teams to assess trading-related market risks and apply risk tolerance limits to proposed new products and business activities.

We use our CAP to assess our overall capital and liquidity in relation to our risk profile and provide a comprehensive strategy for maintaining appropriate capital and liquidity levels. With respect to market risk associated with trading activities, our risk management and our calculations of regulatory capital are based primarily on our internal VaR models and stress testing analysis. As discussed in detail under "Value-at-Risk" below, VaR is measured daily by ERM.

The TMRC oversees our market risk exposure in relation to limits established within our risk appetite framework. These limits define threshold levels for VaR- and stressed VaR-based measures and are applicable to all trading positions subject to regulatory capital requirements. These limits are designed to prevent any undue concentration of market risk exposure, in light of the primarily non-proprietary nature of our trading activities. The risk appetite framework and associated limits are reviewed and approved by the Board's RC.

Covered Positions

Our trading positions are subject to regulatory market risk capital requirements if they meet the regulatory definition of a "covered position." A covered position is generally defined by U.S. banking regulators as an on- or off-balance sheet position associated with the organization's trading activities that is free of any restrictions on its tradability, but does not include intangible assets, certain credit derivatives recognized as guarantees and certain equity positions not publicly traded. All FX and commodity positions are considered covered positions, regardless of the accounting treatment they receive. The identification of covered positions for inclusion in our market risk capital framework is governed by our trading and market risk guidelines, which outlines the standards we use to determine whether a trading position is a covered position.

Our covered positions consist primarily of the trading portfolios held by our global markets business. They also arise from certain positions held by our Global Treasury group. These trading positions include products such as foreign exchange spot, foreign exchange forwards, non-deliverable forwards, foreign exchange options, foreign exchange funding swaps, currency futures, financial futures and interest rate futures. New activities are analyzed to determine if the positions arising from such new activities meet the definition of a covered position and conform to our trading and market risk guidelines. This documented analysis, including any decisions with respect to market risk treatments, must receive approval from the TMRC.

We use spot rates, forward points, yield curves and discount factors imported from third-party sources to measure the value of our covered positions, and we use such values to mark our covered positions to market on a daily basis. These values are subject to separate validation by us in order to evaluate reasonableness and consistency with market experience. The mark-to-market gain or loss on spot transactions is calculated by applying the spot rate to the foreign currency principal and comparing the resultant base currency amount to the original transaction principal. The mark-to-market gain or loss on a forward foreign exchange contract or forward cash flow contract is determined as the difference between the life-to-date (historical) value of the cash flow and the value of the cash flow at the inception of the transaction. The mark-to-market gain or loss on interest rate swaps is determined by discounting the future cash flows from each leg of the swap transaction.

Value-at-Risk and Stressed VaR

We use a variety of risk measurement tools and methodologies, including VaR, which is an estimate of potential loss for a given period within a stated statistical confidence interval. We use a risk measurement methodology to measure trading-related VaR daily. We have adopted standards for measuring trading-related VaR, and we maintain regulatory capital for market risk associated with our trading activities in conformity with currently applicable bank regulatory market risk requirements.

We utilize an internal VaR model to calculate our regulatory market risk capital requirements. We use a historical simulation model to calculate daily VaR- and stressed VaR-based measures for our covered positions in conformity with regulatory requirements. Our VaR model seeks to capture identified material risk factors associated with our covered positions, including risks arising from market movements such as changes in foreign exchange rates, interest rates and option-implied volatilities.

We have adopted standards and guidelines to value our covered positions which govern our VaR- and stressed VaR-based measures. Our regulatory VaR-based measure is calculated based on historical volatilities of market risk factors during a two-year observation period calibrated to a one-tail, 99% confidence interval and a ten-business-day holding period. We also use the same platform to calculate a one-tail, 99% confidence interval, one-business-day VaR for internal risk management purposes. A 99% one-tail confidence interval implies that daily trading losses are not expected to exceed the estimated VaR more than 1% of the time, or less than three business days out of a year.

Our market risk models, including our VaR model, are subject to change in connection with the governance, validation and back-testing processes described below. These models can change as a result of changes in our business activities, our historical experiences, market forces and events, regulations and regulatory interpretations and other factors. In addition, the models are subject to continuing regulatory review and approval. Changes in our models may result in changes in our measurements of our market risk exposures, including VaR, and related measures, including regulatory capital. These changes could result in material changes in those risk measurements and related measures as calculated and compared from period to period.

Value-at-Risk Measures

VaR measures are based on the most recent two years of historical price movements for instruments and related risk factors to which we have exposure. The instruments in question are limited to foreign exchange spot, forward and options contracts and interest rate contracts, including futures and interest rate swaps. Historically, these instruments have exhibited a higher degree of liquidity relative to other available capital markets instruments. As a result, the VaR measures shown reflect our ability to rapidly adjust exposures in highly dynamic markets. For this reason, risk inventory, in the form of net open positions, across all currencies is typically limited. In addition, long and short positions in major, as well as minor, currencies provide risk offsets that limit our potential downside exposure.

Our VaR methodology uses a historical simulation approach based on market-observed changes in foreign exchange rates, U.S. and non-U.S. interest rates and implied volatilities, and incorporates the resulting diversification benefits provided from the mix of our trading positions. Our VaR model incorporates approximately 5,000 risk factors and includes correlations among currency, interest rates and other market rates.

All VaR measures are subject to limitations and must be interpreted accordingly. Some, but not all, of the limitations of our VaR methodology include the following:

- Compared to a shorter observation period, a two-year observation period is slower to reflect increases in market volatility (although temporary increases in market volatility will affect the calculation of VaR for a longer period); consequently, in periods of sudden increases in volatility or increasing volatility, in each case relative to the prior two-year period, the calculation of VaR may understate current risk;
- Compared to a longer observation period, a two-year observation period may not reflect as many past periods of volatility in the markets, because such past volatility is no longer in the observation period; consequently, historical market scenarios of high volatility, even if similar to current or likely future market circumstances, may fall outside the two-year observation period, resulting in a potential understatement of current risk;
- The VaR-based measure is calibrated to a specified level of confidence and does not indicate the potential magnitude of losses beyond this confidence level;
- In certain cases, VaR-based measures approximate the impact of changes in risk factors on the values of positions and portfolios; this may happen because the number of inputs included in the VaR model is necessarily limited; for example, yield

curve risk factors do not exist for all future dates;

- The use of historical market information may not be predictive of future events, particularly those that are extreme in nature; this "backward-looking" limitation can cause VaR to understate or overstate risk;
- The effect of extreme and rare market movements is difficult to estimate; this may result from non-linear risk sensitivities as well as the potential for actual volatility and correlation levels to differ from assumptions implicit in the VaR calculations; and
- Intra-day risk is not captured.

We calculate a stressed VaR-based measure using the same model we use to calculate VaR, but with model inputs calibrated to historical data from a range of continuous twelve-month periods that reflect significant financial stress. The stressed VaR model is designed to identify the second-worst outcome occurring in the worst continuous one-year rolling period since July 2007. This stressed VaR meets the regulatory requirement as the rolling ten-day period with an outcome that is worse than 99% of other outcomes during that twelve-month period of financial stress. For each portfolio, the stress period is determined algorithmically by seeking the one-year time horizon that produces the largest ten-business-day VaR from within the available historical data. This historical data set includes the financial crisis of 2008, the highly volatile period surrounding the Eurozone sovereign debt crisis and the Standard & Poor's downgrade of U.S. Treasury debt in August 2011. As the historical data set used to determine the stress period expands over time, future market stress events will be incorporated.

Stress Testing

We have a corporate-wide stress testing program in place that incorporates an array of techniques to measure the potential loss we could suffer in a hypothetical scenario of adverse economic and financial conditions. We also monitor concentrations of risk such as concentration by branch, risk component, and currency pairs. We conduct stress testing on a daily basis based on selected historical stress events that are relevant to our positions in order to estimate the potential impact to our current portfolio should similar market conditions recur, and we also perform stress testing as part of the Federal Reserve's CCAR process. Stress testing is conducted, analyzed and reported at the corporate, trading desk, division and risk-factor level (for example, exchange risk, interest rate risk and volatility risk).

Stress testing results and limits are actively monitored on a daily basis by ERM and reported to the TMRC. Limit breaches are addressed by ERM risk managers in conjunction with the business units, escalated as appropriate, and reviewed by the TMRC if material. In addition, we have established several action triggers that prompt immediate review by management and the implementation of a remediation plan.

We perform scenario analysis daily based on selected historical stress events that are relevant to our positions in order to estimate the potential impact to our current portfolio should similar market conditions recur. Relevant scenarios are chosen from an inventory of historical financial stresses and applied to our current portfolio. These historical event scenarios involve spot foreign exchange, credit, equity, unforeseen geo-political events and natural disasters, and government and central bank intervention scenarios. Examples of the specific historical scenarios we incorporate in our stress testing program may include the Asian financial crisis of 1997, the September 11, 2001 terrorist attacks in the U.S. and the 2008 financial crisis. We continue to update our inventory of historical stress scenarios as new stress conditions emerge in the financial markets.

As each of the historical stress events is associated with a different time horizon, we normalize results by scaling down the longer horizon events to a ten-day horizon and keeping the shorter horizon events (i.e., events that are shorter than ten days) at their original terms. We also conduct sensitivity analysis daily to calculate the impact of a large predefined shock in a specific risk factor or a group of risk factors on our current portfolio. These predefined shocks include parallel and non-parallel yield curve shifts and foreign exchange spot and volatility surface shifts. In a parallel shift scenario, we apply a constant factor shift across all yield curve tenors. In a non-parallel shift scenario, we apply different shock levels to different tenors of a yield curve, rather than shifting the entire curve by a constant amount. Non-parallel shifts include steepening, flattening and butterflies.

Validation and Back-Testing

We perform frequent back-testing to assess the accuracy of our VaR-based model in estimating loss at the stated confidence level. This back-testing involves the comparison of estimated VaR model outputs to daily, actual profit-and-loss (P&L) outcomes observed from daily market movements. We back-test our VaR model using "clean" P&L, which excludes non-trading revenue such as fees, commissions and NII, as well as estimated revenue from intra-day trading.

Our VaR definition of trading losses excludes items that are not specific to the price movement of the trading assets and liabilities themselves, such as fees, commissions, changes to reserves and gains or losses from intra-day activity.

We experienced three back-testing exceptions in 2020 and two back-testing exceptions in 2019. At a 99% confidence interval, the statistical expectation for a VaR model is to witness one exception every hundred trading days (or two to three exceptions per year). The 2020 back-testing exceptions were all noted during the March 2020 market turmoil where some of the largest risk factor shifts since the 2007/2008 financial crisis were observed.

Our model validation process also evaluates the integrity of our VaR models through the use of regular outcome analysis. This outcome analysis includes back-testing, which compares the VaR model's predictions to actual outcomes using out-of-sample information. Consistent with regulatory guidance, the back-testing compared "clean" P&L, defined above, with the one-day VaR produced by the model. The back-testing was performed for a time period not used for model development. The number of occurrences where "clean" trading-book P&L exceeded the one-day VaR was within our expected VaR tolerance level.

Market Risk Reporting

Our ERM market risk management group is responsible for market risk monitoring and reporting. We use a variety of systems and controlled market feeds from third-party services to compile data for several daily, weekly and monthly management reports.

The following tables present VaR and stressed VaR associated with our trading activities for covered positions held during the years ended December 31, 2020 and 2019, respectively, as measured by our VaR methodology. Diversification effect in the tables below represents the difference between total VaR and the sum of the VaRs for each trading activity. This effect arises because the risks present in our trading activities are not perfectly correlated.

TABLE 34: TEN-DAY VALUE-AT-RISK ASSOCIATED WITH TRADING ACTIVITIES FOR COVERED POSITIONS

	Year Ended December 31, 2020				Year Ended December 31, 2019			
(In thousands)	**Year Ended**	**Average**	**Maximum**	**Minimum**	**Year Ended**	**Average**	**Maximum**	**Minimum**
Global Markets	**$ 9,321**	**$ 12,430**	**$ 33,991**	**$ 5,220**	$ 9,954	$ 10,372	$ 26,419	$ 4,201
Global Treasury	**4,015**	**2,899**	**8,874**	**112**	987	726	3,988	123
Diversification	**(4,068)**	**(2,253)**	**(9,062)**	**(121)**	(1,082)	(757)	(6,046)	(73)
Total VaR	**$ 9,268**	**$ 13,076**	**$ 33,803**	**$ 5,211**	$ 9,859	$ 10,341	$ 24,361	$ 4,251

TABLE 35: TEN-DAY STRESSED VALUE-AT-RISK ASSOCIATED WITH TRADING ACTIVITIES FOR COVERED POSITIONS

	Year Ended December 31, 2020				Year Ended December 31, 2019			
(In thousands)	**Year Ended**	**Average**	**Maximum**	**Minimum**	**Year Ended**	**Average**	**Maximum**	**Minimum**
Global Markets	**$ 35,999**	**$ 35,031**	**$ 84,755**	**$ 15,399**	$ 48,089	$ 32,339	$ 55,751	$ 15,052
Global Treasury	**8,555**	**7,895**	**23,533**	**587**	5,898	4,671	10,840	842
Diversification	**(1,106)**	**(6,330)**	**(23,570)**	**1,620**	(8,289)	(4,857)	(8,426)	(599)
Total Stressed VaR	**$ 43,448**	**$ 36,596**	**$ 84,718**	**$ 17,606**	$ 45,698	$ 32,153	$ 58,165	$ 15,295

The average of our stressed VaR-based measure was approximately $37 million for the year ended December 31, 2020, compared to an average of approximately $32 million for the year ended December 31, 2019.

The stressed VaR-based measure as of December 31, 2020 was relatively unchanged compared to December 31, 2019. Our average stressed VaR-based measure increased as of December 31, 2020 compared to December 31, 2019, primarily due to larger FX and interest rate positions.

The VaR-based measures presented in the preceding tables are primarily a reflection of the overall level of market volatility and our appetite for taking market risk in our trading activities. Overall levels of volatility have been low both on an absolute basis and relative to the historical information observed at the beginning of the period used for the calculations. Both the ten-day VaR-based measures and the stressed VaR-based measures are based on

historical changes observed during rolling ten-day periods for the portfolios as of the close of business each day over the past one-year period.

We may in the future modify and adjust our models and methodologies used to calculate VaR and stressed VaR, subject to regulatory review and approval, and these modifications and adjustments may result in changes in our VaR-based and stressed VaR-based measures.

The following tables present the VaR and stressed-VaR associated with our trading activities attributable to foreign exchange risk, interest rate risk and volatility risk as of December 31, 2020 and 2019, respectively. The totals of the VaR-based and stressed VaR-based measures for the three attributes in total exceeded the related total VaR and total stressed VaR presented in the foregoing tables as of each period-end, primarily due to the benefits of diversification across risk types. Diversification effect in the tables below represents the difference between total VaR and the sum of the VaRs for each trading activity. This effect arises because the risks present in our trading activities are not perfectly correlated.

TABLE 36: TEN-DAY VaR ASSOCIATED WITH TRADING ACTIVITIES BY RISK FACTOR[1]

	As of December 31, 2020[2]			As of December 31, 2019		
(In thousands)	**Foreign Exchange Risk**	**Interest Rate Risk**	**Volatility Risk**	**Foreign Exchange Risk**	**Interest Rate Risk**	**Volatility Risk**
By component:						
Global Markets	**$ 2,977**	**$ 8,880**	**$ 179**	$ 5,447	$ 6,266	$ 126
Global Treasury	**33**	**4,257**	**—**	24	966	—
Diversification	**(42)**	**(2,246)**	**—**	(23)	(995)	—
Total VaR	**$ 2,968**	**$ 10,891**	**$ 179**	$ 5,448	$ 6,237	$ 126

TABLE 37: TEN-DAY STRESSED VaR ASSOCIATED WITH TRADING ACTIVITIES BY RISK FACTOR[1]

	As of December 31, 2020[2]			As of December 31, 2019		
(In thousands)	**Foreign Exchange Risk**	**Interest Rate Risk**	**Volatility Risk**	**Foreign Exchange Risk**	**Interest Rate Risk**	**Volatility Risk**
By component:						
Global Markets	**$ 5,102**	**$ 39,615**	**$ 265**	$ 8,427	$ 61,792	$ 266
Global Treasury	**83**	**8,465**	**—**	59	6,258	—
Diversification	**(51)**	**(8,102)**	**—**	(61)	(8,681)	—
Total Stressed VaR	**$ 5,134**	**$ 39,978**	**$ 265**	$ 8,425	$ 59,369	$ 266

[1] For purposes of risk attribution by component, foreign exchange refers only to the risk from market movements in period-end rates. Forwards, futures, options and swaps with maturities greater than period-end have embedded interest rate risk that is captured by the measures used for interest rate risk. Accordingly, the interest rate risk embedded in these foreign exchange instruments is included in the interest rate risk component.

Asset and Liability Management Activities

The primary objective of asset and liability management is to provide sustainable NII under varying economic conditions, while protecting the economic value of the assets and liabilities carried on our consolidated statement of condition from the adverse effects of changes in interest rates. While many market factors affect the level of NII and the economic value of our assets and liabilities, one of the most significant factors is our exposure to movements in interest rates. Most of our NII is earned from the investment of client deposits generated by our businesses. We invest these client deposits in assets that conform generally to the characteristics of our balance sheet liabilities, including the currency composition of our significant non-U.S. dollar denominated client liabilities.

We quantify NII sensitivity using an earnings simulation model that includes our expectations for new business growth, changes in balance sheet mix and investment portfolio positioning. This measure compares our baseline view of NII over a twelve-month horizon, based on our internal forecast of interest rates, to a wide range of rate shocks. Table 38, Key Interest Rates for Baseline Forecasts, presents the spot and 12-month forward rates used in our baseline forecasts at December 31, 2020 and December 31, 2019. Our December 31, 2020 baseline forecast assumes no changes by the Federal Reserve over the next 12 months.

TABLE 38: KEY INTEREST RATES FOR BASELINE FORECASTS

	December 31, 2020		December 31, 2019	
	Fed Funds Target	**10-Year Treasury**	**Fed Funds Target**	**10-Year Treasury**
Spot rates	**0.25 %**	**0.93 %**	1.75 %	1.92 %
12-month forward rates	**0.25**	**1.12**	1.50	1.95

In Table 39: Net Interest Income Sensitivity, we report the expected change in NII over the next twelve months from instantaneous shocks to various tenors on the yield curve, including the impacts from U.S. and non-U.S. rates. Each scenario assumes no management action is taken to mitigate the adverse effects of interest rate changes on our financial performance. While investment securities balances can fluctuate with the level of rates as prepayment

assumptions change, our modeling approach in both the December 31, 2020 and December 31, 2019 reporting periods was to keep our balance sheet consistent with our baseline outlook in both higher and lower rate scenarios. Beginning with the December 31, 2020 reporting period, we have enhanced our NII sensitivity methodology so that the full impact of the shock is realized for all currencies even if the result is negative interest rates. Prior to the December 31, 2020 reporting period, our results in lower rate scenarios were impacted by an assumed floor at zero for certain currencies including U.S. dollar. Given the higher level of market interest rates during the December 31, 2019 reporting period, our prior year's reported NII sensitivity results would not materially change using the new flooring methodology.

TABLE 39: NET INTEREST INCOME SENSITIVITY

	December 31, 2020			December 31, 2019		
(In millions)	**U.S. Dollar**	**All Other Currencies**	**Total**	**U.S. Dollar**	**All Other Currencies**	**Total**
Rate change:	**Benefit (Exposure)**			**Benefit (Exposure)**		
Parallel shifts:						
+100 bps shock	**$ 410**	**$ 172**	**$ 582**	$ 67	$ 175	$ 242
–100 bps shock	**591**	**196**	**787**	(214)	81	(133)
Steeper yield curve:						
'+100 bps shift in long-end rates[1]	**135**	**3**	**138**	176	6	182
'-100 bps shift in short-end rates[1]	**743**	**199**	**942**	(16)	86	70
Flatter yield curve:						
'+100 bps shift in short-end rates[1]	**282**	**168**	**450**	(97)	170	73
'-100 bps shift in long-end rates[1]	**(141)**	**(3)**	**(144)**	(184)	(6)	(190)

[1] The short end is 0-3 months. The long end is 5 years and above. Interim term points are interpolated.

As of December 31, 2020, NII is expected to benefit from both parallel increases and decreases in interest rates. Compared to December 31, 2019, our NII is more sensitive to parallel rate increases primarily driven by higher levels of deposits and assumptions for lower deposit betas. Our positioning to parallel rate decreases has shifted to benefit NII due to passing through negative rates on higher deposit balances with higher betas.

U.S. dollar NII as of December 31, 2020 is positioned to benefit from both parallel increases and decreases in interest rates. Compared to December 31, 2019, our U.S. dollar NII benefit to higher rates has increased primarily due to higher levels of deposits and assumptions for lower deposit betas. Compared to December 31, 2019, our U.S. dollar NII sensitivity to lower rates changed from NII exposure to a benefit as a result of passing through negative rates on higher deposit balances with higher betas.

NII is still positioned to benefit from changes in non-U.S. interest rates with the majority of our sensitivity derived from the short-end of the curve given deposit pricing expectations. Compared to December 31, 2019, our non-U.S. benefit from higher rates is largely unchanged while the benefit from lower rates has increased. The increased benefit from lower rates is mainly driven by passing through negative rates on higher deposit balances with higher betas.

EVE sensitivity is a discounted cash flow model designed to estimate the fair value of assets and liabilities under a series of interest rate shocks over a long-term horizon. In the following table, we report our EVE sensitivity to 200 bps instantaneous rate shocks, relative to spot interest rates. Management compares the change in EVE sensitivity against our aggregate Tier 1 and Tier 2 risk-based capital, calculated in conformity with current applicable regulatory requirements. EVE sensitivity is dependent on the timing of interest and principal cash flows. Also, the measure only evaluates the spot balance sheet and does not include the impact of new business assumptions.

TABLE 40: ECONOMIC VALUE OF EQUITY SENSITIVITY

	As of December 31,	
(In millions)	**2020**	**2019**
Rate change:	**Benefit (Exposure)**	
+200 bps shock	**$ (1,603)**	$ (1,966)
–200 bps shock	**5,538**	1,292

As of December 31, 2020, EVE sensitivity remains exposed to upward shifts in interest rates. Compared to December 31, 2019, the change in the up 200 bps instantaneous shock scenario was primarily driven by the benefit from increased liability duration from deposit modeling updates and hedging activity. Compared to December 31, 2019, the change in the down 200 bps scenario was primarily driven by decreased liability duration from higher deposit betas, combined with a full realization of the shock.

Both NII sensitivity and EVE sensitivity are routinely monitored as market conditions change. For additional information about our Asset and Liability Management Activities, refer to Management's Discussion and Analysis of Financial Condition and Results of Operations, "Risk Management".

Model Risk Management

The use of models is widespread throughout the financial services industry, with large and complex organizations relying on sophisticated models to support numerous aspects of their financial decision making. The models contemporaneously represent both a significant advancement in financial management and a source of risk. In large banking organizations like us, model results influence business decisions, and model failure could have a harmful effect on our financial performance. As a result, the MRM Framework seeks to mitigate our model risk.

Our MRM program has three principal components:

- A model risk governance program that defines roles and responsibilities, including the authority to restrict model usage, provides policies and guidance, monitors compliance and reports regularly to the Board on the overall degree of model risk across the corporation;
- A model development process that focuses on sound design and computational accuracy, and includes activities designed to test for robustness, stability and sensitivity to assumptions; and
- An independent model validation function designed to verify that models are conceptually sound, computationally accurate, are performing as expected, and are in line with their design objectives.

The MRM Framework, highlighted above, also provides insight and guidance into addressing key model risks that arise. In 2020, MRM required enhanced communication, prioritization of reviews due to model changes, greater documentation related to overlays, and enhanced on-going monitoring to mitigate the increased model risk brought on by volatility due to the COVID-19 pandemic.

Governance

Models used in the regulatory capital calculation can only be deployed for use after undergoing a model validation by ERM's MRM group. The model validation results and/or a decision by the Model Risk Committee must permit model usage or the model may not be used.

ERM's MRM group is responsible for defining the corporate-wide model risk governance framework, maintaining policies that achieve the framework's objectives. All regulatory capital calculation models, including any artificial intelligence and machine learning models, must comply with the model risk governance framework and corresponding policies. The team is responsible for overall model risk governance capabilities, with particular emphasis in the areas of model validation, model risk reporting, model performance monitoring, tracking of new model development status and committee-level review and challenge.

MRC, which is composed of senior managers responsible for representing functional areas and business units with key models across the organization, reports to MRAC, and provides guidance and oversight to the MRM function.

Model Development and Usage

Models are developed under standards governing data sourcing, methodology selection and model integrity testing. Model development includes a statement of purpose to align development with intended use. It also includes a comparison of alternative approaches to promote a sound modeling approach.

Model developers conduct an assessment of data quality and relevance. The development teams conduct a variety of tests of the accuracy, robustness and stability of each model.

Model owners submit models to the MVG for validation on a regular basis, as per the existing policy.

Model Validation

MVG is part of MRM within ERM and performs model validations and reviews. MVG is independent, as contemplated by applicable bank regulatory requirements, of both the developers and users of the models. MVG validates models through an evaluation process that assesses the appropriateness, accuracy, and suitability of data inputs, methodologies, documentation, assumptions, and processing code. Model validation also encompasses an assessment of model performance, sensitivity, and robustness, as well as a model's potential limitations given its particular assumptions or deficiencies. Based on the results of its review, MVG issues a model use decision and may require remedial actions and/or compensating controls on model use. MVG also maintains a model risk rating system, which assigns a risk rating to each model based on an assessment of a model's inherent and residual risks. These ratings aid in the understanding and reporting of model risk across the model portfolio, and enable the triaging of needs for remediation.

Although model validation is the primary method of subjecting models to independent review and challenge, in practice, a multi-step governance

process provides the opportunity for challenge by multiple parties. First, MVG conducts a model validation and issues a model use decision. MVG communicates their result as one of the following three outcomes: "Approved", "Approved with conditions", or "Not Approved". There are two ways in which a model can be deemed "Not approved for Use" given a validation: 1) the aggregation of the model scoring within MRM's Model Risk Rating System (MRRS) model is poor enough to result in a "high" rating, or 2) the scoring of one or more MRRS model element(s) is deemed "critical" resulting in an automatic "high" rating irrespective of the other elements as the "critical" element(s) undermines the model. Second, these decisions may be reviewed, challenged, and confirmed by the MRC. Finally, model use decisions, risk ratings, and overall levels of model risk may be reported to and reviewed by MRAC. MRM also reports regularly on model risk issues to the Board.

Strategic Risk Management

We define strategic risk as the current or prospective impact on earnings or capital arising from adverse business decisions, improper implementation of strategic initiatives, or lack of responsiveness to industry-wide changes. Strategic risks are influenced by changes in the competitive environment; decline in market performance or changes in our business activities; and the potential secondary impacts of reputational risks, not already captured as market, interest rate, credit, operational, model or liquidity risks. We incorporate strategic risk into our assessment of our business plans and risk and capital management processes. Active management of strategic risk is an integral component of all aspects of our business.

Separating the effects of a potential material adverse event into operational and strategic risk is sometimes difficult. For instance, the direct financial impact of an unfavorable event in the form of fines or penalties would be classified as an operational risk loss, while the impact on our reputation and consequently the potential loss of clients and corresponding decline in revenue would be classified as a strategic risk loss. An additional example of strategic risk is the integration of a major acquisition. Failure to successfully integrate the operations of an acquired business, and the resultant inability to retain clients and the associated revenue, would be classified as a loss due to strategic risk.

Strategic risk is managed with a long-term focus. Techniques for its assessment and management include the development of business plans, which are subject to robust review and challenge from senior management and the Board of Directors, as well as a formal review and approval process for all new business and product proposals. The potential impact of the various elements of strategic risk is difficult to quantify with any degree of precision. We use a combination of historical earnings volatility, scenario analysis, stress-testing and management judgment to help assess the potential effect on us attributable to strategic risk. Management and control of strategic risks are generally the responsibility of the business units, with oversight from the control functions, as part of their overall strategic planning and internal risk management processes.

Capital

Managing our capital involves evaluating whether our actual and projected levels of capital are commensurate with our risk profile, are in compliance with all applicable regulatory requirements and are sufficient to provide us with the financial flexibility to undertake future strategic business initiatives. We assess capital adequacy based on relevant regulatory capital requirements, as well as our own internal capital goals, targets and other relevant metrics.

Framework

Our objective with respect to management of our capital is to maintain a strong capital base in order to provide financial flexibility for our business needs, including funding corporate growth and supporting clients' cash management needs, and to provide protection against loss to depositors and creditors. We strive to maintain an appropriate level of capital, commensurate with our risk profile, on which an attractive return to shareholders is expected to be realized over both the short and long-term, while protecting our obligations to depositors and creditors and complying with regulatory capital requirements.

Our capital management focuses on our risk exposures, the regulatory requirements applicable to us with respect to multiple capital measures, the evaluations and resulting credit ratings of the major independent rating agencies, our return on capital at both the consolidated and line-of-business level and our capital position relative to our peers.

Assessment of our overall capital adequacy includes the comparison of capital sources with capital uses, as well as the consideration of the quality and quantity of the various components of capital. The assessment seeks to determine the optimal level of capital and composition of capital instruments to satisfy all constituents of capital, with the lowest overall cost to shareholders. Other factors considered in our assessment of capital adequacy are strategic and contingency planning, stress testing and planned capital actions.

Capital Adequacy Process (CAP)

Our primary federal banking regulator is the Federal Reserve. Both we and State Street Bank are subject to the minimum regulatory capital requirements established by the Federal Reserve and defined in the Federal Deposit Insurance Corporation Improvement Act. State Street Bank must exceed the regulatory capital thresholds for "well capitalized" in order for our Parent Company to maintain its status as a financial holding company. Accordingly, one of our primary objectives with respect to capital management is to exceed all applicable minimum regulatory capital requirements and for State Street Bank to be "well-capitalized" under the PCA guidelines established by the FDIC. Our capital management activities are conducted as part of our corporate-wide CAP and associated Capital Policy and Guidelines.

We consider capital adequacy to be a key element of our financial well-being, which affects our ability to attract and maintain client relationships; operate effectively in the global capital markets; and satisfy regulatory, security holders and shareholder needs. Capital is one of several elements that affect our credit ratings and the ratings of our principal subsidiaries.

In conformity with our Capital Policy and Guidelines, we strive to achieve and maintain specific internal capital levels, not just at a point in time, but over time and during periods of stress, to account for changes in our strategic direction, evolving economic conditions, and financial and market volatility. We have developed and implemented a corporate-wide CAP to assess our overall capital in relation to our risk profile and to provide a comprehensive strategy for maintaining appropriate capital levels. The CAP considers material risks under multiple scenarios, with an emphasis on stress scenarios, and encompasses existing processes and systems used to measure our capital adequacy.

Capital Contingency Planning

Contingency planning is an integral component of capital management. The objective of contingency planning is to monitor current and forecast levels of select capital, liquidity and other measures that serve as early indicators of a potentially adverse capital or liquidity adequacy situation. These measures are one of the inputs used to set our internal capital adequacy level. We review these measures annually for appropriateness and relevance in relation to our financial budget and capital plan. In addition, we maintain an inventory of capital contingency actions designed to conserve or generate capital to support the unique risks in our business model, our client and investor demands and regulatory requirements.

Stress Testing

We administer a robust business-wide stress-testing program that executes stress tests each year to assess the institution's capital adequacy and/or future performance under adverse conditions. Our stress testing program is structured around what we determine to be the key risks inherent in our business, as assessed through a recurring material risk identification process. The material risk identification process represents a bottom-up approach to identifying the institution's most significant risk exposures across all on- and off-balance sheet risk-taking activities, including credit, market, liquidity, interest rate, operational, fiduciary, business, reputation and regulatory risks. These key risks serve as an organizing principle for much of our risk management framework, as well as reporting, including the "risk dashboard" provided to the Board.

In connection with the focus on our key risks, each stress test incorporates idiosyncratic loss events tailored to our unique risk profile and business activities. Due to the nature of our business model and our consolidated statement of condition, our risks differ from those of a traditional commercial bank. Over the past few years, stress scenarios have included a deep recession in the U.S., including impacts from the COVID-19 pandemic, a break-up of the Eurozone, a severe recession in China and an oil shock precipitated by turmoil in the Middle East/North Africa region.

The Federal Reserve requires bank holding companies with total consolidated assets of $50 billion or more, which includes us, to submit a capital plan on an annual basis. The Federal Reserve uses its annual CCAR process, which incorporates hypothetical financial and economic stress scenarios, to review those capital plans and assess whether banking organizations have capital planning processes that account for idiosyncratic risks and provide for sufficient capital to continue operations throughout times of economic and financial stress. As part of its CCAR process, the Federal Reserve assesses each organization's capital adequacy, capital planning process and plans to distribute capital, such as dividend payments or stock purchase programs. Management and Board risk committees review, challenge and approve CCAR results and assumptions before submission to the Federal Reserve.

Through the evaluation of our capital adequacy and/or future performance under adverse conditions, the stress testing process provides us important insights for capital planning, risk management and strategic decision-making.

Governance

In order to support integrated decision making, we have identified three management elements to aid in the compatibility and coordination of our CAP:

- Risk Management - identification, measurement, monitoring and forecasting of different types of risk and their combined impact on capital adequacy;
- Capital management - determination of optimal capital levels; and
- Business Management - strategic planning, budgeting, forecasting and performance management.

We have a hierarchical structure supporting appropriate committee review of relevant risk and capital information. The ongoing responsibility for capital management rests with our Treasurer. The Capital Management group within Global Treasury is responsible for the Capital Policy and Guidelines, development of the Capital Plan, the oversight of global capital management and optimization.

The MRAC provides oversight of our capital management, our capital adequacy, our internal targets and the expectations of the major independent credit rating agencies. In addition, MRAC approves our balance sheet strategy and related activities. The Board's RC assists the Board in fulfilling its oversight responsibilities related to the assessment and management of risk and capital. Our Capital Policy is reviewed and approved annually by the Board's RC.

Global Systemically Important Bank

We have been identified by the Financial Stability Board and the Basel Committee on Banking Supervision as a G-SIB. Our designation as a G-SIB is based on a number of factors, as evaluated by banking regulators, and requires us to maintain an additional capital surcharge above the minimum capital ratios set forth in the Basel III rule.

We and our depositary institution subsidiaries are subject to the current Basel III minimum risk-based capital and leverage ratio guidelines.

Additional information about G-SIBs is provided under "Regulatory Capital Adequacy and Liquidity Standards" in "Supervision and Regulation" in Business in this Form 10-K.

Regulatory Capital

We and State Street Bank, as advanced approaches banking organizations, are subject to the U.S. Basel III framework. Provisions of the Basel III rule became effective with full implementation on January 1, 2019. We are also subject to the final market risk capital rule issued by U.S. banking regulators effective as of January 2013.

The Basel III rule provides for two frameworks for monitoring capital adequacy: the "standardized" approach and the "advanced" approaches, applicable to advanced approaches banking organizations, like us. The standardized approach prescribes standardized calculations for credit RWA, including specified risk weights for certain on- and off-balance sheet exposures.

The advanced approaches consist of the Advanced Internal Ratings-Based Approach used for the calculation of RWA related to credit risk, and the Advanced Measurement Approach used for the calculation of RWA related to operational risk.

The market risk capital rule requires us to use internal models to calculate daily measures of VaR, which reflect general market risk for certain of our trading positions defined by the rule as "covered positions," as well as stressed-VaR measures to supplement the VaR measures. The rule also requires a public disclosure composed of qualitative and quantitative information about the market risk associated with our trading activities and our related VaR and stressed-VaR measures. The qualitative and quantitative information required by the rule is provided under "Market Risk" included in this Management's Discussion and Analysis.

As required by the Dodd-Frank Act enacted in 2010, and the Stress Capital Buffer (SCB) rule enacted in 2020, we and State Street Bank, as advanced approaches banking organizations, are subject to a "capital floor," also referred to as the Collins Amendment, in the assessment of our regulatory capital adequacy, including the capital conservation buffer (CCB) and the SCB, for the advanced approach and standardized approach, respectively, and a countercyclical capital buffer. The countercyclical buffer is currently set to zero by the U.S. federal banking agencies. In addition, we are subject to a G-SIB surcharge. Our risk-based capital ratios for regulatory assessment purposes are the lower of each ratio calculated under the standardized approach and the advanced approaches.

The SCB replaced, under the standardized approach, the capital conservation buffer with a buffer calculated as the difference between the institution's starting and lowest projected CET1 ratio under the CCAR severely adverse scenario plus planned common stock dividend payments (as a percentage of RWA) from the fourth through seventh quarter of the CCAR planning horizon. The SCB requirement, which became effective October 1, 2020, can be no less than 2.5% of RWA. Breaching the SCB or other regulatory buffer or surcharge will limit a banking organization's ability to make capital distributions and discretionary bonus payments to executive officers. The countercyclical capital buffer is currently set at zero by U.S. banking regulators.

The following table presents the regulatory capital structure and related regulatory capital ratios for us and State Street Bank as of the dates indicated. We are subject to the more stringent of the risk-based capital ratios calculated under the standardized approach and those calculated under the advanced approaches in the assessment of our capital adequacy under applicable bank regulatory standards.

TABLE 41: REGULATORY CAPITAL STRUCTURE AND RELATED REGULATORY CAPITAL RATIOS

	State Street Corporation				State Street Bank			
(Dollars in millions)	Basel III Advanced Approaches December 31, 2020	Basel III Standardized Approach December 31, 2020	Basel III Advanced Approaches December 31, 2019	Basel III Standardized Approach December 31, 2019	Basel III Advanced Approaches December 31, 2020	Basel III Standardized Approach December 31, 2020	Basel III Advanced Approaches December 31, 2019	Basel III Standardized Approach December 31, 2019
Common shareholders' equity:								
Common stock and related surplus	**$ 10,709**	**$ 10,709**	$ 10,636	$ 10,636	**$ 12,893**	**$ 12,893**	$ 12,893	$ 12,893
Retained earnings	**23,442**	**23,442**	21,918	21,918	**12,939**	**12,939**	13,218	13,218
Accumulated other comprehensive income (loss)	**187**	**187**	(870)	(870)	**371**	**371**	(654)	(654)
Treasury stock, at cost	**(10,609)**	**(10,609)**	(10,209)	(10,209)	**—**	**—**	—	—
Total	**23,729**	**23,729**	21,475	21,475	**26,203**	**26,203**	25,457	25,457
Regulatory capital adjustments:								
Goodwill and other intangible assets, net of associated deferred tax liabilities	**(9,019)**	**(9,019)**	(9,112)	(9,112)	**(8,745)**	**(8,745)**	(8,839)	(8,839)
Other adjustments[1]	**(333)**	**(333)**	(150)	(150)	**(152)**	**(152)**	(1)	(1)
Common equity tier 1 capital	**14,377**	**14,377**	12,213	12,213	**17,306**	**17,306**	16,617	16,617
Preferred stock	**2,471**	**2,471**	2,962	2,962	**—**	**—**	—	—
Tier 1 capital	**16,848**	**16,848**	15,175	15,175	**17,306**	**17,306**	16,617	16,617
Qualifying subordinated long-term debt	**961**	**961**	1,095	1,095	**966**	**966**	1,099	1,099
Allowance for credit losses	**1**	**148**	5	90	**10**	**148**	3	90
Total capital	**$ 17,810**	**$ 17,957**	$ 16,275	$ 16,360	**$ 18,282**	**$ 18,420**	$ 17,719	$ 17,806
Risk-weighted assets:								
Credit risk[2]	**$ 63,367**	**$ 114,892**	$ 54,763	$ 102,367	**$ 58,960**	**$ 110,797**	$ 51,610	$ 98,979
Operational risk[3]	**44,150**	**NA**	47,963	NA	**43,663**	**NA**	44,138	NA
Market risk	**2,188**	**2,188**	1,638	1,638	**2,188**	**2,188**	1,638	1,638
Total risk-weighted assets	**$ 109,705**	**$ 117,080**	$ 104,364	$ 104,005	**$ 104,811**	**$ 112,985**	$ 97,386	$ 100,617
Adjusted quarterly average assets	**$ 263,490**	**$ 263,490**	$ 219,624	$ 219,624	**$ 260,489**	**$ 260,489**	$ 216,397	$ 216,397

Capital Ratios:	2020 Minimum Requirements[4]	2019 Minimum Requirements[5]						
Common equity tier 1 capital	**8.0 %**	8.5 %	**13.1 %**	**12.3 %**	11.7 %	11.7 %	**16.5 %**	**15.3 %**	17.1 %	16.5 %
Tier 1 capital	**9.5**	10.0	**15.4**	**14.4**	14.5	14.6	**16.5**	**15.3**	17.1	16.5
Total capital	**11.5**	12.0	**16.2**	**15.3**	15.6	15.7	**17.4**	**16.3**	18.2	17.7

[1] Other adjustments within CET1 capital primarily include the overfunded portion of our defined benefit pension plan obligation net of associated deferred tax liabilities, disallowed deferred tax assets, and other required credit risk based deductions.
[2] Includes a CVA which reflects the risk of potential fair value adjustments for credit risk reflected in our valuation of over-the-counter (OTC) derivative contracts. We used a simple CVA approach in conformity with the Basel III advanced approaches.
[3] Under the current advanced approaches rules and regulatory guidance concerning operational risk models, RWA attributable to operational risk can vary substantially from period-to-period, without direct correlation to the effects of a particular loss event on our results of operations and financial condition and impacting dates and periods that may differ from the dates and periods as of and during which the loss event is reflected in our financial statements, with the timing and categorization dependent on the processes for model updates and, if applicable, model revalidation and regulatory review and related supervisory processes. An individual loss event can have a significant effect on the output of our operational RWA under the advanced approaches depending on the severity of the loss event and its categorization among the seven Basel-defined UOMs.
[4] Minimum requirements include a capital conservation buffer of 2.5% and a stress capital buffer of 2.5% for advanced and standardized, respectively, a G-SIB surcharge of 1.0% and a countercyclical buffer of 0%.
[5] Minimum requirements include a capital conservation buffer of 2.5%, a G-SIB surcharge of 1.5% and a countercyclical buffer of 0%.
NA Not applicable

Our CET1 capital increased $2.16 billion as of December 31, 2020 compared to December 31, 2019, primarily driven by net income and accumulated other comprehensive income in the year ended December 31, 2020, partially offset by capital distributions from common and preferred stock dividends and first quarter 2020 common stock repurchases.

Our Tier 1 capital increased $1.67 billion as of December 31, 2020 compared to December 31, 2019 under both the advanced approaches and standardized approach due to increase in CET1 capital, partially offset by the redemption of all outstanding Series C preferred stock. Total capital increased under the advanced approaches and standardized approach by $1.54 billion and $1.60 billion, respectively, due to an increase in our Tier 1 capital, partially offset by a decrease in Tier 2 capital.

The table below presents a roll-forward of CET1 capital, Tier 1 capital and total capital for the years ended December 31, 2020 and 2019.

TABLE 42: CAPITAL ROLL-FORWARD

(In millions)	Basel III Advanced Approaches December 31, 2020	Basel III Standardized Approach December, 31, 2020	Basel III Advanced Approaches December 31, 2019	Basel III Standardized Approach December 31, 2019
Common equity tier 1 capital:				
Common equity tier 1 capital balance, beginning of period	**$ 12,213**	**$ 12,213**	$ 11,580	$ 11,580
Net income	**2,420**	**2,420**	2,242	2,242
Changes in treasury stock, at cost	**(400)**	**(400)**	(1,494)	(1,494)
Dividends declared	**(886)**	**(886)**	(939)	(939)
Goodwill and other intangible assets, net of associated deferred tax liabilities	**93**	**93**	238	238
Effect of certain items in accumulated other comprehensive income (loss)	**1,057**	**1,057**	462	462
Other adjustments	**(120)**	**(120)**	124	124
Changes in common equity tier 1 capital	**2,164**	**2,164**	633	633
Common equity tier 1 capital balance, end of period	**14,377**	**14,377**	12,213	12,213
Additional tier 1 capital:				
Tier 1 capital balance, beginning of period	**15,175**	**15,175**	15,270	15,270
Change in common equity tier 1 capital	**2,164**	**2,164**	633	633
Net issuance of preferred stock	**(491)**	**(491)**	(728)	(728)
Changes in tier 1 capital	**1,673**	**1,673**	(95)	(95)
Tier 1 capital balance, end of period	**16,848**	**16,848**	15,175	15,175
Tier 2 capital:				
Tier 2 capital balance, beginning of period	**1,100**	**1,185**	792	861
Net issuance and changes in long-term debt qualifying as tier 2	**(134)**	**(134)**	317	317
Changes in allowance for credit losses[1]	**(4)**	**58**	(9)	7
Changes in tier 2 capital	**(138)**	**(76)**	308	324
Tier 2 capital balance, end of period	**962**	**1,109**	1,100	1,185
Total capital:				
Total capital balance, beginning of period	**16,275**	**16,360**	16,062	16,131
Changes in tier 1 capital	**1,673**	**1,673**	(95)	(95)
Changes in tier 2 capital	**(138)**	**(76)**	308	324
Total capital balance, end of period	**$ 17,810**	**$ 17,957**	$ 16,275	$ 16,360

[1] We adopted ASU 2016-13, Financial Instruments - Credit Losses (ASC 326): Measurement of Credit Losses on Financial Instruments, on January 1, 2020. Please refer to Note 1 to the consolidated financial statements in this Form 10-K for additional information.

The following table presents a roll-forward of the Basel III advanced approaches and standardized approach RWA for the years ended December 31, 2020 and 2019.

TABLE 43: ADVANCED & STANDARDIZED APPROACHES RISK-WEIGHTED ASSETS ROLL-FORWARD

(In millions)	Basel III Advanced Approaches December 31, 2020	Basel III Advanced Approaches December 31, 2019	Basel III Standardized Approach December 31, 2020	Basel III Standardized Approach December 31, 2019
Total risk-weighted assets, beginning of period	**$ 104,364**	$ 95,315	**$ 104,005**	$ 98,820
Changes in credit risk-weighted assets:				
Net increase (decrease) in investment securities-wholesale	**3,008**	3,470	**1,762**	3,882
Net increase (decrease) in loans	**2,973**	2,586	**3,638**	809
Net increase (decrease) in securitization exposures	**578**	(140)	**351**	(140)
Net increase (decrease) in repo-style transaction exposures	**1,763**	(45)	**3,895**	365
Net increase (decrease) in over-the-counter derivatives exposures[1]	**780**	26	**457**	(1,124)
Net increase (decrease) in all other[2][3]	**(498)**	1,128	**2,422**	1,272
Net increase (decrease) in credit risk-weighted assets	**8,604**	7,025	**12,525**	5,064
Net increase (decrease) in market risk-weighted assets	**550**	121	**550**	121
Net increase (decrease) in operational risk-weighted assets	**(3,813)**	1,903	**N/A**	N/A
Total risk-weighted assets, end of period	**$ 109,705**	$ 104,364	**$ 117,080**	$ 104,005

[1] Under the advanced approaches, includes CVA RWA.
[2] Includes assets not in a definable category, non-material portfolio, cleared transactions, other wholesale, cash and due from banks, interest-bearing deposits with banks and equity exposures.
[3] December 2019 includes a 6% credit risk supervisory charge.

As of December 31, 2020, total advanced approaches RWA increased $5.34 billion compared to December 31, 2019, primarily due to an increase in credit risk RWA, partially offset by a decrease in operational RWA. The increase in credit risk RWA was primarily driven by an increase in investment securities - wholesale RWA, loans RWA, and repo-style transactions RWA.

As of December 31, 2020, total standardized approach RWA increased $13.08 billion compared to December 31, 2019, primarily due to higher credit risk RWA. The increase in credit risk RWA was primarily driven by an increase in repo-style transactions RWA, loans RWA, and all other RWA.

The regulatory capital ratios as of December 31, 2020, presented in Table 41: Regulatory Capital Structure and Related Regulatory Capital Ratios, are calculated under the standardized approach and advanced approaches in conformity with the Basel III rule. The advanced approaches based ratios reflect calculations and determinations with respect to our capital and related matters as of December 31, 2020, based on our and external data, quantitative formulae, statistical models, historical correlations and assumptions, collectively referred to as "advanced systems," in effect and used by us for those purposes as of the time we first reported such ratios in a quarterly report on Form 10-Q or an annual report on Form 10-K. Significant components of these advanced systems involve the exercise of judgment by us and our regulators, and our advanced systems may not, individually or collectively, precisely represent or calculate the scenarios, circumstances, outputs or other results for which they are designed or intended.

Our advanced systems are subject to update and periodic revalidation in response to changes in our business activities and our historical experiences, forces and events experienced by the market broadly or by individual financial institutions, changes in regulations and regulatory interpretations and other factors, and are also subject to continuing regulatory review and approval. For example, a significant operational loss experienced by another financial institution, even if we do not experience a related loss, could result in a material change in the output of our advanced systems and a corresponding material change in our risk exposures, our total RWA and our capital ratios compared to prior periods. An operational loss that we experience could also result in a material change in our capital requirements for operational risk under the advanced approaches, depending on the severity of the loss event, its characterization among the seven Basel-defined UOM, and the stability of the distributional approach for a particular UOM, and without direct correlation to the effects of the loss event, or the timing of such effects, on our results of operations.

Due to the influence of changes in these advanced systems, whether resulting from changes in data inputs, regulation or regulatory supervision or interpretation, specific to us or market activities or experiences or other updates or factors, we expect that our advanced systems and our capital ratios calculated in conformity with the Basel III rule will change and may be volatile over time, and that those latter changes or volatility could be material as calculated and measured from period to period. The full effects of the Basel III rule on us and State Street Bank are therefore subject to further evaluation and also to further regulatory guidance, action or rule-making.

Tier 1 and Supplementary Leverage Ratios

We are subject to a minimum Tier 1 leverage ratio and a supplementary leverage ratio. The Tier 1 leverage ratio is based on Tier 1 capital and adjusted quarterly average on-balance sheet assets. The Tier 1 leverage ratio differs from the SLR primarily in that the denominator of the Tier 1 leverage ratio is a quarterly average of on-balance sheet assets, while the SLR additionally includes off-balance sheet exposures. We must maintain a minimum Tier 1 leverage ratio of 4%.

We are also subject to a minimum SLR of 3%, and as a U.S. G-SIB, we must maintain a 2% SLR buffer in order to avoid any limitations on distributions to shareholders and discretionary bonus payments to certain executives. If we do not maintain this buffer, limitations on these distributions and discretionary bonus payments would be increasingly stringent based upon the extent of the shortfall.

TABLE 44: TIER 1 AND SUPPLEMENTARY LEVERAGE RATIOS

(Dollars in millions)	December 31, 2020	December 31, 2019
State Street:		
Tier 1 capital	**$ 16,848**	$ 15,175
Average assets	**277,055**	228,886
Less: adjustments for deductions from tier 1 capital and other	**(13,565)**	(9,262)
Adjusted average assets for Tier 1 leverage ratio	**263,490**	219,624
Derivatives and repo-style transactions and off-balance sheet exposures	**34,379**	28,238
Adjustments for deductions of qualifying central bank deposits	**(90,322)**	—
Total assets for SLR	**$ 207,547**	$ 247,862
Tier 1 leverage ratio[1]	**6.4 %**	6.9 %
Supplementary leverage ratio	**8.1**	6.1
State Street Bank[2]:		
Tier 1 capital	**$ 17,306**	$ 16,617
Average assets	**273,599**	225,234
Less: adjustments for deductions from tier 1 capital and other	**(13,110)**	(8,837)
Adjusted average assets for Tier 1 leverage ratio	**260,489**	216,397
Off-balance sheet exposures	**38,591**	28,266
Adjustments for deductions of qualifying central bank deposits	**(80,935)**	—
Total assets for SLR	**$ 218,145**	$ 244,663
Tier 1 leverage ratio [1]	**6.6 %**	7.7 %
Supplementary leverage ratio	**7.9**	6.8

[1] Tier 1 leverage ratios were calculated in conformity with the Basel III rule.

[2] The SLR rule requires that, as of January 1, 2018, (i) State Street Bank maintains an SLR of at least 6.0% to be well capitalized under the U.S. banking regulators' Prompt Corrective Action Framework and (ii) we maintain an SLR of at least 5.0% to avoid limitations on capital distributions and discretionary bonus payments. In addition to the SLR, State Street Bank is subject to a well-capitalized Tier 1 leverage ratio requirement of 5.0%.

Total Loss-Absorbing Capacity (TLAC)

In 2016, the Federal Reserve released its final rule on TLAC, LTD and clean holding company requirements for U.S. domiciled G-SIBs, such as us, that is intended to improve the resiliency and resolvability of certain U.S. banking organizations through enhanced prudential standards. Among other things, the TLAC final rule requires us to comply with minimum requirements for external TLAC and external LTD effective January 1, 2019. Specifically, we must hold:

	Amount equal to:
Combined eligible tier 1 regulatory capital and LTD	Greater of: • 21.5% of total RWA (18.0% minimum plus 2.5% plus a G-SIB surcharge calculated for these purposes under Method 1 of 1.0% plus any applicable counter- cyclical buffer, which is currently 0%); and • 9.5% of total leverage exposure (7.5% minimum plus the SLR buffer of 2.0%), as defined by the SLR final rule.
Qualifying external LTD	Greater of: • 7.0% of RWA (6.0% minimum plus a G-SIB surcharge calculated for these purposes under method 2 of 1.0%); and • 4.5% of total leverage exposure, as defined by the SLR final rule.

As of April 1, 2020, the TLAC and LTD requirements calibrated to the SLR denominator reflect the deduction of certain central bank balances as prescribed by the regulatory relief implemented under the EGRRCPA.

The following table presents external LTD and external TLAC as of December 31, 2020.

TABLE 45: TOTAL LOSS-ABSORBING CAPACITY

	As of December 31, 2020			
(Dollars in millions)	**Actual**		**Requirement**	
Total loss-absorbing capacity (eligible Tier 1 regulatory capacity and long term debt):				
Risk-weighted assets	**$ 29,045**	**24.8 %**	**$ 25,172**	**21.5 %**
Supplemental leverage ratio	**29,045**	**14.0**	**19,717**	**9.5**
Long term debt:				
Risk-weighted assets	**12,197**	**10.4**	**8,196**	**7.0**
Supplemental leverage ratio	**12,197**	**5.9**	**9,340**	**4.5**

Additional information about TLAC is provided under "Total Loss-Absorbing Capacity" in "Supervision and Regulation" in Business in this Form 10-K.

Regulatory Developments

In April 2018, the Federal Reserve issued a proposed rule which would replace the current 2.0% SLR buffer for G-SIBs, with a buffer equal to 50% of their G-SIB surcharge. This proposal would also make conforming modifications to our TLAC and eligible LTD requirements applicable to G-SIBs. At this point in time, it is unclear whether this proposal will be implemented as proposed.

In November 2019, the Federal Reserve and other U.S. federal banking agencies issued a final rule to implement the Standardized Approach for Counterparty Credit Risk (SA-CCR) as a replacement of the Current Exposure Method for calculating exposure-at-default of derivatives exposures. Mandatory compliance with the final rule is required by January 1, 2022.

On March 4, 2020, U.S. federal banking agencies issued the SCB final rule that replaces, under the standardized approach, the capital conservation buffer (2.5%) with a SCB calculated as the difference between an institution's starting and lowest projected CET1 ratio under the CCAR severely adverse scenario plus planned common stock dividend payments (as a percentage of RWA) from the fourth through seventh quarter of the CCAR planning horizon. The SCB requirement, which became effective October 1, 2020, can be no less than 2.5% of RWA.

The Federal Reserve and other U.S. federal banking agencies issued an interim final rule effective in March 2020 and later finalized on a permanent basis on August 26, 2020, which revised the definition of eligible retained income for all U.S. banking organizations. The revised definition of eligible retained income makes any automatic limitations on capital distributions, where a banking organization's regulatory ratios were to decline below the respective minimum requirements, take effect on a more gradual basis.

Following the launch of the MMLF program, which we participate in, the Federal Reserve issued an interim final rule on March 19, 2020 (followed by a final rule on September 29, 2020), allowing Bank Holding Companies (BHCs) to exclude assets purchased with the MMLF program from their RWA, total leverage exposure and average total consolidated assets. For the quarter ended December 31, 2020, we deducted $4.2 billion of MMLF program average HTM securities.

On March 27, 2020, the BCBS announced the deferral of the implementation of the revisions to the Basel III framework to January 1, 2023. As of now, the U.S. federal banking agencies have not formally proposed the implementation of the BCBS revisions.

Effective April 1, 2020, the Federal Reserve and other U.S. federal banking agencies adopted a final rule as part of EGRRCPA that establishes a deduction for qualifying central bank deposits from a custodial banking organization's total leverage exposure equal to the lesser of (i) the total amount of funds the custodial banking organization and its consolidated subsidiaries have on deposit at qualifying central banks and (ii) the total amount of client funds on deposit at the custodial banking organization that are linked to fiduciary or custodial and safekeeping accounts. For the quarter ended December 31, 2020, we deducted $76.7 billion of average balances held on deposit at central banks from the denominator used in the calculation of our SLR, based on this custodial banking deduction.

In addition to the regulatory relief granted to custodial banks under the EGRRCPA, an SLR interim final rule released on April 1, 2020 allows all BHCs to deduct their deposits at Federal Reserve Banks and their investments in U.S. Treasuries from their total leverage exposure on a temporary basis, from the second quarter of 2020 through the first quarter of 2021. The temporary deduction of our investment in U.S. Treasuries is incremental to the existing central bank placement deduction granted to custodian banks under EGRRCPA. For the quarter ended December 31, 2020, we deducted $13.6 billion invested in U.S. Treasuries from our total leverage exposure.

On May 15, 2020, the U.S. federal banking agencies released an interim final rule that also permits insured depository institution subsidiaries of BHCs to temporarily exclude deposits at Federal Reserve Banks and investments in U.S. Treasuries from their total leverage exposure, subject to certain conditions. State Street Bank has elected not to apply such exclusions as of December 31, 2020.

On June 25, 2020, we were notified by the Federal Reserve of the results from the 2020 DFAST stress test, including our preliminary SCB of 2.5%. Additionally, included in this notification and in light of the considerable economic uncertainty created by the COVID-19 pandemic, all participating CCAR banking organizations were required to resubmit their capital plans by November 2, 2020, based on updated scenarios provided by the Federal Reserve on September 17, 2020.

In line with the decision to administer a new stress test, the Federal Reserve decided to limit the ability of all CCAR banking organizations to make capital distributions in the third and fourth quarters of 2020, although banking organizations were permitted to pay common stock dividends at previous levels provided such distributions did not exceed an amount determined by a formula based on the banking organization's recent income. As a result, CCAR banking organizations, including us, were not permitted to return capital to shareholders in the form of common share repurchases during the third quarter and fourth quarter of 2020.

On August 10, 2020, the Federal Reserve confirmed that our SCB is 2.5% for the period starting on October 1, 2020 and ending on September 30, 2021.

On October 20, 2020, the Federal Reserve and other U.S. federal banking agencies issued a final rule that will require us and State Street Bank to make certain deductions from regulatory capital for investments in certain unsecured debt instruments, including eligible LTD under the TLAC rule, issued by the Parent Company and other U.S. and foreign G-SIBs. The final rule will become effective on April 1, 2021.

On December 18, 2020, following the release of a second round of stress test results for 2020, the Federal Reserve decided to modify the applicable restrictions on capital distributions for the first quarter of 2021. Provided that we do not increase the amount of our common stock dividends to be larger than the level paid in the second quarter of 2020, common stock dividends and share repurchases in the first quarter of 2021 will be limited to the average of our net income for the four preceding quarters plus a number of shares equal to the share issuances in the quarter related to expensed employee compensation. We also may redeem and make scheduled payments on additional Tier 1 and Tier 2 capital instruments in the first quarter of 2021. As of now, our capital distributions in the first quarter of 2021 and beyond will be governed by our minimum capital requirements inclusive of the SCB that will not be recalibrated based on the stress test results.

For additional information about regulatory developments, refer to the "Regulatory Capital Adequacy and Liquidity Standards" section of "Supervision and Regulation" in Business in this Form 10-K.

Capital Actions

Preferred Stock

The following table summarizes selected terms of each of the series of the preferred stock issued and outstanding as of December 31, 2020:

TABLE 46: PREFERRED STOCK ISSUED AND OUTSTANDING

Preferred Stock[2]:	Issuance Date	Depositary Shares Issued	Amount outstanding (in millions)	Ownership Interest Per Depositary Share	Liquidation Preference Per Share	Liquidation Preference Per Depositary Share	Per Annum Dividend Rate	Dividend Payment Frequency	Carrying Value as of December 31, 2020 (In millions)	Redemption Date[1]
Series D	February 2014	30,000,000	750	1/4,000th	100,000	25	5.90% to but excluding March 15, 2024, then a floating rate equal to the three-month LIBOR plus 3.108%	Quarterly: March, June, September and December	$ 742	March 15, 2024
Series F[3]	May 2015	750,000	750	1/100th	100,000	1,000	5.25% to but excluding September 15, 2020, then a floating rate equal to the three-month LIBOR plus 3.597%, or 3.81350% effective December 15, 2020	Quarterly: March, June, September and December	742	September 15, 2020
Series G	April 2016	20,000,000	500	1/4,000th	100,000	25	5.35% to but excluding March 15, 2026, then a floating rate equal to the three-month LIBOR plus 3.709%	Quarterly: March, June, September and December	493	March 15, 2026
Series H	September 2018	500,000	500	1/100th	100,000	1,000	5.625% to but excluding December 15, 2023, then a floating rate equal to the three-month LIBOR plus 2.539%	Semi-annually: June and December	494	December 15, 2023

[1] On the redemption date, or any dividend payment date thereafter, the preferred stock and corresponding depositary shares may be redeemed by us, in whole or in part, at the liquidation price per share and liquidation price per depositary share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

[2] The preferred stock and corresponding depositary shares may be redeemed at our option in whole, but not in part, prior to the redemption date upon the occurrence of a regulatory capital treatment event, as defined in the certificate of designation, at a redemption price equal to the liquidation price per share and liquidation price per depositary share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

[3] Series F preferred stock is redeemable on September 15, 2020 and on each succeeding dividend payment date. We did not elect redemption on September 15, 2020 or December 15, 2020.

We redeemed all outstanding Series C non-cumulative perpetual preferred stock on March 15, 2020 at a redemption price of $500 million ($100,000 per share equivalent to $25.00 per depositary share) plus accrued and unpaid dividends. The difference of $9 million between the redemption value and the net carrying value resulted in an EPS impact of approximately ($0.03) per share in the first quarter of 2020.

On January 14, 2021, we announced that we will redeem on March 15, 2021 an aggregate of $500 million, or 5,000 of the 7,500 outstanding shares of our non-cumulative perpetual preferred stock, Series F, for cash at a redemption price of $100,000 per share (equivalent to $1,000 per depositary share) plus all declared and unpaid dividends. A cash dividend of $953.38 per share of Series F Preferred Stock (or approximately $9.5338 per depositary share) has been declared for the period from December 15, 2020 up to but not including March 15, 2021 (the "March Dividend"). The March Dividend will be paid separately to the holders of record of the Series F Preferred Stock as of March 1, 2021 in the customary manner. Accordingly, there will not be any declared and unpaid dividends included in the Redemption Price.

The following tables present the dividends declared for each of the series of preferred stock issued and outstanding for the periods indicated:

TABLE 47: PREFERRED STOCK DIVIDENDS

	Years Ended December 31,					
	2020			2019		
(Dollars in millions, except per share amounts)	Dividends Declared per Share	Dividends Declared per Depositary Share	Total	Dividends Declared per Share	Dividends Declared per Depositary Share	Total
Preferred Stock:						
Series C	**$ 1,313**	**$ 0.33**	**$ 6**	$ 5,250	$ 1.32	$ 26
Series D	**5,900**	**1.48**	**44**	5,900	1.48	44
Series E	**—**	**—**	**—**	6,000	1.52	45
Series F	**6,223**	**62.23**	**47**	5,250	52.50	40
Series G	**5,352**	**1.32**	**27**	5,352	1.32	27
Series H	**5,625**	**56.25**	**28**	5,625	56.25	28
Total			**$ 152**			$ 210

Common Stock

In June 2019, the Federal Reserve issued a non-objection to our capital plan submitted as part of the 2019 CCAR submission; and in connection with that capital plan, our Board approved a common stock purchase program authorizing the purchase of up to $2.0 billion of our common stock from July 1, 2019 through June 30, 2020 (the 2019 Program). We repurchased $500 million of our common stock in each of the third and fourth quarters of 2019 and the first quarter of 2020 under the 2019 Program. On March 16, 2020, we, along with the other U.S. G-SIBs, suspended common share repurchases and maintained this suspension through the fourth quarter of 2020 in response to the COVID-19 pandemic. This suspension was consistent with limitations imposed by the Federal Reserve beginning in the second quarter of 2020. As a result, we had no repurchases of our common stock in the second, third or fourth quarters of 2020. In December 2020, the Federal Reserve issued results of 2020 resubmission stress tests and authorized us to continue to pay common stock dividends at current levels and to resume repurchasing common shares in the first quarter of 2021. In January 2021, our Board authorized a common share repurchase program for the purchase of up to $475 million of our common stock through March 31, 2021.

In June 2018, the Federal Reserve issued a conditional non-objection to our 2018 capital plan; and in connection with that capital plan, our Board approved a common stock purchase program authorizing the purchase of up to $1.2 billion of our common stock through June 30, 2019 (the 2018 Program), under which we repurchased $300 million of our common stock in each of the first and second quarters of 2019.

The table below presents the activity under our common stock purchase program for the period indicated:

TABLE 48: SHARES REPURCHASED

	Year Ended December 31, 2020		
	Shares Acquired (In millions)	Average Cost per Share	Total Acquired (In millions)
2019 Program	**6.5**	**$ 77.35**	**$ 500**

The table below presents the dividends declared on common stock for the periods indicated:

TABLE 49: COMMON STOCK DIVIDENDS

	Years Ended December 31,			
	2020		2019	
	Dividends Declared per Share	Total (In millions)	Dividends Declared per Share	Total (In millions)
Common Stock	**$ 2.08**	**$ 734**	$ 1.98	$ 728

Federal and state banking regulations place certain restrictions on dividends paid by subsidiary banks to the parent holding company. In addition, banking regulators have the authority to prohibit bank holding companies from paying dividends. For information concerning limitations on dividends from our subsidiary banks, refer to "Related Stockholder Matters" included under Item 5, Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities, and to Note 15 to the consolidated financial statements in this Form 10-K. Our common stock and preferred stock dividends, including the declaration, timing and amount thereof, are subject to consideration and approval by the Board at the relevant times.

Stock purchases may be made using various types of mechanisms, including open market purchases, accelerated share repurchases or transactions off market and may be made under Rule 10b5-1 trading programs. The timing of stock purchases, types of transactions and number of shares purchased will depend on several factors, including, market conditions and our capital positions, financial performance and investment opportunities. The common stock purchase program does not have specific price targets and may be suspended at any time.

OFF-BALANCE SHEET ARRANGEMENTS

On behalf of clients enrolled in our securities lending program, we lend securities to banks, broker/dealers and other institutions. In most circumstances, we indemnify our clients for the fair market value of those securities against a failure of the borrower to return such securities. Though these transactions are collateralized, the substantial volume of these activities necessitates detailed credit-based underwriting and monitoring processes. The aggregate amount of indemnified securities on loan totaled $440.88 billion and $367.90 billion as of December 31, 2020 and December 31, 2019, respectively. We require the borrower to provide collateral in an amount in excess of 100% of the fair market value of the securities borrowed. We hold the collateral received in connection with these securities lending services as agent, and the collateral is not recorded in our consolidated statement of condition.

We revalue the securities on loan and the collateral daily to determine if additional collateral is necessary or if excess collateral is required to be returned to the borrower. We held, as agent, cash and securities totaling $463.27 billion and $385.43 billion as collateral for indemnified securities on loan as of December 31, 2020 and December 31, 2019, respectively.

The cash collateral held by us as agent is invested on behalf of our clients. In certain cases, the cash collateral is invested in third-party repurchase agreements, for which we indemnify the client against loss of the principal invested. We require the counterparty to the indemnified repurchase agreement to provide collateral in an amount in excess of 100% of the amount of the repurchase agreement. In our role as agent, the indemnified repurchase agreements and the related collateral held by us are not recorded in our consolidated statement of condition. Of the collateral of $463.27 billion and $385.43 billion, referenced above, $54.43 billion and $45.66 billion was invested in indemnified repurchase agreements as of December 31, 2020 and December 31, 2019, respectively. We or our agents held $58.09 billion and $48.89 billion as collateral for indemnified investments in repurchase agreements as of December 31, 2020 and December 31, 2019, respectively.

Additional information about our securities finance activities and other off-balance sheet arrangements is provided in Notes 10, 12 and 14 to the consolidated financial statements in this Form 10-K.

SIGNIFICANT ACCOUNTING ESTIMATES

Our consolidated financial statements are prepared in conformity with U.S. GAAP, and we apply accounting policies that affect the determination of amounts reported in the consolidated financial statements. Additional information on our significant accounting policies, including references to applicable footnotes, is provided in Note 1 to the consolidated financial statements in this Form 10-K.

Certain of our accounting policies, by their nature, require management to make judgments, involving significant estimates and assumptions, about the effects of matters that are inherently uncertain. These estimates and assumptions are based on information available as of the date of the consolidated financial statements, and changes in this information over time could materially affect the amounts of assets, liabilities, equity, revenue and expenses reported in subsequent consolidated financial statements.

Based on the sensitivity of reported financial statement amounts to the underlying estimates and

assumptions, the more significant accounting policies applied by us have been identified by management as those associated with recurring fair value measurements, allowance for credit losses, impairment of goodwill and other intangible assets, and contingencies. These accounting policies require the most subjective or complex judgments, and underlying estimates and assumptions could be most subject to revision as new information becomes available. An understanding of the judgments, estimates and assumptions underlying these accounting policies is essential in order to understand our reported consolidated results of operations and financial condition.

The following is a discussion of the above-mentioned significant accounting estimates. Management has discussed these significant accounting estimates with the E&A Committee of the Board.

Fair Value Measurements

We carry certain of our financial assets and liabilities at fair value in our consolidated financial statements on a recurring basis, including trading account assets and liabilities, AFS debt securities, certain equity securities and various types of derivative financial instruments.

Changes in the fair value of these financial assets and liabilities are recorded either as components of our consolidated statement of income or as components of other comprehensive income within shareholders' equity in our consolidated statement of condition. In addition to those financial assets and liabilities that we carry at fair value in our consolidated financial statements on a recurring basis, we estimate the fair values of other financial assets and liabilities that we carry at amortized cost in our consolidated statement of condition, and we disclose these fair value estimates in the notes to our consolidated financial statements. We estimate the fair values of these financial assets and liabilities using the definition of fair value described below. Additional information with respect to the assets and liabilities carried by us at fair value on a recurring basis is provided in Note 2 to the consolidated financial statements in this Form 10-K.

U.S. GAAP defines fair value as the price that would be received to sell an asset or paid to transfer a liability in the principal or most advantageous market for an asset or liability in an orderly transaction between market participants on the measurement date. When we measure fair value for our financial assets and liabilities, we consider the principal or the most advantageous market in which we would transact; we also consider assumptions that market participants would use when pricing the asset or liability. When possible, we look to active and observable markets to measure the fair value of identical, or similar, financial assets and liabilities. When identical financial assets and liabilities are not traded in active markets, we look to market-observable data for similar assets and liabilities. In some instances, certain assets and liabilities are not actively traded in observable markets; as a result, we use alternate valuation techniques to measure their fair value.

We categorize the financial assets and liabilities that we carry at fair value in our consolidated statement of condition on a recurring basis based on U.S. GAAP's prescribed three-level valuation hierarchy. The hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (level 1) and the lowest priority to valuation methods using significant unobservable inputs (level 3).

With respect to derivative instruments, we evaluate the fair value impact of the credit risk of our counterparties. We consider such factors as the market-based probability of default by our counterparties, and our current and expected potential future net exposures by remaining maturities, in determining the appropriate measurements of fair value.

Allowance for Credit Losses

In January 2020, we adopted ASC 326, which replaces the incurred loss methodology with an expected loss methodology. We maintain an allowance for credit losses to support our on-balance sheet credit exposures, including financial assets held at amortized cost. We also maintain an allowance for unfunded commitments and letters of credit to support our off-balance credit exposure. The two components together represent the allowance for credit losses.

Determining the appropriateness of the allowance is complex and requires judgment by management about the effect of matters that are inherently uncertain. In future periods, factors and forecasts then prevailing may result in significant changes in the allowance for credit losses in those future periods. We estimate credit losses over the contractual life of the financial asset while factoring in prepayment activity where supported by data over a three year reasonable and supportable forecast period. We utilize a baseline, upside and downside scenario which are applied based on a probability weighting, in order to better reflect management's expectation of expected credit losses given existing market conditions and the changes in the economic environment. The multiple scenarios are based on a three year horizon (or less depending on contractual maturity) and then revert linearly over a two year period to a ten-year historical average thereafter. The contractual term excludes expected extensions,

renewals and modifications, but includes prepayment assumptions where applicable.

Additional information about our allowance for credit losses is provided in Note 4 to the consolidated financial statements in this Form 10-K.

Goodwill and Other Intangible Assets

Goodwill represents the excess of the cost of an acquisition over the fair value of the net tangible and other intangible assets acquired at the acquisition date. Other intangible assets represent purchased long-lived intangible assets, primarily client relationships, core deposit intangible assets and technology that can be distinguished from goodwill because of contractual rights or because the asset can be exchanged on its own or in combination with a related contract, asset or liability. Other intangible assets are initially measured at their acquisition date fair value, the determination of which requires management judgment. Goodwill is not amortized, while other intangible assets are amortized over their estimated useful lives.

Management reviews goodwill for impairment annually or more frequently if circumstances arise or events occur that indicate an impairment of the carrying amount may exist. We begin our review by first assessing qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. Events that may indicate impairment include: significant or adverse changes in the business, economic or political climate; an adverse action or assessment by a regulator; unanticipated competition; and a more-likely-than-not expectation that we will sell or otherwise dispose of a business to which the goodwill or other intangible assets relate. If we conclude from the qualitative assessment of goodwill impairment that it is more likely than not that a reporting unit's fair value is greater than its carrying amount, quantitative tests are not required. However, if we determine it is more likely than not that a reporting unit's fair value is less than its carrying amount, then we complete a quantitative assessment to determine if there is goodwill impairment. We may elect to bypass the qualitative assessment and complete a quantitative assessment in any given year.

In 2020, we assessed goodwill for impairment using a qualitative assessment. Based on our evaluation of the qualitative factors noted above, we determined that it was more likely than not that the fair value of each of the reporting units exceeded its respective carrying amount. We determined there was no goodwill impairment in 2020.

Other intangible assets are supported by the future cash flows that are directly associated with and expected to arise as a direct result of the use of the intangible asset, less any costs associated with the intangible asset's eventual disposition. We evaluate other intangible assets for impairment at the lowest level for which there are identifiable cash flows that are largely independent of the cash flows from other groups of assets using the following process. First, we routinely assess whether impairment indicators are present. When impairment indicators are identified as being present, we compare the estimated future net undiscounted cash flows of the intangible asset with its carrying value. If the future net undiscounted cash flows are greater than the carrying value, then there is no impairment, but if the intangible asset's net undiscounted cash flows are less than its carrying value, we are required to calculate impairment. An impairment is recognized by writing the intangible asset down to its fair value. We evaluate intangible assets for indicators of impairment on a quarterly basis. There were no impairments taken on other intangible assets in 2020.

Additional information about goodwill and other intangible assets, including information by line of business, is provided in Note 5 to the consolidated financial statements in this Form 10-K.

Contingencies

Information on significant estimates and judgments related with establishing litigation reserves is discussed in Note 13 of the consolidated financial statements in this Form 10-K.

RECENT ACCOUNTING DEVELOPMENTS

Information with respect to recent accounting developments is provided in Note 1 to the consolidated financial statements in this Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The information provided under "Market Risk Management" in "Financial Condition" in our Management's Discussion and Analysis in this Form 10-K, is incorporated by reference herein.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Additional information about restrictions on the transfer of funds from State Street Bank to the Parent Company is provided under "Related Stockholder Matters" in Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities, and under "Capital" in "Financial Condition" in our Management's Discussion and Analysis in this Form 10-K.

Report of Ernst & Young LLP, Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of State Street Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of condition of State Street Corporation (the “Corporation”) as of December 31, 2020 and 2019, the related consolidated statements of income, comprehensive income, changes in shareholders’ equity, and cash flows for each of the three years in the period ended December 31, 2020, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Corporation at December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the Corporation's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 19, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

These consolidated financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on the Corporation’s consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the 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 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 account or disclosures to which it relates.

	Servicing Fee Revenue
Description of the Matter	Revenue recognized by the Corporation as servicing fees was $5.2 billion for the year ended December 31, 2020. As disclosed in Notes 24 and 25 of the consolidated financial statements, servicing fee revenue involves revenue streams from various products which include custody, product accounting, daily pricing and administration, master trust and master custody, depotbank services (a fund oversight role created by non-US regulation), record-keeping, cash management, investment manager and alternative investment manager operations outsourcing. The Corporation's servicing fee revenue involves a significant volume of contracts and transactions and is sourced from multiple systems and processes across different business teams and geographies. Auditing servicing fee revenue was complex and involved significant audit effort due to the non-standard nature of the Corporation's contracts, the volume of contracts, the impact of contract renegotiations on accrued servicing fees, and the number of different processes used to recognize revenue.
How We Addressed the Matter in Our Audit	We identified and obtained an understanding of the processes used by the Corporation to recognize revenue transactions. We evaluated the design and tested the operating effectiveness of controls over the Corporation's processes for recognizing servicing fee revenue, including, among others, controls over the review of client contracts, the calculations of the key drivers of revenue (e.g., assets under custody) and the flow of this information from the business teams negotiating contract amendments to the department accruing revenue. Among other procedures, to test servicing fee revenue, we selected a sample of client contracts and analyzed the contracts to determine whether terms that may have an impact on revenue recognition, including performance obligations and specified fees, were identified and properly considered in the evaluation of the accounting for the contracts. In addition, we reperformed the calculation of revenue for a sample of revenue transactions. We also agreed the amounts recognized to source documents and tested the mathematical accuracy of the recorded revenue. We inquired of the business teams involved in contract negotiations for a selection of clients to assess the state of those negotiations and any effect on accrued servicing fees. We obtained third party confirmation of the client balance due for a sample of servicing fees receivable.

/s/ Ernst & Young LLP

We have served as the Corporation's auditor since 1972.

Boston, Massachusetts
February 19, 2021

STATE STREET CORPORATION
CONSOLIDATED STATEMENT OF INCOME

(Dollars in millions, except per share amounts)	Years Ended December 31, 2020	2019	2018
Fee revenue:			
Servicing fees	**$ 5,167**	$ 5,074	$ 5,421
Management fees	**1,880**	1,824	1,899
Foreign exchange trading services	**1,363**	1,058	1,153
Securities finance	**356**	471	543
Software and processing fees	**733**	720	438
Total fee revenue	**9,499**	9,147	9,454
Net interest income:			
Interest income	**2,575**	3,941	3,662
Interest expense	**375**	1,375	991
Net interest income	**2,200**	2,566	2,671
Other income:			
Gains (losses) from sales of available-for-sale securities, net	**4**	(1)	9
Other income	**—**	44	(3)
Total other income	**4**	43	6
Total revenue	**11,703**	11,756	12,131
Provision for credit losses	**88**	10	15
Expenses:			
Compensation and employee benefits	**4,450**	4,541	4,780
Information systems and communications	**1,550**	1,465	1,324
Transaction processing services	**978**	983	985
Occupancy	**489**	470	500
Acquisition and restructuring costs	**50**	77	24
Amortization of other intangible assets	**234**	236	226
Other	**965**	1,262	1,176
Total expenses	**8,716**	9,034	9,015
Income before income tax expense	**2,899**	2,712	3,101
Income tax expense	**479**	470	508
Net income	**$ 2,420**	$ 2,242	$ 2,593
Net income available to common shareholders	**$ 2,257**	$ 2,009	$ 2,404
Earnings per common share:			
Basic	**$ 6.40**	$ 5.43	$ 6.46
Diluted	**6.32**	5.38	6.39
Average common shares outstanding (in thousands):			
Basic	**352,865**	369,911	371,983
Diluted	**357,106**	373,666	376,476
Cash dividends declared per common share	**$ 2.08**	$ 1.98	$ 1.78

The accompanying notes are an integral part of these consolidated financial statements.

STATE STREET CORPORATION
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(In millions)	Years Ended December 31, 2020	2019	2018
Net income	**$ 2,420**	$ 2,242	$ 2,593
Other comprehensive income (loss), net of related taxes:			
Foreign currency translation, net of related taxes of ($40), $2 and ($8), respectively	**488**	(9)	(67)
Net unrealized gains (losses) on available-for-sale securities, net of reclassification adjustment and net of related taxes of $165, $212 and ($134), respectively	**436**	545	(302)
Net unrealized gains (losses) on available-for-sale securities designated in fair value hedges, net of related taxes of $1, $6 and $9, respectively	**3**	18	24
Non-credit impairment on held-to-maturity securities previously identified under ASC 320, net of related taxes of zero, $1 and $2, respectively [(1)]	**—**	1	4
Net unrealized gains (losses) on cash flow hedges, net of related taxes of $46, $9 and ($17), respectively	**127**	25	(33)
Net unrealized gains (losses) on retirement plans, net of related taxes of $3, ($8) and $8, respectively	**9**	(16)	27
Other comprehensive income (loss)	**1,063**	564	(347)
Total comprehensive income	**$ 3,483**	$ 2,806	$ 2,246

[(1)] We adopted ASU 2016-13, Financial Instruments - Credit Losses (ASC 326) : Measurement of Credit Losses on Financial Instruments, on January 1, 2020. Non-credit impairment on HTM securities was previously recognized under ASC 320. Please refer to Note 1 for additional information.

The accompanying notes are an integral part of these consolidated financial statements.

STATE STREET CORPORATION
CONSOLIDATED STATEMENT OF CONDITION

(Dollars in millions, except per share amounts)	December 31, 2020	December 31, 2019
Assets:		
Cash and due from banks	**$ 3,467**	$ 3,302
Interest-bearing deposits with banks	**116,960**	68,965
Securities purchased under resale agreements	**3,106**	1,487
Trading account assets	**815**	914
Investment securities available-for-sale	**59,048**	53,815
Investment securities held-to-maturity purchased under money market liquidity facility (less allowance for credit losses of $1) (fair value of $3,304)	**3,299**	—
Investment securities held-to-maturity (less allowance for credit losses of $2) (fair value of $50,003 and $42,157)	**48,929**	41,782
Loans (less allowance for credit losses on loans of $122 and $74)	**27,803**	26,235
Premises and equipment (net of accumulated depreciation of $4,825 and $4,367)	**2,154**	2,282
Accrued interest and fees receivable	**3,105**	3,231
Goodwill	**7,683**	7,556
Other intangible assets	**1,827**	2,030
Other assets	**36,510**	34,011
Total assets	**$ 314,706**	$ 245,610
Liabilities:		
Deposits:		
Non-interest-bearing	**$ 49,439**	$ 34,031
Interest-bearing - U.S.	**102,331**	77,504
Interest-bearing - non-U.S.	**88,028**	70,337
Total deposits	**239,798**	181,872
Securities sold under repurchase agreements	**3,413**	1,102
Short term borrowings under money market liquidity facility	**3,302**	—
Other short-term borrowings	**685**	839
Accrued expenses and other liabilities	**27,503**	24,857
Long-term debt	**13,805**	12,509
Total liabilities	**288,506**	221,179
Commitments, guarantees and contingencies (Notes 12 and 13)		
Shareholders' equity:		
Preferred stock, no par, 3,500,000 shares authorized:		
Series C, 5,000 shares issued and outstanding	**—**	491
Series D, 7,500 shares issued and outstanding	**742**	742
Series F, 7,500 shares issued and outstanding	**742**	742
Series G, 5,000 shares issued and outstanding	**493**	493
Series H, 5,000 shares issued and outstanding	**494**	494
Common stock, $1 par, 750,000,000 shares authorized:		
503,879,642 and 503,879,642 shares issued, and 353,156,279 and 357,389,416 shares outstanding	**504**	504
Surplus	**10,205**	10,132
Retained earnings	**23,442**	21,918
Accumulated other comprehensive income (loss)	**187**	(876)
Treasury stock, at cost (150,723,363 and 146,490,226 shares)	**(10,609)**	(10,209)
Total shareholders' equity	**26,200**	24,431
Total liabilities and shareholders' equity	**$ 314,706**	$ 245,610

The accompanying notes are an integral part of these consolidated financial statements.

STATE STREET CORPORATION
CONSOLIDATED STATEMENT OF CHANGES IN SHAREHOLDERS' EQUITY

(Dollars in millions, except per share amounts, shares in thousands)	Preferred Stock	Common Stock Shares	Common Stock Amount	Surplus	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock Shares	Treasury Stock Amount	Total
Balance at December 31, 2017	$ 3,196	503,880	$ 504	$ 9,799	$ 18,809	$ (1,009)	136,230	$ (9,029)	$ 22,270
Net income					2,593				2,593
Other comprehensive income (loss)						(347)			(347)
Preferred stock issued	494								494
Common stock issued				586			(13,244)	564	1,150
Cash dividends declared:									
Common stock - $1.78 per share					(665)				(665)
Preferred stock					(188)				(188)
Common stock acquired							3,324	(350)	(350)
Common stock awards exercised				44			(2,389)	101	145
Other				(368)	4		12	(1)	(365)
Balance at December 31, 2018	$ 3,690	503,880	$ 504	$ 10,061	$ 20,553	$ (1,356)	123,933	$ (8,715)	$ 24,737
Reclassification of certain tax effects[1]					84	(84)			—
Net income					2,242				2,242
Other comprehensive income (loss)						564			564
Preferred stock redeemed	(728)				(22)				(750)
Cash dividends declared:									
Common stock - $1.98 per share					(728)				(728)
Preferred stock					(210)				(210)
Common stock acquired							24,884	(1,600)	(1,600)
Common stock awards exercised				95			(2,295)	103	198
Other				(24)	(1)		(32)	3	(22)
Balance at December 31, 2019	$ 2,962	503,880	$ 504	$ 10,132	$ 21,918	$ (876)	146,490	$ (10,209)	$ 24,431
Net income					**2,420**				**2,420**
Other comprehensive income (loss)						**1,063**			**1,063**
Preferred stock redeemed	**(491)**				**(9)**				**(500)**
Cash dividends declared:									
Common stock - $2.08 per share					**(734)**				**(734)**
Preferred stock					**(152)**				**(152)**
Common stock acquired							**6,464**	**(500)**	**(500)**
Common stock awards exercised				**72**			**(2,233)**	**100**	**172**
Other				**1**	**(1)**		**2**	**—**	**—**
Balance at December 31, 2020	**$ 2,471**	**503,880**	**$ 504**	**$ 10,205**	**$ 23,442**	**$ 187**	**150,723**	**$ (10,609)**	**$ 26,200**

[1] Represents the reclassification from accumulated other comprehensive income into retained earnings as a result of our adoption of ASU 2018-02 - Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income in the first quarter of 2019.

The accompanying notes are an integral part of these consolidated financial statements.

STATE STREET CORPORATION
CONSOLIDATED STATEMENT OF CASH FLOWS

(In millions)	Years Ended December 31, 2020	2019	2018
Operating Activities:			
Net income	**$ 2,420**	$ 2,242	$ 2,593
Adjustments to reconcile net income to net cash provided by operating activities:			
Deferred income tax (benefit)	**(194)**	(130)	(136)
Amortization of other intangible assets	**234**	236	226
Other non-cash adjustments for depreciation, amortization and accretion, net	**1,276**	1,101	977
Losses (gains) related to investment securities, net	**(4)**	1	(6)
Provision for credit losses	**88**	10	15
Change in trading account assets, net	**99**	(54)	233
Change in accrued interest and fees receivable, net	**127**	(28)	26
Change in collateral deposits, net	**(2,951)**	287	7,326
Change in unrealized losses (gains) on foreign exchange derivatives, net	**3,652**	2,034	(1,836)
Change in other assets, net	**(1,406)**	(713)	(22)
Change in accrued expenses and other liabilities, net	**(170)**	294	394
Other, net	**361**	410	385
Net cash provided by operating activities	**3,532**	5,690	10,175
Investing Activities:			
Net (increase) decrease in interest-bearing deposits with banks	**(47,995)**	4,075	(5,813)
Net (increase) decrease in securities purchased under resale agreements	**(1,619)**	3,192	(1,438)
Proceeds from sales of available-for-sale securities	**2,645**	5,642	26,082
Proceeds from maturities of available-for-sale securities	**23,644**	20,407	14,645
Purchases of available-for-sale securities	**(37,873)**	(38,164)	(31,814)
Purchases of held-to-maturity securities under the MMLF program	**(29,242)**	—	—
Proceeds from maturities of held-to-maturity securities under the MMLF program	**25,984**	—	—
Proceeds from maturities of held-to-maturity securities	**15,179**	10,390	6,296
Purchases of held-to-maturity securities	**(13,981)**	(6,938)	(6,539)
Sale of loans	**324**	131	278
Net (increase) in loans and leases	**(1,939)**	(650)	(2,739)
Business acquisitions, net of cash acquired	**—**	(54)	(2,595)
Purchases of equity investments and other long-term assets	**(1,436)**	(647)	(326)
Purchases of premises and equipment, net	**(560)**	(730)	(609)
Other, net	**1,335**	720	76
Net cash (used in) by investing activities	**(65,534)**	(2,626)	(4,496)
Financing Activities:			
Net (decrease) increase in time deposits	**(33,466)**	(11,255)	6,673
Net increase (decrease) in all other deposits	**91,391**	12,767	(11,209)
Net increase (decrease) in securities sold under repurchase agreements	**2,311**	20	(1,760)
Net (decrease) increase in other short-term borrowings	**(154)**	(2,253)	1,948
Net increase in short-term borrowings under money market liquidity facility	**3,302**	—	—
Proceeds from issuance of long-term debt, net of issuance costs	**2,489**	1,495	995
Payments for long-term debt and obligations under finance leases	**(1,724)**	(402)	(1,461)
Payments for redemption of preferred stock	**(500)**	(750)	—
Proceeds from issuance of preferred stock, net of issuance costs	**—**	—	495
Proceeds from issuance of common stock, net of issuance costs	**—**	—	1,150
Repurchases of common stock	**(515)**	(1,585)	(350)
Repurchases of common stock for employee tax withholding	**(78)**	(81)	(124)
Payments for cash dividends	**(889)**	(930)	(828)
Net cash provided by (used in) financing activities	**62,167**	(2,974)	(4,471)
Net increase	**165**	90	1,208
Cash and due from banks at beginning of period	**3,302**	3,212	2,004
Cash and due from banks at end of period	**$ 3,467**	$ 3,302	$ 3,212
Supplemental disclosure:			
Interest paid	**$ 375**	$ 1,382	$ 981
Income taxes paid, net	**403**	510	549

The accompanying notes are an integral part of these consolidated financial statements.

Note 1. Summary of Significant Accounting Policies

Basis of Presentation

The accounting and financial reporting policies of State Street Corporation conform to U.S. GAAP. State Street Corporation, the Parent Company, is a financial holding company headquartered in Boston, Massachusetts. Unless otherwise indicated or unless the context requires otherwise, all references in these notes to consolidated financial statements to "State Street," "we," "us," "our" or similar references mean State Street Corporation and its subsidiaries on a consolidated basis, including our principal banking subsidiary, State Street Bank.

We have two lines of business:

Investment Servicing provides a suite of related products and services including: custody; product accounting; daily pricing and administration; master trust and master custody; depotbank services (a fund oversight role created by non-U.S. regulation); record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance and enhanced custody products; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; performance, risk and compliance analytics; and financial data management to support institutional investors.

Included within our Investment Servicing line of business is CRD, which we acquired in October 2018. The Charles River Investment Management solution is a technology offering which is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. With the acquisition of CRD, we took the first step in building our front-to-back platform, State Street Alpha. Today our State Street Alpha platform combines portfolio management, trading and execution, advanced data aggregation, analytics and compliance tools, and integration with other industry platforms and providers.

Investment Management, through State Street Global Advisors, provides a broad range of investment management strategies and products for our clients. Our investment management strategies and products span the risk/reward spectrum for equity, fixed income and cash assets, including core and enhanced indexing, multi-asset strategies, active quantitative and fundamental active capabilities and alternative investment strategies. Our AUM is currently primarily weighted to indexed strategies. In addition, we provide a breadth of services and solutions, including environmental, social and governance investing, defined benefit and defined contribution and Global Fiduciary Solutions (formerly Outsourced Chief Investment Officer). State Street Global Advisors is also a provider of ETFs, including the SPDR® ETF brand. While management fees are primarily determined by the values of AUM and the investment strategies employed, management fees reflect other factors as well, including the benchmarks specified in the respective management agreements related to performance fees.

Consolidation

Our consolidated financial statements include the accounts of the Parent Company and its majority- and wholly-owned and otherwise controlled subsidiaries, including State Street Bank. All material inter-company transactions and balances have been eliminated. Certain previously reported amounts have been reclassified to conform to current-year presentation.

We consolidate subsidiaries in which we exercise control. Investments in unconsolidated subsidiaries, recorded in other assets, generally are accounted for under the equity method of accounting if we have the ability to exercise significant influence over the operations of the investee. For investments accounted for under the equity method, our share of income or loss is recorded in software and processing fees in our consolidated statement of income. Investments not meeting the criteria for equity-method treatment are measured at fair value through earnings, except for investments where a fair market value is not readily available, which are accounted for under the cost method of accounting.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions in the application of certain of our significant accounting policies that may materially affect the reported amounts of assets, liabilities, equity, revenue and expenses. As a result of unanticipated events or circumstances, actual results could differ from those estimates.

Foreign Currency Translation

The assets and liabilities of our operations with functional currencies other than the U.S. dollar are translated at month-end exchange rates, and revenue and expenses are translated at rates that approximate average monthly exchange rates. Gains or losses from the translation of the net assets of subsidiaries with functional currencies other than the U.S. dollar, net of related taxes, are recorded in AOCI, a component of shareholders' equity.

Cash and Cash Equivalents

For purposes of the consolidated statement of cash flows, cash and cash equivalents are defined as cash and due from banks.

Interest-Bearing Deposits with Banks

Interest-bearing deposits with banks generally consist of highly liquid, short-term investments maintained at the Federal Reserve Bank and other non-U.S. central banks with original maturities at the time of purchase of one month or less.

Securities Purchased Under Resale Agreements and Securities Sold Under Repurchase Agreements

Securities purchased under resale agreements and sold under repurchase agreements are treated as collateralized financing transactions, and are recorded in our consolidated statement of condition at the amounts at which the securities will be subsequently resold or repurchased, plus accrued interest. Our policy is to take possession or control of securities underlying resale agreements either directly or through agent banks, allowing borrowers the right of collateral substitution and/or short-notice termination. We revalue these securities daily to determine if additional collateral is necessary from the borrower to protect us against credit exposure. We can use these securities as collateral for repurchase agreements.

For securities sold under repurchase agreements collateralized by our investment securities portfolio, the dollar value of the securities remains in investment securities in our consolidated statement of condition. Where a master netting agreement exists or both parties are members of a common clearing organization, resale and repurchase agreements with the same counterparty or clearing house and maturity date are recorded on a net basis.

Fee and Net Interest Income

The majority of fees from investment servicing, investment management, securities finance, trading services and certain types of software and processing fees are recorded in our consolidated statement of income based on the consideration specified in contracts with our customers, and excludes taxes collected from customers subsequently remitted to governmental authorities. We recognize revenue as the services are performed or at a point in time depending on the nature of the services provided. Payments made to third party service providers are generally recognized on a gross basis when we control those services and are deemed to be the principal. Additional information about revenue from contracts with customers is provided in Note 25.

Interest income on interest-earning assets and interest expense on interest-bearing liabilities are recorded in our consolidated statement of income as components of NII, and are generally based on the effective yield of the related financial asset or liability.

Other Significant Policies

The following table identifies our other significant accounting policies and the note and page where a detailed description of each policy can be found:

Fair Value	Note	2	Page	135
Investment Securities	Note	3	Page	143
Loans	Note	4	Page	149
Goodwill and Other Intangible Assets	Note	5	Page	154
Derivative Financial Instruments	Note	10	Page	158
Offsetting Arrangements	Note	11	Page	163
Contingencies	Note	13	Page	167
Variable Interest Entities	Note	14	Page	169
Equity-Based Compensation	Note	18	Page	176
Income Taxes	Note	22	Page	180
Earnings Per Common Share	Note	23	Page	181
Revenue from Contracts with Customers	Note	25	Page	184

Recent Accounting Developments

Relevant standards that were adopted in 2020:

In January 2020, we adopted ASU 2016-13, Financial Instruments - Credit Losses (ASC 326): Measurement of Credit Losses on Financial Instruments, which replaces the incurred loss methodology with an expected loss methodology that is referred to as CECL methodology. This standard requires immediate recognition of expected credit losses for certain financial assets and off-balance sheet commitments, including trade and other receivables, loans and commitments, held-to-maturity debt securities, and other financial assets held at amortized cost at the reporting date, to be measured based on historical experience, current conditions, and reasonable and supportable forecasts. Credit losses on available-for-sale securities are recorded as an allowance against the amortized cost basis of the security, limited to the amount by which the security's amortized cost basis exceeds the fair value, and reversal of impairment losses are allowed when the credit of the issuer improves.

ASC 326 was adopted using a modified retrospective method of transition for all financial assets measured at amortized cost and off balance sheet commitments, which requires the impact of applying the standard on prior periods to be reflected in opening retained earnings upon adoption. Results for reporting periods beginning on or after January 1, 2020 are presented under the CECL methodology in ASC 326, while prior period amounts are reported in accordance with previously applicable GAAP. The impact of transitioning to ASC 326 on the consolidated financial statements was an increase in the allowance for credit losses and a decrease in retained earnings of $3 million primarily arising from:

• An increase of $1 million in the allowance for credit losses related to loans and other financial assets held at amortized cost.

• An increase of $2 million in the allowance for credit losses related to off-balance sheet commitments.

In January 2020, we adopted the remaining provisions of ASU 2018-13 - Fair Value Measurement (Topic 820): Disclosure Framework- Changes to the Disclosure Requirements for Fair Value, specifically the provisions of the standard that add disclosures. We previously adopted the provisions of the standard that eliminated or amended disclosures as of December 31, 2018. There were no material impacts to the disclosures as a result of the adoption.

In January 2020, we adopted ASU 2017-04, Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. There were no material impacts to our financial statements as a result of the adoption.

In January 2020, we adopted 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. There were no material impacts to our financial statements as a result of the adoption.

ASU 2020-04, Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting is effective as of March 12, 2020. The guidance provides temporary optional expedients and exceptions to the existing guidance in U.S. GAAP on contract modifications and hedge accounting in relation to the transition from LIBOR and other interbank offered rates to alternative reference rates. The guidance also allows a one-time election to sell and/or reclassify to AFS or trading HTM debt securities that reference an interest rate affected by reference rate reform. We expect to elect certain of the optional expedients and are evaluating the one-time election to sell/transfer HTM securities impacted by reference rate reform.

We continue to evaluate accounting standards that were recently issued but not yet adopted as of December 31, 2020, but none are expected to have a material impact to our financial statements.

Note 2. Fair Value

Fair Value Measurements

We carry trading account assets and liabilities, AFS debt securities, certain equity securities and various types of derivative financial instruments, at fair value in our consolidated statement of condition on a recurring basis. Changes in the fair values of these financial assets and liabilities are recorded either as components of our consolidated statement of income or as components of AOCI within shareholders' equity in our consolidated statement of condition.

We measure fair value for the above-described financial assets and liabilities in conformity with U.S. GAAP that governs the measurement of the fair value of financial instruments. Management believes that its valuation techniques and underlying assumptions used to measure fair value conform to the provisions of U.S. GAAP. We categorize the financial assets and liabilities that we carry at fair value based on a prescribed three-level valuation hierarchy. The hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (level 1) and the lowest priority to valuation methods using significant unobservable inputs (level 3). If the inputs used to measure a financial asset or liability cross different levels of the hierarchy, categorization is based on the lowest-level input that is significant to the fair-value measurement. Management's assessment of the significance of a particular input to

the overall fair-value measurement of a financial asset or liability requires judgment, and considers factors specific to that asset or liability. The three levels of the valuation hierarchy are described below.

Level 1. Financial assets and liabilities with values based on unadjusted quoted prices for identical assets or liabilities in an active market. Our level 1 financial assets and liabilities primarily include positions in U.S. government securities and highly liquid U.S. and non-U.S. government fixed-income securities. Our level 1 financial assets also include actively traded exchange- traded equity securities.

Level 2. Financial assets and liabilities with values based on quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the asset or liability. Level 2 inputs include the following:

- Quoted prices for similar assets or liabilities in active markets;
- Quoted prices for identical or similar assets or liabilities in non-active markets;
- Pricing models whose inputs are observable for substantially the full term of the asset or liability; and
- Pricing models whose inputs are derived principally from, or corroborated by, observable market information through correlation or other means for substantially the full term of the asset or liability.

Our level 2 financial assets and liabilities primarily include non-U.S. debt securities carried in trading account assets and various types of fixed-income AFS investment securities, as well as various types of foreign exchange and interest rate derivative instruments.

Fair value for our AFS investment securities categorized in level 2 is measured primarily using information obtained from independent third parties. This third-party information is subject to review by management as part of a validation process, which includes obtaining an understanding of the underlying assumptions and the level of market participant information used to support those assumptions. In addition, management compares significant assumptions used by third parties to available market information. Such information may include known trades or, to the extent that trading activity is limited, comparisons to market research information pertaining to credit expectations, execution prices and the timing of cash flows and, where information is available, back- testing.

Derivative instruments categorized in level 2 predominantly represent foreign exchange contracts used in our trading activities, for which fair value is measured using discounted cash-flow techniques, with inputs consisting of observable spot and forward points, as well as observable interest rate curves. With respect to derivative instruments, we evaluate the impact on valuation of the credit risk of our counterparties. We consider factors such as the likelihood of default by our counterparties, our current and potential future net exposures and remaining maturities in determining the fair value. Valuation adjustments associated with derivative instruments were not material to those instruments for the years ended December 31, 2020 and 2019.

Level 3. Financial assets and liabilities with values based on prices or valuation techniques that require inputs that are both unobservable in the market and significant to the overall measurement of fair value. These inputs reflect management's judgment about the assumptions that a market participant would use in pricing the financial asset or liability, and are based on the best available information, some of which may be internally developed. The following provides a more detailed discussion of our financial assets and liabilities that we may categorize in level 3 and the related valuation methodology.

- The fair value of our investment securities categorized in level 3 is measured using information obtained from third-party sources, typically non-binding broker/dealer quotes, or through the use of internally-developed pricing models. Management has evaluated its methodologies used to measure fair value and has considered the level of observable market information to be insufficient to categorize the securities in level 2.
- The fair value of certain foreign exchange contracts, primarily options, is measured using an option-pricing model. Because of a limited number of observable transactions, certain model inputs are not observable, such as implied volatility surface, but are derived from observable market information.

Our level 3 financial assets and liabilities are similar in structure and profile to our level 1 and level 2 financial instruments, but they trade in less liquid markets, and the measurement of their fair value is inherently less observable.

The following tables present information with respect to our financial assets and liabilities carried at fair value in our consolidated statement of condition on a recurring basis as of the dates indicated:

(In millions)	Fair Value Measurements on a Recurring Basis As of December 31, 2020				
	Quoted Market Prices in Active Markets (Level 1)	Pricing Methods with Significant Observable Market Inputs (Level 2)	Pricing Methods with Significant Unobservable Market Inputs (Level 3)	Impact of Netting[1]	Total Net Carrying Value in Consolidated Statement of Condition
Assets:					
Trading account assets:					
U.S. government securities	$ 40	$ —	$ —		$ 40
Non-U.S. government securities	—	239	—		239
Other	17	519	—		536
Total trading account assets	57	758	—		815
Available-for-sale investment securities:					
U.S. Treasury and federal agencies:					
Direct obligations	6,575	—	—		6,575
Mortgage-backed securities	—	14,305	—		14,305
Total U.S. Treasury and federal agencies	6,575	14,305	—		20,880
Asset-backed securities:					
Student loans	—	314	—		314
Credit cards	—	90	—		90
Collateralized loan obligations	—	2,952	14		2,966
Total asset-backed securities	—	3,356	14		3,370
Non-U.S. debt securities:					
Mortgage-backed securities	—	1,996	—		1,996
Asset-backed securities	—	2,291	—		2,291
Government securities	—	12,539	—		12,539
Other[2]	—	12,903	—		12,903
Total non-U.S. debt securities	—	29,729	—		29,729
State and political subdivisions	—	1,548	—		1,548
Collateralized mortgage obligations	—	78	—		78
Other U.S. debt securities	—	3,443	—		3,443
Total available-for-sale investment securities	6,575	52,459	14		59,048
Other assets:					
Derivative instruments:					
Foreign exchange contracts	—	25,941	2	$ (20,140)	5,803
Interest rate contracts	1	—	—	—	1
Total derivative instruments	1	25,941	2	(20,140)	5,804
Other	—	525	—	—	525
Total assets carried at fair value	$ 6,633	$ 79,683	$ 16	$ (20,140)	$ 66,192
Liabilities:					
Accrued expenses and other liabilities:					
Trading account liabilities:					
Other	$ 4	$ —	$ —	$ —	$ 4
Derivative instruments:					
Foreign exchange contracts	1	25,925	1	(15,558)	10,369
Interest rate contracts	—	42	—	—	42
Other derivative contracts	—	157	—	—	157
Total derivative instruments	1	26,124	1	(15,558)	10,568
Total liabilities carried at fair value	$ 5	$ 26,124	$ 1	$ (15,558)	$ 10,572

[1] Represents counterparty netting against level 2 financial assets and liabilities where a legally enforceable master netting agreement exists between us and the counterparty. Netting also reflects asset and liability reductions of $5.87 billion and $1.29 billion, respectively, for cash collateral received from and provided to derivative counterparties.

[2] As of December 31, 2020, the fair value of other non-U.S. debt securities included $9.55 billion of supranational and non-U.S. agency bonds, $1.88 billion of corporate bonds and $0.47 billion of covered bonds.

(In millions)	Fair Value Measurements on a Recurring Basis As of December 31, 2019				
	Quoted Market Prices in Active Markets (Level 1)	Pricing Methods with Significant Observable Market Inputs (Level 2)	Pricing Methods with Significant Unobservable Market Inputs (Level 3)	Impact of Netting[1]	Total Net Carrying Value in Consolidated Statement of Condition
Assets:					
Trading account assets:					
U.S. government securities	$ 34	$ —	$ —		$ 34
Non-U.S. government securities	146	173	—		319
Other	21	540	—		561
Total trading account assets	201	713	—		914
Available-for-sale investment securities:					
U.S. Treasury and federal agencies:					
Direct obligations	3,487	—	—		3,487
Mortgage-backed securities	—	17,838	—		17,838
Total U.S. Treasury and federal agencies	3,487	17,838	—		21,325
Asset-backed securities:					
Student loans	—	531	—		531
Credit cards	—	89	—		89
Collateralized loan obligations	—	—	1,820		1,820
Total asset-backed securities	—	620	1,820		2,440
Non-U.S. debt securities:					
Mortgage-backed securities	—	1,980	—		1,980
Asset-backed securities	—	1,292	887		2,179
Government securities	—	12,373	—		12,373
Other[2]	—	8,613	45		8,658
Total non-U.S. debt securities	—	24,258	932		25,190
State and political subdivisions	—	1,783	—		1,783
Collateralized mortgage obligations	—	104	—		104
Other U.S. debt securities	—	2,973	—		2,973
Total available-for-sale investment securities	3,487	47,576	2,752		53,815
Other assets:					
Derivative instruments:					
Foreign exchange contracts	—	15,136	4	$ (10,391)	4,749
Interest rate contracts	—	8	—	(4)	4
Total derivative instruments	—	15,144	4	(10,395)	4,753
Other	—	504	—	—	504
Total assets carried at fair value	$ 3,688	$ 63,937	$ 2,756	$ (10,395)	$ 59,986
Liabilities:					
Accrued expenses and other liabilities:					
Trading account liabilities:					
Other	$ 5	$ —	$ —	$ —	$ 5
Derivative instruments:					
Foreign exchange contracts	3	15,144	3	(8,918)	6,232
Interest rate contracts	6	43	—	(4)	45
Other derivative contracts	—	182	—	—	182
Total derivative instruments	9	15,369	3	(8,922)	6,459
Total liabilities carried at fair value	$ 14	$ 15,369	$ 3	$ (8,922)	$ 6,464

[1] Represents counterparty netting against level 2 financial assets and liabilities where a legally enforceable master netting agreement exists between us and the counterparty. Netting also reflects asset and liability reductions of $2.31 billion and $0.84 billion, respectively, for cash collateral received from and provided to derivative counterparties.

[2] As of December 31, 2019, the fair value of other non-U.S. debt securities included $5.50 billion of supranational and non-U.S. agency bonds, $1.78 billion of corporate bonds and $0.68 billion of covered bonds.

The following tables present activity related to our level 3 financial assets during the years ended December 31, 2020 and 2019, respectively. Transfers into and out of level 3 are reported as of the beginning of the period presented. During the years ended December 31, 2020 and 2019, transfers into level 3 were primarily related to collateralized loan obligations, for which fair value was measured using information obtained from third party sources, including non-binding broker/dealer quotes. During the years ended December 31, 2020 and 2019, transfers out of level 3 were mainly related to collateralized loan obligations, certain MBS and non-U.S. debt securities, for which fair value was measured using prices based on observable market information.

	Fair Value Measurements Using Significant Unobservable Inputs Year Ended December 31, 2020									
		Total Realized and Unrealized Gains (Losses)								
(In millions)	Fair Value as of December 31, 2019	Recorded in Revenue[1]	Recorded in Other Comprehensive Income[1]	Purchases	Sales	Settlements	Transfers into Level 3	Transfers out of Level 3	Fair Value as of December 31, 2020[1]	Change in Unrealized Gains (Losses) Related to Financial Instruments Held as of December 31, 2020
Assets:										
Available-for-sale Investment securities:										
Asset-backed securities:										
Collateralized loan obligations	$ 1,820	$ —	$ (10)	$ 864	$ (95)	$ (77)	$ 50	$ (2,538)	$ 14	
Total asset-backed securities	1,820	—	(10)	864	(95)	(77)	50	(2,538)	14	
Non-U.S. debt securities:										
Asset-backed securities	887	—	35	1	—	(5)	—	(918)	—	
Other	45	—	2	—	—	—	—	(47)	—	
Total non-U.S. debt securities	932	—	37	1	—	(5)	—	(965)	—	
Total Available-for-sale investment securities	2,752	—	27	865	(95)	(82)	50	(3,503)	14	
Other assets:										
Derivative instruments:										
Foreign exchange contracts	4	(6)	—	5	—	(1)	—	—	2	$ (3)
Total derivative instruments	4	(6)	—	5	—	(1)	—	—	2	(3)
Total assets carried at fair value	$ 2,756	$ (6)	$ 27	$ 870	$ (95)	$ (83)	$ 50	$ (3,503)	$ 16	$ (3)

[1] Total realized and unrealized gains (losses) on AFS investment securities are included within gains (losses) related to investment securities, net. Total realized and unrealized gains (losses) on derivative instruments are included within foreign exchange trading services.

	Fair Value Measurements Using Significant Unobservable Inputs Year Ended December 31, 2019									
		Total Realized and Unrealized Gains (Losses)								
(In millions)	Fair Value as of December 31, 2018	Recorded in Revenue[1]	Recorded in Other Comprehensive Income[1]	Purchases	Sales	Settlements	Transfers into Level 3	Transfers out of Level 3	Fair Value as of December 31, 2019[1]	Change in Unrealized Gains (Losses) Related to Financial Instruments Held as of December 31, 2019
Assets:										
Available-for-sale Investment securities:										
Mortgage-backed securities	$ —	$ —	$ —	$ 123	$ —	$ —	$ —	$ (123)	$ —	
Asset-backed securities:										
Collateralized loan obligations	593	1	—	1,065	—	(342)	503	—	1,820	
Other	—	—	—	—	—	—	—	—	—	
Total asset-backed securities	593	1	—	1,065	—	(342)	503	—	1,820	
Non-U.S. debt securities:										
Asset-backed securities	631	—	(9)	340	—	(36)	—	(39)	887	
Other	58	—	(1)	—	—	—	—	(12)	45	
Total non-U.S. debt securities	689	—	(10)	340	—	(36)	—	(51)	932	
State and political subdivisions	—	—	—	—	—	—	—	—	—	
Collateralized mortgage obligations	2	—	—	—	—	(2)	—	—	—	
Total Available-for-sale investment securities	1,284	1	(10)	1,528	—	(380)	503	(174)	2,752	
Other assets:										
Derivative instruments:										
Foreign exchange contracts	4	(15)	—	16	—	(1)	—	—	4	$ (11)
Total derivative instruments	4	(15)	—	16	—	(1)	—	—	4	(11)
Total assets carried at fair value	$ 1,288	$ (14)	$ (10)	$ 1,544	$ —	$ (381)	$ 503	$ (174)	$ 2,756	$ (11)

[1] Total realized and unrealized gains (losses) on AFS investment securities are included within gains (losses) related to investment securities, net. Total realized and unrealized gains (losses) on derivative instruments are included within foreign exchange trading services.

The following table presents quantitative information, as of the dates indicated, about the valuation techniques and significant unobservable inputs used in the valuation of our level 3 financial assets and liabilities measured at fair value on a recurring basis for which we use internally-developed pricing models. The significant unobservable inputs for our level 3 financial assets and liabilities whose fair value is measured using pricing information from non-binding broker/dealer quotes are not included in the table, as the specific inputs applied are not provided by the broker/dealer.

	Quantitative Information about Level 3 Fair Value Measurements						
	Fair Value				Range	Weighted-Average	
(Dollars in millions)	As of December 31, 2020	As of December 31, 2019	Valuation Technique	Significant Unobservable Input[1]	As of December 31, 2020	As of December 31, 2020	As of December 31, 2019
Significant unobservable inputs readily available to State Street:							
Assets:							
Derivative Instruments, foreign exchange contracts	**$ 2**	$ 4	Option model	Volatility	**5.7% - 10.3%**	**7.9 %**	8.2 %
Total	**$ 2**	$ 4					
Liabilities:							
Derivative instruments, foreign exchange contracts	**$ 1**	$ 3	Option model	Volatility	**6.6% - 10.3%**	**7.7 %**	7.0 %
Total	**$ 1**	$ 3					

[1] Significant changes in these unobservable inputs may result in significant changes in fair value measurement of the derivative instrument.

Financial Instruments Not Carried at Fair Value

Estimates of fair value for financial instruments not carried at fair value in our consolidated statement of condition are generally subjective in nature, and are determined as of a specific point in time based on the characteristics of the financial instruments and relevant market information. Disclosure of fair value estimates is not required by U.S. GAAP for certain items, such as lease financing, equity- method investments, obligations for pension and other post-retirement plans, premises and equipment, other intangible assets and income-tax assets and liabilities. Accordingly, aggregate fair-value estimates presented do not purport to represent, and should not be considered representative of, our underlying "market" or franchise value. In addition, because of potential differences in methodologies and assumptions used to estimate fair values, our estimates of fair value should not be compared to those of other financial institutions.

We use the following methods to estimate the fair values of our financial instruments:

- For financial instruments that have quoted market prices, those quoted prices are used to estimate fair value;
- For financial instruments that have no defined maturity, have a remaining maturity of 180 days or less, or reprice frequently to a market rate, we assume that the fair value of these instruments approximates their reported value, after taking into consideration any applicable credit risk; and
- For financial instruments for which no quoted market prices are available, fair value is estimated using information obtained from independent third parties, or by discounting the expected cash flows using an estimated current market interest rate for the financial instrument.

The generally short duration of certain of our assets and liabilities results in a significant number of financial instruments for which fair value equals or closely approximates the amount recorded in our consolidated statement of condition. These financial instruments are reported in the following captions in our consolidated statement of condition: cash and due from banks; interest-bearing deposits with banks; securities purchased under resale agreements; accrued interest and fees receivable; deposits; securities sold under repurchase agreements; and other short-term borrowings.

In addition, due to the relatively short duration of certain of our loans, we consider fair value for these loans to approximate their reported value. The fair value of other types of loans, such as leveraged loans, commercial real estate loans, purchased receivables and municipal loans is estimated using information obtained from independent third parties or by discounting expected future cash flows using current rates at which similar loans would be made to borrowers with similar credit ratings for the same remaining maturities. Commitments to lend have no reported value because their terms are at prevailing market rates.

The following tables present the reported amounts and estimated fair values of the financial assets and liabilities not carried at fair value, as they would be categorized within the fair value hierarchy, as of the dates indicated:

			Fair Value Hierarchy		
(In millions)	**Reported Amount**	**Estimated Fair Value**	**Quoted Market Prices in Active Markets (Level 1)**	**Pricing Methods with Significant Observable Market Inputs (Level 2)**	**Pricing Methods with Significant Unobservable Market Inputs (Level 3)**
December 31, 2020					
Financial Assets:					
Cash and due from banks	**$ 3,467**	**$ 3,467**	**$ 3,467**	**$ —**	**$ —**
Interest-bearing deposits with banks	**116,960**	**116,960**	**—**	**116,960**	**—**
Securities purchased under resale agreements	**3,106**	**3,106**	**—**	**3,106**	**—**
HTM securities purchased under the MMLF program	**3,299**	**3,304**	**—**	**3,304**	**—**
Investment securities held-to-maturity	**48,929**	**50,003**	**6,115**	**43,888**	**—**
Net loans	**27,803**	**27,884**	**—**	**25,668**	**2,216**
Other[1]	**4,753**	**4,753**	**—**	**4,753**	**—**
Financial Liabilities:					
Deposits:					
Non-interest-bearing	**$ 49,439**	**$ 49,439**	**$ —**	**$ 49,439**	**$ —**
Interest-bearing - U.S.	**102,331**	**102,331**	**—**	**102,331**	**—**
Interest-bearing - non-U.S.	**88,028**	**88,028**	**—**	**88,028**	**—**
Securities sold under repurchase agreements	**3,413**	**3,413**	**—**	**3,413**	**—**
Short-term borrowings under the MMLF program	**3,302**	**3,302**	**—**	**3,302**	**—**
Other short-term borrowings	**685**	**685**	**—**	**685**	**—**
Long-term debt	**13,805**	**14,162**	**—**	**14,049**	**113**
Other[1]	**4,753**	**4,753**	**—**	**4,753**	**—**

[1] Represents a portion of underlying client assets related to our enhanced custody business, which clients have allowed us to transfer and re-pledge.

			Fair Value Hierarchy		
(In millions)	**Reported Amount**	**Estimated Fair Value**	**Quoted Market Prices in Active Markets (Level 1)**	**Pricing Methods with Significant Observable Market Inputs (Level 2)**	**Pricing Methods with Significant Unobservable Market Inputs (Level 3)**
December 31, 2019					
Financial Assets:					
Cash and due from banks	$ 3,302	$ 3,302	$ 3,302	$ —	$ —
Interest-bearing deposits with banks	68,965	68,965	—	68,965	—
Securities purchased under resale agreements	1,487	1,487	—	1,487	—
Investment securities held-to-maturity	41,782	42,157	10,299	31,682	176
Net loans (excluding leases)[1]	26,325	26,292	—	24,432	1,860
Other[2]	7,500	7,500	—	7,500	—
Financial Liabilities:					
Deposits:					
Non-interest-bearing	$ 34,031	$ 34,031	$ —	$ 34,031	$ —
Interest-bearing - U.S.	77,504	77,504	—	77,504	—
Interest-bearing - non-U.S.	70,337	70,337	—	70,337	—
Securities sold under repurchase agreements	1,102	1,102	—	1,102	—
Other short-term borrowings	839	839	—	839	—
Long-term debt	12,509	12,770	—	12,621	149
Other[2]	7,500	7,500	—	7,500	—

[1] Includes $9 million of loans classified as held-for-sale that were measured at fair value as of December 31, 2019.

[2] Represents a portion of underlying client assets related to our enhanced custody business, which clients have allowed us to transfer and re-pledge.

Note 3. Investment Securities

Investment securities held by us are classified as either trading account assets, AFS, HTM or equity securities held at fair value at the time of purchase and reassessed periodically, based on management's intent.

Generally, trading assets are debt and equity securities purchased in connection with our trading activities and, as such, are expected to be sold in the near term. Our trading activities typically involve active and frequent buying and selling with the objective of generating profits on short-term movements. AFS investment securities are those securities that we intend to hold for an indefinite period of time. AFS investment securities include securities utilized as part of our asset and liability management activities that may be sold in response to changes in interest rates, prepayment risk, liquidity needs or other factors. HTM securities are debt securities that management has the intent and the ability to hold to maturity.

Starting in the first quarter of 2020, we supported our clients' liquidity needs through the MMLF program, purchasing a total of $29 billion of investment securities under that program, $3.3 billion of which remain outstanding as of December 31, 2020.

Trading assets are carried at fair value. Both realized and unrealized gains and losses on trading assets are recorded in foreign exchange trading services revenue in our consolidated statement of income. AFS securities are carried at fair value, with any allowance for credit losses recorded through the consolidated statement of income and after-tax net unrealized gains and losses are recorded in AOCI. Gains or losses realized on sales of AFS investment securities are computed using the specific identification method and are recorded in gains (losses) related to investment securities, net, in our consolidated statement of income. HTM investment securities are carried at cost, adjusted for amortization of premiums and accretion of discounts, with any allowance for credit losses recorded through the consolidated statement of income. As of December 31, 2020, we recognized an allowance for credit losses on HTM investment securities of $3 million.

Prior to adoption of ASC 326 in 2020, AFS securities were carried at fair value, and after-tax net unrealized gains and losses were recorded in AOCI. HTM investment securities were carried at cost, adjusted for amortization of premiums and accretion of discounts.

The following table presents the amortized cost, fair value and associated unrealized gains and losses of AFS and HTM investment securities as of the dates indicated:

	December 31, 2020				December 31, 2019			
	Amortized Cost	Gross Unrealized		Fair Value	Amortized Cost	Gross Unrealized		Fair Value
(In millions)		Gains	Losses			Gains	Losses	
Available-for-sale:								
U.S. Treasury and federal agencies:								
Direct obligations	$ 6,453	$ 123	$ 1	$ 6,575	$ 3,506	$ 9	$ 28	$ 3,487
Mortgage-backed securities	13,891	421	7	14,305	17,599	264	25	17,838
Total U.S. Treasury and federal agencies	20,344	544	8	20,880	21,105	273	53	21,325
Asset-backed securities:								
Student loans[1]	313	2	1	314	532	1	2	531
Credit cards	90	—	—	90	90	—	1	89
Collateralized loan obligations	2,969	3	6	2,966	1,822	1	3	1,820
Total asset-backed securities	3,372	5	7	3,370	2,444	2	6	2,440
Non-U.S. debt securities:								
Mortgage-backed securities	1,994	4	2	1,996	1,978	3	1	1,980
Asset-backed securities	2,294	1	4	2,291	2,179	2	2	2,179
Government securities	12,337	202	—	12,539	12,243	131	1	12,373
Other[2]	12,729	177	3	12,903	8,595	73	10	8,658
Total non-U.S. debt securities	29,354	384	9	29,729	24,995	209	14	25,190
State and political subdivisions[3]	1,470	80	2	1,548	1,725	59	1	1,783
Collateralized mortgage obligations	76	2	—	78	104	—	—	104
Other U.S. debt securities	3,371	72	—	3,443	2,941	32	—	2,973
Total[4]	$ 57,987	$ 1,087	$ 26	$ 59,048	$ 53,314	$ 575	$ 74	$ 53,815
Held-to-maturity:								
U.S. Treasury and federal agencies:								
Direct obligations	$ 6,057	$ 83	$ —	$ 6,140	$ 10,311	$ 24	$ 3	$ 10,332
Mortgage-backed securities	36,883	955	67	37,771	26,297	316	44	26,569
Total U.S. Treasury and federal agencies	42,940	1,038	67	43,911	36,608	340	47	36,901
Asset-backed securities:								
Student loans[1]	4,774	33	25	4,782	3,783	10	41	3,752
Total asset-backed securities	4,774	33	25	4,782	3,783	10	41	3,752
Non-U.S. debt securities:								
Mortgage-backed securities	303	68	4	367	366	82	6	442
Government securities	342	—	—	342	328	—	—	328
Total non-U.S. debt securities	645	68	4	709	694	82	6	770
Collateralized mortgage obligations	572	30	1	601	697	38	1	734
Total[4]	48,931	1,169	97	50,003	41,782	470	95	42,157
HTM securities purchased under the MMLF program	3,300	4	—	3,304	—	—	—	—
Total held-to-maturity securities[4][5]	$ 52,231	$ 1,173	$ 97	$ 53,307	$ 41,782	$ 470	$ 95	$ 42,157

[1] Primarily comprised of securities guaranteed by the federal government with respect to at least 97% of defaulted principal and accrued interest on the underlying loans.

[2] As of December 31, 2020 and December 31, 2019, the fair value of other non-U.S. debt securities included $9.55 billion and $5.50 billion, respectively, primarily of supranational and non-U.S. agency bonds, $1.88 billion and $1.78 billion, respectively, of corporate bonds and $0.47 billion and $0.68 billion, respectively, of covered bonds.

[3] As of December 31, 2020 and December 31, 2019, the fair value of state and political subdivisions includes securities in trusts of $0.70 billion and $0.94 billion, respectively. Additional information about these trusts is provided in Note 14.

[4] An immaterial amount of accrued interest related to HTM and AFS investment securities was excluded from the amortized cost basis for the year ended December 31, 2020.

[5] As of December 31, 2020, we recognized an allowance for credit losses of $3 million on all HTM securities.

Aggregate investment securities with carrying values of approximately $70.57 billion and $49.48 billion as of December 31, 2020 and December 31, 2019, respectively, were designated as pledged for public and trust deposits, short-term borrowings and for other purposes as provided by law.

In 2020, 2019 and 2018, $8.60 billion, $3.98 billion and $2.13 million, respectively, of agency MBS, previously classified as AFS, were transferred to HTM. These transfers reflect our intent to hold these securities until their maturity. These securities were transferred at fair value, which included a net unrealized gain of $120 million and $49 million as of December 31, 2020 and 2019, respectively, and a net unrealized loss of $53 million as of December 31, 2018, within accumulated other comprehensive loss which will be accreted into interest income over the remaining life of the transferred security (ranging from approximately 3 to 37 years).

In 2018, $1.22 billion of HTM securities, primarily consisting of MBS and CMBS, were transferred to AFS at book value and sold at a pre-tax loss of approximately $36 million, due to our election to make a one-time transfer of securities relating to the adoption of ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities.

In 2020, 2019 and 2018, we sold approximately $2.65 billion, $5.64 billion and $26.37 billion, respectively, of AFS securities, primarily ABS and municipal bonds, resulting in a pre-tax gain of approximately $4 million in 2020, a pre-tax loss less than $1 million in 2019 and a pre-tax gain of $9 million in 2018.

The following table presents the aggregate fair values of AFS investment securities that have been in a continuous unrealized loss position for less than 12 months, and those that have been in a continuous unrealized loss position for 12 months or longer, as of the dates indicated:

	As of December 31, 2020					
	Less than 12 months		12 months or longer		Total	
(In millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Available-for-sale:						
U.S. Treasury and federal agencies:						
Direct obligations	$ 1,636	$ 1	$ —	$ —	$ 1,636	$ 1
Mortgage-backed securities	1,394	7	63	—	1,457	7
Total U.S. Treasury and federal agencies	3,030	8	63	—	3,093	8
Asset-backed securities:						
Student loans	31	—	197	1	228	1
Collateralized loan obligations	1,498	4	369	2	1,867	6
Total asset-backed securities	1,529	4	566	3	2,095	7
Non-U.S. debt securities:						
Mortgage-backed securities	600	1	120	1	720	2
Asset-backed securities	1,015	3	446	1	1,461	4
Government securities	489	—	—	—	489	—
Other	715	3	80	—	795	3
Total non-U.S. debt securities	2,819	7	646	2	3,465	9
State and political subdivisions	95	—	76	2	171	2
Other U.S. debt securities	17	—	—	—	17	—
Total	$ 7,490	$ 19	$ 1,351	$ 7	$ 8,841	$ 26

The following table presents the aggregate fair values of AFS and HTM investment securities that have been in a continuous unrealized loss position for less than 12 months, and those that have been in a continuous unrealized loss position for 12 months or longer, as of the dates indicated:

	As of December 31, 2019					
	Less than 12 months		12 months or longer		Total	
(In millions)	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Available-for-sale:						
U.S. Treasury and federal agencies:						
Direct obligations	$ 1,430	$ 28	$ —	$ —	$ 1,430	$ 28
Mortgage-backed securities	2,499	7	1,665	18	4,164	25
Total U.S. Treasury and federal agencies	3,929	35	1,665	18	5,594	53
Asset-backed securities:						
Student loans	271	1	127	1	398	2
Credit cards	89	1	—	—	89	1
Collateralized loan obligations	862	2	278	1	1,140	3
Total asset-backed securities	1,222	4	405	2	1,627	6
Non-U.S. debt securities:						
Mortgage-backed securities	228	—	220	1	448	1
Asset-backed securities	672	1	109	1	781	2
Government securities	3,246	1	—	—	3,246	1
Other	2,736	9	187	1	2,923	10
Total non-U.S. debt securities	6,882	11	516	3	7,398	14
State and political subdivisions	163	—	22	1	185	1
Collateralized mortgage obligations	13	—	4	—	17	—
Other U.S. debt securities	219	—	14	—	233	—
Total	$ 12,428	$ 50	$ 2,626	$ 24	$ 15,054	$ 74
Held-to-maturity:						
U.S. Treasury and federal agencies:						
Direct obligations	$ 604	$ —	$ 2,262	$ 3	$ 2,866	$ 3
Mortgage-backed securities	6,056	31	1,606	13	7,662	44
Total U.S. Treasury and federal agencies	6,660	31	3,868	16	10,528	47
Asset-backed securities:						
Student loans	2,003	22	778	19	2,781	41
Credit cards	—	—	—	—	—	—
Other	—	—	—	—	—	—
Total asset-backed securities	2,003	22	778	19	2,781	41
Non-U.S. debt securities:						
Mortgage-backed securities	—	—	138	6	138	6
Asset-backed securities	—	—	—	—	—	—
Government securities	—	—	—	—	—	—
Other		—			—	—
Total non-U.S. debt securities	—	—	138	6	138	6
Collateralized mortgage obligations	13	—	110	1	123	1
Total	$ 8,676	$ 53	$ 4,894	$ 42	$ 13,570	$ 95

The following table presents the amortized cost and the fair value of contractual maturities of debt investment securities as of December 31, 2020. The maturities of certain ABS, MBS and collateralized mortgage obligations are based on expected principal payments. Actual maturities may differ from these expected maturities since certain borrowers have the right to prepay obligations with or without prepayment penalties.

	As of December 31, 2020									
(In millions)	Under 1 Year		1 to 5 Years		6 to 10 Years		Over 10 Years		Total	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Available-for-sale:										
U.S. Treasury and federal agencies:										
Direct obligations	$ 1,648	$ 1,661	$ 2,758	$ 2,771	$ 2,047	$ 2,143	$ —	$ —	$ 6,453	$ 6,575
Mortgage-backed securities	121	127	603	619	2,800	2,828	10,367	10,731	13,891	14,305
Total U.S. Treasury and federal agencies	1,769	1,788	3,361	3,390	4,847	4,971	10,367	10,731	20,344	20,880
Asset-backed securities:										
Student loans	113	115	90	90	—	—	110	109	313	314
Credit cards	—	—	—	—	90	90	—	—	90	90
Collateralized loan obligations	76	76	1,080	1,077	838	838	975	975	2,969	2,966
Total asset-backed securities	189	191	1,170	1,167	928	928	1,085	1,084	3,372	3,370
Non-U.S. debt securities:										
Mortgage-backed securities	260	260	527	527	116	116	1,091	1,093	1,994	1,996
Asset-backed securities	337	337	1,250	1,247	272	272	435	435	2,294	2,291
Government securities	3,149	3,151	7,976	8,151	919	939	293	298	12,337	12,539
Other	1,323	1,329	9,520	9,652	1,718	1,752	168	170	12,729	12,903
Total non-U.S. debt securities	5,069	5,077	19,273	19,577	3,025	3,079	1,987	1,996	29,354	29,729
State and political subdivisions	136	136	605	626	514	559	215	227	1,470	1,548
Collateralized mortgage obligations	—	—	—	—	—	—	76	78	76	78
Other U.S. debt securities	449	452	2,833	2,896	89	95	—	—	3,371	3,443
Total	$ 7,612	$ 7,644	$ 27,242	$ 27,656	$ 9,403	$ 9,632	$ 13,730	$ 14,116	$ 57,987	$ 59,048
Held-to-maturity:										
U.S. Treasury and federal agencies:										
Direct obligations	$ 3,480	$ 3,512	$ 2,555	$ 2,607	$ —	$ —	$ 22	$ 21	$ 6,057	$ 6,140
Mortgage-backed securities	204	211	423	430	5,036	5,174	31,220	31,956	36,883	37,771
Total U.S. Treasury and federal agencies	3,684	3,723	2,978	3,037	5,036	5,174	31,242	31,977	42,940	43,911
Asset-backed securities:										
Student loans	350	343	155	152	667	665	3,602	3,622	4,774	4,782
Total asset-backed securities	350	343	155	152	667	665	3,602	3,622	4,774	4,782
Non-U.S. debt securities:										
Mortgage-backed securities	87	84	23	23	—	—	193	260	303	367
Government securities	342	342	—	—	—	—	—	—	342	342
Total non-U.S. debt securities	429	426	23	23	—	—	193	260	645	709
Collateralized mortgage obligations	139	150	265	266	21	21	147	164	572	601
Total	4,602	4,642	3,421	3,478	5,724	5,860	35,184	36,023	48,931	50,003
Held-to-maturity under money market mutual fund liquidity facility	3,300	3,304	—	—	—	—	—	—	3,300	3,304
Total held-to-maturity securities	$ 7,902	$ 7,946	$ 3,421	$ 3,478	$ 5,724	$ 5,860	$ 35,184	$ 36,023	$ 52,231	$ 53,307

The following tables present gross realized gains and losses from sales of AFS investment securities, and the components of net impairment losses included in net gains and losses related to investment securities for the periods indicated, recognized under previous accounting guidance prior to the adoption of ASC 326:

	Years Ended December 31,	
(In millions)	2019	2018
Gross realized gains from sales of AFS investment securities	$ 31	$ 205
Gross realized losses from sales of AFS investment securities	(32)	(196)
Net impairment losses:		
Gross losses from OTTI	—	(3)
Net impairment losses	—	(3)
Gains (losses) related to investment securities, net	(1)	6
Net impairment losses, recognized in our consolidated statement of income, were composed of the following:		
Impairment associated with adverse changes in timing of expected future cash flows	—	(3)
Net impairment losses	$ —	$ (3)

Interest income related to debt securities is recognized in our consolidated statement of income using the effective interest method, or on a basis approximating a level rate of return over the contractual or estimated life of the security. The level rate of return considers any non-refundable fees or costs, as well as purchase premiums or discounts, adjusted as prepayments occur, resulting in amortization or accretion, accordingly.

Allowance for Credit Losses on Debt Securities and Impairment of AFS Securities

As discussed in Note 1, we adopted ASC 326 on January 1, 2020. We conduct periodic reviews of individual securities to assess whether an allowance for credit losses is required. HTM securities are evaluated for expected credit loss utilizing a probability of default methodology, or discounted cash flows assessed against the amortized cost of the investment security excluding accrued interest. An AFS security is impaired when the current fair value of an individual security is below its amortized cost basis. An allowance for credit losses on impaired AFS securities is recorded when the present value of expected future cash flows of the investment security is less than its amortized cost basis, limited to the amount by which the security's amortized cost basis exceeds the fair value. Investment securities will be written down to fair value through the consolidated statement of income when management intends to sell (or may be required to sell) the securities before they recover in value.

We monitor the credit quality of the HTM and AFS investment securities using a variety of methods, including both external and internal credit ratings. As of December 31, 2020, 99% of our HTM and AFS investment portfolio is publicly rated investment grade.

Our allowance for credit losses on our HTM securities is approximately $3 million as of December 31, 2020 and we recorded a $3 million provision and no charge-offs on HTM securities in 2020.

Our review of impaired AFS investment securities generally includes:

• the identification and evaluation of securities that have indications of potential impairment, such as issuer-specific concerns, including deteriorating financial condition or bankruptcy;

• the analysis of expected future cash flows of securities, based on quantitative and qualitative factors;

• the analysis of the collectability of those future cash flows, including information about past events, current conditions, and reasonable and supportable forecasts;

• the analysis of the underlying collateral for MBS and ABS;

• the analysis of individual impaired securities, including the anticipated recovery period and the magnitude of the overall price decline;

• evaluation of factors or triggers that could cause individual securities to be deemed impaired and those that would not support impairment; and

• documentation of the results of these analyses.

Substantially all of our investment securities portfolio is composed of debt securities. A critical component of our assessment of impairment of these debt securities is the identification of credit-impaired securities for which management does not expect to receive cash flows sufficient to recover the entire amortized cost basis of the security.

Debt securities that are not deemed to be credit impaired are subject to additional management analysis to assess whether management intends to sell, or, more likely than not, would be required to sell, the security before the expected recovery of its amortized cost basis.

With respect to certain classes of debt securities, primarily U.S. Treasuries and agency securities (mainly issued by U.S. Government entities and agencies, as well as Group of Seven sovereigns), we consider the history of credit losses, current conditions and reasonable and supportable forecasts, which may indicate that the expectation that nonpayment of the amortized cost basis is or continues to be zero. Therefore, for those securities, we do not record expected credit losses.

We have elected to not record an allowance on accrued interest for HTM and AFS securities. Accrued Interest on these securities is reversed against interest income when payment on a security is delinquent for greater than 90 days from the date of payment.

After a review of the investment portfolio, taking into consideration then-current economic conditions, adverse situations that might affect our ability to fully collect principal and interest, the timing of future payments, the credit quality and performance of the collateral underlying MBS and ABS and other relevant factors, management considers the aggregate decline in fair value of the investment securities portfolio and the resulting gross pre-tax unrealized losses of $123 million related to 503 securities as of December 31, 2020 to not be the result of any material changes in the credit characteristics of the securities.

Prior to the adoption of ASC 326 on January 1, 2020, we assessed our AFS and HTM securities for impairment under an OTTI model. Under this model impairment of AFS and HTM debt securities was recorded in our consolidated statement of income when management intended to sell (or may be required to sell) the securities before they recovered in value, or when management expected the present value of cash flows expected to be collected from the securities to be less than the amortized cost of the impaired security (a credit loss). The review of impaired securities under the OTTI model was consistent with the considerations noted for AFS securities under ASC 326. Where impairment was indicated based on our review, the following factors were also considered in determining whether impairment was other than temporary:

- certain macroeconomic drivers;
- certain industry-specific drivers;
- the length of time the security has been impaired;
- the severity of the impairment;
- the cause of the impairment and the financial condition and near-term prospects of the issuer;
- activity in the market with respect to the issuer's securities, which may indicate adverse credit conditions; and
- our intention not to sell, and the likelihood that we will not be required to sell, the security for a period of time sufficient to allow for its recovery in value.

Substantially all of our investment securities portfolio is composed of debt securities. A critical component of our assessment of OTTI of these debt securities was the identification of credit-impaired securities for which management did not expect to receive cash flows sufficient to recover the entire amortized cost basis of the security. Debt securities that were not deemed to be credit-impaired were subject to additional management analysis to assess whether management intended to sell, or, more likely than not, would be required to sell, the security before the expected recovery of its amortized cost basis.

We recorded less than $1 million and $3 million of OTTI, included in other income, in the years ended December 31, 2019 and 2018, respectively, which resulted from adverse changes in the timing of expected future cash flows from non-U.S. mortgage- and asset backed securities.

The following table presents a roll-forward with respect to net impairment losses that had been recognized in income for the periods indicated:

	Years Ended December 31,	
(In millions)	2019	2018
Balance, beginning of period	$ 78	$ 77
Additions[1]:		
Other-than-temporary-impairment recognized	—	3
Deductions[2]:		
Realized losses on securities sold or matured	(8)	(2)
Balance, end of period	$ 70	$ 78

[1] Additions represent securities with a first time credit impairment realized or when a subsequent credit impairment has occurred.

[2] Deductions represent impairments on securities that have been sold or matured, are required to be sold, or for which management intends to sell.

After a review of the investment portfolio, taking into consideration then-current economic conditions, adverse situations that might affect our ability to fully collect principal and interest, the timing of future payments, the credit quality and performance of the collateral underlying MBS and ABS and other relevant factors, management considered the aggregate decline in fair value of the investment securities portfolio and the resulting gross pre-tax unrealized losses of $123 million and $169 million related to 503 and 622 securities as of December 31, 2020 and December 31, 2019, respectively, to be temporary, and not the result of any material changes in the credit characteristics of the securities.

Note 4. Loans and Allowance for Credit Losses

Loans are generally recorded at their principal amount outstanding, net of the allowance for credit losses, unearned income, and any net unamortized deferred loan origination fees. Loans that are classified as held-for-sale are measured at lower of cost or fair value on an individual basis.

Interest income related to loans is recognized in our consolidated statement of income using the interest method, or on a basis approximating a level

rate of return over the term of the loan. Fees received for providing loan commitments and letters of credit that we anticipate will result in loans typically are deferred and amortized to interest income over the term of the related loan, beginning with the initial borrowing. Fees on commitments and letters of credit are amortized to software and processing fees over the commitment period when funding is not known or expected.

The following table presents our recorded investment in loans, by segment, as of the dates indicated:

(In millions)	December 31, 2020	December 31, 2019
Domestic[1]:		
Commercial and financial:		
Fund Finance[2]	**11,531**	10,270
Leveraged loans	**2,923**	3,342
Overdrafts	**1,894**	1,739
Other[3]	**2,688**	3,411
Commercial real estate	**2,096**	1,766
Total domestic	**21,132**	20,528
Foreign[1]:		
Commercial and financial:		
Fund Finance[2]	**4,432**	3,145
Leveraged loans	**1,242**	1,119
Overdrafts	**1,088**	1,517
Other[3]	**31**	—
Total foreign	**6,793**	5,781
Total loans[2]	**27,925**	26,309
Allowance for credit losses	**(122)**	(74)
Loans, net of allowance	**$ 27,803**	$ 26,235

[1] Domestic and foreign categorization is based on the borrower's country of domicile.

[2] Fund finance loans include primarily $6,391 million loans to real money funds, $8,380 million private equity capital call finance loans and $821 million loans to business development companies as of December 31, 2020, compared to $6,040 million loans to real money funds, $6,076 million private equity capital call finance loans and $932 million loans to business development companies as of December 31, 2019.

[3] Includes $1,911 million securities finance loans, $754 million loans to municipalities and $54 million other loans as of December 31, 2020 and $2,537 million securities finance loans, $848 million loans to municipalities and $26 million other loans as of December 31, 2019.

We segregate our loans into two segments: commercial and financial loans and commercial real estate loans. These classifications reflect their risk characteristics, their initial measurement attributes and the methods we use to monitor and assess credit risk.

The commercial and financial segment is composed of primarily floating-rate loans, purchased leveraged loans, overdrafts and other loans. Fund finance loans are composed of revolving credit lines providing liquidity and leverage to mutual fund and private equity fund clients.

Certain loans are pledged as collateral for access to the Federal Reserve's discount window. As of December 31, 2020 and December 31, 2019, the loans pledged as collateral totaled $8.07 billion and $6.75 billion, respectively.

We generally place loans on non-accrual status once principal or interest payments are 90 days contractually past due, or earlier if management determines that full collection is not probable. Loans 90 days past due, but considered both well-secured and in the process of collection, may be excluded from non-accrual status. When we place a loan on non-accrual status, the accrual of interest is discontinued and previously recorded but unpaid interest is reversed and generally charged against interest income. For loans on non-accrual status, income is recognized on a cash basis after recovery of principal, if and when interest payments are received. Loans may be removed from non-accrual status when repayment is reasonably assured and performance under the terms of the loan has been demonstrated. As of December 31, 2020 and December 31, 2019, we had no loans on non-accrual status. As of December 31, 2020, we had one loan with principal or interest payments 30 days or more contractually past due, that was subsequently paid in January 2021. As of December 31, 2019, we had no loans with principal or interest payments 30 days or more contractually past due.

We sold $353 million of leveraged loans in 2020. We recorded a charge-off against the allowance for these loans prior to the sale of these loans of $41 million in 2020.

In certain circumstances, we restructure troubled loans by granting concessions to borrowers experiencing financial difficulty. Once restructured, the loans are generally considered impaired until their maturity, regardless of whether the borrowers perform under the modified terms of the loans. There were no loans modified in troubled debt restructurings during the years ended December 31, 2020 and 2019.

Allowance for Credit Losses

We recognize an allowance for credit losses in accordance with ASC 326 for financial assets held at amortized cost and off-balance sheet commitments. Further discussion of our adoption of ASC 326 on January 1, 2020, including the impact on our consolidated financial statements, is provided in Note 1. For additional discussion on the allowance for credit losses for investment securities, please refer to Note 3.

When the allowance is recorded, a provision for credit loss expense is recognized in net income. The allowance for credit losses for financial assets (excluding investment securities, as discussed in Note 3) represents the portion of the amortized cost basis, including accrued interest for financial assets

held at amortized cost, which management does not expect to recover due to expected credit losses and is presented on the statement of condition as an offset to the amortized cost basis. The accrued interest balance is presented separately on the statement of condition within accrued interest and fees receivable. The allowance for off-balance sheet commitments is presented within other liabilities. Loans are charged off to the allowance for credit losses in the reporting period in which either an event occurs that confirms the existence of a loss on a loan, including a sale of a loan below its carrying value, or a portion of a loan is determined to be uncollectible.

The allowance for credit losses may be determined using various methods, including discounted cash flow methods, loss-rate methods, probability-of-default methods, and other quantitative or qualitative methods as determined by us. The method used to estimate expected credit losses may vary depending on the type of financial asset, our ability to predict the timing of cash flows, and the information available to us.

The allowance for credit losses as reported in our consolidated statement of condition is adjusted by provision for credit losses, which is reported in earnings, and reduced by the charge-off of principal amounts, net of recoveries.

We measure expected credit losses of financial assets on a collective (pool) basis when similar risk characteristic exist. Each reporting period, we assess whether the assets in the pool continue to display similar risk characteristics.

For a financial asset that does not share risk characteristics with other assets, expected credit losses are measured based on the difference between the discounted value of the expected future cash flows, utilizing the effective interest rate and the amortized cost basis of the asset. As of December 31, 2020, we had 5 loans for $77 million in the commercial and financial segment that no longer met the similar risk characteristics of their collective pool. We recorded an allowance for credit losses of $6 million as of December 31, 2020 on these loans.

When the asset is collateral dependent, which means when the borrower is experiencing financial difficulty and repayment is expected to be provided substantially through the operation or sale of the collateral, expected credit losses are measured as the difference between the amortized cost basis of the asset and the fair value of the collateral, adjusted for the estimated costs to sell.

Determining the appropriateness of the allowance is complex and requires judgment by management about the effect of matters that are inherently uncertain. In future periods, factors and forecasts then prevailing may result in significant changes in the allowance for credit losses in those future periods.

We estimate credit losses over the contractual life of the financial asset, while factoring in prepayment activity, where supported by data, over a three year reasonable and supportable forecast period. We utilize a baseline, upside and downside scenario which are applied based on a probability weighting, in order to better reflect management's expectation of expected credit losses given existing market conditions and the changes in the economic environment. The multiple scenarios are based on a three year horizon (or less depending on contractual maturity) and then revert linearly over a two year period to a ten-year historical average thereafter. The contractual term excludes expected extensions, renewals and modifications, but includes prepayment assumptions where applicable.

As part of our allowance methodology, we establish qualitative reserves to address any risks inherent in our portfolio that are not addressed through our quantitative reserve assessment. These factors may relate to, among other things, legislation changes or new regulation, credit concentration, loan markets, scenario weighting and overall model limitations. The qualitative adjustments are applied to our portfolio of financial instruments under the existing governance structure and are inherently judgmental.

Prior to the implementation of ASC 326, we reviewed loans for indicators of impairment. Loans where indicators existed were evaluated individually for impairment at least quarterly. For those loans where no such indicators were identified, the loans were collectively evaluated for impairment. As of December 31, 2019, we had one loan for $25 million in the commercial and financial segment that was individually evaluated for impairment and deemed to be impaired. We recorded a specific reserve of $1 million for this loan.

Credit Quality

Credit quality for financial assets held at amortized cost are continuously monitored by management and is reflected within the allowance for credit losses.

We use an internal risk-rating system to assess our risk of credit loss for each loan. This risk-rating process incorporates the use of risk-rating tools in conjunction with management judgment. Qualitative and quantitative inputs are captured in a systematic manner, and following a formal review and approval process, an internal credit rating based on our credit scale is assigned.

When computing allowance levels, credit loss assumptions are estimated using a model that categorizes asset pools based on loss history,

delinquency status and other credit trends and risk characteristics, including current conditions and reasonable and supportable forecasts about the future. Determining the appropriateness of the allowance is complex and requires judgment by management about the effect of matters that are inherently uncertain. In future periods evaluations of the overall asset portfolio, in light of the factors and forecasts then prevailing, may result in significant changes in the allowance and credit loss expense in those future periods.

Credit quality is assessed and monitored by evaluating various attributes in order to enable the earliest possible detection of any concerns with the customer's credit rating. The results of those evaluations are utilized in underwriting new loans and transactions with counterparties and in our process for estimation of expected credit losses.

In assessing the risk rating assigned to each individual loan, among the factors considered are the borrower's debt capacity, collateral coverage, payment history and delinquency experience, financial flexibility and earnings strength, the expected amounts and source of repayment, the level and nature of contingencies, if any, and the industry and geography in which the borrower operates. These factors are based on an evaluation of historical and current information, and involve subjective assessment and interpretation. Credit counterparties are evaluated and risk-rated on an individual basis at least annually. Management considers the ratings to be current as of December 31, 2020.

Management regularly reviews financial assets in the portfolio to assess credit quality indicators and to determine appropriate loans classification and grading in accordance with applicable bank regulations. Our internal risk rating methodology assigns risk ratings to counterparties ranging from Investment Grade, Speculative, Special Mention, Substandard, Doubtful and Loss.

• Investment Grade. Counterparties with strong credit quality and low expected credit risk and probability of default. Approximately 81% of our loans were rated as investment grade as of December 31, 2020 with external credit ratings, or equivalent, of "BBB-" or better.

• Speculative. Counterparties that have the ability to repay but face significant uncertainties, such as adverse business or financial circumstances that could affect credit risk. Loans to counterparties rated as speculative account for approximately 19% of our loans as of December 31, 2020, and are concentrated in leveraged loans. Approximately 85% of those leveraged loans have an external credit rating, or equivalent, of "BB" or "B" as of December 31, 2020.

• Special Mention. Counterparties with potential weaknesses that, if uncorrected, may result in deterioration of repayment prospects.

• Substandard. Counterparties with well-defined weakness that jeopardizes repayment with the possibility we will sustain some loss.

• Doubtful. Counterparties with well-defined weakness which make collection or liquidation in full highly questionable and improbable.

• Loss. Counterparties which are uncollectible or have little value.

The following tables present our recorded loans to counterparties by risk rating, as noted above, as of the dates indicated:

December 31, 2020 (In millions)	**Commercial and Financial**	**Commercial Real Estate**	**Total Loans**
Investment grade	**$ 20,859**	**$ 1,724**	**$ 22,583**
Speculative	**4,852**	**372**	**5,224**
Special mention	**67**	**—**	**67**
Substandard	**34**	**—**	**34**
Doubtful	**17**	**—**	**17**
Total[1]	**$ 25,829**	**$ 2,096**	**$ 27,925**

December 31, 2019 (In millions)	**Commercial and Financial**	**Commercial Real Estate**	**Total Loans**
Investment grade	$ 19,501	$ 1,766	$ 21,267
Speculative	5,008	—	5,008
Special mention	25	—	25
Substandard	9	—	9
Total[1]	$ 24,543	$ 1,766	$ 26,309

[1] Loans Include $2,982 million and $3,256 million of overdrafts as of December 31, 2020 and December 31, 2019, respectively. Overdrafts are short-term in nature and do not present a significant credit risk to us.

Financial assets held at amortized cost that are not loans are disaggregated based on product type. This includes our fees receivable balance, which have had no history of credit losses, and are evaluated collectively as a pool.

Securities purchased under a resale agreement and securities-financing within our principal business utilize the collateral maintenance provisions included within ASC 326. An allowance for credit losses is recognized for any remaining exposure based on counterparty type.

The allowance for credit losses for off-balance sheet credit exposures, recorded in accrued expenses and other liabilities in our consolidated statement of condition, represents management's estimate of credit losses primarily in outstanding letters and lines of credit and other credit-enhancement facilities provided to our clients and outstanding as of the balance sheet date. The allowance is evaluated quarterly by management. Factors considered in evaluating the appropriate level of this allowance are similar to those considered with respect to the allowance for credit losses on financial assets held at amortized cost. Provisions to maintain the allowance at a level considered by us to be appropriate to absorb estimated credit losses in outstanding facilities are recorded in the provision for credit losses in our consolidated statement of income.

The following table presents the amortized cost basis, by year of origination and credit quality indicator as of December 31, 2020. For origination years before the fifth annual period, we present the aggregate amortized cost basis of loans. For purchased loans, the date of issuance is used to determine the year of origination, not the date of acquisition. For modified, extended or renewed lending arrangements, we evaluate whether a credit event has occurred which would consider the loan to be a new arrangement.

(In millions)	2020	2019	2018	2017	2016	Prior	Revolving Loans	Total[1]
Domestic loans:								
Commercial and financial:								
Risk Rating:								
Investment grade	$ 1,894	$ 388	$ 4	$ 167	$ 200	$ —	$ 12,836	$ 15,489
Speculative	432	942	822	610	43	—	597	3,446
Special mention	—	28	—	39	—	—	—	67
Substandard	—	5	—	—	29	—	—	34
Doubtful	—	—	—	—	—	—	—	—
Total commercial and financing	$ 2,326	$ 1,363	$ 826	$ 816	$ 272	$ —	$ 13,433	$ 19,036
Commercial real estate:								
Risk Rating:								
Investment grade	$ 178	$ 383	$ 688	$ 277	$ 197	$ —	$ —	$ 1,723
Speculative	120	166	58	—	—	29	—	373
Total commercial real estate	$ 298	$ 549	$ 746	$ 277	$ 197	$ 29	$ —	$ 2,096
Non-U.S. loans:								
Commercial and financial:								
Risk Rating:								
Investment grade	$ 1,028	$ —	$ —	$ —	$ —	$ —	$ 4,343	$ 5,371
Speculative	283	401	346	162	26	66	121	1,405
Doubtful	—	—	—	17	—	—	—	17
Total commercial and financing	$ 1,311	$ 401	$ 346	$ 179	$ 26	$ 66	$ 4,464	$ 6,793
Total loans	$ 3,935	$ 2,313	$ 1,918	$ 1,272	$ 495	$ 95	$ 17,897	$ 27,925

[1] Any reserve associated with accrued interest is not material. As of December 31, 2020, accrued interest receivable of $72 million included in the amortized cost basis of loans has been excluded from the amortized cost basis within this table.

The following table presents the activity in the allowance for credit losses by portfolio and class for the year ended December 31, 2020:

	Year End December 31, 2020						
	Commercial and Financial						
(In millions)	Leveraged Loans	Other Loans[1]	Commercial Real Estate	Held-to-Maturity Securities	Off-Balance Sheet Commitments	All Other	Total
Allowance for credit losses:							
Beginning balance	$ 61	$ 10	$ 2	$ —	$ 19	$ 1	$ 93
Charge-offs[2]	(41)	—	—	—	—	—	(41)
Provision	70	7	6	3	2	—	88
FX translation	7	—	—	—	1	—	8
Ending balance	$ 97	$ 17	$ 8	$ 3	$ 22	$ 1	$ 148

[1] Includes $13 million allowance for credit losses on Fund Finance loans and $4 million on other loans.

[2] Related to the sale of leveraged loans in 2020.

Loans are reviewed on a regular basis, and any provisions for credit losses that are recorded reflect management's estimate of the amount necessary to maintain the allowance for loan losses at a level considered appropriate to absorb estimated credit losses in the loan portfolio. We recorded $88 million provision for credit losses in 2020, which reflected both downward credit migration within our loan portfolio and revision in management's economic outlook reflecting the impact of the COVID-19 pandemic. Allowance estimates remain subject to continued model and economic uncertainty and management may use qualitative adjustments. If future data and forecasts deviate relative to the forecasts utilized to determine our allowance for credit losses as of December 31, 2020, or if credit risk migration is higher or lower than forecasted for reasons independent of the economic forecast, our allowance for credit losses will also change.

Allowance for Loan Losses under Incurred Loss Methodology for the years ended December 31, 2019 and December 31, 2018

On-Balance Sheet Credit Exposures

Factors considered in evaluating the appropriate level of the allowance for each segment of our loan portfolio under the incurred loss model included loss experience, the probability of default reflected in our internal risk rating of the counterparty's creditworthiness, then-current economic conditions and adverse situations that may affect the borrower's ability to repay, the estimated value of the underlying collateral, if any, the performance of individual credits in relation to contract terms, and other relevant factors.

Loans were charged off to the allowance for loan losses in the reporting period in which either an event occurred that confirmed the existence of a loss on a loan, including a sale of a loan below its carrying value, or a portion of a loan was determined to be uncollectible. In addition, any impaired loan that was determined to be collateral-dependent was reduced to an amount equal to the fair value of the collateral less costs to sell. A loan was identified as collateral-dependent when management determined that it was probable that the underlying collateral would be the sole source of repayment. Recoveries were recorded on a cash basis as adjustments to the allowance.

The following table presents activity in the allowance for loan losses for the periods indicated under the incurred loss methodology:

(In millions)	Year Ended December 31, 2019	Year Ended December 31, 2018
Allowance for loan losses:		
Beginning balance	$ 67	$ 54
Provision for credit losses[1]	10	15
Charge-offs[1]	(3)	(2)
Ending balance	$ 74	$ 67

[1] The provisions and charge offs for credit losses were primarily attributable to exposure to purchased leveraged loans to non-investment grade loans.

Off-Balance Sheet Credit Exposures

The reserve for off-balance sheet credit exposures, recorded in accrued expenses and other liabilities in our consolidated statement of condition, represented management's estimate of probable credit losses primarily in letters and lines of credit and other credit-enhancement facilities provided to our clients and outstanding as of the balance sheet date.

The reserve was evaluated on a regular basis by management. Factors considered in evaluating the appropriate level of this reserve were similar to those considered with respect to the allowance for loan losses. Provisions to maintain the reserve at a level considered by us to be appropriate to absorb estimated incurred credit losses in outstanding facilities were recorded in other expenses in our consolidated statement of income.

Note 5. Goodwill and Other Intangible Assets

Goodwill represents the excess of the cost of an acquisition over the fair value of the net tangible and other intangible assets acquired. Other intangible assets represent purchased long-lived intangible assets, primarily client relationships, that can be distinguished from goodwill because of contractual rights or because the asset can be exchanged on its own or in combination with a related contract, asset or liability. Goodwill is not amortized, but is subject to at least annual evaluation for impairment. Other intangible assets, which are subject to evaluation for impairment, are mainly related to client relationships, which are amortized on a straight-line basis over periods ranging from five to twenty years, technology assets, which are amortized on a straight-line basis over periods ranging from three to ten years, and core deposit intangible assets, which are amortized on a straight-line basis over periods ranging from sixteen to twenty-two years, with such amortization recorded in other expenses in our consolidated statement of income.

Impairment of goodwill is deemed to exist if the carrying value of a reporting unit, including its allocation of goodwill and other intangible assets, exceeds its estimated fair value. Impairment of other

intangible assets is deemed to exist if the balance of the other intangible asset exceeds the cumulative expected net cash inflows related to the asset over its remaining estimated useful life. If these reviews determine that goodwill or other intangible assets are impaired, the value of the goodwill or the other intangible asset is written down through a charge to other expenses in our consolidated statement of income. There were no impairments to goodwill or other intangible assets in 2020, 2019 and 2018.

The following table presents changes in the carrying amount of goodwill during the periods indicated:

(In millions)	Investment Servicing[1]	Investment Management	Total
Goodwill:			
Ending balance December 31, 2018	$ 7,180	$ 266	$ 7,446
Acquisitions[2]	122	—	122
Foreign currency translation	(13)	1	(12)
Ending balance December 31, 2019	7,289	267	7,556
Foreign currency translation	**124**	**3**	**127**
Ending balance December 31, 2020	**$ 7,413**	**$ 270**	**$ 7,683**

[1] Investment Servicing includes our acquisition of CRD.

[2] We completed the purchase price accounting for the CRD acquisition as of March 31, 2019. Upon completion of valuation procedures related to the acquired assets and assumed liabilities, primarily the identifiable intangible assets, we recorded measurement period adjustments in the year ended December 31, 2019, resulting in an increase in the goodwill of $113 million and a decrease of $93 million in other intangible assets.

The following table presents changes in the net carrying amount of other intangible assets during the periods indicated:

(In millions)	Investment Servicing[1]	Investment Management	Total
Other intangible assets:			
Ending balance December 31, 2018	$ 2,218	$ 151	$ 2,369
Acquisitions[2]	(93)	—	(93)
Amortization	(207)	(29)	(236)
Foreign currency translation	(10)	—	(10)
Ending balance December 31, 2019	1,908	122	2,030
Amortization	**(206)**	**(28)**	**(234)**
Foreign currency translation	**31**	**—**	**31**
Ending balance December 31, 2020	**$ 1,733**	**$ 94**	**$ 1,827**

[1] Investment Servicing includes our acquisition of CRD.

[2] We completed the purchase price accounting for the CRD acquisition as of March 31, 2019. Upon completion of valuation procedures related to the acquired assets and assumed liabilities, primarily the identifiable intangible assets, we recorded measurement period adjustments in the year ended December 31, 2019, resulting in a decrease in the fair value of other intangible assets of $93 million, with a corresponding increase to goodwill.

The following table presents the gross carrying amount, accumulated amortization and net carrying amount of other intangible assets by type as of the dates indicated:

December 31, 2020 (In millions)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Other intangible assets:			
Client relationships	**$ 2,704**	**$ (1,450)**	**$ 1,254**
Technology	**393**	**(113)**	**280**
Core deposits	**690**	**(425)**	**265**
Other	**107**	**(79)**	**28**
Total	**$ 3,894**	**$ (2,067)**	**$ 1,827**

December 31, 2019 (In millions)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Other intangible assets:			
Client relationships	$ 3,104	$ (1,718)	$ 1,386
Technology	403	(87)	316
Core deposits	673	(381)	292
Other	100	(64)	36
Total	$ 4,280	$ (2,250)	$ 2,030

Amortization expense related to other intangible assets was $234 million, $236 million and $226 million in 2020, 2019 and 2018, respectively.

Expected future amortization expense for other intangible assets recorded as of December 31, 2020 is as follows:

(In millions) Years Ended December 31,	Future Amortization
2021	$ 235
2022	232
2023	231
2024	224
2025	199

Note 6. Other Assets

The following table presents the components of other assets as of the dates indicated:

(In millions)	December 31, 2020	December 31, 2019
Securities borrowed[1]	$ 18,330	$ 18,524
Derivative instruments, net	5,804	4,753
Bank-owned life insurance	3,479	3,395
Investments in joint ventures and other unconsolidated entities	3,095	2,899
Collateral, net	2,713	874
Right-of-use assets	720	858
Prepaid expenses	383	395
Accounts receivable	379	432
Income taxes receivable	367	309
Deferred tax assets, net of valuation allowance[2]	233	216
Receivable for securities settlement	117	336
Deposits with clearing organizations	58	58
Other	832	962
Total	$ 36,510	$ 34,011

[1] Refer to Note 11, for further information on the impact of collateral on our financial statement presentation of securities borrowing and securities lending transactions.
[2] Deferred tax assets and liabilities recorded in our consolidated statement of condition are netted within the same tax jurisdiction.

Note 7. Deposits

As of December 31, 2020, we had $1.68 billion of time deposits outstanding, all of which were non-US time deposits. As of December 31, 2019, we had $35.15 billion of time deposits outstanding, of which $3.00 billion were wholesale CDs, $32.01 billion were derived from client deposits (payable on demand to such clients) and held in a time deposit established by us as the agent and $139 million were non-U.S. As of December 31, 2020 and 2019, all U.S. and non-U.S. time deposits were in amounts of $250,000 or more. As of December 31, 2020, all time deposits are scheduled to mature in 2021. Demand deposit overdrafts of $2.98 billion and $3.26 billion were included as loan balances at December 31, 2020 and 2019, respectively.

Note 8. Short-Term Borrowings

Our short-term borrowings include securities sold under repurchase agreements, short-term borrowings associated with our tax-exempt investment program (more fully described in Note 14) and other short-term borrowings, including those related to the money market liquidity facility.

Collectively, short-term borrowings had weighted-average interest rates of 0.93% and 1.64% in 2020 and 2019, respectively.

The following table presents information with respect to the amounts outstanding and weighted-average interest rates of the primary components of our short-term borrowings as of and for the years ended December 31:

(Dollars in millions)	Securities Sold Under Repurchase Agreements			Tax-Exempt Investment Program			Other		
	2020	2019	2018	2020	2019	2018	2020	2019	2018
Balance as of December 31	$ 3,413	$ 1,102	$ 1,082	$ 616	$ 823	$ 931	$ 3,302	$ —	$ 2,000
Maximum outstanding as of any month-end	5,373	4,125	3,441	823	931	1,078	25,665	—	2,000
Average outstanding during the year	2,615	1,616	2,048	771	898	1,023	8,251	3	nm
Weighted-average interest rate as of year-end	.00 %	.00 %	1.38 %	.23 %	1.75 %	1.74 %	1.35 %	.00 %	2.68 %
Weighted-average interest rate during the year	.14	1.90	.62	.78	1.51	1.46	1.23	.01	nm

[nm] Not meaningful

Obligations to repurchase securities sold are recorded as a liability in our consolidated statement of condition. U.S. government securities with a fair value of $3.98 billion underlying the repurchase agreements remained in our investment securities portfolio as of December 31, 2020.

The following table presents information about these U.S. government securities and the carrying value of the related repurchase agreements, including accrued interest, as of December 31, 2020.

	U.S. Government Securities Sold		Repurchase Agreements[1]
(In millions)	Amortized Cost	Fair Value	Amortized Cost
Overnight maturity	$ 2,992	$ 3,981	$ 3,413

[1] Collateralized by investment securities.

We maintain an agreement with a clearing organization that enables us to net all securities purchased under resale agreements and sold under repurchase agreements with counterparties that are also members of the clearing organization. As a result of this netting, the average balances of securities purchased under resale agreements and securities sold under repurchase agreements were reduced by $100.45 billion in 2020 compared to $86.67 billion in 2019. The increase in average balance sheet netting, in 2020 compared to 2019, is primarily due to the expansion of our FICC program and new client activity.

State Street Bank currently maintains a line of credit of CAD 1.40 billion, or approximately $1.10 billion, as of December 31, 2020, to support its Canadian securities processing operations. The line of credit has no stated termination date and is cancelable by either party with prior notice. As of December 31, 2020 and 2019, there was no balance outstanding on this line of credit.

Note 9. Long-Term Debt

(Dollars in millions)					As of December 31,	
Issuance Date	Maturity Date	Coupon Rate	Seniority	Interest Due Dates	2020	2019
Parent Company And Non-Banking Subsidiary Issuances						
August 18, 2015	August 18, 2025	3.55 %	Senior notes	2/18; 8/18[1]	$ 1,413	$ 1,331
August 18, 2015	August 18, 2020	2.55 %	Senior notes	2/18; 8/18	—	1,191
November 19, 2013	November 20, 2023	3.7 %	Senior notes	5/20; 11/20[1]	1,070	1,037
December 15, 2014	December 16, 2024	3.3 %	Senior notes	6/16; 12/16[1]	1,075	1,022
May 15, 2013	May 15, 2023[2]	3.1 %	Subordinated notes	5/15; 11/15[1]	1,039	1,006
November 1, 2019	November 1, 2025	2.354 %	Fixed-to-floating rate senior notes	5/1; 11/1	1,047	991
January 24, 2020	January 24, 2030	2.400 %	Senior notes	1/24, 7/24	821	—
March 30, 2020	March 30, 2023	2.825 %	Fixed-to-floating rate senior notes	3/30, 9/30	748	—
March 30, 2020	March 30, 2026	2.901 %	Fixed-to-floating rate senior notes	3/30, 9/30	498	—
March 30, 2020	March 30, 2031	3.152 %	Fixed-to-floating rate senior notes	3/30, 9/30	497	—
May 15, 2017	May 15, 2023	2.653 %	Fixed-to-floating rate senior notes	5/15; 11/15[1]	766	753
March 7, 2011	March 7, 2021	4.375 %	Senior notes	3/7; 9/7[1]	752	748
May 19, 2016	May 19, 2021	1.95 %	Senior notes	5/19; 11/19[1]	753	744
May 19, 2016	May 19, 2026	2.65 %	Senior notes	5/19; 11/19[1]	796	741
December 3, 2018	December 3, 2029	4.141 %	Fixed-to-floating rate senior notes	6/3; 12/3[1]	594	546
December 3, 2018	December 3, 2024	3.776 %	Fixed-to-floating rate senior notes	6/3; 12/3[1]	538	522
August 18, 2015	August 18, 2020	Floating-rate	Senior notes	2/18; 5/18; 8/18; 11/18	—	500
April 30, 2007	June 15, 2047	Floating-rate	Junior subordinated debentures	3/15; 6/15; 9/15; 12/15	499	499
November 1, 2019	November 1, 2034[2]	3.031 %	Fixed-to-floating rate senior subordinated notes	5/1; 11/1	546	492
May 15, 1998	May 15, 2028	Floating-rate	Junior subordinated debentures	2/15; 5/15; 8/15; 11/15	100	100
June 21, 1996	June 15, 2026[3]	7.35 %	Senior notes	6/15; 12/15	150	150
Parent Company						
Long-term finance leases					103	136
Total long-term debt					$ 13,805	$ 12,509

[1] We have entered into interest rate swap agreements, recorded as fair value hedges, to modify our interest expense on these senior and subordinated notes from a fixed rate to a floating rate. As of December 31, 2020 and 2019, the carrying value of long-term debt associated with these fair value hedges was $691 million and$157 million, respectively. Refer to Note 10 for additional information about fair value hedges.
[2] The subordinated notes qualify for inclusion in tier 2 regulatory capital under current federal regulatory capital guidelines.
[3] We may not redeem notes prior to their maturity.

In the fourth quarter of 2019, we completed a cash tender offer for approximately $297 million of our $800 million aggregate principal amount of outstanding floating rate junior subordinated debentures due 2047, resulting in a gain of approximately $44 million. Additionally, in the fourth quarter of 2019, we completed a redemption for approximately $50 million of our $150 million aggregate principal amount of outstanding floating rate junior subordinated debentures due 2028.

Termination of Replacement Capital Covenant

Prior to November 20, 2019, we were subject to a replacement capital covenant dated April 30, 2007 (the Original RCC), as amended by the amendment to replacement capital covenant dated May 13, 2016 (the RCC Amendment and, together with the Original RCC, the Replacement Capital Covenant). Pursuant to the terms of the Replacement Capital Covenant, neither us nor any of our subsidiaries, including State Street Bank, was permitted to repay, redeem or purchase any of the outstanding floating rate junior subordinated debentures due 2047 prior to June 1, 2047 unless certain conditions had been satisfied, except to the extent that (i) we obtained the prior approval of the Federal Reserve, if such approval was then required, and (ii) we had received proceeds, up to specified percentages of the aggregate principal amount repaid or the applicable redemption or purchase price, from the sale or issuance of qualifying securities with characteristics that are the same as, or more equity-like than, the applicable characteristics of the floating rate junior subordinated debentures due 2047 during the 180 days prior to the date of that repayment, redemption or purchase (which period was to be shortened under certain specified circumstances). The Replacement Capital Covenant was a covenant for the benefit of persons buying, holding or selling specified series of our unsecured long-term indebtedness or our depository institution subsidiaries (the Covered Debt). The original Covered Debt under the Replacement Capital Covenant were the outstanding floating rate junior subordinated debentures due 2028.

The Replacement Capital Covenant was terminated automatically without further action on November 20, 2019, following the settlement of the partial redemption of approximately $50 million aggregate principal amount of floating rate junior subordinated debentures due 2028 and the redesignation of our 2.650% Senior Notes due 2026 as Covered Debt for the purposes of the Replacement Capital Covenant, and purchases of the floating rate junior subordinated debentures due 2047 are permissible without issuing qualifying securities under the Replacement Capital Covenant.

Parent Company

As of December 31, 2020 and 2019, long-term finance leases included $103 million and $136 million, respectively, related to our One Lincoln Street headquarters building and related underground parking garage. Refer to Note 20 for additional information.

Note 10. Derivative Financial Instruments

We use derivative financial instruments to support our clients' needs and to manage our interest rate and currency risks. These financial instruments consist of FX contracts such as forwards, futures and options contracts; interest rate contracts such as interest rate swaps (cross currency and single currency) and futures; and other derivative contracts. Derivative instruments used for risk management purposes that are highly effective in offsetting the risk being hedged are generally designated as hedging instruments in hedge accounting relationships, while others are economic hedges and not designated in hedge accounting relationships. Derivatives in hedge accounting relationships are disclosed according to the type of hedge, such as, fair value, cash flow, or net investment. Derivatives designated as hedging instruments in hedge accounting relationships are carried at fair value with change in fair value recognized in the consolidated statement of income or OCI, as appropriate. Derivatives not designated in hedge accounting relationships include those derivatives entered into to support client needs and derivatives used to manage interest rate or foreign currency risk associated with certain assets and liabilities. Such derivatives are carried at fair value with changes in fair value recognized in the consolidated statement of income.

Derivatives Not Designated as Hedging Instruments

We provide foreign exchange forward contracts and options in support of our client needs, and also act as a dealer in the currency markets. As part of our trading activities, we assume positions in both the foreign exchange and interest rate markets by buying and selling cash instruments and using derivative financial instruments, including foreign exchange forward contracts, foreign exchange and interest rate options, interest rate forward contracts, and interest rate futures. The entire change in the fair value of our non-hedging derivatives utilized in our trading activities are recorded in foreign exchange trading services revenue, and the entire change in fair value of our non-hedging derivatives utilized in our asset-and-liability management activities are recorded in net interest income.

We enter into stable value wrap derivative contracts with unaffiliated stable value funds that

allow a stable value fund to provide book value coverage to its participants. These derivatives contracts qualify as guarantees as described in Note 12.

We grant deferred cash awards to certain of our employees as part of our employee incentive compensation plans. We account for these awards as derivative financial instruments, as the underlying referenced shares are not equity instruments of ours. The fair value of these derivatives is referenced to the value of units in State Street-sponsored investment funds or funds sponsored by other unrelated entities. We re-measure these derivatives to fair value quarterly, and record the change in value in compensation and employee benefits expenses in our consolidated statement of income.

Derivatives Designated as Hedging Instruments

In connection with our asset-and-liability management activities, we use derivative financial instruments to manage our interest rate risk and foreign currency risk for certain assets and liabilities. At both the inception of the hedge and on an ongoing basis, we formally assess and document the effectiveness of a derivative designated in a hedging relationship and the likelihood that the derivative will be an effective hedge in future periods. We discontinue hedge accounting prospectively when we determine that the derivative is no longer highly effective in offsetting changes in fair value or cash flows of the underlying risk being hedged, the derivative expires, terminates or is sold, or management discontinues the hedge designation.

The risk management objective of a highly effective hedging strategy that qualifies for hedge accounting must be formally documented. The hedge documentation includes the derivative hedging instrument, the asset or liability or forecasted transaction, type of risk being hedged and method for assessing hedge effectiveness of the derivative prospectively and retrospectively. We use quantitative methods including regression analysis and cumulative dollar offset method, comparing the change in the fair value of the derivative to the change in fair value or the cash flows of the hedged item. We may also utilize qualitative methods such as matching critical terms and evaluation of any changes in those critical terms. Effectiveness is assessed and documented quarterly and if determined that the derivative is not highly effective at hedging the designated risk hedge accounting is discontinued.

Fair Value Hedges

Derivatives designated as fair value hedges are utilized to mitigate the risk of changes in the fair values of recognized assets and liabilities, including long-term debt, AFS securities, and foreign currency investment securities. We use interest rate or FX contracts in this manner to manage our exposure to changes in the fair value of hedged items caused by changes in interest rates or FX rates.

Changes in the fair value of the derivative and changes in fair value of the hedged item due to changes in the hedged risk are recognized in earnings in the same line item. If a hedge is terminated, but the hedged item was not derecognized, all remaining adjustments to the carrying amount of the hedged item are amortized over a period that is consistent with the amortization of other discounts or premiums associated with the hedged item.

Cash Flow Hedges

Derivatives designated as cash flow hedges are utilized to offset the variability of cash flows of recognized assets or liabilities or forecasted transactions. We have entered into FX contracts to hedge the change in cash flows attributable to FX movements in foreign currency denominated investment securities. Additionally, we have entered into interest rate swap agreements to hedge the forecasted cash flows associated with LIBOR indexed floating-rate loans. The interest rate swaps synthetically convert the loan interest receipts from a variable-rate to a fixed-rate, thereby mitigating the risk attributable to changes in the LIBOR benchmark rate.

Changes in fair value of the derivatives designated as cash flow hedges are initially recorded in AOCI and then reclassified into earnings in the same period or periods during which the hedged forecasted transaction affects earnings and are presented in the same income statement line item as the earnings effect of the hedged item. If the hedge relationship is terminated, the change in fair value on the derivative recorded in AOCI is reclassified into earnings consistent with the timing of the hedged item. For hedge relationships that are discontinued because a forecasted transaction is not expected to occur according to the original hedge terms, any related derivative values recorded in AOCI are immediately recognized in earnings. As of December 31, 2020, the maximum maturity date of the underlying loans is approximately 3.7 years.

Net Investment Hedges

Derivatives categorized as net investment hedges are entered into to protect the net investment in our foreign operations against adverse changes in exchange rates. We use FX forward contracts to convert the foreign currency risk to U.S. dollars to mitigate our exposure to fluctuations in FX rates. The changes in fair value of the FX forward contracts are recorded, net of taxes, in the foreign currency translation component of OCI.

The following table presents the aggregate contractual, or notional, amounts of derivative financial instruments including those entered into for trading and asset-and-liability management activities as of the dates indicated:

(In millions)	December 31, 2020	December 31, 2019
Derivatives not designated as hedging instruments:		
Interest rate contracts:		
Futures	**$ 2,842**	$ 4,368
Foreign exchange contracts:		
Forward, swap and spot	**2,640,989**	2,378,808
Options purchased	**946**	1,581
Options written	**661**	1,110
Futures	**1,980**	1,040
Other:		
Stable value contracts[1]	**32,359**	26,895
Deferred value awards[2]	**332**	389
Derivatives designated as hedging instruments:		
Interest rate contracts:		
Swap agreements	**7,449**	15,196
Foreign exchange contracts:		
Forward and swap	**5,221**	3,176

[1] The notional value of the stable value contracts represents our maximum exposure. However, exposure to various stable value contracts is generally contractually limited to substantially lower amounts than the notional values.

(2) Represents grants of deferred value awards to employees; refer to discussion in this note under "Derivatives Not Designated as Hedging Instruments."

Notional amounts are provided here as an indication of the volume of our derivative activity and serve as a reference to calculate the fair values of the derivative.

The following tables present the fair value of derivative financial instruments, excluding the impact of master netting agreements, recorded in our consolidated statement of condition as of the dates indicated. The impact of master netting agreements is provided in Note 11.

	Derivative Assets[1]		Derivative Liabilities[2]	
(In millions)	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	**$ 25,939**	$ 15,140	**$ 25,811**	$ 15,054
Other derivative contracts	**—**	—	**157**	182
Total	**$ 25,939**	$ 15,140	**$ 25,968**	$ 15,236
Derivatives designated as hedging instruments:				
Foreign exchange contracts	**$ 4**	$ —	**$ 116**	$ 96
Interest rate contracts	**1**	8	**42**	49
Total	**$ 5**	$ 8	**$ 158**	$ 145

[1] Derivative assets are included within other assets in our consolidated statement of condition.

[2] Derivative liabilities are included within other liabilities in our consolidated statement of condition.

The following tables present the impact of our use of derivative financial instruments on our consolidated statement of income for the periods indicated:

(In millions)	Location of Gain (Loss) on Derivative in Consolidated Statement of Income	Years Ended December 31, 2020	2019	2018
		Amount of Gain (Loss) on Derivative Recognized in Consolidated Statement of Income		
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	Foreign exchange trading services revenue	**$ 922**	$ 630	$ 723
Foreign exchange contracts	Interest expense[1]	**63**	(153)	(41)
Interest rate contracts	Foreign exchange trading services revenue	**3**	(3)	(6)
Interest rate contracts	Software and processing fees[1]	**—**	—	(1)
Other derivative contracts	Foreign exchange trading services revenue	**—**	—	5
Other derivative contracts	Compensation and employee benefits	**(189)**	(205)	(171)
Total		**$ 799**	$ 269	$ 509

[1] 2018 includes approximately $15 million of swap costs related to the first quarter of 2018 that were reclassified from software and processing fees to interest expense.

The following table shows the carrying amount and associated cumulative basis adjustments related to the application of hedge accounting that is included in the carrying amount of hedged assets and liabilities in fair value hedging relationships:

(In millions)	December 31, 2020			
	Hedged Items Currently Designated		Hedged Items No Longer Designated[1]	
	Carrying Amount of Assets and Liabilities	Cumulative Hedge Accounting Basis Adjustments	Carrying Amount of Assets and Liabilities	Cumulative Hedge Accounting Basis Adjustments
Long-term debt	**$ 496**	**$ 3**	**$ 10,023**	**$ 688**
Available-for-sale securities	**2,330**	**45**	**—**	**—**
Total	**$ 2,826**	**$ 48**	**$ 10,023**	**$ 688**

(In millions)	December 31, 2019			
	Hedged Items Currently Designated		Hedged Items No Longer Designated[1]	
	Carrying Amount of Assets and Liabilities	Cumulative Hedge Accounting Basis Adjustments	Carrying Amount of Assets and Liabilities	Cumulative Hedge Accounting Basis Adjustments
Long-term debt	$ 9,769	$ 164	$ 1,199	$ (8)
Available-for-sale securities	940	49	—	—
Total	$ 10,709	$ 213	$ 1,199	$ (8)

[1] Represents hedged items no longer designated in qualifying fair value hedging relationships for which an associated basis adjustment exists at the balance sheet date.

As of December 31, 2020 and December 31, 2019, the total notional amount of the interest rate swaps of fair value hedges was $2.60 billion and $10.20 billion, respectively.

The following tables present the impact of our use of derivative financial instruments on our consolidated statement of income for the periods indicated:

(In millions)	Location of Gain (Loss) on Derivative in Consolidated Statement of Income	Years Ended December 31, 2020	2019	2018	Hedged Item in Fair Value Hedging Relationship	Location of Gain (Loss) on Hedged Item in Consolidated Statement of Income	Years Ended December 31, 2020	2019	2018
		Amount of Gain (Loss) on Derivative Recognized in Consolidated Statement of Income					Amount of Gain (Loss) on Hedged Item Recognized in Consolidated Statement of Income		
Derivatives designated as fair value hedges:									
Foreign exchange contracts	Software and processing fees	**$ —**	$ —	$ (74)	Investment securities	Software and processing fees	**$ —**	**$ —**	$ 74
Foreign exchange contracts	Software and processing fees	**—**	—	(328)	Foreign exchange deposit	Software and processing fees	**—**	**—**	328
Interest rate contracts	Net interest income	**1**	(4)	31	Available-for-sale securities[1]	Net interest income	**(4)**	2	(32)
Interest rate contracts	Net interest income	**566**	266	(58)	Long-term debt	Net interest income	**(559)**	(255)	49
Total		**$ 567**	$ 262	$ (429)			**$ (563)**	$ (253)	$ 419

[1] In 2020, 2019 and 2018, $3 million, $18 million and $24 million, respectively, of net unrealized gains on AFS investment securities designated in fair value hedges were recognized in OCI.

(In millions)	Years Ended December 31, 2020	2019	2018	Location of Gain or (Loss) Reclassified from Accumulated Other Comprehensive Income into Income	Years Ended December 31, 2020	2019	2018
	Amount of Gain or (Loss) Recognized in Other Comprehensive Income on Derivative				Amount of Gain or (Loss) Reclassified from Accumulated Other Comprehensive Income into Income		
Derivatives designated as cash flow hedges:							
Interest rate contracts	**$ 176**	$ 8	$ (12)	Net interest income	**$ 49**	$ (10)	$ (1)
Foreign exchange contracts	**(22)**	43	(12)	Net interest income	**23**	27	27
Total derivatives designated as cash flow hedges	**$ 154**	$ 51	$ (24)		**$ 72**	$ 17	$ 26
Derivatives designated as net investment hedges:							
Foreign exchange contracts	**$ (250)**	$ 30	$ 81	Gains (Losses) related to investment securities, net	**$ —**	$ —	$ —
Total derivatives designated as net investment hedges	**(250)**	30	81		**—**	—	—
Total	**$ (96)**	$ 81	$ 57		**$ 72**	$ 17	$ 26

Derivatives Netting and Credit Contingencies

Netting

Derivatives receivable and payable as well as cash collateral from the same counterparty are netted in the consolidated statement of condition for those counterparties with whom we have legally binding master netting agreements in place. In addition to cash collateral received and transferred presented on a net basis, we also receive and transfer collateral in the form of securities, which mitigate credit risk but are not eligible for netting. Additional information on netting is provided in Note 11.

Credit Contingencies

Certain of our derivatives are subject to master netting agreements with our derivative counterparties containing credit risk-related contingent features, which requires us to maintain an investment grade credit rating with the various credit rating agencies. If our rating falls below investment grade, we would be in violation of the provisions, and counterparties to the derivatives could request immediate payment or demand full overnight collateralization on derivatives instruments in net liability positions. The aggregate fair value of all derivatives with credit contingent features and in a liability position as of December 31, 2020 totaled approximately $3.91 billion, against which we provided $1.69 billion of collateral in the normal course of business. If our credit related contingent features underlying these agreements were triggered as of December 31, 2020, the maximum additional collateral we would be required to post to our counterparties is approximately $2.22 billion.

Note 11. Offsetting Arrangements

Certain of our transactions are subject to master netting agreements that allow us to net receivables and payables by contract and settlement type. For those legally enforceable contracts, we net receivables and payables with the same counterparty on our statement of condition.

In addition to netting receivables and payables with our derivatives counterparty where a legal and enforceable netting arrangement exist, we also net related cash collateral received and transferred up to the fair value exposure amount.

With respect to our securities financing arrangements, we net balances outstanding on our consolidated statement of condition for those transactions that met the netting requirements and were transacted under a legally enforceable netting arrangement with the counterparty.

Securities received as collateral under securities financing or derivatives transactions can be transferred as collateral in many instances. The securities received as proceeds under secured lending transactions are recorded at a value that approximates fair value in other assets in our consolidated statement of condition with a related liability to return the collateral, if we have the right to transfer or re-pledge the collateral.

As of December 31, 2020 and December 31, 2019, the value of securities received as collateral from third parties where we are permitted to transfer or re-pledge the securities totaled $6.48 billion and $10.09 billion, respectively, and the fair value of the portion that had been transferred or re-pledged as of the same dates was $3.88 billion and $5.72 million, respectively.

The following tables present information about the offsetting of assets related to derivative contracts and secured financing transactions, as of the dates indicated:

Assets:	December 31, 2020				
				Gross Amounts Not Offset in Statement of Condition	
(In millions)	Gross Amounts of Recognized Assets[1][2]	Gross Amounts Offset in Statement of Condition[3]	Net Amounts of Assets Presented in Statement of Condition	Cash and Securities Received[4]	Net Amount[5]
Derivatives:					
Foreign exchange contracts	$ 25,943	$ (14,271)	$ 11,672	$ —	$ 11,672
Interest rate contracts[6]	1	—	1	—	1
Cash collateral and securities netting	NA	(5,869)	(5,869)	(1,105)	(6,974)
Total derivatives	25,944	(20,140)	5,804	(1,105)	4,699
Other financial instruments:					
Resale agreements and securities borrowing[7][8]	174,461	(153,025)	21,436	(20,568)	868
Total derivatives and other financial instruments	$ 200,405	$ (173,165)	$ 27,240	$ (21,673)	$ 5,567

Assets:	December 31, 2019				
				Gross Amounts Not Offset in Statement of Condition	
(In millions)	Gross Amounts of Recognized Assets[1][2]	Gross Amounts Offset in Statement of Condition[3]	Net Amounts of Assets Presented in Statement of Condition	Cash and Securities Received[4]	Net Amount[5]
Derivatives:					
Foreign exchange contracts	$ 15,140	$ (8,081)	$ 7,059	$ —	$ 7,059
Interest rate contracts[6]	8	(4)	4	—	4
Cash collateral and securities netting	NA	(2,310)	(2,310)	(685)	(2,995)
Total derivatives	15,148	(10,395)	4,753	(685)	4,068
Other financial instruments:					
Resale agreements and securities borrowing[7][8]	179,989	(159,978)	20,011	(19,572)	439
Total derivatives and other financial instruments	$ 195,137	$ (170,373)	$ 24,764	$ (20,257)	$ 4,507

[1] Amounts include all transactions regardless of whether or not they are subject to an enforceable netting arrangement.
[2] Refer to Note 1 and Note 2 for additional information about the measurement basis of derivative instruments.
[3] Amounts subject to netting arrangements which have been determined to be legally enforceable and eligible for netting in the consolidated statement of condition.
[4] Includes securities in connection with our securities borrowing transactions.
[5] Includes amounts secured by collateral not determined to be subject to enforceable netting arrangements.
[6] Variation margin payments presented as settlements rather than collateral.
[7] Included in the $21.44 billion as of December 31, 2020 were $3.11 billion of resale agreements and $18.33 billion of collateral provided related to securities borrowing. Included in the $20.01 billion as of December 31, 2019 were $1.49 billion of resale agreements and $18.52 billion of collateral provided related to securities borrowing. Resale agreements and collateral provided related to securities borrowing were recorded in securities purchased under resale agreements and other assets, respectively, in our consolidated statement of condition. Refer to Note 12 for additional information with respect to principal securities finance transactions.
[8] Offsetting of resale agreements primarily relates to our involvement in FICC, where we settle transactions on a net basis for payment and delivery through the Fedwire system.
NA Not applicable

The following tables present information about the offsetting of liabilities related to derivative contracts and secured financing transactions, as of the dates indicated:

Liabilities:	December 31, 2020				
				Gross Amounts Not Offset in Statement of Condition	
(In millions)	Gross Amounts of Recognized Liabilities[1][2]	Gross Amounts Offset in Statement of Condition[3]	Net Amounts of Liabilities Presented in Statement of Condition	Cash and Securities Received[4]	Net Amount[5]
Derivatives:					
Foreign exchange contracts	**$ 25,927**	**$ (14,271)**	**$ 11,656**	**$ —**	**$ 11,656**
Interest rate contracts[6]	**42**	**—**	**42**	—	**42**
Other derivative contracts	**157**	**—**	**157**	—	**157**
Cash collateral and securities netting	**NA**	**(1,287)**	**(1,287)**	**(1,732)**	**(3,019)**
Total derivatives	**26,126**	**(15,558)**	**10,568**	**(1,732)**	**8,836**
Other financial instruments:					
Repurchase agreements and securities lending[7][8]	**165,793**	**(153,025)**	**12,768**	**(12,448)**	**320**
Total derivatives and other financial instruments	**$ 191,919**	**$ (168,583)**	**$ 23,336**	**$ (14,180)**	**$ 9,156**

Liabilities:	December 31, 2019				
				Gross Amounts Not Offset in Statement of Condition	
(In millions)	Gross Amounts of Recognized Liabilities[1][2]	Gross Amounts Offset in Statement of Condition[3]	Net Amounts of Liabilities Presented in Statement of Condition	Cash and Securities Received[4]	Net Amount[5]
Derivatives:					
Foreign exchange contracts	$ 15,150	$ (8,081)	$ 7,069	$ —	$ 7,069
Interest rate contracts[6]	49	(4)	45	—	45
Other derivative contracts	182	—	182	—	182
Cash collateral and securities netting	NA	(837)	(837)	(557)	(1,394)
Total derivatives	15,381	(8,922)	6,459	(557)	5,902
Other financial instruments:					
Repurchase agreements and securities lending[7][8]	171,853	(159,977)	11,876	(10,793)	1,083
Total derivatives and other financial instruments	$ 187,234	$ (168,899)	$ 18,335	$ (11,350)	$ 6,985

[1] Amounts include all transactions regardless of whether or not they are subject to an enforceable netting arrangement.
[2] Refer to Note 1 and Note 2 for additional information about the measurement basis of derivative instruments.
[3] Amounts subject to netting arrangements which have been determined to be legally enforceable and eligible for netting in the consolidated statement of condition.
[4] Includes securities provided in connection with our securities lending transactions.
[5] Includes amounts secured by collateral not determined to be subject to enforceable netting arrangements.
[6] Variation margin payments presented as settlements rather than collateral.
[7] Included in the $12.77 billion as of December 31, 2020 were $3.41 billion of repurchase agreements and $9.36 billion of collateral received related to securities lending transactions. Included in the $11.88 billion as of December 31, 2019 were $1.10 billion of repurchase agreements and $10.77 billion of collateral received related to securities lending transactions. Repurchase agreements and collateral received related to securities lending were recorded in securities sold under repurchase agreements and accrued expenses and other liabilities, respectively, in our consolidated statement of condition. Refer to Note 12 for additional information with respect to principal securities finance transactions.
[8] Offsetting of repurchase agreements primarily relates to our involvement in FICC, where we settle transactions on a net basis for payment and delivery through the Fedwire system.
[NA] Not applicable

The securities transferred under resale and repurchase agreements typically are U.S. Treasury, agency and agency MBS. In our principal securities borrowing and lending arrangements, the securities transferred are predominantly equity securities and some corporate debt securities. The fair value of the securities transferred may increase in value to an amount greater than the amount received under our repurchase and securities lending arrangements, which exposes us to counterparty risk. We require the review of the price of the underlying securities in relation to the carrying value of the repurchase agreements and securities lending arrangements on a daily basis and when appropriate, adjust the cash or security to be obtained or returned to counterparties that is reflective of the required collateral levels.

The following table summarizes our repurchase agreements and securities lending transactions by category of collateral pledged and remaining maturity of these agreements as of the periods indicated:

	As of December 31, 2020				As of December 31, 2019			
(In millions)	Overnight and Continuous	Up to 30 Days	Greater than 90 Days	Total	Overnight and Continuous	Up to 30 Days	Greater than 90 Days	Total
Repurchase agreements:								
U.S. Treasury and agency securities	**$ 152,140**	**$ —**	**$ —**	**$ 152,140**	$ 156,465	$ —	$ —	$ 156,465
Total	**152,140**	**—**	**—**	**152,140**	156,465	—	—	156,465
Securities lending transactions:								
US Treasury and agency securities	**—**	**—**	**—**	**—**	15	—	—	15
Corporate debt securities	**110**	**—**	**—**	**110**	354	—	—	354
Equity securities	**7,578**	**56**	**1,156**	**8,790**	7,389	—	130	7,519
Other[1]	**4,753**	**—**	**—**	**4,753**	7,500	—	—	7,500
Total	**12,441**	**56**	**1,156**	**13,653**	15,258	—	130	15,388
Gross amount of recognized liabilities for repurchase agreements and securities lending	**$ 164,581**	**$ 56**	**$ 1,156**	**$ 165,793**	$ 171,723	$ —	$ 130	$ 171,853

[1] Represents a security interest in underlying client assets related to our enhanced custody business, which assets clients have allowed us to transfer and re-pledge.

Note 12. Commitments and Guarantees

The following table presents the aggregate gross contractual amounts of our off-balance sheet commitments and off-balance sheet guarantees as of the dates indicated:

(In millions)	December 31, 2020	December 31, 2019
Commitments:		
Unfunded credit facilities	**$ 34,213**	$ 29,697
Guarantees[1]**:**		
Indemnified securities financing	**$ 440,875**	$ 367,901
Standby letters of credit	**3,330**	3,324

[1] The potential losses associated with these guarantees equal the gross contractual amounts and do not consider the value of any collateral or reflect any participations to independent third parties.

Unfunded Credit Facilities

Unfunded credit facilities consist primarily of liquidity facilities provided to our fund and municipal counterparties, as well as commitments to purchase commercial real estate and leveraged loans that have not yet settled.

As of December 31, 2020, approximately 73% of our unfunded commitments to extend credit expire within one year. Since many of these commitments are expected to expire or renew without being drawn upon, the gross contractual amounts do not necessarily represent our future cash requirements.

Indemnified Securities Financing

On behalf of our clients, we lend their securities, as agent, to brokers and other institutions. In most circumstances, we indemnify our clients for the fair market value of those securities against a failure of the borrower to return such securities. We require the borrowers to maintain collateral in an amount in excess of 100% of the fair market value of the securities borrowed. Securities on loan and the collateral are revalued daily to determine if additional collateral is necessary or if excess collateral is required to be returned to the borrower. Collateral received in connection with our securities lending services is held by us as agent and is not recorded in our consolidated statement of condition.

The cash collateral held by us as agent is invested on behalf of our clients. In certain cases, the cash collateral is invested in third-party repurchase agreements, for which we indemnify the client against the loss of the principal invested. We require the counterparty to the indemnified repurchase agreement to provide collateral in an amount in excess of 100% of the amount of the repurchase agreement. In our role as agent, the indemnified repurchase agreements and the related collateral held by us are not recorded in our consolidated statement of condition.

The following table summarizes the aggregate fair values of indemnified securities financing and related collateral, as well as collateral invested in indemnified repurchase agreements, as of the dates indicated:

(In millions)	December 31, 2020	December 31, 2019
Fair value of indemnified securities financing	**$ 440,875**	$ 367,901
Fair value of cash and securities held by us, as agent, as collateral for indemnified securities financing	**463,273**	385,428
Fair value of collateral for indemnified securities financing invested in indemnified repurchase agreements	**54,432**	45,658
Fair value of cash and securities held by us or our agents as collateral for investments in indemnified repurchase agreements	**58,092**	48,887

In certain cases, we participate in securities finance transactions as a principal. As a principal, we borrow securities from the lending client and then lend such securities to the subsequent borrower, either our client or a broker/dealer. Our right to receive and obligation to return collateral in connection with our securities lending transactions are recorded in other assets and other liabilities, respectively, in our consolidated statement of condition. As of December 31, 2020 and December 31, 2019, we had approximately $18.33 billion and $18.52 billion, respectively, of collateral provided and approximately $9.36 billion and $10.77 billion, respectively, of collateral received from clients in connection with our participation in principal securities finance transactions.

Stable Value Protection

Stable value funds wrapped by us are high quality diversified portfolios of short intermediate duration fixed-income investments. Stable value contracts are derivative contracts that also qualify as guarantees. The notional amount under non-hedging derivatives, provided in Note 10, generally represents our maximum exposure under these derivatives contracts. However, exposure to various stable value contracts is contractually limited to substantially lower amounts than the notional values, which represent the total assets of the stable value funds.

Standby Letters of Credit

Standby letters of credit provide credit enhancement to our municipal clients to support the issuance of capital markets financing.

Note 13. Contingencies

Legal and Regulatory Matters

In the ordinary course of business, we and our subsidiaries are involved in disputes, litigation, and governmental or regulatory inquiries and investigations, both pending and threatened. These matters, if resolved adversely against us or settled, may result in monetary awards or payments, fines and penalties or require changes in our business practices. The resolution or settlement of these matters is inherently difficult to predict. Based on our assessment of these pending matters, we do not believe that the amount of any judgment, settlement or other action arising from any pending matter is likely to have a material adverse effect on our consolidated financial condition. However, an adverse outcome or development in certain of the matters described below could have a material adverse effect on our consolidated results of operations for the period in which such matter is resolved, or an accrual is determined to be required, on our consolidated financial condition, or on our reputation.

We evaluate our needs for accruals of loss contingencies related to legal and regulatory proceedings on a case-by-case basis. When we have a liability that we deem probable, and we deem the amount of such liability can be reasonably estimated as of the date of our consolidated financial statements, we accrue our estimate of the amount of loss. We also consider a loss probable and establish an accrual when we make, or intend to make, an offer of settlement. Once established, an accrual is subject to subsequent adjustment as a result of additional information. The resolution of legal and regulatory proceedings and the amount of reasonably estimable loss (or range thereof) are inherently difficult to predict, especially in the early stages of proceedings. Even if a loss is probable, an amount (or range) of loss might not be reasonably estimated until the later stages of the proceeding due to many factors such as the presence of complex or novel legal theories, the discretion of governmental authorities in seeking sanctions or negotiating resolutions in civil and criminal matters, the pace and timing of discovery and other assessments of facts and the procedural posture of the matter (collectively, "factors influencing reasonable estimates").

As of December 31, 2020, our aggregate accruals for loss contingencies for legal, regulatory and related matters totaled approximately $144 million, including potential fines by government agencies and civil litigation with respect to the matters specifically discussed below. To the extent that we have established accruals in our consolidated statement of condition for probable loss contingencies, such accruals may not be sufficient to cover our ultimate financial exposure associated with any settlements or judgments. Any such ultimate financial exposure, or proceedings to which we may become subject in the future, could have a material adverse effect on our businesses, on our future consolidated financial statements or on our reputation.

As of December 31, 2020, for those matters for which we have accrued probable loss contingencies (including the Invoicing Matter described below) and for other matters for which loss is reasonably possible (but not probable) in future periods, and for which we are able to estimate a range of reasonably possible loss, our estimate of the aggregate reasonably possible loss (in excess of any accrued amounts) ranges up to approximately $40 million. Our estimate with respect to the aggregate reasonably possible loss is based upon currently available information and is subject to significant judgment and a variety of assumptions and known and unknown uncertainties, which may change quickly and significantly from time to time, particularly if and as we engage with applicable governmental agencies or plaintiffs in connection with a proceeding. Also, the matters underlying the reasonably possible loss will change from time to time. As a result, actual results may vary significantly from the current estimate.

In certain pending matters, it is not currently feasible to reasonably estimate the amount or a range of reasonably possible loss, and such losses, which may be significant, are not included in the estimate of reasonably possible loss discussed above. This is due to, among other factors, the factors influencing reasonable estimates described above. An adverse outcome in one or more of the matters for which we have not estimated the amount or a range of reasonably possible loss, individually or in the aggregate, could have a material adverse effect on our businesses, on our future consolidated financial statements or on our reputation. Given that our actual losses from any legal or regulatory proceeding for which we have provided an estimate of the reasonably possible loss could significantly exceed such estimate, and given that we cannot estimate reasonably possible loss for all legal and regulatory proceedings as to which we may be subject now or in the future, no conclusion as to our ultimate exposure from current pending or potential legal or regulatory proceedings should be drawn from the current estimate of reasonably possible loss.

The following discussion provides information with respect to significant legal, governmental and regulatory matters.

Invoicing Matter

In 2015, we determined that we had incorrectly invoiced clients for certain expenses. We have

reimbursed most of our affected customers for those expenses, and we have implemented enhancements to our billing processes. In connection with our enhancements to our billing processes, we continue to review historical billing practices and may from time to time identify additional remediation. In 2017, we identified an additional area of incorrect expense billing associated with mailing services in our retirement services business. We currently expect the cumulative total of our payments to customers for these invoicing errors, including the error in the retirement services business, to be at least $370 million, all of which has been paid or is accrued. However, we may identify additional remediation costs.

In March 2017, a purported class action was commenced against us alleging that our invoicing practices violated duties owed to retirement plan customers under the Employee Retirement Income Security Act. In addition, we have received a purported class action demand letter alleging that our invoicing practices were unfair and deceptive under Massachusetts law. A class of customers, or particular customers, may assert that we have not paid to them all amounts incorrectly invoiced, and may seek double or treble damages under Massachusetts law.

We are also cooperating with investigations by governmental and regulatory authorities on these matters, including the civil and criminal divisions of the DOJ and the DOL, which reviews could result in significant fines or other sanctions, civil and criminal, against us. In June 2019, we reached an agreement with the SEC to settle its claims that we violated the recordkeeping provisions of Section 34(b) of the Investment Company Act of 1940 and caused violations of Section 31(a) of the Investment Company Act and Rules 31a-1(a) and 31a-1(b) thereunder in connection with our overcharges of customers which are registered investment companies. In reaching this settlement, we neither admitted nor denied the claims contained in the SEC's order, and agreed to pay a civil monetary penalty of $40 million. Also in June 2019, we reached an agreement with the Massachusetts Attorney General's office to resolve its claims related to this matter. In reaching this settlement, we neither admitted nor denied the claims in the order, and agreed to pay a civil monetary penalty of $5.5 million. The costs associated with these settlements were within our related previously established accruals for loss contingencies. The SEC and Massachusetts Attorney General's office settlements both recognize that the payment of $48.8 million in disgorgement and interest is satisfied by our direct reimbursements of our customers.

In January 2020, the DOJ outlined a framework for a possible resolution of their review. We are discussing the terms of a potential settlement of this matter with the DOJ. Separately, we have inquired of the DOL as to the status of their review but have not entered into settlement discussions with the DOL. There can be no assurance that any settlement with the DOJ or DOL will be reached on financial or other terms acceptable to us or at all. The aggregate amount of penalties that may potentially be imposed upon us in connection with the resolution of all outstanding investigations into our historical billing practices is not currently known. We have established a legal accrual with respect to the pending governmental investigations and civil litigation with respect to this matter, however, our ultimate liability with respect to this matter might be significantly in excess of our current accrual. Government authorities have significant discretion in criminal and civil matters as to the fines and other penalties they may seek to impose. Any resolution of the DOJ and DOL claims may involve penalties that could be a significant percentage, or a multiple of, all or a portion of the overcharge. The severity of such fines or penalties could take into account factors such as the amount or duration of our incorrect invoicing and the government's or regulators' assessment of the conduct of our employees, as well as prior conduct such as that which resulted in our January 2017 deferred prosecution agreement and settlement of civil claims regarding our indirect FX business.

The outcome of any of these proceedings and, in particular, any criminal sanction could materially adversely affect our results of operations and could have significant additional consequences for our business and reputation.

Federal Reserve/Massachusetts Division of Banks Written Agreement

On June 1, 2015, we entered into a written agreement with the Federal Reserve and the Massachusetts Division of Banks relating to deficiencies identified in our compliance programs with the requirements of the Bank Secrecy Act, Anti-Money Laundering regulations and U.S. economic sanctions regulations promulgated by the Office of Foreign Assets Control. As part of this enforcement action, we have been required to, among other things, implement improvements to our compliance programs. In June 2020, the Federal Reserve and the Massachusetts Division of Banks terminated the written agreement, based on our compliance with its requirements.

Shareholder Litigation

A shareholder of ours has filed a derivative complaint against the Company's past and present officers and directors to recover alleged losses

incurred by the Company relating to the invoicing matter and to the Ohio public retirement plans matter.

Income Taxes

In determining our provision for income taxes, we make certain judgments and interpretations with respect to tax laws in jurisdictions in which we have business operations. Because of the complex nature of these laws, in the normal course of our business, we are subject to challenges from U.S. and non-U.S. income tax authorities regarding the amount of income taxes due. These challenges may result in adjustments to the timing or amount of taxable income or deductions or the allocation of taxable income among tax jurisdictions. We recognize a tax benefit when it is more likely than not that our position will result in a tax deduction or credit. Unrecognized tax benefits of approximately $308 million as of December 31, 2020 increased from $149 million as of December 31, 2019.

We are presently under audit by a number of tax authorities, and the Internal Revenue Service is currently reviewing our U.S. income tax returns, including amended returns, for tax years 2014-2018. The earliest tax year open to examination in jurisdictions where we have material operations is 2013. Management believes that we have sufficiently accrued liabilities as of December 31, 2020 for potential tax exposures.

Note 14. Variable Interest Entities

We are involved, in the normal course of our business, with various types of special purpose entities, some of which meet the definition of VIEs. When evaluating a VIE for consolidation, we must determine whether or not we have a variable interest in the entity. Variable interests are investments or other interests that absorb portions of an entity's expected losses or receive portions of the entity's expected returns. If it is determined that we do not have a variable interest in the VIE, no further analysis is required and we do not consolidate the VIE. If we hold a variable interest in a VIE, we are required by U.S. GAAP to consolidate that VIE when we have a controlling financial interest in the VIE and therefore are deemed to be the primary beneficiary. We are determined to have a controlling financial interest in a VIE when it has both the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and the obligation to absorb losses or the right to receive benefits of the VIE that could potentially be significant to that VIE. This determination is evaluated periodically as facts and circumstances change.

Asset-Backed Investment Securities

We invest in various forms of ABS, which we carry in our investment securities portfolio. These ABS meet the U.S. GAAP definition of asset securitization entities, which are considered to be VIEs. We are not considered to be the primary beneficiary of these VIEs since we do not have control over their activities. Additional information about our ABS is provided in Note 3.

Tax-Exempt Investment Program

In the normal course of our business, we structure and sell certificated interests in pools of tax-exempt investment grade assets, principally to our mutual fund clients. We structure these pools as partnership trusts, and the assets and liabilities of the trusts are recorded in our consolidated statement of condition as AFS investment securities and other short-term borrowings. As of December 31, 2020 and December 31, 2019, we carried AFS investment securities, composed of securities related to state and political subdivisions, with a fair value of $0.70 billion and $0.94 billion, respectively, and other short-term borrowings of $0.62 billion and $0.82 billion, respectively, in our consolidated statement of condition in connection with these trusts. The interest income and interest expense generated by the investments and certificated interests, respectively, are recorded as components of NII when earned or incurred.

We transfer assets to the trusts from our investment securities portfolio at adjusted book value, and the trusts finance the acquisition of these assets by selling certificated interests issued by the trust to third-party investors and to us as residual holder. These transfers do not meet the de-recognition criteria defined by U.S. GAAP, and therefore, the assets continue to be recorded in our consolidated financial statements. The trusts had a weighted-average life of approximately 2.7 years as of December 31, 2020, compared to approximately 3.0 years as of December 31, 2019.

Under separate legal agreements, we provide liquidity facilities to these trusts and, with respect to certain securities, letters of credit. As of December 31, 2020, our commitments to the trusts under these liquidity facilities and/or letters of credit totaled $0.62 billion, and neither of the liquidity facilities nor letters of credit were utilized. In the event that our obligations under these liquidity facilities are triggered, no material impact to our consolidated results of operations or financial condition is expected to occur, because the securities are already recorded at fair value in our consolidated statement of condition. In addition, neither creditors or third-party investors in the trusts have any recourse to our general credit other than through the liquidity facilities and letters of credit noted above.

Interests in Investment Funds

In the normal course of business, we manage various types of investment funds through State Street Global Advisors in which our clients are investors, including State Street Global Advisors commingled investment vehicles and other similar investment structures. The majority of our AUM are contained within such funds. The services we provide to these funds generate management fee revenue. From time to time, we may invest cash in the funds in order for the funds to establish a performance history for newly-launched strategies, referred to as seed capital, or for other purposes.

With respect to our interests in funds that meet the definition of a VIE, a primary beneficiary assessment is performed to determine if we have a controlling financial interest. As part of our assessment, we consider all the facts and circumstances regarding the terms and characteristics of the variable interest(s), the design and characteristics of the fund and the other involvements of the enterprise with the fund. Upon consolidation of certain funds, we retain the specialized investment company accounting rules followed by the underlying funds.

All of the underlying investments held by such consolidated funds are carried at fair value, with corresponding changes in the investments' fair values reflected in foreign exchange trading services revenue in our consolidated statement of income. When we no longer control these funds due to a reduced ownership interest or other reasons, the funds are de-consolidated and accounted for under another accounting method if we continue to maintain investments in the funds.

As of December 31, 2020, the aggregate assets and liabilities of our consolidated sponsored investment funds totaled $17 million and $4 million, respectively. As of December 31, 2019, the aggregate assets and liabilities of our consolidated sponsored investment funds totaled $21 million and $5 million, respectively. As of December 31, 2020 and December 31, 2019, our maximum total exposure associated with the consolidated sponsored investment funds totaled $13 million and $15 million, respectively, and represented the value of our economic ownership interest in the funds.

Our conclusion to consolidate a fund may vary from period to period, most commonly as a result of fluctuation in our ownership interest as a result of changes in the number of fund shares held by either us or by third parties. Given that the funds follow specialized investment company accounting rules which prescribe fair value, a de-consolidation generally would not result in gains or losses for us.

The net assets of any consolidated fund are solely available to settle the liabilities of the fund and to settle any investors' ownership redemption requests, including any seed capital invested in the fund by us. We are not contractually required to provide financial or any other support to any of our funds. In addition, neither creditors nor equity investors in the funds have any recourse to our general credit.

As of December 31, 2020 and December 31, 2019, we managed certain funds, considered VIEs, in which we held a variable interest but for which we were not deemed to be the primary beneficiary. Our potential maximum loss exposure related to these unconsolidated funds totaled $22 million and $21 million as of December 31, 2020 and December 31, 2019, respectively, and represented the carrying value of our investments, which are recorded in other assets in our consolidated statement of condition. The amount of loss we may recognize during any period is limited to the carrying amount of our investments in the unconsolidated funds.

Note 15. Shareholders' Equity

Preferred Stock

The following table summarizes selected terms of each of the series of the preferred stock issued and outstanding as of December 31, 2020:

Preferred Stock[2]:	Issuance Date	Depositary Shares Issued	Ownership Interest Per Depositary Share	Liquidation Preference Per Share	Liquidation Preference Per Depositary Share	Per Annum Dividend Rate	Dividend Payment Frequency	Carrying Value as of December 31, 2020 (In millions)	Redemption Date[1]
Series D	February 2014	30,000,000	1/4,000th	100,000	25	5.90% to but excluding March 15, 2024, then a floating rate equal to the three-month LIBOR plus 3.108%	Quarterly	$ 742	March 15, 2024
Series F[3]	May 2015	750,000	1/100th	100,000	1,000	5.25% to but excluding September 15, 2020, then a floating rate equal to the three-month LIBOR plus 3.597%, or 3.81350% effective December 15, 2020	Quarterly	742	September 15, 2020
Series G	April 2016	20,000,000	1/4,000th	100,000	25	5.35% to but excluding March 15, 2026, then a floating rate equal to the three-month LIBOR plus 3.709%	Quarterly	493	March 15, 2026
Series H	September 2018	500,000	1/100th	100,000	1,000	5.625% to but excluding December 15, 2023, then a floating rate equal to the three-month LIBOR plus 2.539%	Semi-annually	494	December 15, 2023

[1] On the redemption date, or any dividend payment date thereafter, the preferred stock and corresponding depositary shares may be redeemed by us, in whole or in part, at the liquidation price per share and liquidation price per depositary share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.
[2] The preferred stock and corresponding depositary shares may be redeemed at our option in whole, but not in part, prior to the redemption date upon the occurrence of a regulatory capital treatment event, as defined in the certificate of designation, at a redemption price equal to the liquidation price per share and liquidation price per depositary share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.
[3] Series F preferred stock is redeemable on September 15, 2020 and on each succeeding dividend payment date. We did not elect redemption on September 15, 2020 or December 15, 2020.

We redeemed all outstanding Series C non-cumulative perpetual preferred stock on March 15, 2020 at a redemption price of $500 million ($100,000 per share equivalent to $25.00 per depositary share) plus accrued and unpaid dividends. The difference of $9 million between the redemption value and the net carrying value resulted in an EPS impact of approximately ($0.03) per share in the first quarter of 2020.

On January 14, 2021, we announced that we will redeem on March 15, 2021 an aggregate of $500 million, or 5,000 of the 7,500 outstanding shares of our non-cumulative perpetual preferred stock, Series F, for cash at a redemption price of $100,000 per share (equivalent to $1,000 per depositary share) plus all declared and unpaid dividends. A cash dividend of $953.38 per share of Series F Preferred Stock (or approximately $9.5338 per depositary share) has been declared for the period from December 15, 2020 up to but not including March 15, 2021 (the “March Dividend”). The March Dividend will be paid separately to the holders of record of the Series F Preferred Stock as of March 1, 2021 in the customary manner. Accordingly, there will not be any declared and unpaid dividends included in the redemption price.

The following table presents the dividends declared for each of the series of preferred stock issued and outstanding for the periods indicated:

	Years Ended December 31,					
	2020			2019		
(Dollars in millions, except per share amounts)	Dividends Declared per Share	Dividends Declared per Depositary Share	Total	Dividends Declared per Share	Dividends Declared per Depositary Share	Total
Preferred Stock:						
Series C	**$ 1,313**	**$ 0.33**	**$ 6**	$ 5,250	$ 1.32	$ 26
Series D	**5,900**	**1.48**	**44**	5,900	1.48	44
Series E	**—**	**—**	**—**	6,000	1.52	45
Series F	**6,223**	**62.23**	**47**	5,250	52.50	40
Series G	**5,352**	**1.32**	**27**	5,352	1.32	27
Series H	**5,625**	**56.25**	**28**	5,625	56.25	28
Total			**$ 152**			$ 210

In January 2021, we declared dividends on our series D, F, and G preferred stock of approximately $1,475, $953, and $1,338, respectively, per share, or approximately $0.37, $9.53, and $0.33, respectively, per depositary share. These dividends total approximately $11 million, $7 million, and $7 million on our series D, F, and G preferred stock, respectively, which will be paid in March 2021.

Common Stock

In June 2019, our Board approved a common stock purchase program authorizing the purchase of up to $2.0 billion of our common stock from July 1, 2019 through June 30, 2020 (the 2019 Program). We repurchased $500 million of our common stock in each of the third and fourth quarters of 2019 and the first quarter of 2020 under the 2019 Program. On March 16, 2020, we, along with the other U.S. G-SIBs, suspended common share repurchases and maintained this suspension through the fourth quarter of 2020 in response to the COVID-19 pandemic. This suspension was consistent with limitations imposed by the Federal Reserve beginning in the second quarter of 2020. As a result, we had no repurchases of our common stock in the second, third or fourth quarters of 2020.

In June 2020, concurrent with the release of the CCAR 2020 results, the Federal Reserve announced that all CCAR banks were required to resubmit their capital plan and stress test results based on scenarios to be provided in September 2020. Scenarios were provided on September 17, 2020 with materials due on November 2, 2020. In December 2020, the Federal Reserve issued results of 2020 resubmission stress tests and authorized us to continue to pay common stock dividends at current levels and to resume repurchasing common shares in the first quarter of 2021. In January 2021, our Board authorized a share repurchase program for the purchase of up to $475 million of our common stock through March 31, 2021.

In June 2018, our Board approved a common stock purchase program authorizing the purchase of up to $1.2 billion of our common stock through June 30, 2019 (the 2018 Program). We repurchased $300 million of our common stock in each of the first and second quarters of 2019 under the 2018 Program.

The table below presents the activity under our common stock purchase program for the period indicated:

	Year Ended December 31, 2020		
	Shares Acquired (In millions)	Average Cost per Share	Total Acquired (In millions)
2019 Program	**6.5**	**$ 77.35**	**$ 500**
Total	**6.5**	**77.35**	**$ 500**

The table below presents the dividends declared on common stock for the periods indicated:

	Years Ended December 31,			
	2020		2019	
	Dividends Declared per Share	Total (In millions)	Dividends Declared per Share	Total (In millions)
Common Stock	**$ 2.08**	**$ 734**	$ 1.98	$ 728

Accumulated Other Comprehensive Income (Loss)

The following table presents the after-tax components of AOCI for the periods indicated:

	Years Ended December 31,		
(In millions)	**2020**	**2019**	**2018**
Net unrealized gains (losses) on cash flow hedges	**$ 57**	$ (70)	$ (89)
Net unrealized gains (losses) on available-for-sale securities portfolio	**936**	426	(193)
Net unrealized gains (losses) related to reclassified available-for-sale securities	**(55)**	19	58
Net unrealized gains (losses) on available-for-sale securities	**881**	445	(135)
Net unrealized (losses) on available-for-sale securities designated in fair value hedges	**(33)**	(36)	(40)
Net unrealized gains (losses) on hedges of net investments in non-U.S. subsidiaries	**(204)**	46	16
Other-than-temporary impairment on held-to-maturity securities related to factors other than credit	**(2)**	(2)	(2)
Net unrealized (losses) on retirement plans	**(178)**	(187)	(143)
Foreign currency translation	**(334)**	(1,072)	(963)
Total	**$ 187**	$ (876)	$ (1,356)

The following table presents changes in AOCI by component, net of related taxes, for the periods indicated:

(In millions)	Net Unrealized Gains (Losses) on Cash Flow Hedges	Net Unrealized Gains (Losses) on Available-for-Sale Securities	Net Unrealized Gains (Losses) on Hedges of Net Investments in Non-U.S. Subsidiaries	Other-Than-Temporary Impairment on Held-to-Maturity Securities	Net Unrealized Losses on Retirement Plans	Foreign Currency Translation	Total
Balance as of December 31, 2018	$ (89)	$ (175)	$ 16	$ (2)	$ (143)	$ (963)	$ (1,356)
Other comprehensive income (loss) before reclassifications	13	563	33	2	—	(42)	569
Reclassification of certain tax effects[1]	(6)	21	(3)	(1)	(28)	(67)	(84)
Amounts reclassified into (out of) earnings	12	—	—	(1)	(16)	—	(5)
Other comprehensive income (loss)	19	584	30	—	(44)	(109)	480
Balance as of December 31, 2019	$ (70)	$ 409	$ 46	$ (2)	$ (187)	$ (1,072)	$ (876)
Other comprehensive income (loss) before reclassifications	**75**	**439**	**(250)**	**—**	**—**	**738**	**1,002**
Amounts reclassified into earnings	**52**	**—**	**—**	**—**	**9**	**—**	**61**
Other comprehensive income (loss)	**127**	**439**	**(250)**	**—**	**9**	**738**	**1,063**
Balance as of December 31, 2020	**$ 57**	**$ 848**	**$ (204)**	**$ (2)**	**$ (178)**	**$ (334)**	**$ 187**

[1] Represents the reclassification from accumulated other comprehensive income into retained earnings as a result of our adoption of ASU 2018-02 - Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income in the first quarter of 2019.

The following table presents after-tax reclassifications into earnings for the periods indicated:

	Years Ended December 31,		
	2020	2019	
(In millions)	Amounts Reclassified into (out of) Earnings		Affected Line Item in Consolidated Statement of Income
Held-to-maturity securities:			
Other-than-temporary impairment on held-to-maturity securities related to factors other than credit, net of related taxes of zero and zero, respectively	**$ —**	$ (1)	Losses reclassified (from) to other comprehensive income
Cash flow hedges:			
Gain reclassified from accumulated other comprehensive income into Income, net of related taxes of $20 and $5	**52**	12	Net interest income reclassified from other comprehensive income
Retirement plans:			
Amortization of actuarial losses, net of related taxes of $3 and ($8), respectively	**9**	(16)	Compensation and employee benefits expenses
Total reclassifications (into) out of Accumulated other comprehensive loss	**$ 61**	$ (5)	

Note 16. Regulatory Capital

We are subject to various regulatory capital requirements administered by federal banking agencies. Failure to meet minimum regulatory capital requirements can initiate certain mandatory and discretionary actions by regulators that, if undertaken, could have a direct material effect on our consolidated financial condition. Under current regulatory capital adequacy guidelines, we must meet specified capital requirements that involve quantitative measures of our consolidated assets, liabilities and off-balance sheet exposures calculated in conformity with regulatory accounting practices. Our capital components and their classifications are subject to qualitative judgments by regulators about components, risk weightings and other factors.

As required by the Dodd-Frank Act, we and State Street Bank, as advanced approaches banking organizations, are subject to a "capital floor" in the calculation and assessment of regulatory capital adequacy by U.S. banking regulators. Beginning on January 1, 2015, we were required to calculate our risk- based capital ratios using both the advanced approaches and the standardized approach. As a result, from January 1, 2015 going forward, our risk-based capital ratios for regulatory assessment purposes are the lower of each ratio calculated under the standardized approach and the advanced approaches.

The methods for the calculation of our and State Street Bank's risk-based capital ratios have changed as the provisions of the Basel III rule related to the numerator (capital) and denominator (RWA) were phased in, and as we calculated our RWA using the advanced approaches. These ongoing methodological changes have resulted in differences in our reported capital ratios from one reporting period to the next that are independent of applicable changes to our capital base, our asset composition, our off-balance sheet exposures or our risk profile.

As of December 31, 2020, we and State Street Bank exceeded all regulatory capital adequacy requirements to which we were subject. As of December 31, 2020, State Street Bank was categorized as “well capitalized” under the applicable regulatory capital adequacy framework, and exceeded all “well capitalized” ratio guidelines to which it was subject. Management believes that no conditions or events have occurred since December 31, 2020 that have changed the capital categorization of State Street Bank.

The following table presents the regulatory capital structure, total RWA, related regulatory capital ratios and the minimum required regulatory capital ratios for us and State Street Bank as of the dates indicated. As a result of changes in the methodologies used to calculate our regulatory capital ratios from period to period as the provisions of the Basel III rule were phased in, the ratios presented in the table for each period-end are not directly comparable. Refer to the footnotes following the table.

(Dollars in millions)	State Street Corporation				State Street Bank			
	Basel III Advanced Approaches December 31, 2020	Basel III Standardized Approach December 31, 2020	Basel III Advanced Approaches December 31, 2019	Basel III Standardized Approach December 31, 2019	Basel III Advanced Approaches December 31, 2020	Basel III Standardized Approach December 31, 2020	Basel III Advanced Approaches December 31, 2019	Basel III Standardized Approach December 31, 2019
Common shareholders' equity:								
Common stock and related surplus	**$ 10,709**	**$ 10,709**	$ 10,636	$ 10,636	**$ 12,893**	**$ 12,893**	$ 12,893	$ 12,893
Retained earnings	**23,442**	**23,442**	21,918	21,918	**12,939**	**12,939**	13,218	13,218
Accumulated other comprehensive income (loss)	**187**	**187**	(870)	(870)	**371**	**371**	(654)	(654)
Treasury stock, at cost	**(10,609)**	**(10,609)**	(10,209)	(10,209)	**—**	**—**	—	—
Total	**23,729**	**23,729**	21,475	21,475	**26,203**	**26,203**	25,457	25,457
Regulatory capital adjustments:								
Goodwill and other intangible assets, net of associated deferred tax liabilities	**(9,019)**	**(9,019)**	(9,112)	(9,112)	**(8,745)**	**(8,745)**	(8,839)	(8,839)
Other adjustments[1]	**(333)**	**(333)**	(150)	(150)	**(152)**	**(152)**	(1)	(1)
Common equity tier 1 capital	**14,377**	**14,377**	12,213	12,213	**17,306**	**17,306**	16,617	16,617
Preferred stock	**2,471**	**2,471**	2,962	2,962	**—**	**—**	—	—
Tier 1 capital	**16,848**	**16,848**	15,175	15,175	**17,306**	**17,306**	16,617	16,617
Qualifying subordinated long-term debt	**961**	**961**	1,095	1,095	**966**	**966**	1,099	1,099
Allowance for credit losses	**1**	**148**	5	90	**10**	**148**	3	90
Total capital	**$ 17,810**	**$ 17,957**	$ 16,275	$ 16,360	**$ 18,282**	**$ 18,420**	$ 17,719	$ 17,806
Risk-weighted assets:								
Credit risk[2]	**$ 63,367**	**$ 114,892**	$ 54,763	$ 102,367	**$ 58,960**	**$ 110,797**	$ 51,610	$ 98,979
Operational risk[3]	**44,150**	**NA**	47,963	NA	**43,663**	**NA**	44,138	NA
Market risk	**2,188**	**2,188**	1,638	1,638	**2,188**	**2,188**	1,638	1,638
Total risk-weighted assets	**$ 109,705**	**$ 117,080**	$ 104,364	$ 104,005	**$ 104,811**	**$ 112,985**	$ 97,386	$ 100,617
Adjusted quarterly average assets	**$ 263,490**	**$ 263,490**	$ 219,624	$ 219,624	**$ 260,489**	**$ 260,489**	$ 216,397	$ 216,397

Capital Ratios:	2020 Minimum Requirements[4]	2019 Minimum Requirements[5]								
Common equity tier 1 capital	**8.0 %**	8.5 %	**13.1 %**	**12.3 %**	11.7 %	11.7 %	**16.5 %**	**15.3 %**	17.1 %	16.5 %
Tier 1 capital	**9.5**	10.0	**15.4**	**14.4**	14.5	14.6	**16.5**	**15.3**	17.1	16.5
Total capital	**11.5**	12.0	**16.2**	**15.3**	15.6	15.7	**17.4**	**16.3**	18.2	17.7
Tier 1 leverage[6]	**4.0**	4.0	**6.4**	**6.4**	6.9	6.9	**6.6**	**6.6**	7.7	7.7

[1] Other adjustments within CET1 primarily include the overfunded portion of the firm's defined benefit pension plan obligation net of associated deferred tax liabilities, disallowed deferred tax assets, and other required credit risk based deductions.
[2] Includes a CVA which reflects the risk of potential fair value adjustments for credit risk reflected in our valuation of OTC derivative contracts. We used a simple CVA approach in conformity with the Basel III advanced approaches.
[3] Under the current advanced approaches rules and regulatory guidance concerning operational risk models, RWA attributable to operational risk can vary substantially from period-to-period, without direct correlation to the effects of a particular loss event on our results of operations and financial condition and impacting dates and periods that may differ from the dates and periods as of and during which the loss event is reflected in our financial statements, with the timing and categorization dependent on the processes for model updates and, if applicable, model revalidation and regulatory review and related supervisory processes. An individual loss event can have a significant effect on the output of our operational RWA under the advanced approaches depending on the severity of the loss event and its categorization among the seven Basel-defined UOMs.
[4] Assuming a countercyclical buffer of 0%, the minimum requirements include a capital conservation buffer and a stress capital buffer for advanced and standardized, respectively, and a G-SIB surcharge.
[5] Assuming a countercyclical buffer of 0%, the minimum requirements include a capital conservation buffer and a G-SIB surcharge.
[6] State Street Bank is required to maintain a minimum Tier 1 leverage ratio of 5% as it is the insured depository institution subsidiary of one of the eight US G-SIBs.
NA Not applicable

Note 17. Net Interest Income

The following table presents the components of interest income and interest expense, and related NII, for the periods indicated:

	Years Ended December 31,		
(In millions)	2020	2019	2018
Interest income:			
Interest-bearing deposits with banks	$ 76	$ 416	$ 387
Investment securities:			
U.S. Treasury and federal agencies	1,174	1,443	1,178
State and political subdivisions	37	49	143
Other investments	366	505	560
Investment securities purchased under money market liquidity facility	117	—	—
Total Investment securities	1,694	1,997	1,881
Securities purchased under resale agreements	126	364	335
Loans and leases	624	769	687
Other interest-earning assets	55	395	372
Total interest income	2,575	3,941	3,662
Interest expense:			
Interest-bearing deposits	(117)	663	363
Short term borrowings under money market liquidity facility	101	—	—
Securities sold under repurchase agreements	4	31	13
Other short-term borrowings	17	21	17
Long-term debt	312	414	389
Other interest-bearing liabilities	58	246	209
Total interest expense	375	1,375	991
Net interest income	$ 2,200	$ 2,566	$ 2,671

Note 18. Equity-Based Compensation

We record compensation expense for equity-based awards, such as deferred stock and performance awards, based on the closing price of our common stock on the date of grant, adjusted if appropriate, based on the eligibility of the award to receive dividends.

Compensation expense related to equity-based awards with service-only conditions and terms that provide for a graded vesting schedule is recognized on a straight-line basis over the required service period for the entire award. Compensation expense related to equity-based awards with performance conditions and terms that provide for a graded vesting schedule is recognized over the requisite service period for each separately vesting tranche of the award, and is based on the probable outcome of the performance conditions at each reporting date. Compensation expense is adjusted for assumptions with respect to the estimated amount of awards that will be forfeited prior to vesting, and for employees who have met certain retirement eligibility criteria. Compensation expense for common stock awards granted to employees meeting early retirement eligibility criteria is fully expensed on the grant date.

Dividend equivalents for certain equity-based awards are paid on stock units on a current basis prior to vesting and distribution.

The 2017 Stock Incentive Plan, or 2017 Plan, was approved by shareholders in May 2017 for issuance of stock and stock based awards. Awards may be made under the 2017 Plan for (i) up to 8.3 million shares of common stock plus (ii) up to an additional 28.5 million shares that were available to be issued under the 2006 Equity Incentive Plan, or 2006 Plan, or may become available for issuance under the 2006 Plan due to expiration, termination, cancellation, forfeiture or repurchase of awards granted under the 2006 Plan. As of December 31, 2020, a total of 20.5 million shares from the 2006 Plan have been added to and may be issued from the 2017 Plan.

The following table presents the cumulative total number of shares that was awarded under the 2017 Plan and the 2006 Plan for the periods indicated:

	As of December 31,		
(In millions)	2020	2019	2018
Total number of shares awarded under the 2006 Plan	68.9	68.9	68.9
Total number of shares awarded under the 2017 Plan	11.3	7.6	3.9

The 2017 Plan allows for shares withheld in payment of the exercise price of an award or in satisfaction of tax withholding requirements, shares forfeited due to employee termination, shares expired under option awards, or shares not delivered when performance conditions have not been met, to be added back to the pool of shares available for issuance under the 2017 Plan. From inception to December 31, 2020, 1.7 million shares had been awarded under the 2017 Plan but not delivered, and have become available for re-issue. As of December 31, 2020, a total of 19.2 million shares were available for future issuance under the 2017 Plan.

For deferred stock awards granted under the Plans, no common stock is issued at the time of grant and the award does not possess dividend and voting rights. Generally, these grants vest over one to four years. Performance awards granted are earned over a performance period based on the achievement of defined goals, generally over three years. Payment for performance awards is made in shares of our common stock equal to its fair market value per share, based on the performance of certain financial ratios, after the conclusion of each performance period.

Beginning with 2012, malus-based forfeiture provisions were included in deferred stock awards granted to employees identified as “material risk-takers,” as defined by management. These malus-

based forfeiture provisions provide for the reduction or cancellation of unvested deferred compensation, such as deferred stock awards and performance based awards, if it is determined that a material risk-taker made risk-based decisions that exposed us to inappropriate risks that resulted in a material unexpected loss at the business-unit, line-of-business or corporate level. In addition, awards granted to certain of our senior executives, as well as awards granted to individuals in certain jurisdictions, may be subject to recoupment after vesting (if applicable) and delivery to the individual in specified circumstances generally relating to fraud or willful misconduct by the individual that results in material harm to us or a material financial restatement.

Compensation expense related to deferred stock awards and performance awards, which we record as a component of compensation and employee benefits expense in our consolidated statement of income, was $240 million, $235 million and $262 million for the years ended December 31, 2020, 2019 and 2018, respectively. Such expense for 2020, 2019 and 2018 excluded an expense of $29 million, a release of $4 million and an expense of $45 million, respectively, associated with acceleration of expense in connection with targeted staff reductions. This expense was included in the severance-related portion of the associated restructuring or repositioning charges recorded in each respective year.

For the years ended December 31, 2020, 2019 and 2018, no stock appreciation rights were exercised. As of December 31, 2020, there was no unrecognized compensation cost related to stock appreciation rights.

	Shares (In thousands)	Weighted-Average Grant Date Fair Value
Deferred Stock Awards:		
Outstanding as of December 31, 2018	5,975	$ 77.07
Granted	3,168	66.68
Vested	(3,089)	71.20
Forfeited	(220)	75.85
Outstanding as of December 31, 2019	5,834	74.33
Granted	**2,926**	**63.56**
Vested	**(2,938)**	**71.33**
Forfeited	**(136)**	**71.79**
Outstanding as of December 31, 2020	**5,686**	**69.70**

The total fair value of deferred stock awards vested for the years ended December 31, 2020, 2019 and 2018, based on the weighted average grant date fair value in each respective year, was $210 million, $220 million and $230 million, respectively. As of December 31, 2020, total unrecognized compensation cost related to deferred stock awards, net of estimated forfeitures, was $199 million, which is expected to be recognized over a weighted-average period of 2.3 years.

	Shares (In thousands)	Weighted-Average Grant Date Fair Value
Performance Awards:		
Outstanding as of December 31, 2018	2,157	$ 69.36
Granted	510	66.04
Forfeited	(96)	74.82
Paid out	(432)	51.01
Outstanding as of December 31, 2019	2,139	71.82
Granted	**811**	**62.58**
Forfeited	**(23)**	**94.91**
Paid out	**(410)**	**73.10**
Outstanding as of December 31, 2020	**2,517**	**68.42**

The total fair value of performance awards vested for the years ended December 31, 2020, 2019 and 2018, based on the weighted average grant date fair value in each respective year, was $30 million, $22 million and $32 million, respectively. As of December 31, 2020, total unrecognized compensation cost related to performance awards, net of estimated forfeitures, was $26 million, which is expected to be recognized over a weighted-average period of 1.6 years.

We utilize either treasury shares or authorized but unissued shares to satisfy the issuance of common stock under our equity incentive plans. We do not have a specific policy concerning purchases of our common stock to satisfy stock issuances. We have a general policy concerning purchases of our common stock to meet issuances under our employee benefit plans, including other corporate purposes. Various factors determine the amount and timing of our purchases of our common stock, including regulatory reviews and approvals or non-objections, our regulatory capital requirements, the number of shares we expect to issue under employee benefit plans, market conditions (including the trading price of our common stock), and legal considerations. These factors can change at any time, and the number of shares of common stock we will purchase or when we will purchase them cannot be assured. Additional information on our common stock purchase program is provided in Note 15.

Note 19. Employee Benefits

Defined Benefit Pension and Other Post-Retirement Benefit Plans

State Street Bank and certain of its U.S. subsidiaries participate in a non-contributory, tax-qualified defined benefit pension plan. The U.S. defined benefit pension plan was frozen as of December 31, 2007 and no new employees were eligible to participate after that date. We have agreed to contribute sufficient amounts as necessary to meet the benefits paid to plan participants and to fund the plan's service cost, plus interest. U.S. employee account balances earn annual interest credits until the employee begins receiving benefits. Non-U.S. employees participate in local defined benefit plans which are funded as required in each local jurisdiction. In addition to the defined benefit pension plans, we have non-qualified unfunded SERPs that provide certain officers with defined pension benefits in excess of allowable qualified plan limits. State Street Bank and certain of its U.S. subsidiaries also participate in a post-retirement plan that provides health care benefits for certain retired employees. The total expense for these tax-qualified and non-qualified plans was $25 million, $8 million and $11 million in 2020, 2019 and 2018, respectively.

We recognize the funded status of our defined benefit pension plans and other post-retirement benefit plans, measured as the difference between the fair value of the plan assets and the projected benefit obligation, in the consolidated statement of position. The assets held by the defined benefit pension plans are largely made up of common, collective funds that are liquid and invest principally in U.S. equities and high-quality fixed-income investments. The majority of these assets fall within Level 2 of the fair value hierarchy. The benefit obligations associated with our primary U.S. and non-U.S. defined benefit plans, non-qualified unfunded supplemental retirement plans and post-retirement plans were $1.53 billion, $69 million and $4 million, respectively, as of December 31, 2020 and $1.37 billion, $88 million and $10 million, respectively, as of December 31, 2019. As the primary defined benefit plans are frozen, the benefit obligation will only vary over time as a result of changes in market interest rates, the life expectancy of the plan participants and payments made from the plans. The primary U.S. and non-U.S. defined benefit pension plans were underfunded by $15 million and overfunded by $10 million as of December 31, 2020 and 2019, respectively. The non-qualified supplemental retirement plans were underfunded by $69 million and $88 million as of December 31, 2020 and 2019, respectively. The other post-retirement benefit plans were underfunded by $4 million and $10 million as of December 31, 2020 and 2019, respectively. The underfunded status is included in other liabilities.

Defined Contribution Retirement Plans

We contribute to employer-sponsored U.S. and non-U.S. defined contribution plans. Our contribution to these plans was $168 million, $167 million and $170 million in 2020, 2019 and 2018, respectively.

Note 20. Occupancy Expense and Information Systems and Communications Expense

Upon adoption of Topic 842 on January 1, 2019, we recognized right-of-use assets of approximately $0.91 billion and lease liabilities of approximately $1.06 billion.

Occupancy expense and information systems and communications expense include depreciation of buildings, leasehold improvements, computer hardware and software, equipment, furniture and fixtures, and amortization of lease right-of-use assets. Total depreciation and amortization expense in 2020, 2019 and 2018 was $858 million, $842 million and $599 million, respectively. We recorded a repositioning charge of $51 million in occupancy expenses in 2020, consisting of a $46 million impairment of right-of-use assets and consisting of $5 million for one-time repairs.

We use our incremental borrowing rate to determine the present value of the lease payments for finance and operating leases described below. Additionally, we do not separate nonlease components such as real estate taxes and common area maintenance from base lease payments.

As of December 31, 2020 and 2019, an aggregate net book value of $55 million and $78 million, respectively, for the finance lease related to our One Lincoln Street Boston headquarters was recorded in premises and equipment, with the related liability of $103 million and $136 million, respectively, recorded in long-term debt, in our consolidated statement of condition.

Finance lease right-of-use asset amortization is recorded in occupancy expense on a straight-line basis in our consolidated statement of income over the respective lease term. As of December 31, 2020, accumulated amortization of the finance lease right-of-use asset was $75 million. Lease payments are recorded as a reduction of the liability, with a portion recorded as imputed interest expense. In 2020 and 2019, interest expense related to the finance lease obligation reflected in NII was $9 million and $11 million, respectively.

As of December 31, 2020, an aggregate net book value of $720 million for the operating lease right-of-use assets is recorded in other assets, with the related lease liability of $891 million recorded in

accrued expenses and other liabilities in our consolidated statement of condition.

We have entered into non-cancellable operating leases for premises and equipment. Nearly all of these leases include renewal options, and only those reasonably certain of being exercised are included in the term of the lease. Costs for operating leases are recorded on a straight-line basis which includes both interest expense and right-of-use asset amortization. Operating lease costs for office space are recorded in occupancy expense. Costs related to operating leases for equipment are recorded in information systems and communications expense.

As of December 31, 2020, we have additional operating leases, primarily for office space, that have not yet commenced of approximately $462 million of undiscounted future minimum lease payments. These leases will commence between fiscal year 2021 and fiscal year 2023 with lease terms of 10 to 15 years. The majority of these future payments relate to the new Boston headquarters lease executed in the first quarter of 2019, replacing the One Lincoln Street Boston property.

None of our leases contain residual value guarantees.

The following table presents lease costs, sublease rental income, cash flows and new leases arising from lease transactions for 2020:

	Years Ended December 31,	
(In millions)	2020	2019
Finance lease:		
Amortization of right-of-use assets	$ 20	$ 21
Interest on lease liabilities	9	11
Total finance lease expense	29	32
Sublease income	(11)	(9)
Net finance lease expense	18	23
Operating lease:		
Operating lease expense	169	179
Sublease income	(16)	(6)
Net operating lease expense	153	173
Net lease expense	$ 171	$ 196
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from finance leases	$ 9	$ 11
Operating cash flows from operating leases	192	201
Financing cash flows from finance leases	33	54
Right-of-use assets obtained in exchange for new lease obligations:		
Operating leases	$ 38	$ 120
Finance leases	—	—

The following table presents future minimum lease payments under non-cancellable leases as of December 31, 2020:

(In millions)	Operating Leases	Finance Leases	Total
2021	$ 186	$ 41	$ 227
2022	167	41	208
2023	147	31	178
2024	112	—	112
2025	93	—	93
Thereafter	275	—	275
Total future minimum lease payments	980	113	1,093
Less imputed interest	(89)	(10)	(99)
Total	$ 891	$ 103	$ 994

The following table presents details related to remaining lease terms and discount rate as of December 31, 2020:

	December 31, 2020	December 31, 2019
Weighted-average remaining lease term (in years):		
Finance leases	2.7	3.8
Operating leases	7.1	7.6
Weighted-average discount rate:		
Finance leases	7 %	7 %
Operating leases	3 %	3 %

Note 21. Expenses

The following table presents the components of other expenses for the periods indicated:

	Years Ended December 31,		
(In millions)	2020	2019	2018
Professional services	$ 364	$ 321	$ 357
Sales advertising public relations	77	114	115
Regulatory fees and assessments	61	73	91
Securities processing	41	75	52
Donations	20	51	12
Bank operations	18	43	70
Insurance	14	19	18
Other	370	566	461
Total other expenses	$ 965	$ 1,262	$ 1,176

Acquisition Costs

We recorded approximately $54 million of acquisition costs in 2020 compared to $79 million in 2019 and $31 million in 2018, related to our acquisition of CRD.

Restructuring and Repositioning Charges

Repositioning Charges

In 2020, we recorded $133 million of repositioning charges, including $82 million of compensation and employee benefits and $51 million of occupancy expenses, to further drive automation of processes and organizational simplification enabling workforce rationalization and to reduce our real estate footprint by approximately 13% of our total square footage.

In 2019, we recorded $110 million of repositioning charges, including $98 million of compensation and employee benefits expenses and $12 million of occupancy costs, to further drive process automation, information technology optimizations and organization rationalization in 2020.

The following table presents aggregate activity for repositioning charges and activity related to previous Beacon restructuring charges for the periods indicated:

(In millions)	Employee Related Costs	Real Estate Actions	Asset and Other Write-offs	Total
Accrual Balance at December 31, 2017	$ 166	$ 32	$ 3	$ 201
Accruals for Beacon	(7)	—	—	(7)
Accruals for Repositioning Charges	259	41	—	300
Payments and Other Adjustments	(115)	(36)	(2)	(153)
Accrual Balance at December 31, 2018	303	37	1	341
Accruals for Beacon	(2)	—	—	(2)
Accruals for Repositioning Charges	98	12	—	110
Payments and Other Adjustments	(209)	(42)	—	(251)
Accrual Balance at December 31, 2019	190	7	1	198
Accruals for Beacon	**(4)**	**—**	**—**	**(4)**
Accruals for Repositioning Charges	**82**	**51**	**—**	**133**
Payments and Other Adjustments	**(78)**	**(52)**	**(1)**	**(131)**
Accrual Balance at December 31, 2020	**$ 190**	**$ 6**	**$ —**	**$ 196**

Note 22. Income Taxes

We use an asset-and-liability approach to account for income taxes. Our objective is to recognize the amount of taxes payable or refundable for the current year through charges or credits to the current tax provision, and to recognize deferred tax assets and liabilities for future tax consequences of temporary differences between amounts reported in our consolidated financial statements and their respective tax bases. The measurement of tax assets and liabilities is based on enacted tax laws and applicable tax rates. The effects of a tax position on our consolidated financial statements are recognized when we believe it is more likely than not that the position will be sustained. A valuation allowance is established if it is considered more likely than not that all or a portion of the deferred tax assets will not be realized. Deferred tax assets and liabilities recorded in our consolidated statement of condition are netted within the same tax jurisdiction.

The following table presents the components of income tax expense (benefit) for the periods indicated:

	Years Ended December 31,		
(In millions)	2020	2019	2018
Current:			
Federal	**$ 241**	$ 157	$ 122
State	**122**	86	148
Non-U.S.	**310**	357	374
Total current expense	**673**	600	644
Deferred:			
Federal	**(168)**	(6)	(128)
State	**5**	33	(22)
Non-U.S.	**(31)**	(157)	14
Total deferred expense (benefit)	**(194)**	(130)	(136)
Total income tax expense (benefit)	**$ 479**	$ 470	$ 508

The following table presents a reconciliation of the U.S. statutory income tax rate to our effective tax rate based on income before income tax expense for the periods indicated:

	Years Ended December 31,		
	2020	2019	2018
U.S. federal income tax rate	**21.0 %**	21.0 %	21.0 %
Changes from statutory rate:			
State taxes, net of federal benefit	**3.8**	3.4	3.1
Tax-exempt income	**(1.3)**	(1.5)	(2.0)
Business tax credits[1]	**(5.1)**	(5.4)	(4.1)
Foreign tax differential	**(0.8)**	(0.1)	(0.6)
Foreign legal entity restructuring	**—**	(4.3)	—
Foreign tax credit (benefits)/ limitations	**(0.9)**	2.2	0.2
Deferred tax revaluation	**—**	—	(1.0)
Litigation expense	**—**	1.6	0.3
Other, net	**(0.2)**	0.4	(0.6)
Effective tax rate	**16.5 %**	17.3 %	16.3 %

[1] Business tax credits include low-income housing, production and investment tax credits.

As of December 31, 2018, the accounting for income tax effects of the TCJA was completed and the 2018 income tax expense included an additional deferred tax benefit of approximately $32 million.

Beginning in 2018, the TCJA subjects a U.S. shareholder to current tax on Global Intangible Low-Taxed Income (GILTI) earned by certain foreign subsidiaries. We have elected to recognize our tax on GILTI as a period expense in the period the tax is incurred. As such, we have included an estimate of this liability in our estimated annual effective tax rate. This adjustment increased our effective tax rate by

0.2%, 0.3% and 0.2% in 2020, 2019 and 2018, respectively, which is reflected in the prior reconciliation table under "Foreign Tax Credit (Benefits)/Limitations".

Undistributed indefinitely reinvested earnings of certain foreign subsidiaries amounted to approximately $5.8 billion at December 31, 2020. As a result, no provision has been recorded for state and local or foreign withholding income taxes. If a distribution were to occur, we would be subject to state, local and to foreign withholding tax. It is expected that any distribution will be exempt from federal income tax. Although the foreign withholding tax is generally creditable against U.S. federal income tax, certain credit utilization limitations may result in a net cost.

The following table presents significant components of our gross deferred tax assets and gross deferred tax liabilities as of the dates indicated:

	December 31,	
(In millions)	2020	2019
Deferred tax assets:		
Other amortizable assets	$ 385	$ 394
Tax credit carryforwards	564	387
Lease obligations	243	254
Deferred compensation	110	120
Restructuring charges and other reserves	129	104
NOL and other carryforwards	101	73
Pension plan	56	66
Foreign currency translation	3	57
Total deferred tax assets	1,591	1,455
Valuation allowance for deferred tax assets	(295)	(330)
Deferred tax assets, net of valuation allowance	$ 1,296	$ 1,125
Deferred tax liabilities:		
Fixed and intangible assets	$ 765	$ 763
Investment basis differences	269	258
Right-of-use Assets	187	223
Unrealized gains on investment securities, net	321	86
Other	51	32
Total deferred tax liabilities	$ 1,593	$ 1,362

The table below summarizes the deferred tax assets and related valuation allowances recognized as of December 31, 2020:

(In millions)	Deferred Tax Asset	Valuation Allowance	Expiration
Other amortizable assets	$ 385	$ (233)	—
Tax credits	564	—	2038-2040
NOLs - Non-U.S.	65	(40)	2026-2031, None
Other carryforwards	19	(5)	None
NOLs - State	17	(17)	2021-2040

Management considers the valuation allowance adequate to reduce the total deferred tax assets to an aggregate amount that will more likely than not be realized. Management has determined that a valuation allowance is not required for the remaining deferred tax assets because it is more likely than not that there will be sufficient taxable income of the appropriate nature within the carryforward periods to realize these assets.

At December 31, 2020, 2019 and 2018, the gross unrecognized tax benefits, excluding interest, were $308 million, $149 million and $108 million, respectively. Of this, the amounts that would reduce the effective tax rate, if recognized, are $294 million, $140 million and $100 million, respectively. The reduction in the effective tax rate includes the federal benefit for unrecognized state tax benefits.

The following table presents activity related to unrecognized tax benefits as of the dates indicated:

	December 31,		
(In millions)	2020	2019	2018
Beginning balance	$ 149	$ 108	$ 94
Decrease related to agreements with tax authorities	—	(17)	(40)
Increase related to tax positions taken during current year	47	13	12
Increase related to tax positions taken during prior years	137	49	44
Decreases related to a lapse of the applicable statute of limitations	(25)	(4)	(2)
Ending balance	$ 308	$ 149	$ 108

It is reasonably possible that of the $308 million of unrecognized tax benefits as of December 31, 2020, up to $104 million could decrease within the next 12 months due to the resolution of various audits. Management believes that we have sufficient accrued liabilities as of December 31, 2020 for tax exposures and related interest expense.

Income tax expense included related interest and penalties of approximately $6 million, $5 million and $1 million in 2020, 2019 and 2018, respectively. Total accrued interest and penalties were approximately $14 million, $10 million and $8 million as of December 31, 2020, 2019 and 2018, respectively.

Note 23. Earnings Per Common Share

Basic EPS is calculated pursuant to the two-class method, by dividing net income available to common shareholders by the weighted-average common shares outstanding during the period. Diluted EPS is calculated pursuant to the two-class method, by dividing net income available to common shareholders by the total weighted-average number of common shares outstanding for the period plus the shares representing the dilutive effect of equity-based awards. The effect of equity-based awards is excluded from the calculation of diluted EPS in periods in which their effect would be anti-dilutive.

The two-class method requires the allocation of undistributed net income between common and participating shareholders. Net income available to common shareholders, presented separately in our consolidated statement of income, is the basis for the calculation of both basic and diluted EPS. Participating securities are composed of unvested and fully vested SERP shares and fully vested deferred director stock awards, which are equity-based awards that contain non-forfeitable rights to dividends, and are considered to participate with the common stock in undistributed earnings.

The following table presents the computation of basic and diluted earnings per common share for the periods indicated:

	Years Ended December 31,		
(Dollars in millions, except per share amounts)	**2020**	**2019**	**2018**
Net income	**$ 2,420**	$ 2,242	$ 2,593
Less:			
Preferred stock dividends	**(162)**	(232)	(188)
Dividends and undistributed earnings allocated to participating securities[1]	**(1)**	(1)	(1)
Net income available to common shareholders	**$ 2,257**	$ 2,009	$ 2,404
Average common shares outstanding (In thousands):			
Basic average common shares	**352,865**	369,911	371,983
Effect of dilutive securities: equity-based awards	**4,241**	3,755	4,493
Diluted average common shares	**357,106**	373,666	376,476
Anti-dilutive securities[2]	**1,066**	2,052	1,011
Earnings per common share:			
Basic	**$ 6.40**	$ 5.43	$ 6.46
Diluted[3]	**6.32**	5.38	6.39

[1] Represents the portion of net income available to common equity allocated to participating securities, composed of unvested and fully vested SERP (Supplemental executive retirement plans) shares and fully vested deferred director stock awards, which are equity-based awards that contain non-forfeitable rights to dividends, and are considered to participate with the common stock in undistributed earnings.

[2] Represents equity-based awards outstanding but not included in the computation of diluted average common shares, because their effect was anti-dilutive. Additional information about equity-based awards is provided in Note 18.

[3] Calculations reflect allocation of earnings to participating securities using the two-class method, as this computation is more dilutive than the treasury stock method.

Note 24. Line of Business Information

Our operations are organized into two lines of business: Investment Servicing and Investment Management, which are defined based on products and services provided. The results of operations for these lines of business are not necessarily comparable with those of other companies, including companies in the financial services industry.

Investment Servicing, through State Street Institutional Services, State Street Global Markets, State Street Global Exchange and CRD, provides services for U.S. mutual funds, collective investment funds and other investment pools, corporate and public retirement plans, insurance companies, foundations and endowments worldwide. Products include: custody; product accounting; daily pricing and administration; master trust and master custody; depotbank services (a fund oversight role created by non-U.S. regulation); record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance and enhanced custody products; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; performance, risk and compliance analytics; and financial data management to support institutional investors.

Included within our Investment Servicing line of business is CRD, which we acquired in October 2018. The Charles River Investment Management solution is a technology offering which is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. With the acquisition of CRD, we took the first step in building our front-to-back platform, State Street Alpha. Today our State Street Alpha platform combines portfolio management, trading and execution, advanced data aggregation, analytics and compliance tools, and integration with other industry platforms and providers.

Investment Management, through State Street Global Advisors, provides a broad range of investment management strategies and products for our clients. Our investment management strategies and products span the risk/reward spectrum for equity, fixed income and cash assets, including core and enhanced indexing, multi-asset strategies, active quantitative and fundamental active capabilities and alternative investment strategies. Our AUM is currently primarily weighted to indexed strategies. In addition, we provide a breadth of services and solutions, including environmental, social and governance investing, defined benefit and defined contribution and Global Fiduciary Solutions (formerly Outsourced Chief Investment Officer). State Street Global Advisors is also a provider of ETFs, including the SPDR® ETF brand. While management fees are primarily determined by the values of AUM and the investment strategies employed, management fees reflect other factors as well, including the benchmarks specified in the respective management agreements related to performance fees.

Our investment servicing strategy is to focus on total client relationships and the full integration of our products and services across our client base through cross-selling opportunities. In general, our clients will use a combination of services, depending on their needs, rather than one product or service. For instance, a custody client may purchase securities finance and cash management services from different business units. Products and services that we provide to our clients are parts of an integrated offering to these clients. We price our products and services on the basis of overall client relationships and other factors; as a result, revenue may not necessarily reflect the stand-alone market price of these products and services within the business lines in the same way it would for separate business entities.

Our servicing and management fee revenue from the Investment Servicing and Investment Management business lines, including foreign exchange trading services and securities finance activities, represents approximately 70% to 80% of our consolidated total revenue. The remaining 20% to 30% is composed of software and processing fees, including CRD, as well as NII, which is largely generated by our investment of client deposits, short-term borrowings and long-term debt in a variety of assets, and net gains (losses) related to investment securities. These other revenue types are generally fully allocated to, or reside in, Investment Servicing and Investment Management.

Revenue and expenses are directly charged or allocated to our lines of business through management information systems. Assets and liabilities are allocated according to policies that support management's strategic and tactical goals. Capital is allocated based on the relative risks and capital requirements inherent in each business line, along with management judgment. Capital allocations may not be representative of the capital that might be required if these lines of business were separate business entities.

The following is a summary of our line of business results "Other" column for the periods indicated.

	Years Ended December 31,		
	Other		
(Dollars in millions)	**2020**	2019	2018
Net repositioning charges	**$ 133**	$ 110	$ 300
Net acquisition and restructuring costs	**50**	77	24
Accrual release	**(9)**	—	—
Legal and related expenses	**—**	172	50
Business exit costs	**—**	—	24
Total	**$ 174**	**$ 359**	**$ 398**

The following is a summary of our line of business results for the periods indicated. The amounts in the "Other" columns were not allocated to our business lines. Prior reported results reflect reclassifications, for comparative purposes, related to management changes in methodologies associated with allocations of revenue and expenses to lines of business in 2020.

	Years Ended December 31,											
	Investment Servicing			Investment Management			Other			Total		
(Dollars in millions)	**2020**	**2019**	**2018**	**2020**	**2019**	**2018**	2020	**2019**	**2018**	**2020**	**2019**	**2018**
Servicing fees	**$ 5,167**	$ 5,074	$ 5,429	**$ —**	$ —	$ —	**$ —**	$ —	$ (8)	**$ 5,167**	$ 5,074	$ 5,421
Management fees	**—**	—	—	**1,880**	1,824	1,899	**—**	—	—	**1,880**	1,824	1,899
Foreign exchange trading services	**1,299**	974	1,071	**64**	84	82	**—**	—	—	**1,363**	1,058	1,153
Securities finance	**342**	462	543	**14**	9	—	**—**	—	—	**356**	471	543
Software and processing fees[1][2]	**706**	691	443	**27**	29	(5)	**—**	—	—	**733**	720	438
Total fee revenue[1]	**7,514**	7,201	7,486	**1,985**	1,946	1,976	**—**	—	(8)	**9,499**	9,147	9,454
Net interest income	**2,211**	2,590	2,691	**(11)**	(24)	(20)	**—**	—	—	**2,200**	2,566	2,671
Total other income	**4**	43	6	**—**	—	—	**—**	—	—	**4**	43	6
Total revenue[1]	**9,729**	9,834	10,183	**1,974**	1,922	1,956	**—**	—	(8)	**11,703**	11,756	12,131
Provision for credit losses	**88**	10	15	**—**	—	—	**—**	—	—	**88**	10	15
Total expenses[1]	**7,071**	7,140	7,081	**1,471**	1,535	1,544	**174**	359	390	**8,716**	9,034	9,015
Income before income tax expense	**$ 2,570**	$ 2,684	$ 3,087	**$ 503**	$ 387	$ 412	**$ (174)**	$ (359)	$ (398)	**$ 2,899**	$ 2,712	$ 3,101
Pre-tax margin	**26 %**	27 %	30 %	**25 %**	20 %	21 %				**25 %**	23 %	26 %
Average assets (in billions)	**$ 266.4**	$ 220.3	$ 220.2	**$ 2.9**	$ 3.0	$ 3.2				**$ 269.3**	$ 223.3	$ 223.4

[1] Investment Servicing includes results from our acquisition of CRD on October 1, 2018.
[2] Investment Management includes other revenue items that are primarily driven by equity market movements.

Note 25. Revenue from Contracts with Customers

We account for revenue from contracts with customers in accordance with Topic 606, which we adopted on January 1, 2018. The amount of revenue that we recognize is measured based on the consideration specified in contracts with our customers, and excludes taxes collected from customers subsequently remitted to governmental authorities. We recognize revenue when a performance obligation is satisfied over time as the services are performed or at a point in time depending on the nature of the services provided as further discussed below. Revenue recognition guidance related to contracts with customers excludes our NII, revenue earned on security lending transactions entered into as principal, realized gains/losses on securities, revenue earned on foreign exchange activity, loans and related fees, and gains/losses on hedging and derivatives, to which we apply other applicable U.S. GAAP guidance.

For contracts with multiple performance obligations, or contracts that have been combined, we allocate the contracts' transaction price to each performance obligation using our best estimate of the standalone selling price. Our contractual fees are negotiated on a customer by customer basis and are representative of standalone selling price utilized for allocating revenue when there are multiple performance obligations.

Substantially all of our services are provided as a distinct series of daily performance obligations that the customer simultaneously benefits from as they are performed. Payments may be made to third party service providers and the expense is recognized gross when we control those services as we are deemed the principal.

Contract durations may vary from short to long- term or may be open ended. Termination notice periods are in line with general market practice and typically do not include termination penalties. Therefore, for substantially all of our revenues, the duration of the contract and the enforceable rights and obligations do not extend beyond the services that are performed daily or at the transaction level. In instances where we have substantive termination penalties, the duration of the contract may extend through the date of substantive termination penalties.

Investment Servicing

Revenue from contracts with customers related to servicing fees is recognized over time as our customers benefit from the custody, administration, accounting, transfer agency and other related asset services as they are performed. At contract inception, no revenue is estimated as the fees are dependent on assets under custody and/or administration and/or actual transactions which are susceptible to market factors outside of our control. Therefore, revenue is recognized using a time-based output method as the customers benefit from the services over time and as the assets under custody or transactions are known or determinable during each reporting period based on contractual fee schedules. Payments made to third party service providers, such as sub-custodians, are generally recognized gross as we control those services and are deemed to be a principal in such arrangements.

Foreign exchange trading services revenue includes revenue generated from providing access and use of electronic trading platforms and other trading, transition management and brokerage services. Electronic FX services are dependent on the volume of actual transactions initiated through our electronic exchange platforms. Revenue is recognized over time using a time-based measure as access to, and use of, the electronic exchange platforms is made available to the customer and the activity is determinable. Revenue related to other trading, transition management and brokerage services is recognized when the customer obtains the benefit of such services which may be over time or at a point in time upon trade execution.

Securities finance revenue is related to services for providing agency lending programs to State Street Global Advisors managed investment funds and third- party investment managers and asset owners. This securities finance revenue is recognized over time using a time-based measure as our customers benefit from these lending services over time.

Revenue related to the front office solutions provided by CRD is primarily driven by the sale of licenses and software as service arrangements, including professional services such as consulting and implementation services, software support and maintenance. Revenue for a sale of software to be installed on premise is recognized at a point in time when the customer benefits from obtaining access to and use of the software license. Revenue for a SaaS related arrangement is recognized over time as services are provided.

Investment Management

Revenue from contracts with customers related to investment management, investment research and investment advisory services provided through State Street Global Advisors is recognized over time as our customers benefit from the services as they are performed. Substantially all of our investment management fees are determined by the value of assets under management and the investment strategies employed. At contract inception, no revenue is estimated as the fees are dependent on assets under management which are susceptible to market factors outside of our control.

Therefore, substantially all of our Investment Management services revenue is recognized using a time-based output method as the customers benefit from the services over time and as the assets under management are known or determinable during each reporting period based on contractual fee schedules. Payments made to third party service providers, such as payments to others in unitary fee arrangements, are generally recognized on a gross basis when State Street Global Advisors controls those services and is deemed to be a principal in such transactions.

Revenue by category

In the following table, revenue is disaggregated by our two lines of business and by revenue stream for which the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. The amounts in the "Other" columns were not allocated to our business lines.

	Year Ended December 31, 2020									
	Investment Servicing			Investment Management			Other			Total
(Dollars in millions)	Topic 606 revenue	All other revenue	Total	Topic 606 revenue	All other revenue	Total	Topic 606 revenue	All other revenue	Total	2020
Servicing fees	$ 5,167	$ —	$ 5,167	$ —	$ —	$ —	$ —	$ —	$ —	$ 5,167
Management fees	—	—	—	1,880	—	1,880	—	—	—	1,880
Foreign exchange trading services	377	922	1,299	64	—	64	—	—	—	1,363
Securities finance	212	130	342	—	14	14	—	—	—	356
Software and processing fees	487	219	706	—	27	27	—	—	—	733
Total fee revenue	6,243	1,271	7,514	1,944	41	1,985	—	—	—	9,499
Net interest income	—	2,211	2,211	—	(11)	(11)	—	—	—	2,200
Total other income	—	4	4	—	—	—	—	—	—	4
Total revenue	$ 6,243	$ 3,486	$ 9,729	$ 1,944	$ 30	$ 1,974	$ —	$ —	$ —	$ 11,703

	Year Ended December 31, 2019									
	Investment Servicing			Investment Management			Other			Total
(Dollars in millions)	Topic 606 revenue	All other revenue	Total	Topic 606 revenue	All other revenue	Total	Topic 606 revenue	All other revenue	Total	2019
Servicing fees	$ 5,074	$ —	$ 5,074	$ —	$ —	$ —	$ —	$ —	$ —	$ 5,074
Management fees	—	—	—	1,824	—	1,824	—	—	—	1,824
Foreign exchange trading services	346	628	974	84	—	84	—	—	—	1,058
Securities finance	259	203	462	—	9	9	—	—	—	471
Software and processing fees	456	235	691	—	29	29	—	—	—	720
Total fee revenue	6,135	1,066	7,201	1,908	38	1,946	—	—	—	9,147
Net interest income	—	2,590	2,590	—	(24)	(24)	—	—	—	2,566
Total other income	—	43	43	—	—	—	—	—	—	43
Total revenue	$ 6,135	$ 3,699	$ 9,834	$ 1,908	$ 14	$ 1,922	$ —	$ —	$ —	$ 11,756

	Year Ended December 31, 2018									
	Investment Servicing			Investment Management			Other			Total
(Dollars in millions)	Topic 606 revenue	All other revenue	Total	Topic 606 revenue	All other revenue	Total	Topic 606 revenue	All other revenue	Total	2018
Servicing fees	$ 5,429	$ —	$ 5,429	$ —	$ —	$ —	$ (8)	$ —	$ (8)	$ 5,421
Management fees	—	—	—	1,899	—	1,899	—	—	—	1,899
Foreign exchange trading services	361	710	1,071	82	—	82	—	—	—	1,153
Securities finance	308	235	543	—	—	—	—	—	—	543
Software and processing fees	209	234	443	—	(5)	(5)	—	—	—	438
Total fee revenue	6,307	1,179	7,486	1,981	(5)	1,976	(8)	—	(8)	9,454
Net interest income	—	2,691	2,691	—	(20)	(20)	—	—	—	2,671
Total other income	—	6	6	—	—	—	—	—	—	6
Total revenue	$ 6,307	$ 3,876	$ 10,183	$ 1,981	$ (25)	$ 1,956	$ (8)	$ —	$ (8)	$ 12,131

Contract balances and contract costs

As of December 31, 2020 and December 31, 2019, net receivables of $2.68 billion and $2.77 billion, respectively, are included in accrued interest and fees receivable, representing amounts billed or currently billable related to revenue from contracts with customers. As performance obligations are satisfied, we have an unconditional right to payment and billing is generally performed monthly; therefore, we do not have significant contract assets or liabilities.

No adjustments are made to the promised amount of consideration for the effects of a significant financing component as the period between when we transfer a promised service to a customer and when the customer pays for that service is expected to be one year or less.

Note 26. Non-U.S. Activities

We define our non-U.S. activities as those revenue-producing business activities that arise from clients which are generally serviced or managed outside the U.S. Due to the integrated nature of our business, precise segregation of our U.S. and non-U.S. activities is not possible.

Subjective estimates, assumptions and other judgments are applied to quantify the financial results and assets related to our non-U.S. activities, including our application of funds transfer pricing, our asset and liability management policies and our allocation of certain indirect corporate expenses. Management periodically reviews and updates its processes for quantifying the financial results and assets related to our non-U.S. activities.

The following table presents our U.S. and non-U.S. financial results for the periods indicated:

	Years Ended December 31,								
	2020			2019			2018		
(In millions)	Non-U.S.[1]	U.S.	Total	Non-U.S.[1]	U.S.	Total	Non-U.S.[1]	U.S.	Total
Total revenue	**$ 5,252**	**$ 6,451**	**$ 11,703**	$ 5,230	$ 6,526	$ 11,756	$ 5,190	$ 6,941	$ 12,131
Income before income tax expense	**1,146**	**1,753**	**2,899**	1,248	1,464	2,712	1,294	1,807	3,101

[1] Geographic mix is generally based on the domicile of the entity servicing the funds and is not necessarily representative of the underlying asset mix.

Non-U.S. assets were $111.30 billion and $83.28 billion as of December 31, 2020 and 2019, respectively.

Note 27. Parent Company Financial Statements

The following tables present the financial statements of the Parent Company without consolidation of its banking and non-banking subsidiaries, as of and for the years indicated:

Statement of Income - Parent Company

	Years Ended December 31,		
(In millions)	2020	2019	2018
Cash dividends from consolidated banking subsidiary	**$ 2,721**	$ 3,300	$ 785
Cash dividends from consolidated non-banking subsidiaries and unconsolidated entities	**118**	285	41
Other, net	**92**	149	58
Total revenue	**2,931**	3,734	884
Interest expense	**324**	415	381
Other expenses	**172**	108	162
Total expenses	**496**	523	543
Income tax (benefit)	**(109)**	(91)	(127)
Income before equity in undistributed income of consolidated subsidiaries and unconsolidated entities	**2,544**	3,302	468
Equity in undistributed income of consolidated subsidiaries and unconsolidated entities:			
Consolidated banking subsidiary	**(277)**	(1,070)	1,944
Consolidated non-banking subsidiaries and unconsolidated entities	**153**	10	181
Net income	**$ 2,420**	$ 2,242	$ 2,593

Statement of Condition - Parent Company

(In millions)	As of December 31, 2020	2019
Assets:		
Interest-bearing deposits with consolidated banking subsidiary	**$ 492**	$ 428
Trading account assets	**412**	393
Investment securities available-for-sale	**100**	250
Investments in subsidiaries:		
Consolidated banking subsidiary	**26,204**	25,451
Consolidated non-banking subsidiaries	**8,807**	7,240
Unconsolidated entities	**124**	117
Notes and other receivables from:		
Consolidated banking subsidiary	**81**	—
Consolidated non-banking subsidiaries and unconsolidated entities	**3,885**	3,361
Other assets	**277**	270
Total assets	**$ 40,382**	$ 37,510
Liabilities:		
Accrued expenses and other liabilities	**$ 557**	$ 696
Long-term debt	**13,625**	12,383
Total liabilities	**14,182**	13,079
Shareholders' equity	**26,200**	24,431
Total liabilities and shareholders' equity	**$ 40,382**	$ 37,510

Statement of Cash Flows - Parent Company

(In millions)	Years Ended December 31, 2020	2019	2018
Net cash provided by operating activities	**$ 3,513**	$ 2,684	$ 2,250
Investing Activities:			
Net decrease (increase) in interest-bearing deposits with consolidated banking subsidiary	**(64)**	58	46
Proceeds from sales and maturities of available-for-sale securities	**1,000**	900	—
Purchases of available-for-sale securities	**(849)**	(921)	(224)
Investments in consolidated banking and non-banking subsidiaries	**(7,406)**	(6,165)	(4,883)
Sale or repayment of investment in consolidated banking and non-banking subsidiaries	**4,999**	5,345	2,472
Net cash (used in) provided by investing activities	**(2,320)**	(783)	(2,589)
Financing Activities:			
Proceeds from issuance of long-term debt, net of issuance costs	**2,489**	1,495	996
Payments for long-term debt	**(1,700)**	(50)	(1,000)
Proceeds from issuance of preferred stock, net of issuance costs	**—**	—	495
Proceeds from issuance of common stock, net of issuance costs	**—**	—	1,150
Payments for redemption of preferred stock	**(500)**	(750)	—
Repurchases of common stock	**(515)**	(1,585)	(350)
Repurchases of common stock for employee tax withholding	**(78)**	(81)	(124)
Payments for cash dividends	**(889)**	(930)	(828)
Net cash provided (used in) financing activities	**(1,193)**	(1,901)	339
Net change	**—**	—	—
Cash and due from banks at beginning of year	**—**	—	—
Cash and due from banks at end of year	**$ —**	$ —	$ —

Note 28. Subsequent Events

On January 14, 2021, we announced that we will redeem on March 15, 2021 an aggregate of $500 million, or 5,000 of the 7,500 outstanding shares of our non-cumulative perpetual preferred stock, Series F, for cash at a redemption price of $100,000 per share (equivalent to $1,000 per depositary share) plus all declared and unpaid dividends. A cash dividend of $953.38 per share of Series F Preferred Stock (or approximately $9.5338 per depositary share) has been declared for the period from December 15, 2020 up to but not including March 15, 2021 (the "March Dividend"). The March Dividend will be paid separately to the holders of record of the Series F Preferred Stock as of March 1, 2021 in the customary manner. Accordingly, there will not be any declared and unpaid dividends included in the redemption price.

STATISTICAL DISCLOSURE BY BANK HOLDING COMPANIES

Distribution of Average Assets, Liabilities and Shareholders' Equity; Interest Rates and Interest Differential (Unaudited)

The following table presents consolidated average statements of condition and NII for the years indicated:

	Years Ended December 31,								
	2020			2019			2018		
(Dollars in millions; fully taxable-equivalent basis)	Average Balance	Interest	Average Rate	Average Balance	Interest	Average Rate	Average Balance	Interest	Average Rate
Assets:									
Interest-bearing deposits with U.S. banks	$ 30,866	$ 101	.33 %	$ 16,815	$ 360	2.14 %	$ 18,081	$ 345	1.91 %
Interest-bearing deposits with non-U.S. banks	45,722	(25)	(.06)	31,685	56	.18	36,247	42	.12
Securities purchased under resale agreements	3,452	126	3.64	2,506	364	14.54	2,901	335	11.55
Trading account assets	878	—	—	884	1	.11	1,051	—	—
Investment securities:									
U.S. Treasury and federal agencies[1]	60,816	1,174	1.93	56,639	1,443	2.55	48,449	1,178	2.43
State and political subdivisions[1]	1,717	51	2.95	1,869	62	3.31	5,481	189	3.45
Other investments	38,459	366	.95	33,260	504	1.51	34,140	560	1.64
Investment securities held-to-maturity purchased under money market liquidity facility	8,183	117	1.43	—	—	—	—	—	—
Loans	27,525	627	2.28	24,073	775	3.22	23,147	687	2.97
Lease financing[1]	—	—	—	—	—	—	426	11	2.53
Other interest-earning assets	11,256	55	.49	14,160	395	2.79	15,714	372	2.37
Total interest-earning assets[1]	228,874	2,592	1.13	181,891	3,960	2.18	185,637	3,719	2.00
Cash and due from banks	3,849			3,390			3,178		
Other assets	36,611			38,053			34,570		
Total assets	$ 269,334			$ 223,334			$ 223,385		
Liabilities and shareholders' equity:									
Interest-bearing deposits:									
Time	$ 7,114	$ 23	.32 %	$ 20,443	$ 222	1.08 %	$ 17,081	$ 121	.71 %
Savings	80,330	91	.11	47,104	317	.67	37,872	135	.36
Non-U.S.	68,806	(231)	(.34)	61,301	124	.20	70,623	107	.15
Total interest-bearing deposits	156,250	(117)	(.07)	128,848	663	.51	125,576	363	.29
Securities sold under repurchase agreements	2,615	4	.14	1,616	31	1.90	2,048	13	.62
Short-term borrowings under money market liquidity facility	8,207	101	1.22	—	—	—	—	—	—
Other short-term borrowings	2,226	18	.78	1,524	21	1.37	1,327	17	1.28
Long-term debt	14,371	312	2.17	11,474	414	3.61	10,686	389	3.64
Other interest-bearing liabilities	3,176	57	1.82	4,103	246	6.00	4,956	209	4.20
Total interest-bearing liabilities	186,845	375	.20	147,565	1,375	.93	144,593	991	.68
Non-interest-bearing deposits:									
Special time	7,196			15,338			19,187		
Demand	29,187			13,552			16,260		
Non-U.S.[2]	592			524			385		
Other liabilities	20,464			21,299			19,804		
Shareholders' equity	25,050			25,056			23,156		
Total liabilities and shareholders' equity	$ 269,334			$ 223,334			$ 223,385		
Net interest income, fully taxable-equivalent basis		$ 2,217			$ 2,585			$ 2,728	
Excess of rate earned over rate paid			.93 %			1.25 %			1.32 %
Net interest margin[3]			.97			1.42			1.47

[1] Fully taxable-equivalent revenue is a method of presentation in which the tax savings achieved by investing in tax-exempt investment securities and certain leases are included in interest income with a corresponding charge to income tax expense. This method facilitates the comparison of the performance of these assets. The adjustments are computed using a federal income tax rate of 21% for periods ending in 2018, 2019 and 2020, adjusted for applicable state income taxes, net of the related federal tax benefit. The fully taxable-equivalent adjustments included in interest income presented above were $17 million, $19 million and $57 million for the years ended December 31, 2020, 2019 and 2018, respectively, and were substantially related to tax-exempt securities (state and political subdivisions).

[2] Non-U.S. non-interest-bearing deposits were $784 million, $820 million and $1,165 million as of December 31, 2020, 2019 and 2018, respectively.

[3] NIM is calculated by dividing fully taxable-equivalent NII by average total interest-earning assets.

STATISTICAL DISCLOSURE BY BANK HOLDING COMPANIES (CONTINUED)

The following table summarizes changes in fully taxable-equivalent interest income and interest expense due to changes in volume of interest-earning assets and interest-bearing liabilities, and due to changes in interest rates. Changes attributed to both volumes and rates have been allocated based on the proportion of change in each category.

Years Ended December 31,	2020 Compared to 2019			2019 Compared to 2018		
(Dollars in millions; fully taxable-equivalent basis)	**Change in Volume**	**Change in Rate**	**Net (Decrease) Increase**	**Change in Volume**	**Change in Rate**	**Net (Decrease) Increase**
Interest income related to:						
Interest-bearing deposits with U.S. banks	**$ 301**	**$ (560)**	**$ (259)**	$ (24)	$ 39	$ 15
Interest-bearing deposits with non-U.S. banks	**25**	**(106)**	**(81)**	(5)	19	14
Securities purchased under resale agreements	**138**	**(376)**	**(238)**	(46)	75	29
Trading account assets	**—**	**(1)**	**(1)**	—	1	1
Investment securities:						
U.S. Treasury and federal agencies	**107**	**(376)**	**(269)**	199	66	265
State and political subdivisions	**(5)**	**(6)**	**(11)**	(125)	(2)	(127)
Other investments	**79**	**(217)**	**(138)**	(14)	(42)	(56)
Investment securities held-to-maturity purchased under money market liquidity facility	**—**	**117**	**117**	—	—	—
Loans	**111**	**(259)**	**(148)**	27	61	88
Lease financing	**—**	**—**	**—**	(11)	—	(11)
Other interest-earning assets	**(81)**	**(259)**	**(340)**	(37)	60	23
Total interest-earning assets	**675**	**(2,043)**	**(1,368)**	(36)	277	241
Interest expense related to:						
Deposits:						
Time	**(144)**	**(55)**	**(199)**	24	77	101
Savings	**224**	**(450)**	**(226)**	33	149	182
Non-U.S.	**15**	**(370)**	**(355)**	(14)	31	17
Securities sold under repurchase agreements	**19**	**(46)**	**(27)**	(3)	21	18
Short-term borrowings under money market liquidity facility	**—**	**101**	**101**	—	—	—
Other short-term borrowings	**10**	**(13)**	**(3)**	3	1	4
Long-term debt	**105**	**(207)**	**(102)**	29	(4)	25
Other interest-bearing liabilities	**(56)**	**(133)**	**(189)**	(36)	73	37
Total interest-bearing liabilities	**173**	**(1,173)**	**(1,000)**	36	348	384
Net interest income	**$ 502**	**$ (870)**	**$ (368)**	$ (72)	$ (71)	$ (143)

Quarterly Summarized Financial Information (Unaudited)

(Dollars in millions, except per share amounts; shares in thousands)	**4Q20**	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19
Total fee revenue	**$ 2,416**	$ 2,306	$ 2,378	$ 2,399	$ 2,368	$ 2,259	$ 2,260	$ 2,260
Interest income	**513**	520	674	868	906	1,001	1,007	1,027
Interest expense	**14**	42	115	204	270	357	394	354
Net interest income	**499**	478	559	664	636	644	613	673
Total other income	**2**	—	—	2	44	—	—	(1)
Total revenue	**2,917**	2,784	2,937	3,065	3,048	2,903	2,873	2,932
Provision for credit losses	**—**	—	52	36	3	2	1	4
Total expenses	**2,276**	2,103	2,082	2,255	2,407	2,180	2,154	2,293
Income before income tax expense	**641**	681	803	774	638	721	718	635
Income tax expense (benefit)	**104**	126	109	140	74	138	131	127
Net income	**$ 537**	$ 555	$ 694	$ 634	$ 564	$ 583	$ 587	$ 508
Net income available to common shareholders	**$ 498**	$ 517	$ 662	$ 580	$ 492	$ 528	$ 537	$ 452
Earnings per common share[1]:								
Basic	**$ 1.41**	$ 1.47	$ 1.88	$ 1.64	$ 1.36	$ 1.44	$ 1.44	$ 1.20
Diluted	**1.39**	1.45	1.86	1.62	1.35	1.42	1.42	1.18
Average common shares outstanding:								
Basic	**352,974**	352,586	352,157	353,746	361,439	366,732	373,773	377,915
Diluted	**357,719**	357,168	356,413	357,993	365,851	370,595	377,577	381,703
Dividends per common share	**$ .52**	$ .52	$ .52	$ .52	$ .52	$ .52	$ .47	$ .47

[1] Basic and diluted earnings per common share for full-year 2020 and basic earnings per common share for full-year 2019 do not equal the sum of the four quarters for the year.

ACRONYMS

ABS	Asset-backed securities
AFS	Available-for-sale
AML	Anti-money laundering
AOCI	Accumulated other comprehensive income (loss)
ASU	Accounting Standards Update
AUC/A	Assets under custody and/or administration
AUM	Assets under management
BCC	Business Conduct Committee
bps	Basis points
CAP	Capital adequacy process
CCAR	Comprehensive Capital Analysis and Review
CECL	Current Expected Credit Loss
CRD	Charles River Development
CET1[1]	Common equity tier 1
CFTC	Commodity Futures Trading Commission
CIS	Corporate Information Security
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRO	Chief Risk Officer
CRPC	Credit Risk & Policy Committee
CVA	Credit valuation adjustment
DOJ	Department of Justice
DOL	Department of Labor
E&A Committee	Examining and Audit Committee
ECB	European Central Bank
EGRRCPA	Economic Growth, Regulatory Relief, and Consumer Protection Act
EMEA	Europe, Middle East, and Africa
EPS	Earnings per share
ERM	Enterprise Risk Management
ETF	Exchange-Traded Fund
EVE	Economic value of equity
FDIC	Federal Deposit Insurance Corporation
FHLB	Federal Home Loan Bank of Boston
FICC	Fixed Income Clearing Corporation
FTE	Fully taxable-equivalent
FSOC	Financial Stability Oversight Council
FX	Foreign exchange
GAAP	Generally accepted accounting principles
GCR	Global credit review
G-SIB	Global systemically important bank
HQLA[1]	High-quality liquid assets
HRC	Human Resources Committee
HTM	Held-to-maturity
IDI	Insured Depository Institution
LCR[1]	Liquidity coverage ratio
LIHTC	Low income housing tax credits
LDA model	Loss distribution approach model
LIBOR	London Interbank Offered Rate
LTD	Long-term debt
MBS	Mortgage-backed securities
MRAC	Management Risk and Capital Committee
MRC	Model Risk Committee
MRM	Model Risk Management
MVG	Model Validation Group
NII	Net interest income
NIM	Net interest margin
NOL	Net Operating Loss
NSFR[1]	Net stable funding ratio
ORM	Operational risk management
OTC	Over-the-counter
OTTI	Other-than-temporary-impairment
PCA	Prompt corrective action
PCAOB	Public Company Accounting Oversight Board
PD[1]	Probability-of-default
P&L	Profit-and-loss
RC	Risk Committee
RWA[1]	Risk-weighted asset
SCB	Stress Capital Buffer
SEC	Securities and Exchange Commission
SIFI	Systemically important financial institutions
SLB	Stress Leverage Buffer
SLR[1]	Supplementary leverage ratio
SPDR	Spider; Standard and Poor's depository receipt
SPOE Strategy	Single Point of Entry Strategy
SSIF	State Street Intermediate Funding, LLC
TCJA	Tax Cuts and Jobs Act
TLAC[1]	Total loss-absorbing capacity
TMRC	Trading and Markets Risk Committee
TOPS	Technology and Operations Committee
TORC	Technology and Operational Risk Committee
UCITS	Undertakings for Collective Investments in Transferable Securities
UOM	Unit of measure
VaR	Value-at-Risk
VIE	Variable interest entity
WD	Withdrawn

[1] As defined by the applicable U.S. regulations.

GLOSSARY

Asset-backed securities: A financial security backed by collateralized assets, other than real estate or mortgage backed securities.

Assets under custody and/or administration: Assets that we hold directly or indirectly on behalf of clients under a safekeeping or custody arrangement or for which we provide administrative services for clients. To the extent that we provide more than one AUC/A service (including back and middle office services) for a client's assets, the value of the asset is only counted once in the total amount of AUC/A.

Assets under management: The total market value of client assets for which we provide investment management strategy services, advisory services and/or distribution services generating management fees based on a percentage of the assets' market values. These client assets are not included on our balance sheet. Assets under management include managed assets lost but not liquidated. Lost business occurs from time to time and it is difficult to predict the timing of client behavior in transitioning these assets as the timing can vary significantly.

Beacon: A multi-year program, announced in October 2015, to create cost efficiencies through changes in our operational processes and to further digitize our processes and interfaces with our clients.

Certificates of deposit: A savings certificate with a fixed maturity date, specified fixed interest rate and can be issued in any denomination aside from minimum investment requirements. A CD restricts access to the funds until the maturity date of the investment.

Collateralized loan obligations: A security backed by a pool of debt, primarily senior secured leveraged loans. CLOs are similar to collateralized mortgage obligations, except for the different type of underlying loan. With a CLO, the investor receives scheduled debt payments from the underlying loans, assuming most of the risk in the event borrowers default, but is offered greater diversity and the potential for higher-than-average returns.

Commercial real estate: Property intended to generate profit from capital gains or rental income. CRE loans are term loans secured by commercial and multifamily properties. We seek CRE loans with strong competitive positions in major domestic markets, stable cash flows, modest leverage and experienced institutional ownership.

Deposit beta: A measure of how much of an interest rate increase is expected to be passed on to client interest-bearing accounts, on average.

Depot bank: A German term, specified by the country's law on investment companies, which essentially corresponds to 'custodian'.

Doubtful: Doubtful loans and leases meet the same definition of substandard loans and leases (i.e., well-defined weaknesses that jeopardize repayment with the possibility that we will sustain some loss) with the added characteristic that the weaknesses make collection or liquidation in full highly questionable and improbable.

Economic value of equity: A measure designed to estimate the fair value of assets, liabilities and off-balance sheet instruments based on a discounted cash flow model.

Exchange-Traded Fund: A type of exchange-traded investment product that offer investors a way to pool their money in a fund that makes investments in stocks, bonds, or other assets and, in return, to receive an interest in that investment pool. ETF shares are traded on a national stock exchange and at market prices that may or may not be the same as the net asset value.

Exposure-at-default: A measure used in the calculation of regulatory capital under Basel III. It can be defined as the expected amount of loss a bank may be exposed to upon default of an obligor.

Global systemically important bank: A financial institution whose distress or disorderly failure, because of its size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity, which will be subject to additional capital requirements.

Held-to-maturity investment securities: We classify investments in debt securities as held-to-maturity only if we have the positive intent and ability to hold those securities to maturity. Investments in debt securities classified as held-to-maturity are measured subsequently at amortized cost in the statement of financial position.

High-quality liquid assets: Cash or assets that can be converted into cash at little or no loss of value in private markets and are considered unencumbered.

Investment grade: A rating of loans and leases to counterparties with strong credit quality and low expected credit risk and probability of default. It applies to counterparties with a strong capacity to support the timely repayment of any financial commitment.

Liquidity coverage ratio: The ratio of encumbered high-quality liquid assets divided by expected total net cash outflows over a 30-day stress period. A Basel III framework requirement for banks and bank holding companies to measure liquidity, it is designed to ensure that certain banking institutions, including us, maintain a minimum amount of unencumbered HQLA sufficient to withstand the net cash outflow under a hypothetical standardized acute liquidity stress scenario for a 30-day stress period.

Net asset value: The amount of net assets attributable to each share/unit of the fund at a specific date or time.

Net stable funding ratio: The ratio of the amount of available stable funding relative to the amount of required stable funding. This ratio should be equal to at least 100% on an ongoing basis.

Other-than-temporary-impairment: Impairment charge taken on a security whose fair value has fallen below its carrying value on balance sheet and its value is not expected to recover through the holding period of the security.

Probability of default: A measure of the likelihood that a credit obligor will enter into default status.

Qualified financial contracts: Securities contracts, commodity contracts, forward contracts, repurchase agreements, swap agreements and any other contract determined by the FDIC to be a qualified financial contract.

Risk-weighted assets: A measurement used to quantify risk inherent in our on and off-balance sheet assets by adjusting the asset value for risk. RWA is used in the calculation of our risk-based capital ratios.

Special mention: Loans and leases that consist of counterparties with potential weaknesses that, if uncorrected, may result in deterioration of repayment prospects.

Speculative: Loans and leases that consist of counterparties that face ongoing uncertainties or exposure to business, financial, or economic downturns. However, these counterparties may have financial flexibility or access to financial alternatives, which allow for financial commitments to be met.

Substandard: Loans and leases that consist of counterparties with well-defined weakness that jeopardizes repayment with the possibility we will sustain some loss.

Supplementary leverage ratio: The ratio of our tier 1 capital to our total leverage exposure, which measures our capital adequacy relative to our on and off-balance sheet assets.

Total loss-absorbing capacity: The sum of our tier 1 regulatory capital plus eligible external long-term debt issued by us.

Value-at-Risk: Statistical model used to measure the potential loss in value of a portfolio that could occur in normal markets condition, over a defined holding period, within a certain confidence level.

Variable interest entity: An entity that: (1) lacks enough equity investment at risk to permit the entity to finance its activities without additional financial support from other parties; (2) has equity owners that lack the right to make significant decisions affecting the entity's operations; and/or (3) has equity owners that do not have an obligation to absorb or the right to receive the entity's losses or return.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

State Street has established and maintains disclosure controls and procedures that are designed to ensure that material information related to State Street and its subsidiaries on a consolidated basis required to be disclosed in its reports filed or submitted under the Securities Exchange Act of 1934 is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to State Street's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. For the year ended December 31, 2020, State Street's management carried out an evaluation, with the participation of the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of State Street's disclosure controls and procedures. Based on the evaluation of these disclosure controls and procedures, the Chief Executive Officer and Chief Financial Officer concluded that State Street's disclosure controls and procedures were effective as of December 31, 2020.

State Street has also established and maintains internal control over financial reporting as a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in conformity with U.S. GAAP. In the ordinary course of business, State Street routinely enhances its internal controls and procedures for financial reporting by either upgrading its current systems or implementing new systems. Changes have been made and may be made to State Street's internal controls and procedures for financial reporting as a result of these efforts. During the quarter ended December 31, 2020, no change occurred in State Street's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, State Street's internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

The management of State Street is responsible for establishing and maintaining adequate internal control over financial reporting.

State Street'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 accounting principles generally accepted in the United States of America. State Street's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of State Street; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of State Street are being made only in accordance with authorizations of management and directors of State Street; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of State Street'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.

Management assessed the effectiveness of State Street's internal control over financial reporting as of December 31, 2020 based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control - Integrated Framework (2013)*.

Based on that assessment, management concluded that, as of December 31, 2020, State Street's internal control over financial reporting is effective.

The effectiveness of State Street's internal control over financial reporting as of December 31, 2020 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their accompanying report, which follows this report.

Report of Ernst & Young LLP, Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of State Street Corporation

Opinion on Internal Control over Financial Reporting

We have audited State Street Corporation's (the "Corporation") internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the "COSO criteria"). In our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the 2020 consolidated financial statements of the Corporation and our report dated February 19, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

Boston, Massachusetts
February 19, 2021

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information concerning our directors will appear in our Proxy Statement for the 2021 Annual Meeting of Shareholders, to be filed pursuant to Regulation 14A on or before April 30, 2021, referred to as the 2021 Proxy Statement, under the caption "Election of Directors." Information concerning compliance with Section 16(a) of the Exchange Act, if required, will appear in our 2021 Proxy Statement under the caption "Delinquent Section 16(a) Reports." Information concerning our Code of Ethics for Senior Financial Officers and our Examining and Audit Committee will appear in our 2021 Proxy Statement under the caption "Corporate Governance at State Street." Such information is incorporated herein by reference.

Information about our executive officers is included under Part I.

ITEM 11. EXECUTIVE COMPENSATION

Information in response to this item will appear in our 2021 Proxy Statement under the captions "Executive Compensation" and "Non-Employee Director Compensation." Such information is incorporated herein by reference.

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

Information concerning security ownership of certain beneficial owners and management will appear in our 2021 Proxy Statement under the caption “Security Ownership of Certain Beneficial Owners and Management.” Such information is incorporated herein by reference.

RELATED STOCKHOLDER MATTERS

The following table presents the number of outstanding common stock awards, options, warrants and rights granted by State Street to participants in our equity compensation plans, as well as the number of securities available for future issuance under these plans, as of December 31, 2020. The table provides this information separately for equity compensation plans that have and have not been approved by shareholders. Shares presented in the table and in the footnotes following the table are stated in thousands of shares.

(Shares in thousands)	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights[1]	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Plan category:			
Equity compensation plans approved by shareholders	**8,203** [2]	**$ —**	**19,163**
Equity compensation plans not approved by shareholders	**18** [3]	**—**	**—**
Total	**8,221**	**—**	**19,163**

[1] Excludes deferred stock awards and performance awards for which there is no exercise price.
[2] Consists of 5,686 thousand shares subject to deferred stock awards, zero shares subject to stock options, zero stock appreciation rights and 2,517 thousand shares subject to performance awards (assuming payout at 100% for all awards, including awards for which performance is uncertain).
[3] Consists of shares subject to deferred stock awards.

Individual directors who are not our employees have received stock awards and cash retainers, both of which may be deferred. Directors may elect to receive shares of our common stock in place of cash. If payment is in the form of common stock, the number of shares is determined by dividing the approved cash amount by the closing price on the date of the annual shareholders' meeting or date of grant, if different. All deferred shares, whether stock awards or common stock received in place of cash retainers, are increased to reflect dividends paid on the common stock and, for certain directors, may include share amounts in respect of an accrual under a terminated retirement plan.

Pursuant to State Street's Deferred Compensation Plan for Directors, non-employee directors may elect to defer the receipt of 0% or 100% of their (1) retainers, (2) meeting fees or (3) annual equity grant award. Non-employee directors also may elect to receive their retainers in cash or shares of common stock. Non-employee directors who elect to defer the cash payment of their retainers or meeting fees may choose from four notional investment fund returns for such deferred cash. Deferrals of common stock are adjusted to reflect the hypothetical reinvestment in additional shares of common stock for any dividends or distributions on State Street common stock. Deferred amounts will be paid (a) as elected by the non-employee director, on either the date of their termination of service on the Board or on the earlier of such termination and a future date specified, and (b) in the form elected by the non-employee director as either a lump sum or in installments over a two- to five-year period.

Stock awards totaling 209,937 shares of common stock were outstanding as of December 31, 2020; awards made through June 30, 2003, totaling 18,324 shares outstanding as of December 31, 2020, have not been approved by shareholders. There are no other equity compensation plans under which our equity securities are authorized for issuance that have been adopted without shareholder approval. Awards of stock made or retainer shares paid to individual directors after June 30, 2003 have been or will be made under our 1997, 2006 or 2017 Equity Incentive Plan, which were approved by shareholders.

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

Information concerning certain relationships and related transactions and director independence will appear in our 2021 Proxy Statement under the caption "Corporate Governance at State Street." Such information is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information concerning principal accounting fees and services and the Examining and Audit Committee's pre-approval policies and procedures will appear in our 2021 Proxy Statement under the caption "Examining and Audit Committee Matters." Such information is incorporated herein by reference.

PART IV.

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(A)(1) FINANCIAL STATEMENTS

The following consolidated financial statements of State Street are included in Item 8 hereof:
Report of Independent Registered Public Accounting Firm
Consolidated Statement of Income - Years ended December 31, 2020, 2019 and 2018
Consolidated Statement of Comprehensive Income - Years ended December 31, 2020, 2019 and 2018
Consolidated Statement of Condition - As of December 31, 2020 and 2019
Consolidated Statement of Changes in Shareholders' Equity - Years ended December 31, 2020, 2019 and 2018
Consolidated Statement of Cash Flows - Years ended December 31, 2020, 2019 and 2018
Notes to Consolidated Financial Statements

(A)(2) FINANCIAL STATEMENT SCHEDULES

Certain schedules to the consolidated financial statements have been omitted if they were not required by Article 9 of Regulation S-X or if, under the related instructions, they were inapplicable, or the information was contained elsewhere herein.

(A)(3) EXHIBITS

The exhibits listed in the Exhibit Index preceding the signature page in this Form 10-K are filed herewith or are incorporated herein by reference to other SEC filings.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

EXHIBIT INDEX

3.1	Restated Articles of Organization, as amended (filed as Exhibit 3.1 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended September 30, 2018 filed with the SEC on October 31, 2018 and incorporated herein by reference)
3.2	By-laws, as amended (filed as Exhibit 3.1 to State Street's Current Report on Form 8-K (File No.001-07511) filed with the SEC on February 20, 2020 and incorporated herein by reference)
4.1	Description of Securities Registered under Section 12 of the Exchange Act
4.2	Deposit Agreement, dated March 4, 2014, among State Street Corporation, American Stock Transfer & Trust Company, LLC (as depositary), and the holders from time to time of depositary receipts (filed as Exhibit 4.1 to State Street's Current Report on Form 8-K (File No. 001-07511) dated March 4, 2014 filed with the SEC on March 4, 2014 and incorporated herein by reference)
4.3	Deposit Agreement dated May 21, 2015, among State Street Corporation, American Stock Transfer & Trust Company, LLC (as depositary) and the holders from time to time of depositary receipts (filed as Exhibit 4.1 to State Street's Current Report on Form 8-K (File No. 001-7511) dated May 21, 2015 filed with the SEC on May 21, 2015 and incorporated herein by reference)
4.4	Deposit Agreement dated April 11, 2016, among State Street Corporation, American Stock Transfer & Trust Company, LLC (as depositary) and the holders from time to time of depositary receipts (filed as Exhibit 4.1 to State Street's Current Report on Form 8-K (File No. 001-7511) dated April 11, 2016 filed with the SEC on April 11, 2016 and incorporated herein by reference)
4.5	Deposit Agreement dated September 27, 2018, among State Street Corporation, American Stock Transfer & Trust Company, LLC (as depositary) and the holders from time to time of the depositary receipts (filed as Exhibit 4.3 to State Street's Current Report on Form 8-K (File No. 001-07511) filed with the SEC on September 27, 2018 and incorporated herein by reference)
	(Note: None of the instruments defining the rights of holders of State Street's outstanding long-term debt are in respect of indebtedness in excess of 10% of the total assets of State Street and its subsidiaries on a consolidated basis. State Street hereby agrees to furnish to the SEC upon request a copy of any other instrument with respect to long-term debt of State Street and its subsidiaries.)
10.1†	State Street's Management Supplemental Retirement Plan, Amended and Restated, as amended (filed as Exhibit 10.5 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2019 filed with the SEC on May 1, 2019 and incorporated herein by reference)
10.2†	State Street's Executive Supplemental Retirement Plan, as amended and restated, and First, Second and Third Amendments thereto
10.3†	Supplemental Cash Incentive Plan, as amended, First and Second Amendments thereto, and form of award agreement thereunder (filed as Exhibit 10.2 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2020 filed with the SEC on April 28, 2020 and incorporated herein by reference)
10.4†	State Street's 2006 Equity Incentive Plan, as amended, and forms of award agreements thereunder (filed as Exhibit 10.8 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2014 and filed with the SEC on February 20, 2015 and incorporated herein by reference)
10.5†	State Street's 2017 Stock Incentive Plan, and forms of award agreements thereunder (filed as Exhibit 10.3 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2020 filed with the SEC on April 28, 2020 and incorporated herein by reference)

10.6†	State Street's Management Supplemental Savings Plan, Amended and Restated, as amended (filed as Exhibit 10.10 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2016 filed with the SEC on February 17, 2017 and incorporated herein by reference)
10.7†	Deferred Compensation Plan for Directors of State Street Corporation, Restated January 1, 2007, as amended (filed as Exhibit 10.12 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2011 filed with the SEC on February 27, 2012 and incorporated herein by reference)
10.8†	Deferred Compensation Plan for Directors of State Street Corporation, Restated January 1, 2021, as amended (filed as Exhibit 10.1 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended June 30, 2020 filed with the SEC on July 27, 2020 and incorporated herein by reference)
10.9	Deferred Prosecution Agreement dated January 17, 2017 between State Street Corporation and the U.S. Department of Justice and United States Attorney for the District of Massachusetts (filed as Exhibit 10.14 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2016 filed with the SEC on February 17, 2017 and incorporated herein by reference)
10.10†	Description of compensation arrangements for non-employee directors
10.11†	State Street's Executive Compensation Trust Agreement dated June 1, 2002 (Rabbi Trust), as amended (filed as Exhibit 10.22 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2017 filed with the SEC on February 26, 2018 and incorporated herein by reference)
10.12A†	Form of Indemnification Agreement between State Street Corporation and each of its directors (filed as Exhibit 10.18A to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2013 filed with the SEC on February 21, 2014 and incorporated herein by reference)
10.12B†	Form of Indemnification Agreement between State Street Corporation and each of its executive officers (filed as Exhibit 10.18B to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2013 filed with the SEC on February 21, 2014 and incorporated herein by reference)
10.12C†	Form of Indemnification Agreement between State Street Bank and Trust Company and each of its directors (filed as Exhibit 10.18C to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2013 filed with the SEC on February 21, 2014 and incorporated herein by reference)
10.12D†	Form of Indemnification Agreement between State Street Bank and Trust Company and each of its executive officers (filed as Exhibit 10.18D to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2013 filed with the SEC on February 21, 2014 and incorporated herein by reference)
10.13†	Form of employment agreement for executive officers in the United States and Hong Kong (filed as Exhibit 10.1 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2020 filed with the SEC on April 28, 2020 and incorporated herein by reference)
10.14†	Employment Letter Agreements entered into with Andrew Erickson dated August 21, 2012, November 19, 2012, and May 25, 2016 (filed as Exhibit 10.2 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2018 filed with the SEC on May 3, 2018 and incorporated herein by reference)

	10.15†	Employment Letter Agreement entered into with Eric Aboaf dated September 22, 2016 (filed as Exhibit 10.1 to State Street's Current Report on Form 8-K (File No. 001-07511) dated September 28, 2016 filed with the SEC on September 28, 2016 and incorporated herein by reference)
	10.16†	Employment Letter Agreement entered into with Francisco Aristeguieta dated March 11, 2019 (filed as Exhibit 10.4 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2020 filed with the SEC on April 28, 2020 and incorporated herein by reference)
	10.17†	Confidentiality, Intellectual Property and Restrictive Covenant Protective Agreement entered into with Francisco Aristeguieta dated July 15, 2019 (filed as Exhibit 10.1 to State Street's Quarterly Report on Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2020 filed with the SEC on April 28, 2020 and incorporated herein by reference)
	10.18†	State Street Corporation Incentive Compensation Program, Effective January 1, 2019 (filed as Exhibit 10.24 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2018 filed with the SEC on February 21, 2019 and incorporated herein by reference)
	10.19†	State Street Corporation Cash Award Plan, Effective January 1, 2019 (filed as Exhibit 10.25 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2018 filed with the SEC on February 21, 2019 and incorporated herein by reference)
	21	Subsidiaries of State Street Corporation
	23	Consent of Independent Registered Public Accounting Firm
	31.1	Rule 13a-14(a)/15d-14(a) Certification of Chairman, President and Chief Executive Officer
	31.2	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer
	32	Section 1350 Certifications
	101.INS	The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document
*	101.SCH	Inline XBRL Taxonomy Extension Schema Document
*	101.CAL	Inline XBRL Taxonomy Calculation Linkbase Document
*	101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
*	101.LAB	Inline XBRL Taxonomy Label Linkbase Document
*	101.PRE	Inline XBRL Taxonomy Presentation Linkbase Document
*	104	Cover Page Interactive Data File (formatted as Inline XBRL and included within the Exhibit 101 attachments)

† Denotes management contract or compensatory plan or arrangement
* Submitted electronically herewith

Attached as Exhibit 101 to this report are the following formatted in iXBRL (Inline Extensible Business Reporting Language): (i) consolidated statement of income for the years ended December 31, 2020, 2019 and 2018, (ii) consolidated statement of comprehensive income for the years ended December 31, 2020, 2019 and 2018, (iii) consolidated statement of condition as of December 31, 2020 and December 31, 2019, (iv) consolidated statement of changes in shareholders' equity for the years ended December 31, 2020, 2019 and 2018, (v) consolidated statement of cash flows for the years ended December 31, 2020, 2019 and 2018, and (vi) notes to consolidated financial statements.

SIGNATURES

Pursuant to the requirement of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, on February 19, 2021, hereunto duly authorized.

STATE STREET CORPORATION

By /s/ ERIC W. ABOAF
ERIC W. ABOAF,
Executive Vice President and
Chief Financial Officer

By /s/ IAN W. APPLEYARD
IAN W. APPLEYARD,
Executive Vice President, Global Controller and
Chief Accounting Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on February 19, 2021 by the following persons on behalf of the registrant and in the capacities indicated.

OFFICERS:

/s/ RONALD P. O'HANLEY
RONALD P. O'HANLEY,
Chairman, President and Chief Executive Officer

/s/ ERIC W. ABOAF
ERIC W. ABOAF,
Executive Vice President and
Chief Financial Officer

/s/ IAN W. APPLEYARD
IAN W. APPLEYARD,
Executive Vice President, Global Controller and
Chief Accounting Officer

DIRECTORS:

/s/ MARIE A. CHANDOHA
MARIE A. CHANDOHA

/s/ RONALD P. O'HANLEY
RONALD P. O'HANLEY

/s/ PATRICK de SAINT-AIGNAN
PATRICK de SAINT-AIGNAN

/s/ SARA MATHEW
SARA MATHEW

/s/ LYNN A. DUGLE
LYNN A. DUGLE

/s/ WILLIAM L. MEANEY
WILLIAM L. MEANEY

/s/ AMELIA C. FAWCETT
AMELIA C. FAWCETT

/s/ SEAN O'SULLIVAN
SEAN O'SULLIVAN

/s/ WILLIAM C. FREDA
WILLIAM C. FREDA

/s/ RICHARD P. SERGEL
RICHARD P. SERGEL

/s/ GREGORY L. SUMME
GREGORY L. SUMME

Exhibit 4.1

DESCRIPTION OF SECURITIES REGISTERED UNDER SECTION 12 OF THE SECURITIES AND EXCHANGE ACT OF 1934

The following is a description of the general terms and provisions of our securities registered under Section 12 of the Securities and Exchange Act of 1934, as amended (the "Exchange Act"). This description is based upon, and is qualified in its entirety by reference to, our Restated Articles of Organization, as amended (the "Restated Articles"), our By-laws, as amended (the "By-laws"), the certificates of designation with respect to our preferred stock and the deposit agreements with respect to our depositary shares, all of which have been filed with the Securities and Exchange Commission (the "SEC"). For purposes of this description, references to "State Street," "we," "our," "ours" and "us" relate only to State Street Corporation and not its subsidiaries.

General

Our Restated Articles authorize the issuance of up to 750,000,000 shares of common stock, $1.00 par value per share, and up to 3,500,000 shares of preferred stock, without par value, in one or more series. Of such number of shares of preferred stock, 7,500 shares have been designated as Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series D (the "Series D Preferred Stock"), 7,500 shares have been designated as Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series F (the "Series F Preferred Stock"), 5,000 shares have been designated as Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series G (the "Series G Preferred Stock"), and 5,000 shares have been designated as Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series H (the "Series H Preferred Stock"). We redeemed all of the issued and outstanding shares of our series B preferred stock in 2009, all of the issued and outstanding shares of our series A preferred stock in 2012, all of the issued and outstanding shares of our series E preferred stock in 2019 and all of the outstanding shares of our series C preferred stock in 2020. On January 14, 2021, we announced that we will redeem 5,000 of the 7,5000 outstanding shares of Series F Preferred Stock with a payable date of March 15, 2021. All of our outstanding shares of preferred stock are represented by depositary shares.

One of the effects of authorized but unissued and unreserved shares of capital stock may be to make it more difficult or to discourage an attempt by a potential acquirer to obtain control of our company by means of a merger, tender offer, proxy contest or otherwise. The issuance of these shares of capital stock may defer or prevent a change in control of us without any further shareholder action.

Our common stock and the depositary shares representing our Series D Preferred Stock and Series G Preferred Stock are registered under Section 12(b) of the Exchange Act. In this description, we refer to the Series D Preferred Stock and Series G Preferred Stock collectively as the "Registered Preferred Stock" and the Series D Preferred Stock, Series F Preferred Stock, Series G Preferred Stock and Series H Preferred Stock collectively as the "Outstanding Preferred Stock."

Description of Common Stock

Dividends and Rights Upon Liquidation

Holders of our common stock are entitled to receive dividends if, as and when declared by our board of directors out of any funds legally available for dividends. Holders of our common stock are also entitled, upon our liquidation, and after claims of creditors and the preferences of any class or series of preferred stock outstanding at the time of liquidation, to receive pro rata our net assets. We pay dividends on our common stock only if we have paid or provided for all dividends on our outstanding classes and series of preferred stock, for the then current period and, in the case of any cumulative preferred stock, all prior periods.

Our ability to declare and pay dividends on our common stock is subject to certain restrictions as described in the "Business—Supervision and Regulation—Capital Planning, Stress Tests and Dividends" section of the Annual Report on Form 10-K to which this description has been filed as an exhibit. We generally are not permitted to purchase shares of our common stock unless full dividends are paid (or declared, with funds set aside for payment) on all outstanding shares of preferred stock.

Any outstanding preferred stock has a preference over our common stock with respect to the payment of dividends and the distribution of assets in the event of our liquidation, winding up or dissolution, and such other preferences as may be fixed by our board of directors.

Voting Rights

Holders of our common stock are entitled to one vote for each share that they hold and are vested with all of the voting power except as our board of directors has provided, or may provide in the future, with respect to preferred stock or any other class or series of preferred stock that the board of directors may hereafter authorize. See "Description of Preferred Stock" below.

Other Rights

Shares of our common stock are not redeemable, and have no subscription, conversion or preemptive rights. There are no sinking fund provisions applicable to shares of our common stock. Outstanding shares of our common stock are non-assessable. Holders of our common stock are not, and will not be, subject to any liability as stockholders.

Preferred Stock

Our board of directors can determine the rights, preferences and limitations of each series of our preferred stock without shareholder action. Therefore, without shareholder approval, our board of directors can authorize the issuance of preferred stock with voting, conversion and other rights that could dilute the voting power and other rights of holders of our common stock. In addition, the issuance of preferred stock could impede the completion of a merger, tender offer or other takeover attempt.

Restrictions on Ownership

The Bank Holding Company Act of 1956, as amended (the "BHC Act") requires any "bank holding company," as defined in the BHC Act, to obtain the approval of the Board of Governors of the Federal Reserve System (the "Federal Reserve") prior to the acquisition of 5% or more of our common stock. Any person, other than a bank holding company, is required to obtain prior approval of the Federal Reserve to acquire 10% or more of our common stock under the Change in Bank Control Act of 1978, as amended. Any holder of 25% or more of our common stock, or that otherwise exercises a "controlling influence" over us, is subject to regulation as a bank holding company under the BHC Act. Chapter 167A of the General Laws of Massachusetts requires any "bank holding company," as defined in Chapter 167A, to obtain prior approval of the board of bank incorporation before (i) acquiring 5% or more of our common stock, (ii) acquiring all or substantially all of our assets or (iii) merging or consolidating with us.

Provisions of Our Restated Articles and By-laws and Massachusetts Law That May Have Anti-Takeover Effects

Certain provisions of our By-laws are designed to make it more difficult for an outsider who does not have the support of our board of directors to accomplish a takeover. These provisions: (1) provide that only our board of directors or the Chairman of the board of directors, or one or more shareholders holding at least 25 percent of all the votes entitled to be cast on any issue to be considered at a proposed special meeting, have the power to call a special meeting of shareholders; (2) specify that action by shareholders without a meeting requires the written approval of all shareholders entitled to vote on the action; and (3) provide that nominations and matters for shareholder action may only be made by advance written notice. While the foregoing provisions will not necessarily prevent take-over attempts, they may discourage an attempt to obtain control of us in a transaction not approved by our board of directors by making it more difficult for a third party to obtain control in a short time and impose its will on our remaining shareholders.

Our Restated Articles provide that none of our directors will be liable to us or our shareholders for monetary damages for any breach of fiduciary duty, except to the extent such exculpation from liability is not permitted under Massachusetts law. This provision does not prevent shareholders from obtaining injunctive or other equitable relief against directors nor does it shield directors from liability under federal or state securities laws.

We are covered by the provisions of Chapter 110F of the Massachusetts General Laws, the so-called Business Combination Statute. Under Chapter 110F, a Massachusetts corporation with more than 200 shareholders may not engage in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person becomes an interested stockholder, unless (i) the interested stockholder obtains the approval of the board of directors prior to becoming an interested stockholder, (ii) the interested stockholder acquires 90% of the outstanding voting stock of the corporation (excluding shares held by certain affiliates of the corporation) at the time it becomes an interested stockholder or (iii) the business combination is approved by both the board of directors and the holders of two-thirds of the outstanding voting stock of the corporation (excluding shares held by the interested stockholder).

An "interested stockholder" is a person who, together with affiliates and associates, owns (or at any time within the prior three years did own) 5% or more of the outstanding voting stock of the corporation. A "business combination" includes a merger, a stock or asset sale, and other transactions resulting in a financial benefit to the interested stockholder.

Our By-laws provide that the provisions of Chapter 110D of the Massachusetts General Laws, the so-called "Control Share Statute," do not apply to us. However, we may in the future become subject to the statute if our board of directors votes to amend our By-laws so as to make them applicable to us. In general, if this statute were applicable it would provide that any person or entity that acquired 20% or more of our outstanding voting stock could not vote such stock unless our other shareholders were to so authorize such voting.

Section 8.06(b) of the Massachusetts Business Corporation Act (the "MBCA") provides that unless a corporation decides otherwise, the terms of directors of a public Massachusetts corporation shall be staggered by dividing the directors into three groups, as nearly equal in number as possible, with only one group of directors being elected each year. Sections 8.06(d) and (e) of the MBCA provide that when directors are so classified, (i) shareholders may remove directors only for cause, (ii) the number of directors shall be fixed only by the vote of the board of directors, (iii) vacancies and newly created directorships shall be filled solely by the affirmative vote of a majority of the remaining directors, and (iv) a decrease in the number of directors will not shorten the term of any incumbent director. Our board of directors opted out of this staggered board of directors requirement, and all of our directors currently serve for one-year terms and are elected annually. Under Section 8.06(c)(2) of the MBCA, our board of directors may opt into the staggered board of directors requirements of Section 8.06(b) and the application of Sections 8.06(d) and (e). If our board of directors opts into this structure, these provisions are likely to increase the time required for our shareholders to change the composition of the board of directors. For example, in general, at least two annual meetings would be necessary for shareholders to effect a change in a majority of the members of our board of directors. The provision for a classified board could prevent a party who acquires control of a large portion of our outstanding common stock from obtaining control of our board of directors until our second annual shareholders meeting following the date the acquirer obtains the stock interest. The classified board provision could have the effect of discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us and could increase the likelihood that incumbent directors will retain their positions.

Description of Preferred Stock

A depositary is the sole holder of each series of Outstanding Preferred Stock, as described under "Description of Depositary Shares" below, and all references in this description to the holders of a series of the Outstanding Preferred Stock shall mean the depositary. However, the holders of depositary shares are entitled, through the depositary, to exercise the rights and preferences of the holders of the Outstanding Preferred Stock, as described under "Description of Depositary Shares."

We may from time to time, without notice to or the consent of holders of the Registered Preferred Stock, issue additional shares of preferred stock that rank equally with or junior to the Registered Preferred Stock.

Ranking

Each series of Registered Preferred Stock ranks, with respect to the payment of dividends and the distribution of assets upon voluntary or involuntary liquidation, dissolution and winding up of the affairs of State Street:

- senior to our common stock and any other series of our junior stock that may be issued in the future;
- equally with each other series of Outstanding Preferred Stock; and
- equally with each other series of our preferred stock that by its terms is expressly stated to be on parity with the Registered Preferred Stock, and junior to any preferred stock that by its terms is expressly stated to be senior to the Registered Preferred Stock.

In addition, we are generally able to pay dividends and distributions upon the voluntary or involuntary liquidation, dissolution or winding up of the affairs of State Street only out of lawfully available assets for such payment (i.e., after taking account of all indebtedness and other non-equity claims). The Registered Preferred Stock is nonassessable. Holders of Registered Preferred Stock do not have preemptive or subscription rights to acquire more capital stock of State Street.

The Registered Preferred Stock is not convertible into, or exchangeable for, shares of any other class or series of stock or other securities of State Street. The Registered Preferred Stock has no stated maturity and is not subject to any sinking fund or other obligation of State Street to redeem or repurchase the Registered Preferred Stock.

Each series of Outstanding Preferred Stock ranks equally with each series of Registered Preferred Stock as to dividends and distributions on liquidation and includes the same provisions with respect to restrictions on declaration and payment of dividends and voting rights as apply to each series of Registered Preferred Stock.

Holders of Series D Preferred Stock are entitled to receive non-cumulative quarterly dividends when, as and if declared by our board of directors (or a duly authorized committee of the board), (1) at a rate of 5.90% per annum to but excluding March 15, 2024 and (2) thereafter at a rate per annum equal to three-month LIBOR plus 3.108%. Holders of Series F Preferred Stock are entitled to receive non-cumulative dividends when, as and if declared by our board of directors (or a duly authorized committee of the board), (1) semi-annually at a rate of 5.250% per annum to but excluding September 15, 2020 and (2) thereafter quarterly at a rate per annum equal to three-month LIBOR plus 3.597%. Holders of Series G Preferred Stock are entitled to receive non-cumulative quarterly dividends when, as and if declared by our board of directors (or a duly authorized committee of the board), (1) at a rate of 5.350% per annum to but excluding March 15, 2026 and (2) thereafter at a rate per annum equal to three-month LIBOR plus 3.709%. Holders of Series H Preferred Stock are entitled to receive non-cumulative dividends when, as

and if declared by our board of directors (or a duly authorized committee of the board), (1) semi-annually at a rate of 5.625% per annum to but excluding December 15, 2023 and (2) thereafter quarterly at a rate per annum equal to three-month LIBOR plus 2.539%.

For additional detail on the terms of our existing series of preferred stock, you also should refer to the respective certificate of designation for each series, each of which is part of our Restated Articles and on file with the SEC.

Dividends

Dividends on shares of the Registered Preferred Stock are not mandatory and are not cumulative. Holders of the Registered Preferred Stock are entitled to receive, when, as and if declared by our board of directors or any duly authorized committee of the board out of legally available assets, non-cumulative cash dividends as follows:

- Dividends on the Series D Preferred Stock are paid quarterly in arrears on the 15th day of March, June, September and December. From the date of issuance to, but excluding, March 15, 2024, dividends are calculated at an annual rate of 5.90%, and from, and including, March 15, 2024, dividends are calculated at an annual rate equal to three-month LIBOR plus 3.108%, in each case on the liquidation preference of $100,000 per share of Series D Preferred Stock (equivalent to $25 per depositary share).
- Dividends on the Series G Preferred Stock are paid quarterly in arrears on the 15th day of March, June, September and December. From the date of issuance to, but excluding, March 15, 2026, dividends are calculated at an annual rate of 5.350%, and from, and including, March 15, 2026, dividends are calculated at an annual rate equal to three-month LIBOR plus 3.709%, in each case on the liquidation preference of $100,000 per share of Series G Preferred Stock (equivalent to $25 per depositary share).

For a series of Registered Preferred Stock that calculates dividends at a fixed rate during one period of time and at a floating rate during another, the period during which such series calculates dividends at a fixed rate is referred to herein as the "fixed rate period", and the period during which such series calculates dividends at a floating rate is referred to herein as the "floating rate period."

If our board of directors or a duly authorized committee of the board has not declared a dividend on a series of Registered Preferred Stock before the dividend payment date for any dividend period, such dividend shall not be cumulative and shall not be payable for such dividend period, and we will have no obligation to pay dividends for such dividend period, whether or not dividends on such series of Registered Preferred Stock are declared for any future dividend period. A "dividend period" with respect to a series of Registered Preferred Stock means the period from, and including, a dividend payment date on such series to, but excluding, the next succeeding dividend payment date.

Notwithstanding the foregoing, dividends on the Registered Preferred Stock shall not be declared, paid or set aside for payment to the extent such act would cause us to fail to comply with laws and regulations applicable thereto, including applicable capital adequacy guidelines.

With respect to the Registered Preferred Stock, during their fixed rate period dividends, including dividends payable for any partial dividend period, are calculated on the basis of a 360-day year of twelve 30-day months, and during their floating rate period dividends, including dividends payable for any partial dividend period, are calculated on the basis of a 360-day year and the actual number of days elapsed.

Dividends on any Registered Preferred Stock to be redeemed cease to accrue after the redemption date, as described below under "—Redemption," unless we default in the payment of the redemption price of the shares of the Registered Preferred Stock called for redemption.

We pay dividends to the holders of record of shares of the Registered Preferred Stock as they appear on our stock register on each record date, which is the 15th calendar day before the related dividend payment date (provided, however, if any such date is not a business day then the record date will be the next succeeding day that is a business day) or, such other date as determined by our board of directors or any duly authorized committee of the board.

Generally, if any date on which dividends would otherwise be payable on a series of Registered Preferred Stock is not a business day, then payment of any dividend otherwise payable on such date will be made on the next succeeding business day, without interest or other payment in respect of such delay. However, if after the first day of such series' floating rate period any date on which dividends would otherwise be payable is not a business day, then payment of any dividend otherwise payable on such date will be made on the next succeeding business day unless that day falls in the next calendar month, in which case payment of any dividend otherwise payable on such date will be made on the immediately preceding business day, and such dividends will be payable on, and calculated to, but excluding, the actual payment date.

"Business day" means, for dividends payable during the fixed rate period, any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions are authorized or required by law or regulation to close in New York, New York or Boston, Massachusetts, and for dividends payable during the floating rate period, any day that would be considered a business day during the fixed rate period that is also a London banking day (as defined below).

For the purposes of calculating any dividend on a series of Registered Preferred Stock during such series' floating rate period:

"three-month LIBOR" means, for any LIBOR determination date, the offered rate for deposits in U.S. dollars having a maturity of three months that appears on the Designated LIBOR Page as of 11:00 a.m., London time, on such LIBOR determination date. If such rate does not appear on such page at such time, the certificates of designation for the Series D Preferred Stock and Series G Preferred Stock provide alternative methods of calculating the dividend rate for the applicable dividend period. All percentages used in or resulting from any calculation of three-month LIBOR are rounded, if necessary, to the nearest one hundred-thousandth of a percentage point, with .000005% rounded up to .00001%. The determination of three-month LIBOR for each relevant dividend period by the calculation agent is (in the absence of manifest error) final and binding;

"calculation agent" means State Street Bank and Trust Company, or any other successor appointed by us, acting as calculation agent;

"LIBOR determination date" means the second London banking day immediately preceding the first day of the relevant dividend period;

"London banking day" means any day on which commercial banks and foreign exchange markets settle payments in London; and

"Designated LIBOR Page" means the display on Reuters, or any successor service, on page LIBOR01, or any other page as may replace that page on that service, for the purpose of displaying the London Interbank rates for U.S. dollars.

Dividends on shares of the Registered Preferred Stock are not cumulative. Accordingly, if our board of directors or a duly authorized committee of the board does not declare a dividend on a series of Registered Preferred Stock payable in respect of any dividend period before the related dividend payment date, such dividend will not be payable and we will have no obligation to pay, and the holders of such series of Registered Preferred Stock shall have no right to receive, dividends for such dividend period on the dividend payment date or at any future time, or interest with respect to such dividends, whether or not dividends on such series of Registered Preferred Stock are declared for any future dividend period.

The terms of each series of Registered Preferred Stock provide that, so long as any share of such series remains outstanding,

> (1) no dividend shall be declared or paid or set aside for payment and no distribution shall be declared or made or set aside for payment on any junior stock (other than a dividend payable solely in junior stock or any dividend or distribution of capital stock or rights to acquire capital stock of State Street in connection with a shareholders' rights plan or any redemption or repurchase of capital stock or rights to acquire capital stock under any such plan); and
>
> (2) no shares of junior stock shall be repurchased, redeemed or otherwise acquired for consideration by us, directly or indirectly (other than (a) as a result of a reclassification of junior stock for or into other junior stock, (b) the exchange or conversion of one share of junior stock for or into another share of junior stock, (c) through the use of the proceeds of a substantially contemporaneous sale of other shares of junior stock, (d) purchases, redemptions or other acquisitions of shares of junior stock pursuant to any employment contract, benefit plan or other similar arrangement with or for the benefit of employees, officers, directors or consultants, (e) purchases of shares of junior stock pursuant to a contractually binding requirement to buy junior stock existing prior to or during the most recent preceding dividend period for which the full dividends for the then most recently completed dividend period on all outstanding shares of such series have been declared and paid or declared and a sum sufficient for the payment thereof has been set aside, including under a contractually binding stock repurchase plan, or (f) the purchase of fractional interests in shares of junior stock pursuant to the conversion or exchange

provisions of such stock or the security being converted or exchanged), nor shall any monies be paid to or made available for a sinking fund for the redemption of any such securities by us;

unless, in each case, the dividends for the then most recently completed dividend period on all outstanding shares of such series have been declared and paid in full or declared and a sum sufficient for the payment in full thereof has been set aside.

As used in this description, "junior stock" means, with respect to a series of Registered Preferred Stock, our common stock and any other class or series of stock of State Street hereafter authorized over which such Registered Preferred Stock has preference or priority in the payment of dividends or in the distribution of assets on any voluntary or involuntary liquidation, dissolution or winding up of the affairs of State Street.

When dividends are not paid in full upon the shares of a series of Registered Preferred Stock and any parity stock, all dividends declared upon the shares of such series of Registered Preferred Stock and any such parity stock will be declared on a proportional basis so that the amount of dividends declared per share will bear to each other the same ratio as the ratio between the then-current dividends due on the shares of the Registered Preferred Stock and (i) in the case of any series of parity stock that is non-cumulative preferred stock, the aggregate of the current and unpaid dividends due on such series of preferred stock, and (ii) in the case of any series of parity stock that is cumulative preferred stock, the aggregate of the current and accumulated and unpaid dividends due on such series of preferred stock.

As used in this description, "parity stock" means, with respect to a series of Registered Preferred Stock, any other class or series of stock of State Street that ranks equally with such Registered Preferred Stock in the payment of dividends and in the distribution of assets on any voluntary or involuntary liquidation, dissolution or winding up of the affairs of State Street.

No interest will be payable in respect of any declared but unpaid dividend payment on shares of Registered Preferred Stock that is paid after the relevant dividend payment date for such dividend period.

If our board of directors determines not to pay any dividend or a full dividend on a series of Registered Preferred Stock on a dividend payment date, we will provide, or cause to be provided, written notice to the holders of such Registered Preferred Stock prior to such date.

Subject to the foregoing, and not otherwise, such dividends (payable in cash, stock or otherwise), as may be determined by our board of directors or any duly authorized committee of the board, may be declared and paid on our common stock and any other stock ranking equally with or junior to the Registered Preferred Stock from time to time out of any assets legally available for such payment, and the holders of Registered Preferred Stock shall not be entitled to participate in any such dividend.

Our ability to pay dividends on our preferred stock is subject to certain restrictions as described in the "Business—Supervision and Regulation—Capital Planning, Stress Tests and Dividends" section of the Annual Report on Form 10-K to which this description has been filed as an exhibit.

Liquidation Rights

Upon any voluntary or involuntary liquidation, dissolution or winding up of the affairs of State Street, holders of each series of Registered Preferred Stock are entitled to receive out of assets of State Street legally available for distribution to shareholders, after satisfaction of liabilities to creditors and subject to the rights of holders of any securities ranking senior to such series of Registered Preferred Stock, before any distribution of assets is made to holders of common stock or of any of our other shares of stock ranking junior as to such a distribution to the shares of Registered Preferred Stock, a liquidating distribution in the amount of the liquidation preference of $100,000 per share (equivalent to $25 per depositary share) plus declared and unpaid dividends, without accumulation of any undeclared dividends. Holders of the Registered Preferred Stock will not be entitled to any other amounts from us after they have received their full liquidating distribution.

In any such distribution, if the assets of State Street are not sufficient to pay the liquidation preferences plus declared and unpaid dividends in full to all holders of a series of Registered Preferred Stock and all holders of any other shares of our stock ranking equally as to such distribution with such Registered Preferred Stock, the amounts paid to the holders of such Registered Preferred Stock and to the holders of all such other parity stock will be paid pro rata in accordance with the respective aggregate liquidating distribution owed to those holders. If the liquidation preference plus declared and unpaid dividends has been paid in full to all holders of Registered Preferred Stock and any other shares of our stock ranking equally as to the liquidation distribution, the holders of our junior stock shall be entitled to receive all remaining assets of State Street according to their respective rights and preferences.

For purposes of this section, the merger, consolidation or other business combination transaction of State Street into or with any other entity, including a merger, consolidation or other business combination transaction in which the holders of Registered Preferred Stock receive cash, securities or other property for their shares, or the sale, lease or exchange of all or substantially all of the property and assets of State Street for cash, securities or other property, shall not constitute a voluntary or involuntary liquidation, dissolution or winding up of the affairs of State Street.

The shares of Registered Preferred Stock may be fully subordinated to interests held by the U.S. government in the event that we enter into a receivership, insolvency, liquidation or similar proceeding.

Because we are a bank holding company, our rights, the rights of our creditors and the rights of our shareholders, including the holders of Registered Preferred Stock, to participate in a distribution of the assets of any subsidiary upon the subsidiary's liquidation or recapitalization may be subject to the prior claims of the subsidiary's creditors except to the extent that we may ourselves be a creditor with recognized claims against the subsidiary.

Redemption

The Registered Preferred Stock is not subject to any mandatory redemption, sinking fund or other similar provision. Except as described below, the Registered Preferred Stock is not redeemable prior to the applicable "Redemption Trigger Date." The Redemption Trigger Dates for the Series D Preferred Stock and Series G Preferred Stock are March 15, 2024 and March 15, 2026, respectively. On the Redemption Trigger Date for a series of Registered Preferred Stock, and on any dividend payment date for such series thereafter, shares of such Registered Preferred Stock are redeemable at our option, in whole or in part, at a redemption price equal to $100,000 per share (equivalent to $25 per depositary share), plus any declared and unpaid dividends, without accumulation of any undeclared dividends. Holders of Registered Preferred Stock have no right to require the redemption or repurchase of the Registered Preferred Stock. Dividends will cease to accrue after the redemption date. Under the Federal Reserve's risk-based capital guidelines applicable to bank holding companies, any redemption of a series of Registered Preferred Stock is subject to prior approval of the Federal Reserve.

Notwithstanding the foregoing, prior to the applicable Redemption Trigger Date, within 90 days of our good faith determination that an event has occurred that would constitute a regulatory capital treatment event (as defined below), we may, at our option, subject to the approval of the Federal Reserve, provide notice of our intent to redeem in accordance with the procedures described below, and subsequently redeem, all (but not less than all) of the shares of a series of Registered Preferred Stock at the time outstanding at a redemption price equal to $100,000 per share (equivalent to $25 per depositary share), plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

A "regulatory capital treatment event" means, with respect to a series of Registered Preferred Stock and subject to the terms of the applicable certificate of designation, our determination, in good faith, that, as a result of any

- amendment to, clarification of or change in (including any announced prospective amendment to, clarification of or change in) the laws or regulations or policies of the United States or any political subdivision of or in the United States that is enacted or announced or that becomes effective after the initial issuance of any share of such series of Registered Preferred Stock;
- proposed amendment to or change in those laws or regulations or policies that is announced or becomes effective after the initial issuance of any share of such series of Registered Preferred Stock; or
- official administrative decision or judicial decision or administrative action or other official pronouncement interpreting or applying those laws or regulations or policies that is announced or that becomes effective after the initial issuance of any share of such series of Registered Preferred Stock,

there is more than an insubstantial risk that we will not be entitled to treat the full liquidation value of all shares of such series of Registered Preferred Stock then outstanding as additional tier 1 capital (or its equivalent) for purposes of the capital adequacy guidelines or regulations of the

appropriate federal banking agency, as then in effect and applicable, for as long as any share of Registered Preferred Stock is outstanding.

If shares of the Registered Preferred Stock are to be redeemed, the notice of redemption shall be given to the holders of record of the Registered Preferred Stock to be redeemed, either by first class mail, postage prepaid, addressed to the holders of record of such shares to be redeemed at their respective last addresses appearing on our stock register or transmitted by such other method approved by the depositary, in its reasonable discretion, not less than 30 days nor more than 60 days prior to the date fixed for redemption thereof (provided that, if the depositary shares representing such Registered Preferred Stock are held in book-entry form through The Depository Trust Company ("DTC") (or a successor securities depositary), we may give such notice in any manner permitted by DTC (or such successor)). Each notice of redemption will include a statement setting forth: (1) the redemption date; (2) the number and series of shares of Registered Preferred Stock to be redeemed and, if less than all the shares held by such holder are to be redeemed, the number of such shares to be redeemed from such holder (or the method of determining such number); (3) the redemption price; (4) the place or places where the certificates evidencing shares of such Registered Preferred Stock are to be surrendered for payment of the redemption price; and (5) that dividend rights with respect to the shares to be redeemed will cease on the redemption date. If notice of redemption of any shares of Registered Preferred Stock has been duly given and if on or before the redemption date the funds necessary for such redemption have been set aside by us for the benefit of the holders of any shares of Registered Preferred Stock so called for redemption, then, on and after the redemption date, dividend rights with respect to such shares of Registered Preferred Stock will cease, such shares of Registered Preferred Stock shall no longer be deemed outstanding and all rights of the holders of such shares will terminate, except the right to receive the redemption price. See "Description of Depositary Shares" below for information about redemption of the depositary shares relating to the Registered Preferred Stock.

In case of any redemption of only part of the outstanding shares of a series of Registered Preferred Stock, the shares to be redeemed shall be selected either pro rata or by lot or in such other manner as our board of directors or any duly authorized committee of the board of directors determines to be fair and equitable.

Under the Federal Reserve's risk-based capital guidelines applicable to bank holding companies, any redemption of the Registered Preferred Stock is subject to prior approval of the Federal Reserve.

Voting Rights

Except as provided below, the holders of the Registered Preferred Stock have no voting rights.

Whenever dividends on a series of Registered Preferred Stock, or any other class or series of preferred stock that ranks on parity with the Registered Preferred Stock as to payment of dividends, and upon which equivalent voting rights have been conferred and are exercisable, have not been paid, or declared and set aside for payment, in an aggregate amount equal to six or more dividend periods, whether or not for consecutive dividend periods (a "Nonpayment"), the

holders of such series of Registered Preferred Stock, together with holders of any other series of our preferred stock that ranks on parity with the Registered Preferred Stock as to payment of dividends with equivalent voting rights, are entitled to vote separately as a single class for the election of a total of two additional members of our board of directors (the "Preferred Directors"), provided that the election of any such directors shall not cause us to violate the corporate governance requirement of the New York Stock Exchange (or any other exchange on which our securities may be listed) that listed companies must have a majority of independent directors and provided further that our board of directors shall at no time include more than two Preferred Directors.

In that event, the number of directors on our board of directors shall automatically increase by two and, at the request of any holder of such series of Registered Preferred Stock, a special meeting of the holders of such series of Registered Preferred Stock and any other class or series of preferred stock that ranks on parity with such Registered Preferred Stock as to payment of dividends and for which dividends have not been paid, shall be called for the election of the two additional directors of our board of directors (unless such request is received less than 90 days before the date fixed for the next annual or special meeting of the shareholders, in which event such election shall be held at such next annual or special meeting of shareholders), followed by another such election at each subsequent annual meeting. These voting rights will continue until full dividends, including any declared and unpaid dividends, have been paid regularly on the shares of such series of Registered Preferred Stock and any other class or series of preferred stock that ranks on parity with such Registered Preferred Stock as to payment of dividends for at least four consecutive dividend periods following the Nonpayment.

If and when full dividends have been regularly paid for at least four consecutive dividend periods following a Nonpayment on such series of Registered Preferred Stock and any other class or series of preferred stock that ranks on parity with such Registered Preferred Stock as to payment of dividends, the holders of such series of Registered Preferred Stock shall be divested of the foregoing voting rights (subject to revesting in the event of any subsequent Nonpayment) and the term of office of each Preferred Director so elected shall terminate and the number of directors on our board of directors shall automatically decrease by two. Any Preferred Director may be removed at any time without cause by the holders of record of a majority of the outstanding shares of such series of Registered Preferred Stock (together with holders of any other series of our preferred stock that ranks on parity with such Registered Preferred Stock as to payment of dividends with equivalent voting rights, whether or not the holders of such preferred stock would be entitled to vote for the election of directors if such default in dividends did not exist) when they have the voting rights described above. So long as a Nonpayment shall continue, any vacancy in the office of a Preferred Director (other than prior to the initial election of the Preferred Directors) may be filled by the written consent of the Preferred Director remaining in office, or if none remains in office, by a vote of the holders of a majority of the outstanding shares of such series of Registered Preferred Stock (together with holders of any other series of our preferred stock that ranks on parity with such Registered Preferred Stock as to payment of dividends with equivalent voting rights, whether or not the holders of such preferred stock would be entitled to vote for the election of directors if such default in dividends did not exist) to serve until the next annual meeting of shareholders.

If the holders of a series of Registered Preferred Stock become entitled to vote for the election of directors, such Registered Preferred Stock may be considered a class of voting securities under interpretations adopted by the Federal Reserve. As a result, certain holders of such Registered Preferred Stock may become subject to regulations under the BHC Act and/or certain acquisitions of such Registered Preferred Stock may be subject to prior approval of the Federal Reserve.

So long as any shares of a series of Registered Preferred Stock remain outstanding:

- the affirmative vote or consent of the holders of at least two-thirds of all of the shares of such series of Registered Preferred Stock at the time outstanding, voting separately as a single class, shall be required to amend the provisions of our Restated Articles (including the certificate of designation of such series of Registered Preferred Stock or any other series of preferred stock) or the By-laws so as to materially and adversely affect the powers, preferences, privileges or rights of such series of Registered Preferred Stock, taken as a whole; provided, however, that any increase in the amount of the authorized or issued shares of a series of Registered Preferred Stock or authorized preferred stock or the creation and issuance, or an increase in the authorized or issued amount, of other series of preferred stock ranking equally with and/or junior to such series of Registered Preferred Stock with respect to the payment of dividends (whether such dividends are cumulative or non-cumulative) and/or the distribution of assets upon voluntary or involuntary liquidation, dissolution or winding up of the affairs of State Street will not be deemed to adversely affect the powers, preferences, privileges or rights of such series of Registered Preferred Stock; and
- the affirmative vote or consent of the holders of at least two-thirds of all of the shares of such series of Registered Preferred Stock at the time outstanding, voting separately as a single class, shall be required to issue, authorize or increase the authorized amount of, or to issue or authorize any obligation or security convertible into or evidencing the right to purchase, any class or series of stock ranking senior to such series of Registered Preferred Stock and all other parity stock with respect to payment of dividends or the distribution of assets upon liquidation, dissolution or winding up of State Street.

The foregoing voting provisions will also not apply if, at or prior to the time when the act with respect to which such vote would otherwise be required, all outstanding shares of such series of Registered Preferred Stock shall have been redeemed or called for redemption upon proper notice and sufficient funds shall have been set aside by us for the benefit of the holders of such series of Registered Preferred Stock to effect such redemption.

The holders of a series of Registered Preferred Stock are not be entitled to vote as a separate class or series or voting group with respect to any plan of merger or share exchange solely as a result of Section 11.04(6) of the MBCA. Section 11.04(6) of the MBCA provides that, unless a corporation expressly provides otherwise in its articles of organization, shares of capital stock are in some circumstances entitled to vote as a separate class or series or voting group on a plan of merger or share exchange, if the plan of merger or share exchange contains a provision that, if contained in a proposed amendment to the articles of organization of a corporation, would entitle

such class or series to vote as a separate voting group on the proposed amendment under Section 10.04 of the MBCA. Section 10.04 of the MBCA entitles the holders of capital stock of a corporation to vote as a separate class or series under certain circumstances. The certificates of designation creating the Registered Preferred Stock, which are part of our Restated Articles, expressly provide that Section 11.04(6) of the MBCA (and any similar successor provision of the MBCA) is inapplicable to the Registered Preferred Stock.

Preemptive and Conversion Rights

The holders of the Registered Preferred Stock do not have any preemptive or conversion rights.

Additional Classes or Series of Stock

We have the right to create and issue additional classes or series of stock ranking equally with or junior to each series of Registered Preferred Stock as to dividends and/or distribution of assets upon our liquidation, dissolution or winding up without the consent of the holders of such series of Registered Preferred Stock or the holders of the related depositary shares. We may create and issue additional shares of preferred stock senior to a series of Registered Preferred Stock as to dividends and/or distribution of assets upon our liquidation, dissolution or winding up with the requisite consent of the holders of such Registered Preferred Stock and our parity stock entitled to vote thereon.

Description of Depositary Shares

In this description, references to "holders" of depositary shares mean those who own depositary shares registered in their own names, on the books that we or the depositary maintain for this purpose, and not indirect holders who own beneficial interests in depositary shares registered in street name or issued in book-entry form through DTC.

This description summarizes specific terms and provisions of the depositary shares relating to our Registered Preferred Stock. As described above under "Description of Preferred Stock," we have issued fractional interests in shares of preferred stock in the form of depositary shares. Each depositary share represents a 1/4,000th ownership interest in a share of Registered Preferred Stock and is evidenced by a depositary receipt. The shares of Registered Preferred Stock represented by depositary shares are deposited under a deposit agreement among State Street, American Stock Transfer & Trust Company, LLC, as depositary, and the holders from time to time of the depositary receipts evidencing the depositary shares. Subject to the terms of the applicable deposit agreement, each holder of a depositary share is entitled, through the depositary, in proportion to the applicable fraction of a share of the Registered Preferred Stock represented by such depositary share, to all the rights and preferences of the Registered Preferred Stock represented thereby (including dividend, voting, redemption and liquidation rights).

Immediately following the issuance of each series of Registered Preferred Stock, we deposited the shares of such Registered Preferred Stock with the depositary, which then issued depositary receipts evidencing the depositary shares to the initial holders thereof. Copies of the deposit agreements and the forms of depositary receipt are on file with the SEC.

Dividends and Other Distributions

The depositary distributes all cash dividends or other cash distributions, if any, received in respect of the preferred stock underlying the depositary shares to the record holders of depositary shares in proportion to the numbers of depositary shares owned by those holders on the relevant record date. The relevant record date for depositary shares is the same date as the record date for the preferred stock.

If there is a distribution other than in cash, rights, preferences or privileges the depositary will distribute property received by it to the record holders of depositary shares, unless the depositary determines, in consultation with us, that it is not feasible to make such distribution. If this occurs, the depositary may, with our approval, adopt another method for the distribution, including selling the property (at a public or private sale) in a commercially reasonable manner and distributing the net proceeds from the sale to the holders.

The amounts distributed to holders of depositary shares will be reduced by any amounts required to be withheld by the depositary or by us on account of taxes or other governmental charges.

Redemption of Depositary Shares

If we redeem shares of a series of Registered Preferred Stock represented by depositary shares, the depositary shares will be redeemed from the proceeds received by the depositary resulting from the redemption of such Registered Preferred Stock held by the depositary. The redemption price per depositary share will be equal to 1/4,000th of the redemption price per share payable with respect to such series of Registered Preferred Stock (or $25 per depositary share), plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

Whenever we redeem shares of a series of Registered Preferred Stock held by the depositary, the depositary will redeem, as of the same redemption date, the number of depositary shares representing shares of such series of Registered Preferred Stock so redeemed. In case of any redemption of less than all of the outstanding depositary shares, the depositary shares to be redeemed will be selected pro rata by lot or in such other manner as our board of directors or any duly authorized committee of the board may determine to be fair and equitable. The depositary will mail by first class mail, postage prepaid (or otherwise transmit by an authorized method) notice of redemption to record holders of the depositary receipts not less than 30 and not more than 60 days prior to the date fixed for redemption of the Registered Preferred Stock and the related depositary shares.

Voting the Registered Preferred Stock

Because each depositary share represents a 1/4,000th interest in a share of the Registered Preferred Stock, holders of depositary receipts are entitled to a 1/4,000th of a vote per depositary share under those limited circumstances in which holders of the Registered Preferred Stock are entitled to a vote.

When the depositary receives notice of any meeting at which the holders of a series of Registered Preferred Stock are entitled to vote, the depositary will mail (or otherwise transmit by an authorized method) the information contained in the notice to the record holders of the depositary shares relating to such Registered Preferred Stock. Each record holder of the depositary shares on the record date, which is the same date as the record date for the Registered Preferred Stock, may instruct the depositary to vote the amount of the Registered Preferred Stock represented by the holder's depositary shares. To the extent possible, the depositary will vote the amount of the Registered Preferred Stock represented by depositary shares in accordance with the instructions it receives. We will agree to take all reasonable actions that may be deemed necessary to enable the depositary to vote as instructed. If the depositary does not receive specific instructions from the holders of any depositary shares representing a series of Registered Preferred Stock, it will vote all depositary shares of that series held by it proportionately with instructions received.

Withdrawal of Stock

Unless the related depositary shares have been previously called for redemption, upon surrender of the depositary receipts at the office of the depositary, the holder of the depositary shares will be entitled to delivery, at the office of the depositary to or upon his or her order, of the number of whole shares of the Registered Preferred Stock and any money or other property represented by the depositary shares. If the depositary receipts delivered by the holder evidence a number of depositary shares in excess of the number of depositary shares representing the number of whole shares of Registered Preferred Stock to be withdrawn, the depositary will deliver to the holder at the same time a new depositary receipt evidencing the excess number of depositary shares. In no event will the depositary deliver fractional shares of Registered Preferred Stock upon surrender of depositary receipts. Holders of Registered Preferred Stock thus withdrawn may not thereafter deposit those shares under the deposit agreement or receive depositary receipts evidencing depositary shares therefor.

Charges of Depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. We paid the charges of the depositary in connection with the initial deposit of the Registered Preferred Stock and will pay the charges of the depositary in connection any redemption of the Registered Preferred Stock. Holders of depositary receipts will pay transfer, income and other taxes and governmental charges and such other charges (including those in connection with the receipt and distribution of dividends, the sale or exercise of rights, the withdrawal of the Registered Preferred Stock and the transferring, splitting or grouping of depositary receipts) as are expressly provided in the deposit agreement to be for their accounts. If these charges have not been paid by the holders of depositary receipts, the depositary may refuse to transfer depositary shares, withhold dividends and distributions and sell the depositary shares evidenced by the depositary receipt.

Amendment and Termination of the Deposit Agreement

The form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement may be amended by agreement between us and the depositary. However, any amendment that materially and adversely alters the rights of the holders of depositary shares, other than fee changes, will not be effective unless the amendment has been approved by the holders of at least a two-thirds majority of the outstanding depositary shares. The deposit agreement with respect to a series of Registered Preferred Stock may be terminated by the depositary or us only if:

- all outstanding depositary shares have been redeemed;
- there has been a final distribution of such Registered Preferred Stock in connection with our dissolution and such distribution has been made to all the holders of depositary shares; or
- upon the consent of the holders of not less than two-thirds of the outstanding depositary shares.

Resignation and Removal of Depositary

The depositary may resign at any time by delivering to us notice of its election to do so, and we may remove the depositary at any time. Any resignation or removal of the depositary will take effect upon our appointment of a successor depositary and its acceptance of such appointment. The successor depositary must be appointed within 60 days after delivery of the notice of resignation or removal and must be a bank or trust company having its principal office in the United States and having the requisite combined capital and surplus as set forth in the applicable agreement.

Notices

The depositary will forward to holders of depositary receipts all notices, reports and other communications, including proxy solicitation materials received from us, that are delivered to the depositary and that we are required to furnish to the holders of the Registered Preferred Stock. In addition, the depositary will make available for inspection by holders of depositary receipts at the principal office of the depositary, and at such other places as it may from time to time deem advisable, any reports and communications we deliver to the depositary as the holder of the Registered Preferred Stock.

Limitation of Liability

Neither we nor the depositary will be liable if either of us is prevented or delayed by law or any circumstance beyond its control in performing its obligations. Our obligations and those of the depositary are limited to performance in good faith of our and their duties thereunder. We and the depositary will not be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or preferred stock unless satisfactory indemnity is furnished. We and the depositary may rely upon written advice of counsel or accountants, on information provided by persons presenting preferred stock for deposit, holders of depositary receipts or other persons believed to be competent to give such information and on documents believed to be genuine and to have been signed or presented by the proper party or parties.

Exhibit 10.2

STATE STREET CORPORATION
Executive Supplemental Retirement Plan
(Amended and Restated January 1, 2015)

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ARTICLE 1 **Establishment and Purpose**

.

1.**Restatement**

. The Plan is a further amendment and restatement of the Prior Plan, effective as of January 1, 2015, unless otherwise provided.

2.**Purpose**

. The principal purposes of the Plan are to provide certain key Employees with competitive retirement benefits and to encourage the continued employment of such Employees with the Employer.

3.**Section 409A**

. The Plan is intended to comply with Section 409A and shall be construed and administered accordingly.

ARTICLE 2 **Definitions**

.

To the extent not otherwise defined in the text of the Plan, including, without limitation, any Exhibits and Schedules of the Plan, capitalized terms shall have the following meaning:

1.**Account**

. "Account" means a bookkeeping account (including any subaccounts) maintained by the Administrator for a Participant to record the Participant's Account Balance from time to time.

2.**Account Balance**

. "Account Balance" means the value of an Account, as credited and/or debited in accordance with Article IV, from time to time.

3.**Account Vesting Commencement Date**

. "Account Vesting Commencement Date" shall mean the date an Active Participant meets the Age/Service Requirements for Supplemental Plan Benefits upon Retirement set forth in Section 4.3(a).

4.**Active Participant**

. "Active Participant" means an Eligible Employee who is participating in the Plan and who has not experienced a Separation from Service, Total Disability or death.

5.**Administrative Procedures**

. "Administrative Procedures" means the policies and procedures established by the Committee and/or the Administrator from time to time governing elections to participate in the Plan, maintenance of Accounts, Investment Options, calculation of Investment Earnings/Losses, Investment Election Forms, distributions from the Plan and such other matters as are necessary for the proper administration of the Plan.

6.**Administrator**

. "Administrator" means that person or persons, including a committee, as is or are delegated by the Board from time to time to discharge the responsibility of administering the Plan.

7.**Affiliate**

. "Affiliate" means any corporation which is included in a controlled group of corporations (within the meaning of Section 414(b) of the Code), which includes the Company and any trade or business (whether or not incorporated) which is under common control with the Company (within the meaning of Section 414(c) of the Code).

8.**Annual Credit Date**

. "Annual Credit Date" means, with respect to a Plan Year, the date of the first regularly scheduled meeting of the Committee that occurs after February 1 of the immediately following Plan Year.

9.**Authorized Person**

. "Authorized Person" means, effective for actions taken on or after August 1, 2012, the Authorized Person appointed pursuant to Section 6.1(b).

10.**Basic Plan**

. "Basic Plan" means, effective for determinations made on or after January 1, 2013, the State Street Salary Saving Program as the same may be amended from time to time for all purposes except with respect to i) Exhibit A, and ii) Exhibit B- Schedule 1, in which cases the Basic Plan shall mean the State Street Retirement Plan as the same may be amended from time to time.

11.**Beneficiary**

. "Beneficiary" means the beneficiary designated to receive a death benefit by the Participant in writing in a form and manner satisfactory to the Administrator. If no Beneficiary is so designated, any death benefits shall be paid at the Administrator's direction in the following order of priority: Spouse, Domestic Partner, children, parents, siblings, estate.

12.**Board**

. "Board" means the Board of Directors of the Company.

13. **Business Day**

. "Business Day" means each day that the New York Stock Exchange is open for business.

14. **Cause**

. "Cause" means, in the case of any Participant:

(i) the willful and continued failure of the Participant to perform substantially the Participant's duties with the Employer (other than any such failure resulting from incapacity due to physical or mental illness), after a written demand for substantial performance is delivered to the Participant by the Participant's supervisor which specifically identifies the manner in which it is asserted that the Participant has not substantially performed the Participant's duties, or

(ii) the willful engaging by the Participant in illegal conduct or gross misconduct which is materially and demonstrably injurious to the Employer.

For purposes of this definition, no act or failure to act on the part of the Participant shall be considered "willful" unless it is done or omitted to be done by the Participant in bad faith or without reasonable belief that the Participant's action or omission was in the best interests of the Employer.

15. **Claimant**

. "Claimant" has the meaning set forth in Section 8.1.

16. **Code**

. "Code" means the Internal Revenue Code of 1986, as the same may be amended from time to time.

17. **Committee**

. "Committee" means the Executive Compensation Committee of the Board.

18. **Company**

. "Company" means State Street Corporation and any successor company.

19. **Company Credit**

. "Company Credit" means a notional amount credited to a Participant's Account in accordance with Section 4.1.

20. **Continuing Participant**

. "Continuing Participant" means an Active Participant in the Prior Plan on December 31, 2007.

21.**Credit Date**

. "Credit Date" means, as applicable, the Annual Credit Date or the Final Credit Date.

22.**Default Investment Option**

. "Default Investment Option" means the default investment option specified from time to time by the Committee for the hypothetical investment of a Participant's Account in the event the Participant fails to allocate all or a portion of his or her Account to a particular Investment Option.

23.**Domestic Partner**

. "Domestic Partner" means the person designated in a manner and form satisfactory to the Administrator as the Participant's domestic partner with respect to eligibility for company-provided benefits.

24.**Early Retirement**

. "Early Retirement" means a Participant's Separation From Service upon or after the Participant's attainment of Early Retirement Age and prior to the Participant's attainment of Normal Retirement Age but excluding a Separation From Service for Cause.

25.**Early Retirement Age**

. "Early Retirement Age" means age 53.

26.**Early Retirement Date**

. "Early Retirement Date" means the date of a Participant's Early Retirement.

27.**Effective Date**

. "Effective Date" means January 1, 2008.

28.**Eligible Employee**

. "Eligible Employee" means an Employee who is appointed to the office of Executive Vice President of the Company or to a position superior to that of Executive Vice President of the Company.

29.**Employee**

. "Employee" means an individual who renders services to the Employer (or who has rendered services to the Employer but is currently subject to an Impairment) as a common-law employee.

30.**Employer**

. "Employer" means the Company and its Affiliates.

31.**Employment**

. "Employment" means the period or periods during which a Participant is an Employee of the Employer and has not experienced a Separation From Service.

32.**Equity Plan**

. "Equity Plan" means the 2006 Equity Incentive Plan, as may be amended from time to time, or such other equity plan of the Company as the Committee may designate from time to time.

33.**ERISA**

. "ERISA" means the Employee Retirement Income Security Act of 1974, as amended, and any successor act thereto.

34.**ESRP Share Award**

. "ESRP Share Award" has the meaning set forth in Section 4.1(b).

35.**Fair Market Value**

. "Fair Market Value" of a share of Stock on any given day shall mean closing price per share of Stock on the New York Stock Exchange, on the date as of which such value is being determined or, if there shall be no sale on that date, then on the basis of the closing price per share of Stock on the nearest date before the date on which such value is being determined.

36.**FICA Amount**

. "FICA Amount" shall mean the amount of Federal Insurance Contributions Act tax imposed under Sections 3101, 3121(a) and 3121(v)(2) of the Code, where applicable, on compensation under the Plan.

37.**Final Company Credit**

. "Final Company Credit" has the meaning set forth in Section 4.1(a)(iii).

38.**Impairment**.

"Impairment" means any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than six months.

39.**Investment Earnings/Losses**

. "Investment Earnings/Losses" means the amounts that would have been realized had an amount deferred hereunder actually been invested in the Investment Option or Options selected by a Participant during the effectiveness of such selections.

40.**Investment Election Form**

. "Investment Election Form" means such form or other means designated by the Company from time to time by which a Participant elects the Investment Options in which the Participant's Account is deemed to be invested in accordance with Section 4.2.

41.**Investment Options**

. "Investment Options" means the Default Investment Option and such other investment options as selected from time to time by the Committee that are used as hypothetical investment options among which the Participant may allocate all or a portion of his or her Account.

42.**Normal Retirement**

. "Normal Retirement" means a Participant's Separation From Service upon or after the Participant's Normal Retirement Age, other than a Separation From Service for Cause.

43.**Normal Retirement Age**

. "Normal Retirement Age" means age 65.

44.**Normal Retirement Date**

. "Normal Retirement Date" means the date of a Participant's Normal Retirement.

45.**Operating Group Participant**

. "Operating Group Participant" means, in respect of a Plan Year, an Active Participant who is identified in the records of the Committee as being a member of the Company's Operating Group during the Plan Year (or a portion thereof) or otherwise designated by the Committee to be a member of the Operating Group.

46.**Participant**

. "Participant" means an Active Participant or a Separated Participant (for so long as he or she is receiving a distribution of Supplemental Benefits under the Plan).

47.**Plan**

. "Plan" means this State Street Corporation Executive Supplemental Retirement Plan (including the Exhibits and Schedules hereto and the Committee actions referenced herein), as the same may be amended from time to time in accordance with the terms hereof.

48.**Plan Year**

. "Plan Year" means the calendar year.

49.**Prior Plan**

. "Prior Plan" means the terms of the Plan (formerly known as the "State Street Corporation Supplemental Defined Benefit Pension Plan") in effect immediately prior to the Effective Date, as set forth in the Company's written documentation, rules, practices and procedures applicable to the Plan.

50.**Reference Date**

. "Reference Date" means, effective for all determinations made on or after October 1, 2012, a date that is as soon as administratively feasible but no later than 5 business days

prior to each applicable payment date specified in Section 4.4; provided that if a Reference Date is not a Business Day, such Reference Date shall be deemed to be the immediately following Business Day.

51.**Retirement**. "Retirement" means Normal Retirement or Early Retirement.

52.**Retirement Date**. "Retirement Date" means the date of a Participant's Normal Retirement or Early Retirement, as applicable.

53.**Schedule**. "Schedule" means, in the case of any Participant to whom the "separate rule" provisions of Section 3.2(c) below apply, an attachment to the Plan or a separate action of the Committee duly recorded in the Committee's records that sets forth identifying information concerning the separate rules applicable to such Participant.

54.**Section 409A**. "Section 409A" means Section 409A of the Code and the applicable rulings, regulations and guidance promulgated thereunder, as each may be amended or issued from time to time.

55.**Section 409A Compliance**. "Section 409A Compliance" has the meaning set forth in Section 7.1.

56.**Separated Participant**. "Separated Participant" means an Active Participant who has experienced a Separation From Service, Total Disability or death.

57.**Separation From Service**. "Separation From Service" means a separation from service with the Employer for purposes of Section 409A within the meaning of the default rules of Treasury Regulation Section 1.409A-(h)(1) and correlative terms shall be construed to have a corresponding meaning; provided that in the event that an

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Active Participant is absent from work due to an Impairment, other than a Total Disability, where such Impairment causes the Participant to be unable to perform the duties of his position or any substantially similar position of employment, the Participant shall incur a Separation From Service 29 months after the date on which the Participant was first Impaired. Notwithstanding the foregoing, if an Active Participant would otherwise incur a Separation From Service in connection with a sale of assets of the Company, the Committee

shall retain the discretion to determine whether a Separation From Service has occurred in accordance with Treasury Regulation Section 1.409A-1(h)(4).

58.**Service**. "Service" means, effective for all determinations made on or after August 1, 2012, a Participant's years (and fraction thereof) of service with the Employer for vesting and eligibility (as determined under the terms of the Basic Plan as in effect on the Effective Date). For the avoidance of doubt, for any Participant who was terminated at any time and subsequently rehired on or after August 1, 2012, only Service after rehire will be counted.

59.**Spouse**. "Spouse" means the individual (if any) who is legally married to the Participant at the time that payment of the Participant's Supplemental Benefits commences or at death if death occurs prior to such benefit commencement date.

60.**Stock**. "Stock" means common stock of the Company, par value $1.00 per share.

61.**Supplemental Benefits**. "Supplemental Benefits" means Supplemental Defined Benefits and/or Supplemental Defined Contribution Benefits.

62.**Supplemental Defined Benefit**. "Supplemental Defined Benefit" means the benefits provided under Exhibit A and Exhibit B to the Plan and any Schedule to the Plan.

63.**Supplemental Defined Contribution Benefit**. "Supplemental Defined Contribution Benefit" means the benefits provided under Article IV of this Plan.

64.**Top Hat Plan**. "Top Hat Plan" means an unfunded plan maintained primarily to provide deferred compensation benefits to a select group of management or highly compensated Employees within the meaning of Sections 201(2), 301(a)(3) and 401(a)(1) of ERISA.

65.**Total Disability**. "Total Disability" or "Totally Disabled" means (i) a Participant's inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than twelve months or (ii) a Participant's receipt, by reason of any medically determinable physical or mental impairment which can be expected to result in death or can be expected to last for a continuous period of not less than twelve months, of income replacement benefits for a period of not less than six months under an accident and health plan covering Employees of the Employer.

66.**Transition Participant**

. "Transition Participant means a Continuing Participant (i) who, as of the Effective Date, (x) was at least age 50 and (y) has been employed with the Employer for at least five years as an Executive Vice President (or superior position) or (ii) who is otherwise identified as a Transition Participant in the records of the Committee.

67.**Treasury Regulations**

. "Treasury Regulations" means the regulations adopted by the Internal Revenue Service under the Code, as they may be amended from time to time.

ARTICLE 3 **Participation**

.

1.**Eligibility**

. Subject to Section 3.2, all Eligible Employees shall participate in the Plan unless the Committee specifies otherwise in a particular case. The Committee may designate other Employees as eligible to participate in the Plan, but only if they are management or highly compensated employees as those terms are used in Sections 201(2), 301(a)(3) and 401(a)(1) of ERISA.

2.**Participation**

.

(a)Continuing Participants shall continue to participate under the Plan in accordance with the terms hereof.

(b)Except as otherwise provided by the Committee, each Eligible Employee who became an Eligible Employee on or after January 1, 2007 and who is not a Continuing Participant shall become an Active Participant upon the earlier of the (i) Effective Date and (ii) the effective date of his or her becoming an Eligible Employee.

(c)The Committee may determine that separately applicable rules (or exceptions to the generally applicable rules) (the "separate rules") shall apply to certain Participants. Such Participants and the relevant separate rules are set forth on Exhibits A and B to the Plan and in any Schedules to the Plan. With respect to any such Participant, the separate rules applicable to such Participant shall be treated as part of the Plan, shall be incorporated herein by reference, and shall apply, in a manner that results in Section 409A Compliance, in lieu of the generally applicable rules set forth below to the extent of any inconsistency.

(d)Participation in the Plan as an Active Participant is terminable by the Committee, in its discretion, upon written notice to the Active Participant, and such termination of participation shall be effective as of the date contained therein, but in no event earlier than the date of such notice; provided, however, that such termination of participation may not

reduce or adversely affect an Active Participant's accrued benefit for which the Active Participant has satisfied the age and service requirements of Section 3.3 hereunder.

3.**Age/Service Requirements for Supplemental Benefits Upon Retirement**

.

(a) Any Participant who became an Eligible Employee before August 1, 2012 shall be eligible to receive a Supplemental Benefit in connection with Retirement only if he or she has (i) attained Early Retirement Age and (ii) satisfied the "rule of 60" (age plus completed years of Service must equal at least 60).

(b) Any Participant hired or rehired, or first elected an Executive Vice President (or to a superior position), on or after August 1, 2012, shall be eligible to receive a Supplemental Benefit in connection with Retirement only if he or she has (i) attained Early Retirement Age, (ii) satisfied the "rule of 60" (age plus completed years of Service must equal at least 60), and (iii) has completed a minimum of 5 years of Service..

4.**Supplemental Benefits Upon Death**

. In the event of an Active Participant's death prior to satisfying the age and service requirement of Section 3.3, the Supplemental Benefits set forth in Section 4.4(b) and, if applicable, Section A.2.4 of Exhibit A, shall be payable to the Participant's designated Beneficiary.

5.**Supplemental Benefits Upon Total Disability**

. In the event that an Active Participant becomes Totally Disabled prior to meeting the age and service requirements set forth in Section 3.3, the Supplemental Benefits set forth in Section 4.4(c) and, if applicable, Section A.2.5 of Exhibit A, shall be payable to the Participant.

6.**Forfeiture**

.

(a)*Failure to Satisfy Age/Service Requirements.* In the event of a Participant's Separation From Service prior to satisfying the age and service requirements of Section 3.3, such Participant shall forfeit his or her right to receive any and all Supplemental Benefits set forth in this Plan. For the avoidance of doubt, if a Participant is rehired by the Employer, the Supplemental Benefits forfeited upon such Participant's Separation From Service shall remain forfeited.

(b)*Nonsolicitation/Noncompetition*. Notwithstanding any other provisions hereof, all payments of Supplemental Benefits shall immediately cease and neither Participant nor his or her Spouse, nor any other Beneficiary of the Participant shall receive any benefits

hereunder if the Participant, without the prior written consent of the Committee, engages, either directly or indirectly, in any of the activities described in subparagraph (i), (ii) or (iii) below within two years after his or her Separation From Service:

(i) solicitation of the employment or retention of any person whom the Employer has employed or retained during the two-year period prior to the Participant's Separation From Service. For purposes of the foregoing sentence, a person retained by the Employer means anyone who has rendered substantial consulting services to the Employer and has thereby acquired material confidential information concerning any aspect of the Employer's operations;

(ii) any sale, offer to sell or negotiation with respect to orders or contracts for any product or service similar to or competitive with a product or service or any equipment or system containing any such product or service sold or offered by the Employer, other than for the Employer's account, during the two-year period after the Participant's Separation From Service, to or with anyone with whom the Employer has so dealt or anywhere in any state of the United States or in any other country, territory or possession in which the Employer has, during said period, sold, offered or negotiated with respect to orders or contracts for any such product, service, equipment or system; or

(iii) ownership of any direct or indirect interest (other than a less-than-one-percent stock interest in a corporation) in, or affiliation with, or rendering

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any services for, any person or business entity which engages, during the two-year period after the Participant's Separation From Service, either directly or indirectly, in any of the activities described in subparagraph (i) or (ii) above.

ARTICLE 4**Supplemental Defined Contribution Benefits**

.

1.**Company Credits**

.

(a)*Generally*. For Plan Years commencing on and after the Effective Date, an Active Participant shall be entitled to receive Company Credits as follows:

(i) An Active Participant who was a Participant for an entire Plan Year shall receive a Company Credit in the amount of $200,000 on the Annual Credit Date for the Plan Year to his or her Account; provided, however, that the Company Credit received under this Section 4.1(a)(i) for the 2013 Plan Year shall be in the amount of $100,000 and shall not be provided to an Active Participant who is an Operating Group Participant; provided, further, there shall be no Company Credit under this Section 4.1(a)(i) for any Participant for the 2015 Plan Year.

(ii) An Active Participant who became an Active Participant during a Plan Year shall receive for such Plan Year a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Active Participant, and the denominator of which is twelve; provided, however, that the Company Credit received under this Section 4.1(a)(ii) for the 2013 Plan Year shall be equal to the product of (x) $100,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Active Participant but not an Operating Group Participant, and the denominator of which is twelve; provided, further, there shall be no Company Credit under this Section 4.1(a)(ii) for any Participant for the 2015 Plan Year. Any such Company Credit shall be credited to the Active Participant's Account on the Annual Credit Date for the relevant Plan Year.

(iii) An Active Participant who becomes a Separated Participant due to Retirement, death or Total Disability during a Plan Year shall receive a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year when such Participant was an Active Participant prior to (I) the Active Participant's Retirement Date, (II) the date of the Active Participant's death or (III) the date the Active Participant became Totally Disabled, as applicable, and the denominator of which is twelve; provided, however, that the Company Credit

received under this Section 4.1(a)(iii) for the 2013 Plan Year shall be equal to the product of (x) $100,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year when such Participant was an Active Participant but not an Operating Group Participant prior to (I) the Active Participant's Retirement Date, (II) the date of the Active Participant's death or (III) the date the Active

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Participant became Totally Disabled, as applicable, and the denominator of which is twelve) ; provided, further, there shall be no Company Credit under this Section 4.1(a)(iii) for any Participant for the 2015 Plan Year. Any such prorated Company Credit shall be credited to the Participant's Account on the last Business Day of the month in which the Participant's Retirement, death or Total Disability occurred (the "Final Credit Date").

(b) *Operating Group Participants.* An Operating Group Participant shall be entitled to receive the following for Plan Years commencing on and after the Effective Date:

(i) An Active Participant who is an Operating Group Participant for an entire Plan Year shall be granted on the Annual Credit Date for such Plan Year a deferred share unit award under the Equity Plan (an "ESRP Share Award") with a Fair Market Value on such Annual Credit Date equal to $200,000; provided, however, there shall be no ESRP Share Award under this Section 4.1(b)(i) for the 2015 Plan Year. The terms of the ESRP Share Award shall, in a manner that results in Section 409A Compliance, provide that the award will vest in accordance with Section 4.3 of the Plan and the underlying shares of Stock will be settled to the Operating Group Participant in accordance with Section 4.4 of the Plan, subject, in each case, to Section 7 of the Equity Plan or any successor provision. In addition, the ESRP Share Award shall provide for dividend equivalents. The other terms of the ESRP Share Award shall be governed by the Equity Plan.

(ii) An Active Participant who is an Operating Group Participant for a portion of a Plan Year, other than an Active Participant who becomes a Separated Participant during the Plan Year, shall receive an ESRP Share Award with a Fair Market Value on

such Annual Credit Date equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Operating Group Participant and the denominator of which is twelve; provided, however, there shall be no ESRP Share Award under this Section 4.1(b)(ii) for the 2015 Plan Year. Any such ESRP Share Award shall be granted to the Active Participant on the Annual Credit Date for the relevant Plan Year.

(iii) An Active Participant who becomes a Separated Participant due to Retirement, death or Total Disability during a Plan Year at a time when he/she is an Operating Group Participant, shall not be entitled to an ESRP Share Award in respect of such Plan Year but instead for the period of the Plan Year, if any, when the Active Participant was an Operating Group Participant shall be entitled to receive a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year when the Active Participant was an Operating Group Participant prior to (I) the Operating Group Participant's Retirement Date, (II) the date of the Operating Group Participant's death or (III) the date the Operating Group Participant became Totally Disabled, as applicable, and the denominator of which is twelve; provided, however, there shall be no Company Credit under this Section 4.1(b)(iii) for the 2015 Plan Year. Any such prorated Company Credit shall be credited to the Participant's Account on the Final Credit Date.

For the avoidance of doubt, an Operating Group Participant shall also be entitled to Company Credits pursuant to Section 4.1(a); provided, however that for the 2013 Plan

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Year, an Operating Group Participant shall not be entitled to Company Credits pursuant to Section 4.1(a) for any period during a Plan Year when the Active Participant was an Operating Group Participant; provided, further, there shall be no Company Credit under Section 4.1(a) for any Participant for the 2015 Plan Year.

(c)*Transition Participants*. Notwithstanding Section 4.1(a) and Section 4.1(b) above, Company Credits (including any Final Company Credits) shall not be credited to the Account of a Transition Participant and ESRP Share Awards shall not be granted to a Transition Participant in respect of any period commencing prior to the Freeze Date applicable to the Transition Participant. A Transition Participant shall continue to earn a Supplemental Defined Benefit in accordance with the relevant terms of the Plan (including any Schedules hereto) until the Freeze Date applicable to the Transition Participant.

(d)*Adjustment by Committee*. Notwithstanding anything to the contrary in Section 4.1(a) and 4.1(b) above, the Committee shall have the discretion to adjust, in a manner that results in Section 409A Compliance: (i) the amount of a Company Credit (including any Final Company Credits or ESRP Share Award credited or granted, as applicable, in respect of a Participant's status as an Active Participant or an Operating Group Participant for a portion of a Plan Year); and (ii) the medium of settlement of an ESRP Share Award, in each case, to the extent necessary to avoid adverse tax consequences to an Operating Group Participant; provided, however, that in no event shall such adjustment diminish the economic benefit to the Participant of a Company Credit or an ESRP Share Award without the Participant's consent.

2.**Accounts**

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(a)*Generally*. An Account shall be established and maintained under the Plan on behalf of each Participant. The Account shall track the Company Credits (including any Final Company Credits), Investment Earnings/Losses, distributions or other elections applicable to such accounts. The Account shall have subaccounts, established and maintained as appropriate to reflect the Company Credits and Investment Option(s) selected by the Participant.

(b)*Crediting/Debiting of Account*. A Company Credit (including any Final Company Credits) shall be credited to a Participant's Account in accordance with the Administrative Procedures; provided that a Company Credit shall not be credited or debited with Investment Earnings/Losses prior to the applicable Credit Date for such Company Credit. A Participant's Account shall be credited or debited with Investment Earnings/Losses based upon the Investment Options selected by the Participant pursuant to Section 4.2(c) and in accordance with the Administrative Procedures.

(c)*Election of Investment Options*. A Participant shall elect, in accordance with the Administrative Procedures, one or more Investment Option(s) from a menu of Investment Options provided by the Committee to be used to determine Investment Earnings/Losses credited or debited to his or her Account. A Participant may reallocate the existing balance of his or her Account among the available Investment Options and change Investment Options with respect to future deferrals under the Plan in accordance with the

Administrative Procedures. In the event that a Participant fails to select one or more Investment Options for all or a portion of his or her Account (including in the situation where the Investment Option is discontinued and the Participant fails to designate an alternative in accordance with the Administrative Procedures), such amounts shall be deemed invested in the Default Investment Option. Notwithstanding the foregoing, the Final Company Credits credited to the Account of a Participant on the Final Credit Date in connection with his or her death or Total Disability shall not be deemed invested in any Investment Option.

(d)*Investment Options*. The Committee shall select the Investment Options. The Committee shall be permitted to add, remove or change Investment Options, as it deems appropriate; provided that any such addition, deletion or change shall not be effective with respect to any period prior to the effective date of the change. Each Participant, as a condition to his or her participation in the Plan, agrees to indemnify and hold harmless the Committee, the Administrator and the Company, and their agents and representatives, from any losses or damages of any kind relating to the Investment Options made available hereunder.

(e)*Crediting or Debiting Method*. The performance of each elected Investment Option (either positive or negative) will be determined based on the performance of the actual Investment Option. A Participant's Account shall be credited or debited with Investment Earnings/Losses as determined by the Administrator in accordance with the Administrative Procedures. The Administrator shall establish procedures for valuing the balance of a Participant's Account, from time to time, including upon distribution, in accordance with the Administrative Procedures.

(f)*No Actual Investment*. Notwithstanding any other provision of the Plan, the Investment Options are to be used for measurement purposes only, and a Participant's election of any such Investment Options and the crediting or debiting of Investment Earnings/Losses to a Participant's Account shall not be considered or construed in any manner as an actual investment of his or her Account in any such Investment Options. In the event that the Company decides to invest funds in any or all of the Investment Options, no Participant shall have any rights in or to such investments themselves. Without limiting the foregoing, a Participant's Account shall at all times be a bookkeeping entry only and shall not represent any investment made on his or her behalf by the Company. The Participant shall at all times remain an unsecured creditor of the Company.

3.**Vesting**

.

(a)*Generally*. An Active Participant shall commence vesting in his or her Account on the date that the Active Participant (i) attains Early Retirement Age and (ii) satisfies the requirements under Section 3.3 (the "Age/Service Requirements for Supplemental Benefits Upon Retirement Date"). An Active Participant shall vest on a cumulative basis in one-third (33.3%) of his or her Account on the Account Vesting Date, and each of the Active Participant's first two birthdays immediately subsequent to the Account Vesting Commencement Date. Notwithstanding the foregoing, a Continuing Participant who was first elected an Executive Vice President (or to a superior position) prior to March 1, 2000 shall immediately vest in full in his or her Account on the date such Continuing Participant attains Early Retirement Age.

(b)*Death*. In the event of an Active Participant's death, the Active Participant shall become fully vested in his or her Account effective as of the date of the Active Participant's death.

(c)*Total Disability*. If an Active Participant becomes Totally Disabled, the Active Participant shall become fully vested effective as of the date the Active Participant became Totally Disabled.

4.**Distribution**

.

(a)*Retirement*.

(i) Upon an Active Participant's Retirement, the vested balance of the Participant's Account, other than the ESRP Share Award if applicable, shall be payable to the Participant in cash in three installment payments. The amount of each cash installment payment shall be the amount determined by multiplying the value of a Participant's Account, other than the ESRP Share

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Award if applicable, calculated as of the close of business on the applicable Reference Date by a fraction, the numerator of which is one and the denominator of which is the remaining number of payments due to the Participant. The installment payments shall be made on the following dates: (I) the first Business Day of the month coinciding with or following the date that is six months after the Participant's Retirement Date; (II) the first Business Day of the month coinciding with or following the first anniversary of the Participant's Retirement Date; and (III) the first Business Day of the month coinciding with or following the second anniversary of the Participant's Retirement Date, or, in each case, as soon as

administratively feasible thereafter in a manner that is consistent with Section 409A Compliance.

(ii) Upon an Active Participant's Retirement, the vested balance of the Participant's ESRP Share Award if applicable shall be distributed to the Participant in the form of shares of Stock, also in three installment payments. The number of shares in any installment payment of an ESRP Share Award if applicable shall the total number of shares under such Award remaining unpaid on the applicable Reference Date multiplied by a fraction, the numerator of which is one and the denominator of which is the remaining number of payments due to the Participant. The installment payments shall be payable on the following dates: (I) the first Business Day following the date that is six months after the Participant's Retirement Date, (II) the first Business Day coinciding with or following the first anniversary of the Participant's Retirement Date, and (III) the first Business Day coinciding with or following the second anniversary of the Participant's Retirement Date, or, in each case, as soon as administratively feasible thereafter in a manner that is consistent with Section 409A Compliance.

(b)*Death*.

(i) Upon the death of an Active Participant, the balance of the Active Participant's Account, calculated as of the close of business on the Reference Date, shall be paid to the Active Participant's Beneficiary in a single lump sum cash distribution within 90 days following the date of the Active Participant's death.

(ii) Upon the death of a Separated Participant, the Committee shall commute any or all remaining payments to the Separated Participant's Beneficiary by paying the remaining balance of the Separated Participant's Account, calculated as of the close of business on the Reference Date, in a single lump sum cash distribution within 90 days following the date of the Separated Participant's death.

(c)*Total Disability*. Upon the Total Disability of an Active Participant, the balance of the Active Participant's Account, , including the ESRP Share Award if applicable, calculated as of the close of business on the Reference Date, shall be paid to the Active Participant in a

single lump sum cash distribution as soon as administratively feasible following the date on which the Active Participant becomes Totally Disabled, and in any event by the later of (I) the fifteenth day of the third month following the date on which the Participant becomes Totally Disabled, or (II) the end of the calendar year in which the Participant becomes Totally Disabled, in a manner that is

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consistent with Section 409A Compliance, provided the Active Participant has remained Totally Disabled through the date of payment.

ARTICLE 5**Special Payment Rules**

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1.**Delay in Payment**

. Notwithstanding anything in the Plan to the contrary, neither the Committee nor the Administrator shall have the discretionary authority to delay payment of Supplemental Benefits, except to the extent that the Administrator determines, in its discretion, that any such delay can be effected in a manner that results in Section 409A Compliance (as hereinafter defined). Without limiting the generality of the foregoing, payment of the Supplemental Benefits may be delayed, at the discretion of the Committee or Administrator, to the extent that the Committee or the Administrator reasonably anticipates that (i) if payment were made as scheduled, the Employer's deduction with respect to such payment would not be permitted due to the application of Section 162(m) of the Code, or (ii) payment of the Supplemental Benefits would violate federal securities laws or other applicable law. Payment of any amount delayed pursuant to this Section 5.1 shall earn interest at the then prevailing applicable federal rate provided for in Section 7872(f)(2)(A) of the Code and made in a manner that results in Section 409A Compliance.

2.**Acceleration of Payment**

.

(a)Notwithstanding anything in the Plan to the contrary, neither the Committee nor the Administrator shall have the discretionary authority to accelerate payment of any Supplemental Benefits except as set forth in the remainder of this Section 5.2(a) or to the extent the Committee or the Administrator determines, in its discretion, that any such acceleration may be effected in a manner that results in Section 409A Compliance.

(b)The Administrator may, in a manner that results in Section 409A Compliance, determine to accelerate the time or schedule of a Participant's distribution to pay (i) the FICA Amount and/or (ii) the income tax at source on wages imposed under Section 3401 of the Code or the corresponding withholding provisions of applicable state, local or foreign

tax laws as a result of the payment of the FICA Amount (and any additional tax due as a result of such payment). The total amount accelerated under this Section 5.2(b) may not exceed the aggregate of the FICA Amount and the income tax withholding related to such FICA Amount.

(c)The Administrator may, in a manner that results in Section 409A Compliance, determine to accelerate the time or schedule of a Participant's distribution if at any time the Plan, as applicable to such Participant, fails to meet the requirements of Section 409A of the Code and the corresponding Treasury Regulations. Such amount may not exceed the amount required to be included in income as a result of the failure to comply with Section 409A of the Code and the corresponding Treasury Regulations.

3.**No Suspension of Payment**

. Notwithstanding anything to the contrary in the Plan, in the event (i) a Separated Participant is subsequently rehired by the Employer or (ii) a Separated Participant who was Totally Disabled subsequently recovers and recommences performing services for the Employer, the payment of such Separated Participant's Supplemental Benefits accrued prior to such Separation From Service or Total Disability shall not be suspended or otherwise delayed.

4.**Designation of Taxable Year**

. In no event may any Participant or any Beneficiary designate the taxable year of payment of any Supplemental Benefits. The timing of payment of a Participant's Supplemental Benefits shall be

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determined by the Committee, in its sole discretion, in accordance with the provisions of the Plan and in a manner that results in Section 409A Compliance.

ARTICLE 6 **Administration**

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1.**Authority of the Committee**

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(a) *Authority of the Committee.* The Administrator of the Plan shall be the Committee. The Administrator shall have complete discretionary authority to interpret the Plan and to decide all matters under the Plan. Such interpretation and decision shall be final, conclusive and binding on all Participants and any person claiming under or through any Participant, in the absence of clear and convincing evidence that the Administrator acted arbitrarily and capriciously. The Administrator

shall establish such rules and procedures, maintain such records and prepare such reports as it considers to be necessary or appropriate to carry out the purposes of the Plan. As the Administrator, the Committee's powers and duties shall include, but shall not be limited to, permitting the acceleration of vesting in individual cases in its sole and exclusive direction.

(b) *Authorized Person.* Except as the Committee may otherwise determine, the Authorized Person shall be the Executive Vice President-Global Human Resources, as from time to time in office, and his or her delegates. The Authorized Person shall have the power and responsibility to (i) undertake routine administrative tasks related to the Plan, (ii) make amendments to the Plan (in general or with respect to one or more individual Participants or Beneficiaries) that are administrative in nature and that do not materially increase the financial obligations of the Employer, and (iii) add, remove or change investment options (including with respect to balances already notionally invested) under the Plan. References to "Committee" in Sections 6.2, 6.3 and 6.4 below shall be deemed to include the Authorized Person acting within the scope of his or her responsibilities as described in the immediately preceding sentence.

(c) Notwithstanding any other provision in this Section, no individual acting, directly or by delegation (including, for the avoidance of doubt, the Authorized Person), as the Administrator may determine his or her own rights or entitlements under the Plan.

2.**Outside Services**

. The Committee may engage counsel and such clerical, financial, investment, accounting, and other specialized services as the Committee may deem necessary or appropriate in the administration of the Plan. The Committee shall be entitled to rely upon any opinions, reports, or other advice furnished by counsel or other specialists engaged for that purpose and, in so relying, shall be fully protected by the Company in any action, determination, or omission made in good faith.

3.**Decisions Binding**

. The decision or action of the Committee with respect to any question arising out of or in connection with the administration, interpretation and application of the Plan and any rules or guidelines made in connection with the Plan shall be final, binding and conclusive upon all persons and entities having or claiming any interest in the Plan.

4.**Indemnity of Committee**

. The Company shall indemnify and hold harmless the Committee and its individual members against any and all claims, loss, damage, expense or liability arising from any action or failure to act with respect to the Plan.

5.**Cost of Administration**

. The Company shall bear all expenses of administration of the Plan.

ARTICLE 7 **Amendment and Termination**

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1.**Amendment/Termination of Plan**

. Subject to Section 7.2 below, the Company hereby reserves the right to amend, modify or terminate the Plan at any time by action of a majority of the members of the Committee. In addition, the Authorized Person shall have the right at any time and from time to time to make amendments to the Plan as specified in Section 6.1(b). Except as described below in this Article 7, no such amendment or termination shall in any material manner reduce or adversely affect any Participant's accrued benefit without the consent of the Participant. Upon termination of the Plan, payment of a Participant's Supplemental Benefits shall be made in accordance with the terms of the Plan and the elections in effect prior to such termination, unless the Board or the Committee, in its discretion, determines to accelerate payment, and such acceleration may be effected in a manner that will not cause any Participant or Beneficiary to recognize income for U.S. federal income tax purposes prior to the time of a distribution of Supplemental Benefits or to incur interest or additional tax under Section 409A ("Section 409A Compliance").

2.**Termination of Participant Interests**

. The Plan is intended to be a Top Hat Plan and therefore to be exempt from the provisions of Parts 2, 3 and 4 of Subtitle B of Title I of ERISA. Accordingly, subject to Section 7.1 above, the Board may terminate the Plan and commence termination distributions for all or certain Participants, or remove certain Employees as Participants, if it is determined by the United States Department of Labor, or a court of competent jurisdiction, that the Plan constitutes an employee pension benefit plan within the meaning of Section 3(2) of ERISA which is not so exempt. If distribution is commenced pursuant to the operation of this Article 7, the payment of such amounts shall be made consistent with Section 7.1.

ARTICLE 8 **Miscellaneous**

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1.**Claims**

. If a Participant or his or her Beneficiary or the authorized representative of one of the foregoing (hereinafter, the "Claimant") does not receive the timely payment of the benefits which he or she believes are due under the Plan, the Claimant may make a claim for benefits in accordance with the Claims Procedures set forth on Exhibit C to this Plan. Notwithstanding Section 7.1, the Claims Procedures may be amended by the Administrator from time to time.

2.**Unfunded Plan**

. It is intended that this Plan's status as a Top Hat Plan shall not be adversely affected by the establishment of any trust pursuant to Section 8.4.

3.**Unsecured General Creditor**

. No Participant, nor any Spouse, Domestic Partner or other Beneficiaries of a Participant, shall have any legal or equitable right, interest or claim in any property or assets of the Employer, other than

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that of an unsecured general creditor of the Employer. Without limiting the generality of the foregoing, no such person shall have any right, claim or interest in any life insurance policies, annuity contracts or the proceeds therefrom owned or which may be acquired by the Employer. Except as provided in Section 8.4, such policies, annuity contracts or other assets of the Employer shall not be held under any trust for the benefit of a Participant, his or her Beneficiaries, heirs, successors or assigns, or held, in any way, as collateral security for the fulfilling of any obligations of the Employer under this Plan. The Employer's assets shall be, and shall remain for purposes of this Plan, the general assets of the Employer. The Employer's obligation under this Plan shall be that of an unfunded and unsecured promise to pay money in the future.

4.**Trust Fund**

. At its discretion and in a manner intended to result in Section 409A Compliance, the Employer may establish one or more grantor trusts, with such trustees as the Committee may approve, for the purpose of providing for the payment of benefits under this Plan. Such trust or trusts may be irrevocable, but the assets thereof shall be subject to the claims of the Employer's general creditors in the event of bankruptcy or insolvency of the grantor. To the extent any benefits provided under this Plan are actually paid from any such trust, the Employer shall have no further obligation with respect to the benefits so paid, but to the extent not so paid, such benefits shall remain the obligation of, and shall be paid by, the Employer.

5.**Nonassignability**

. Neither a Participant nor any other person shall have any right to sell, assign, transfer, pledge, anticipate, mortgage, or otherwise encumber, hypothecate or convey in advance of actual receipt the amounts, if any, payable hereunder, or any part thereof, which are, and all rights to which are, expressly declared to be nonassignable and nontransferable. No part of the amount payable shall, prior to actual payment, be subject to seizure or sequestration for the payment of any debts, judgments, alimony or separate maintenance owed by a Participant or any other person, nor shall such amounts or rights to such amounts be transferable by operation of law in the event of a Participant's or any other person's bankruptcy or insolvency.

6.**Not a Contract of Employment**

. The terms and conditions of this Plan shall not be deemed to constitute a contract of employment between the Employer and any Participant, and the Participants (and a Participant's Spouse, Domestic Partner or other Beneficiaries) shall have no rights against the Employer except as may otherwise be specially provided herein. Moreover, nothing in this Plan shall be deemed to give a Participant the right to be retained in the service of the Employer or to interfere with the right of the Employer to discipline or discharge any Participant at any time.

7.**Validity**

. If any provision of this Plan shall be held illegal or invalid for any reason, said illegality or invalidity shall not affect the remaining parts hereof, but this Plan shall be construed and enforced, in a manner intended to result in Section 409A Compliance, as if such illegal and invalid provision had never been inserted herein.

8.**Incompetency**

. If the Committee determines in its discretion that a payment under the Plan is to be paid to a minor, a person declared incompetent or a person incapable of handling the disposition of such person's property, the Committee may direct payment of such benefit to the guardian, legal representative or person having the care and custody of such minor, incompetent or incapable person. Any payment of a

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benefit shall be a payment for the account of the Participant and the Participant's Beneficiary, as the case may be, and shall be a complete discharge of any liability under the Plan for such payment amount.

9.**Successors**

. The provisions of this Plan shall bind and inure to the benefit of the Employer and its successors and assigns, and the Employer shall require all its successors and assigns to

expressly assume its obligations hereunder. The term "successors," as used herein, shall include any corporate or other business entity which shall, whether by merger, consolidation, purchase or otherwise, acquire all or substantially all of the business and assets of the Employer.

10.**Tax Withholdings**

. The Employer shall have the right to deduct from payments made pursuant to the Plan amounts sufficient to satisfy federal, state and local income and/or employment tax withholding requirements.

11.**Governing Law**

. The provisions of this Agreement shall be construed and interpreted according to the laws of the Commonwealth of Massachusetts except as preempted by federal law.

IN WITNESS WHEREOF, the Employer has caused this instrument to be executed by its duly authorized officer on the 22nd day of December, 2014.

State Street Corporation

by __/s/ Todd Gershkowitz_____

Todd Gershkowitz

Executive Vice President

Head of Global Total Rewards

EXHIBIT A

The terms and conditions in this Exhibit A shall apply to the Supplemental Defined Benefits of Continuing Participants. Except as otherwise defined in this Exhibit A, capitalized terms shall have the meaning given to such terms in Article 2 of the Plan.

Article A.1 Definitions.

A.1.1 Actuarially Equivalent

. A benefit is "Actuarially Equivalent" to or the "Actuarial Equivalent" of a benefit payable in a different form or at a different time if the two benefits are of actuarially equivalent value as determined by the Administrator in Section 409A Compliance based upon a computation by an actuary chosen by the Administrator using the actuarial assumptions with respect to the Basic Plan.

A.1.2 Additional Company Benefit

. "Additional Company Benefit" means the annual Employer-provided retirement supplemental benefits, in each case expressed in the form of a single life annuity, as determined by the Administrator, that are payable to a Continuing Participant at age 65 under the Additional Company Benefit Plans applicable to the Continuing Participant, if any, determined as follows:

(i) if the Additional Company Benefit Plan is a defined benefit or funded retirement plan, the retirement benefit shall be the Continuing Participant's benefit accrued as of December 31, 2007, where such accrued benefit includes future cost of living increases at 3.25% from December 31, 2007 through age 65 and reduced to an Actuarially Equivalent non-escalating life annuity (where such escalation would be assumed at 3.25%); and

(ii) if the Additional Company Benefit Plan is a defined contribution retirement plan, the retirement benefit shall be a projected benefit at age 65, based on the Continuing Participant's account balance thereunder as of December 31, 2007, assuming 7.0% annual returns, and converted to an age 65 annuity using mortality and interest rates under Section 417(e) of the Code in effect on the applicable Freeze Date.

A.1.3 Additional Company Benefit Plans

. "Additional Company Benefit Plans" means the following Employer-sponsored retirement benefit plans and any other Employer-sponsored Company plan so designated by the Committee:

(iii) Mandatory Provision Fund - Dresdner RCM MPF Plan (Hong Kong);

(iv) State Street Superannuation Plan (Australia);

(v) State Street Switzerland Pension Plan for Senior Management; and

(vi) State Street UK Pension & Life Assurance Plan.

A.1.4 Basic Plan Offset

. "Basic Plan Offset" means the annual benefit, expressed in the form of a single life annuity as determined by the Administrator payable to a Continuing Participant from the Basic Plan that is the greater of (i) the Continuing Participant's Grandfathered Benefit (as defined under Section 4.6 of the Basic Plan), if any, thereunder payable at age 65 or (ii) the Continuing Participant's Cash Balance Benefit (as defined under the Basic Plan) based on the Continuing Participant's account balance as of December 31, 2007 projected to age 65, assuming a 5% interest rate, and converted to an age 65 annuity using mortality and interest rates under Section 417(e) of the Code in effect on the Freeze Date; provided,

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however, that the Cash Balance Account of a Transition Participant under the foregoing clause (ii) shall be increased on a notional basis until the Freeze Date applicable to the Transition Participant by deemed Basic Credits (as defined under the Basic Plan) that would have been contributed to the Cash Balance Account of the Transition Participant pursuant to Section 4.4 of the Basic Plan had the Basic Plan not been frozen and credited with 5% interest. For the avoidance of doubt, any Basic Credits under Section 4.4(b) of the Basic Plan credited to the Cash Balance Account of a Continuing Participant shall not be included in the Basic Plan Offset.

A.1.5 Earnings

. "Earnings" means the following:

(a) For years prior to 2007, a Continuing Participant's annualized rate of base salary as of January 1 of that year and annual incentive compensation under the Employer's annual incentive plan relating to performance in the prior fiscal year, regardless of when paid.

(b) For 2007 and any year thereafter including the applicable Freeze Date, a Continuing Participant's annualized rate of base salary as of January 1 of that year and annual incentive

compensation awards under the incentive plan applicable to the Continuing Participant relating to performance in the prior fiscal year and, in the case of members of the Operating Group, the annual incentive compensation awarded or paid under the Senior Executive Annual Incentive Plan ("SEAIP") or any successor thereto, regardless of whether or when awarded or paid.

(c) In lieu of other amounts, the calculation of the amount of annual incentive award to be included for purposes of determining "Earnings" through January 1, 2008, with respect to a Continuing Participant who was employed by SSgA in an SSgA Plan shall be the lesser of (i) his or her actual annual incentive cash bonus or (ii) the percentage of base pay earned for the respective year as determined by the Administrator and recorded in the records of the Company.

(d) For the avoidance of doubt, prior to January 1, 2007, "Earnings" shall not include any long-term incentive awards.

A.1.6 Final Average Earnings

. "Final Average Earnings" means, for any Continuing Participant, the average annual Earnings amount obtained by averaging the Continuing Participant's Earnings over the five-consecutive-year period during the last ten years of such Continuing Participant's Employment ending with the applicable Freeze Date which yields the highest such annual average. A Continuing Participant's annual Earnings after the applicable Freeze Date shall not be taken into account for any purpose under the Plan.

A.1.7 Freeze Date

. "Freeze Date" means (i) with respect to a Continuing Participant other than a Transition Participant, the Effective Date; and (ii) with respect to a Transition Participant, (x) January 1, 2010 or (y) such other date as may be specified in a schedule to this Exhibit A.

A.1.8 Indexing End Date

. "Indexing End Date" means, with respect to a Continuing Participant, the first to occur of (i) the date of the Continuing Participant's Separation From Service, Total Disability or death or (ii) December 31, 2017.

A.1.9 MSRP Benefit

. "MSRP Benefit" means the annual retirement supplemental benefits, expressed in the form of a single life annuity as determined by the Administrator, that are payable to a Continuing Participant under the State Street Corporation Management Supplemental Retirement Plan (the "MSRP") of (i) the Continuing Participant's Grandfathered Benefit (as provided under the MSRP), if any, thereunder payable at age 65 or (ii) the Continuing Participant's Cash Balance Account (as provided under the MSRP) based on the Continuing Participant's account balance as of December 31, 2007 projected to age 65, assuming a 5% interest rate, and converted to an age 65 annuity using mortality and interest rates under Section 417(e) of the Code in effect the applicable Freeze Date; provided, however, that the Cash Balance Account of a Transition Participant under the foregoing clause (i) shall be increased on a notional basis until the Freeze Date applicable to the Transition Participant by deemed Basic Credits (as provided under the MSRP) that would have been contributed to the Cash Balance Account of the Transition Participant had the MSRP not been frozen and credited with 5% interest.

A.1.10 Other Retirement Income

. "Other Retirement Income" means the sum of the following:

(e)the Basic Plan Offset; plus

(f)the MSRP Benefit; plus

(g)any Additional Company Benefit; plus

(h)any retirement income payable under plans of a Continuing Participant's employers other than the Employer, as identified by the Administrator and recorded in the records of the Company in accordance with the Administrative Procedures and expressed in the form of a single life annuity, as determined by the Administrator in a manner that results in Section 409A Compliance.

A.1.11 SSgA

. "SSgA" means the State Street Global Advisors business unit of the Company.

A.1.12 SSgA Plans

. "SSgA Plans" means the SSgA annual incentive plan for each of the years 2003, 2004, 2005, 2006 and 2007.

Article A.2 Supplemental Defined Benefits.

A.2.1 Eligibility for Supplemental Defined Benefits.

(i)A Participant is eligible to receive a Supplemental Defined Benefit under the Plan only if he or she is a Continuing Participant. No Eligible Employee (i) who was not a Continuing Participant on December 31, 2007 or (ii) who is hired or rehired by the Employer on or after the Effective Date shall become eligible to receive a Supplemental Defined Benefit.

(j)Effective as of the applicable Freeze Date, the Supplemental Defined Benefit of a Continuing Participant shall be frozen such that (i) any annual Earnings of a Continuing

Participant after the applicable Freeze Date shall not be taken into account for any purpose under

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the Plan and (ii) no additional Supplemental Defined Benefit shall accrue on or after the applicable Indexing End Date on behalf of a Continuing Participant or any other individual.

A.2.2 Normal Retirement

. Subject to the terms of the Plan (including this Exhibit A and Exhibit B), the annual Supplemental Defined Benefit payable to a Continuing Participant in connection with Normal Retirement, expressed as a single life annuity commencing at the later of (i) Normal Retirement Age or (ii) the Continuing Participant's Normal Retirement Date, shall equal either (a) or (b) below, whichever shall be applicable, minus (c) below, increased by the factors in (d) below, and adjusted pursuant to (e) below:

(k)For a Continuing Participant who was first elected an Executive Vice President (or to a superior position) prior to March 1, 2000, 50% of the Continuing Participant's Final Average Earnings.

(l)For a Continuing Participant who was first elected an Executive Vice President (or to a superior position) on or after March 1, 2000, 2.5% of the Participant's Final Average Earnings multiplied by the Continuing Participant's years of Service prior to the applicable Freeze Date, but not more than 20 years of such Service, shall be taken into account.

(m)Other Retirement Income, as accrued or as deemed to be accrued under the respective plans as of the earlier to occur of (i) the Freeze Date and (ii) the date of the Continuing Participant's Separation From Service.

(n)Three percent for each whole calendar year following the applicable Freeze Date until the Continuing Participant's Indexing End Date, plus an additional amount equal to the product of (i) the excess of whole calendar months elapsed prior to the Indexing End Date for the Plan Year in which the Indexing End Date occurs over twelve and (ii) 3%.

(o)Where the pre-offset benefit is determined under (b), the benefit amount determined by subtracting (c) from (b) and increased by (d) (the "unadjusted benefit") shall be multiplied by (A) one-third (33.3%) if the Continuing Participant's Separation From Service is prior to attainment of his or her birthday next following the date (the "age/service eligibility date") on which the Continuing Participant first satisfied the age and service requirements of Section 3.3 of the Plan; (B) two-thirds (66.7%) if the Continuing Participant's Separation From Service is on or after attainment of such first birthday following the age/service eligibility date, but before attainment of his or her second birthday following such date; and (C) one (100%) in every other case.

A.2.3 Early Retirement.

(p)Subject to the terms of the Plan (including this Exhibit A and Exhibit B), the annual Supplemental Defined Benefit payable in connection with Early Retirement to a Continuing Participant who on January 1, 2005 had reached the age of 55, completed ten years of Service and previously been elected an Executive Vice President (or to a superior position), expressed as a single life annuity commencing as of the Continuing Participant's Early Retirement Date, shall equal (i) reduced by the factors in (ii), and further where:

(i) the supplemental benefit determined under Section A.2.2 above, reduced by:

(ii) the sum of (A) and (B) below:

(A) .0833% for each whole calendar month by which the Continuing Participant's Early Retirement Date commencement precedes his or her 65th birthday, excluding any period prior to the Continuing Participant's 60th birthday; and

(B) .2083% for each whole calendar month by which the Continuing Participant's Early Retirement Date precedes his or her 60th birthday.

(q)Subject to the terms of the Plan (including this Exhibit A and Exhibit B), the annual Supplemental Defined Benefit in connection with Early Retirement of a Continuing Participant who as of January 1, 2005 had not both reached the age of 55 and completed ten years of Service, expressed as a single life annuity commencing as of the Continuing Participant's Early Retirement Date, shall equal the benefit determined under A.2.3(a) above except that in lieu of the reductions described in Section A.2.3(a)(ii) above, the Supplemental Defined Benefit determined under Section A.2.2 above shall be reduced by 0.25% for each whole calendar month by which the Continuing Participant's Early Retirement Date precedes his or her 65th birthday.

(r)Notwithstanding the above, with respect to a Transition Participant, if Early Retirement occurs prior to the applicable Freeze Date, the reductions in (a) and (b) will apply to the pre-offset benefit as defined in A.2.2(a) and A.2.2(b) and the offsets for Other Retirement Income as defined in A.2.2(c) will be computed on an early retirement basis in accordance with the provisions of the plan or plans providing such Other Retirement Income; provided, however, that if such Additional Company Benefit Plan (or Additional Company Benefit Plans) does/do not contain provisions for early retirement, or such

provisions are not ascertainable as of the date of determination, the Committee shall determine the actuarial equivalence basis to be used for such purpose. For this purpose, the Basic Plan and MSRP Cash Balance Accounts will be increased on a notional basis from December 31, 2007 until Early Retirement by deemed Basic Credits that would have been contributed to the Cash Balance Accounts of the Transition Participant had the Basic Plan and MSRP not been frozen and credited with 5% interest through Early Retirement. The offsets so computed will be subtracted from the reduced preoffset benefit.

A.2.4 Death Before Retirement Eligibility

. If a Continuing Participant dies under the circumstances described in Section 3.4, a Supplemental Defined Benefit shall be paid to his or her designated Beneficiary which equals the amount derived by multiplying (a) times (b) times (c), where (a) equals the net amount calculated under either Section A.2.2, as if the Continuing Participant's Normal Retirement Date was the date of his or her death (determined without the adjustments described in Section A.2.2(e)); (b) equals a fraction of which the numerator is the sum of the Continuing Participant's age at his or her date of death plus the number of completed years of Service prior to the applicable Freeze Date and the denominator is 85; and (c) equals 50%. Payment shall be made in an Actuarially Equivalent single lump sum cash distribution within 90 days following the date of the Continuing Participant's death.

A.2.5 Total Disability Before Retirement Eligibility

. If a Continuing Participant becomes Totally Disabled as described in Section 3.5, a Supplemental Defined Benefit shall be paid to him or her equal to the product of (a) and (b) where (a) equals the amount calculated under either Section A.2.2, as if the Continuing Participant's Normal Retirement Date was on the date on which he or she became Totally Disabled (determined without the adjustments described in Section A.2.2(e)), and (b) equals a fraction the numerator of which is the sum of the Continuing Participant's age at the date he or she became Totally Disabled plus the number of completed years of Service prior to the applicable Freeze Date and the denominator of which is 85. A Continuing Participant's Supplemental Defined Benefit shall be paid in cash in three equal installment payments, which in the aggregate, are the Actuarial Equivalent of the Supplemental Defined Benefit as of the Continuing Participant's Total Disability Date, provided the Continuing Participant has remained Totally Disabled through the first date of payment. The first installment payment shall be made by the later of (A) the fifteenth day of the third month coinciding with or following the date on which the Continuing Participant becomes Totally Disabled, or (B) the end of the calendar year in which the Continuing Participant becomes Totally Disabled, and the remaining installment payments shall be made

on the first Business Day of the month coinciding with or following the first and second anniversaries of the first installment payment date, or, in each case, as soon as administratively feasible thereafter in a manner that is consistent with Section 409A Compliance.

A.2.6 Distribution Following Retirement Eligibility.

(s)*Retirement*. In the event of a Continuing Participant's Retirement after satisfying the age and service requirements of Section 3.3, a Continuing Participant's Supplemental Defined Benefit shall be paid in cash in three equal installment payments which, in the aggregate, are the Actuarial Equivalent of the Supplemental Defined Benefit as of the Continuing Participant's Retirement Date. The installment payments shall be made on the following dates: (i) the first Business Day of the month coinciding with or following the date that is six months after the Continuing Participant's Retirement Date; (ii) the first Business Day of the month coinciding with or following the first anniversary of the Continuing Participant's Retirement Date, and (iii) the first Business Day of the month coinciding with or following the second anniversary of the Continuing Participant's Retirement Date, or, in each case, as soon as administratively feasible thereafter in a manner that is consistent with Section 409A Compliance.

(t)*Death*.

(i) *Death Benefits*. Upon the death of a Continuing Participant after satisfying the age and service requirements of Section 3.3, but before commencement of benefit payments, a death benefit shall be payable to the Continuing Participant's designated Beneficiary. The amount of such death benefit shall be the Actuarial Equivalent of 50% of the Continuing Participant's Supplemental Defined Benefit calculated pursuant to Section A.2.2 (determined without the adjustments described in Section A.2.2(e)), payable as an Actuarially Equivalent single lump sum cash distribution within 90 days following the date of the Continuing Participant's death.

(ii) *Commutation Due to Death*. Upon the death of a Continuing Participant who is receiving the distribution of his or her accrued Supplemental Defined Benefit pursuant to Section A.2.6(a), the Committee shall commute any or all remaining payments by paying the remainder of the accrued Supplemental Defined Benefit to the Continuing Participant's Beneficiary in an Actuarially Equivalent single lump sum cash distribution within 90 days following the date of the Continuing Participant's death.

(u) *Total Disability*. Upon the Total Disability of a Continuing Participant after satisfying the age and service requirements of Section 3.3 but before commencement of benefit payments, a Continuing Participant's Supplemental Defined Benefit shall be paid in cash in three equal installment payments, which in the aggregate are the Actuarial Equivalent of the Supplemental Defined Benefit as of the Continuing Participant's Total Disability Date, provided the Continuing Participant has remained Totally Disabled through the date of payment. The first installment payment shall be made by the later of (A) the fifteenth day of the third month coinciding with or following the date on which the Continuing Participant becomes Totally Disabled, or (B) the end of the calendar year in which the Continuing Participant becomes Totally Disabled, and the remaining installment payments shall be made on the first Business Day of the month coinciding with or following the first and second anniversaries of the first installment payment date, or, in each case, as soon as administratively feasible thereafter in a manner that is consistent with Section 409A Compliance.

EXHIBIT B

Schedule 1

(2005 Restatement)

Section 3.2(c) Separate Rules Applicable to J. Hooley

Status:	Active
Participation Date:	September 1, 2000
Section A.2.2 Supplemental Defined Benefit at Normal Retirement:	Subject to the terms of the Plan, Exhibit A, and the Special Benefit hereafter described, the supplemental benefit under Section A.2.2 of the Plan shall be the benefit set forth in this Schedule 1 of Exhibit B.
Special Benefit:	The Participant's Special Benefit under the Plan and Exhibit A shall be equal to his cash balance account benefit which shall consist of an opening cash balance account in the sum of $500,000 as of September 1, 2000 and earnings credited thereafter in the same percentage and in the same manner as though such cash balance account were provided under the terms of the Basic Plan. There shall be no additional contributions to this "cash balance account." If the Participant's benefit under the Plan is subsequently determined under the generally applicable rules of the Plan, the value of the Special Benefit set forth above shall be payable in addition to such generally applicable Plan benefit. The Special Benefit is in addition to any Supplemental Benefits under the Plan and Exhibit A.
Section A.2.2(e) Applicability:	The offset for Other Retirement Income is not applicable to the Special Benefit pursuant to this Schedule 1 of Exhibit B.
Age/Service Requirements:	The Participant's prior years of service with the Employer as well as the Participant's years of service with Boston Financial Data Services shall be considered as Service hereunder. The age and service requirements to qualify for a benefit set forth in Section A.2.2 of the Plan above are as follows: (1)The Service requirement of completion of ten full years of Employment is satisfied by the recognition of prior Service above. (2)There is no age requirement to qualify for the Special Benefit pursuant to this Schedule 1 of Exhibit B.

EXHIBIT B

Schedule 3

(2008 Restatement)

Section 3.2(c) Separate Rules for Jeffrey N. Carp

Status:	Active
Participation Date:	January 3, 2006. For the avoidance of doubt, the Participant's accruals under the Plan commenced on January 3, 2006.
Freeze Date:	For purposes of the Plan and Exhibit A, the "Freeze Date" applicable to the Participant is December 31, 2013.
Age/Service Requirements:	The age and service requirements under Section 3.3 of the Plan are deemed satisfied as of January 3, 2006.
Section 3.6 Forfeitures:	For purposes of the Plan and Exhibit A, the application of Section 3.6(b) shall be limited to employment with the following companies (and their respective parents, subsidiaries and affiliates): The Bank of New York Mellon Corporation, Deutsche Bank AG, JP Morgan Chase & Co., Northern Trust Corporation, Bank of America Corporation and Marsh & McLennan Companies. For the avoidance of doubt, Section 8 of the Amended and Restated Employment Agreement between the Company and the Participant (the "Employment Agreement") shall apply and shall supersede Section 3.6 the during the Employment Period (as defined therein).
Final Average Earnings:	For purposes of the Plan and Exhibit A, "Final Average Earnings" shall not be less than the Participant's Earnings for the Plan Year that commenced on January 1, 2006.
Section A.2.2 Supplemental Defined Benefit at Normal Retirement:	Subject to the terms of the Plan and Exhibit A, the maximum Supplemental Defined Benefit under Section A.2.2 of the Plan before offsets shall be equal to 20% of the Participant's Final Average Earnings, provided that the foregoing shall not serve to limit any amounts payable in respect of the Plan, Exhibit A and this Schedule pursuant to the Employment Agreement.
Section A.2.3 Supplemental Defined Benefit at Early Retirement:	Subject to the terms of the Plan and Exhibit A, the maximum Supplemental Defined Benefit under Section A.2.3 of the Plan before offsets shall be equal to 20% of the Participant's Final Average Earnings, provided that the foregoing shall not serve to limit any amounts payable in respect of the Plan, Exhibit A and this Schedule pursuant to the Employment Agreement.

Other Retirement Income:	For purposes of the Plan and Exhibit A, subsection (d) of the definition of "Other Retirement Income" shall not be applicable to the Participant.
Section A.2.2 Supplemental Defined Benefit at Normal Retirement:	Subject to the terms of the Plan and Exhibit A, the maximum Supplemental Defined Benefit under Section A.2.2 of the Plan before offsets shall be equal to 20% of the Participant's Final Average Earnings, provided that in the event that a Change of Control (as defined in the Employment Agreement) occurs on or prior to the Freeze Date, the Participant's Supplemental Defined Benefit shall be calculated under Section A.2.2 without regard to such 20% limit and the Participant shall be deemed to have accrued an additional three years of age and Service; and provided further that the foregoing shall not serve to limit any amounts payable in respect of the Plan, Exhibit A and this Schedule pursuant to the Employment Agreement.
Section A.2.3 Supplemental Defined Benefit at Early Retirement:	Subject to the terms of the Plan and Exhibit A, the maximum Supplemental Defined Benefit under Section A.2.3 of the Plan before offsets shall be equal to 20% of the Participant's Final Average Earnings, provided that in the event that a Change of Control (as defined in the Employment Agreement) occurs on or prior to the Freeze Date, the Participant's Supplemental Defined Benefit shall be calculated under Section A.2.3 without regard to such 20% limit and the Participant shall be deemed to have accrued an additional three years of age and Service; and provided further that the foregoing shall not serve to limit any amounts payable in respect of the Plan, Exhibit A and this Schedule pursuant to the Employment Agreement.
Section A.2.2(c) Applicability:	The offset for Other Retirement Income is applicable to the benefit under Section A.2.2 of the Plan.
Amendment/ Termination:	No amendment or termination of the Plan, Exhibit A and this Schedule or, taking any other action, shall, in any material manner, reduce or adversely affect the Participant's accrued benefits or entitlement thereto without the consent of the Participant.

EXHIBIT C

CLAIMS PROCEDURES

STATE STREET CORPORATION

DEFERRED COMPENSATION PLAN CLAIMS PROCEDURES

(Amended and Restated Effective January 1, 2008)

These Claims Procedures for filing and reviewing claims have been established and adopted for the State Street Corporation Executive Supplemental Retirement Plan (the "Plan") and are intended to comply with Section 503 of ERISA and related Department of Labor regulations. These amended and restated Claims Procedures are effective for claims made under the Plan on or after January 1, 2008.

1. **In General**

. Any employee or former employee, or any person claiming to be a beneficiary with respect to such a person, may request, with respect to the Plan:

a) a benefit payment,

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b) a resolution of a disputed amount of benefit payment, or

c) a resolution of a dispute as to whether the person is entitled to the particular form of benefit payment.

A request described above and filed in accordance with these Procedures is a *claim*, and the person on whose behalf the claim is filed is a *claimant*. A claim must relate to a benefit which the claimant asserts he or she is already entitled to receive or will become entitled to receive within one year following the date the claim is filed.

2. **Effect on Benefit Requests in Due Course**

. The Plan has established procedures for benefit applications, selection of benefit forms, and designation of beneficiaries, determination of qualified domestic relations orders, and similar routine requests and inquiries relating to the operation of the Plan.

3. **Filing of Claims**.

a) Each claim must be in writing and delivered by hand or first-class mail (including registered or certified mail) to the Administrator, at the following address:

GHR U.S. Benefits Planning
State Street Corporation
c/o Vice President, GHR-U.S. Benefits Planning
One Lincoln Street, 14th Floor
Boston, MA 02111

A claim must clearly state the specific outcome being sought by the claimant.

b) The claim must also include sufficient information relating to the identity of the claimant and such other information reasonably necessary to allow the claim to be evaluated.

c) In no event may a claim for benefits be filed by a Claimant more than 120 days after the applicable "Notice Date," as defined below.

i) In any case where benefits are paid to the Claimant as a lump sum, the Notice Date shall be the date of payment of the lump sum.

ii) In any case where benefits are paid to the Claimant in the form of an annuity or installments, the Notice Date shall be the date of payment of the first installment of the annuity or payment of first installment.

iii) In any case where the Plan (prior to the filing of a claim for benefits) determines that an individual is not entitled to benefits (for example (without limitation) where an individual terminates employment and the Plan determines that he has not vested) and the Plan provides written notice to such person of its determination, the Notice Date shall be the date of the individual's receipt of such notice.

iv) In any case where the Plan provides an individual with a written statement of his account as of a specific date or the amounts credit to, or charged against, his account within a specified period, the Notice Date with regard to matters described in such statement shall be the date of the receipt of such notice by such individual (or beneficiary).

4.**Processing of Claims**

. A claim normally shall be processed and determined by the Administrator within a reasonable time (not longer than 90 days) following actual receipt of the claim. However, if the Administrator determines that

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additional time is needed to process the claim and so notifies the claimant in writing within the initial 90-day period, the Administrator may extend the determination period for up to an additional 90 days. In addition, where the Administrator determines that the extension of time is required due to the failure of the claimant to submit information necessary in order to determine the claim, the period of time in which the claim is required to be considered pursuant to this Paragraph 4 shall be tolled from the date on which notification of the extension is sent to the claimant until the date on which the claimant responds to the request for additional information. Any notice to a claimant extending the period for considering a claim shall indicate the circumstances requiring the extension and the date by which the Administrator expects to render a determination with respect to the claim. The Administrator shall not process or adjudicate any claim relating specifically to his or her own benefits under the Plan.

5. **Determination of Claim**

. The Administrator shall inform the claimant in writing of the decision regarding the claim by registered or certified mail posted within the time period described in Paragraph 4. The decision shall be based on governing Plan documents. If there is an adverse determination with respect to all or part of the claim, the written notice shall include:

a) the specific reason or reasons for the denial,

b) reference to the specific Plan provisions on which the denial is based,

c) a description of any additional material or information necessary for the claimant to perfect the claim and an explanation of why such material or information is necessary,

d) reference to and a copy of these Procedures, so as to provide the claimant with a description of the relevant Plan's review procedures and the time limits applicable to such procedures, a description of the claimant's rights regarding documentation as described in Paragraph 9, and

e) a statement of the claimant's rights under Section 502(a) of ERISA to bring a civil action with respect to an adverse determination upon review of an appeal filed under Paragraph 6.

For purposes of these Procedures, an *adverse determination* shall mean determination of a claim resulting in a denial, reduction, or termination of a benefit under a Plan, or the failure to provide or make payment (in whole or in part) of a benefit or any form of benefit under a Plan. Adverse determinations shall include denials, reductions, etc., based on the claimant's lack of eligibility to participate in the relevant Plan. All decisions made by the Administrator under these Procedures shall be summarized in a report to be maintained in the files of the Administrator. The report shall include reference to the applicable governing Plan provision(s) and, where applicable, reference to prior determinations of claims involving similarly situated claimants.

6. **Appeal of Claim Denials - Appeals Committee**

. A claimant who has received an adverse determination of all or part of a claim shall have 60 days from the date of such receipt to contest the denial by filing an *appeal*. An appeal must be in writing and delivered to the Administrator. An appeal will be considered timely only if actually received by the Administrator within the 60-day period or, if sent by mail, postmarked within the 60-day period. The timely review will be completed by the Appeals Committee and should be sent to:

Appeals Committee
State Street Corporation
c/o Vice President, GHR-U.S. Benefits Planning
2 Avenue de Lafayette, LCC 1E

Boston, MA 02111-1724

The Appeals Committee shall meet at such times and places as it considers appropriate, shall keep a record of such meetings and shall periodically report its deliberations to the Administrator. Such reports shall include the basis upon which the appeal was determined and, where applicable, reference to prior determinations of claims involving similarly situated claimants. The vote of a majority of the members of the Appeals Committee shall decide any question brought before the Appeals Committee.

7. **Consideration of Appeals**

. The Appeals Committee shall make an independent decision as to the claim based on a full and fair review of the record. The Appeals Committee shall take into account in its deliberations all comments, documents, records and other information submitted by the claimant, whether submitted in connection with the appeal or in connection with the original claim, and may, but need not, hold a hearing in connection with its consideration of the appeal. The Appeals Committee shall consider an appeal within a reasonable period of time, but not later than 60 days after receipt of the appeal, unless the Appeals Committee determines that special circumstances (such as the need to hold a hearing) require an extension of time. If the Appeals Committee determines that an extension of time is required, it will cause written notice of the extension, including a description of the circumstances requiring an extension and the date by which the Appeals Committee expects to render the determination on review, to be furnished to the claimant before the end of the initial 60-day period. In no event shall an extension exceed a period of 60 days from the end of the initial period; *provided*, that in the case of any extension of time required by the failure of the claimant to submit information necessary for the Appeals Committee to consider the appeal, the period of time in which the appeal is required to be considered under this Paragraph 7 shall be tolled from the date on which notification of the extension is sent to the claimant until the date on which the claimant responds to the Appeals Committee's request for additional information.

8. **Resolution of Appeal**

. Notice of the Appeals Committee's determination with respect to an appeal shall be communicated to the claimant in writing by registered or certified mail posted within the time period described in Paragraph 7. If the determination is adverse, such notice shall include:

a) the specific reason or reasons for the adverse determination,

b) reference to the specific plan provisions on which the adverse determination was based,

c) reference to and a copy of these Procedures, so as to provide the claimant with a description of the claimant's rights regarding documentation as described in Paragraph 9, and

d) a statement of the claimant's rights under Section 502(a) of ERISA to bring a civil action with respect to the adverse determination.

9. **Certain Information**. In connection with the determination of a claim or appeal, a claimant may submit written comments, documents, records and other information relating to the claim and may request (in writing) copies of any documents, records and other information relevant to the claim. An item shall be deemed relevant to a claim if it:

a) was relied on in determining the claim,

b) was submitted, considered or generated in the course of making such determination (whether or not actually relied on), or

c) demonstrates that such determination was made in accordance with governing Plan documents (including, for this purpose, these Procedures) and that, where appropriate, Plan provisions have been applied consistently with similarly situated claimants.

The Administrator shall furnish free of charge copies of all relevant documents, records and other information so requested; *provided*, that nothing in these Procedures shall obligate the Company, the Administrator, or any person or committee to disclose any document, record or information that is subject to a privilege (including, without limitation, the attorney-client privilege) or the disclosure of which would, in the Administrator's judgment, violate any law or regulation.

10. **Rights of a Claimant Where Appeal is Denied**.

a) The claimant's actual entitlement, if any, to bring suit and the scope of and other rules pertaining to any such suit shall be governed by, and subject to the limitations of, applicable law, including ERISA. By extending to an employee or former employee the right to file a claim under these Procedures, neither the Company nor any person or committee appointed as Administrator acknowledges or concedes that such individual is a participant in any particular Plan within the meaning of such Plan or ERISA, and reserves the right to assert that an individual is not a participant in any action brought under Section 502(a).

b) In no event may any legal proceeding regarding entitlement to benefits or any aspect of benefits under the Plan be commenced later than the earliest of:

i) two years after the applicable Notice Date; or

ii) one year after the date a claimant receives a decision from the Appeals Committee regarding his appeal; or

iii) the date otherwise prescribed by applicable law.

c) Before any legal proceeding can be brought, a participant must exhaust the claim appeals procedures as set forth herein.

11. **Special Rules Regarding Disability**

. Certain benefits under the Plans are contingent upon an individual's incurring a disability. Where a claim requires a determination by the Company as to whether an individual is "disabled" as defined under the Plan, the additional rules set forth in Schedule 1 to these Procedures shall apply to the claim. State Street to provide. However, where disabled status is based upon actual entitlement to benefits under a separate plan in which the individual participates or is otherwise covered, the determination of such status for purposes of each Plan shall be made under such separate disability plan, and any claims or disputes as to disabled status under such plan or program shall be resolved in accordance with the procedures established for that purpose under the separate plan or program.

12. **Authorized Representation**

. A claimant may authorize an individual to represent him/her with respect to a claim or appeal made under these Procedures. Any such authorization shall be in writing, shall clearly identify the name and address of the individual, and shall be delivered to the Plan Administrator at the address listed in Paragraph 3. On receipt of a letter of authorization, all parties authorized to act under these Procedures shall be entitled to rely on such authorization, until similarly revoked by the claimant. While an authorization is in effect, all notices and communications to be provided to the claimant under these Procedures shall also be provided to his/her authorized representative.

13. **Form of Communications**

. Unless otherwise specified above, any claim, appeal, notice, determination, request, or other communication made under these Procedures shall be in writing, with original signed copy delivered by hand or first class mail (including registered or certified mail). A copy or advance delivery of any such claim, appeal, notice, determination, request, or other communication may be made by electronic mail or facsimile. Any such electronic or facsimile communication, however, shall be for the convenience of the

parties only and not in substitution of a writing required to be mailed or delivered under these Procedures, and receipt or delivery of any such claim, appeal, notice, determination, request, or other written communication shall not be considered to have been made until the actual posting or receipt of original signed copy, as the case may be.

14. **Reliance on Outside Counsel, Consultants, etc.**

The Administrator and the Appeals Committee may rely on or take into account advice or information provided by such legal, accounting, actuarial, consulting or other professionals as may be selected in determining a claim or appeal, including those individuals and firms that may render advice to the Company or the Plans from time to time.

FIRST AMENDMENT
TO THE
STATE STREET CORPORATION
EXECUTIVE SUPPLEMENTAL RETIREMENT PLAN

Pursuant to the provisions of Section 7.1 of the State Street Corporation Executive Supplemental Retirement Plan, Amended and Restated January 1, 2015 (the "Plan"), State Street Corporation as plan sponsor hereby amends the Plan as follows:

Effective for actions taken on or after January 1, 2016, the current Section 4.1 is amended in its entirety as follows:

1. **Company Credits**

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(a)*Generally*. For Plan Years commencing on and after the Effective Date, an Active Participant shall be entitled to receive Company Credits as follows:

(i) An Active Participant who was a Participant for an entire Plan Year shall receive a Company Credit in the amount of $200,000 on the Annual Credit Date for the Plan Year to his or her Account; provided, however, that the Company Credit received under this Section 4.1(a)(i) for the 2013 Plan Year shall be in the amount of $100,000 and shall not be provided to an Active Participant who is an Operating Group Participant; provided, further, there shall be no Company Credit under this Section 4.1(a)(i) for any Participant for the 2015 Plan Year or the 2016 Plan Year.

(ii) An Active Participant who became an Active Participant during a Plan Year shall receive for such Plan Year a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Active Participant, and the denominator of which is twelve; provided, however, that the Company Credit received under this Section 4.1(a)(ii) for the 2013 Plan Year shall be equal to the product of (x) $100,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan

Year during which the Active Participant was an Active Participant but not an Operating Group Participant, and the denominator of which is twelve; provided, further, there shall be no Company Credit under this Section 4.1(a)(ii) for any Participant for the 2015 Plan Year or the 2016 Plan Year. Any such Company Credit shall be credited to the Active Participant's Account on the Annual Credit Date for the relevant Plan Year.

(iii) An Active Participant who becomes a Separated Participant due to Retirement, death or Total Disability during a Plan Year shall receive a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year when such Participant was an Active Participant prior to (I) the Active Participant's Retirement Date, (II) the date of the Active Participant's death or (III) the date the Active Participant became Totally Disabled, as applicable, and the denominator of which is twelve; provided, however, that the Company Credit received under this Section 4.1(a)(iii) for the 2013 Plan Year shall be equal to the product of (x) $100,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year when such Participant was an Active Participant but not an Operating Group Participant prior to (I) the Active Participant's Retirement Date, (II) the date of the Active Participant's death or (III) the date the Active Participant became Totally Disabled, as applicable, and the denominator of which is twelve); provided, further, there shall be no Company Credit under this Section 4.1(a)(iii) for any Participant for the 2015 Plan Year or the 2016 Plan Year. Any such prorated Company Credit shall be credited to the Participant's Account on the last Business Day of the month in which the Participant's Retirement, death or Total Disability occurred (the "Final Credit Date").

(b) *Operating Group Participants.* An Operating Group Participant shall be entitled to receive the following for Plan Years commencing on and after the Effective Date:

(i) An Active Participant who is an Operating Group Participant for an entire Plan Year shall be granted on the Annual Credit Date

for such Plan Year a deferred share unit award under the Equity Plan (an "ESRP Share Award") with a Fair Market Value on such Annual Credit Date equal to $200,000; provided, however, there shall be no ESRP Share Award under this Section 4.1(b)(i) for the 2015 Plan Year or the 2016 Plan Year. The terms of the ESRP Share Award shall, in a manner that results in Section 409A Compliance, provide that the award will vest in accordance with Section 4.3 of the Plan and the underlying shares of Stock will be settled to the Operating Group Participant in accordance with Section 4.4 of the Plan, subject, in each case, to Section 7 of the Equity Plan or any successor provision. In addition, the ESRP Share Award shall provide for dividend equivalents. The other terms of the ESRP Share Award shall be governed by the Equity Plan.

(ii) An Active Participant who is an Operating Group Participant for a portion of a Plan Year, other than an Active Participant who becomes a Separated Participant during the Plan Year, shall receive an ESRP Share Award with a Fair Market Value on such Annual Credit Date equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Operating Group Participant and the denominator of which is twelve; provided, however, there shall be no ESRP Share Award under this Section 4.1(b)(ii) for

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the 2015 Plan Year or the 2016 Plan Year. Any such ESRP Share Award shall be granted to the Active Participant on the Annual Credit Date for the relevant Plan Year.

(iii) An Active Participant who becomes a Separated Participant due to Retirement, death or Total Disability during a Plan Year at a time when he/she is an Operating Group Participant, shall not be entitled to an ESRP Share Award in respect of such Plan Year but instead for the period of the Plan Year, if any, when the Active Participant was an Operating Group Participant shall be entitled to receive a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the

number of complete calendar months in the Plan Year when the Active Participant was an Operating Group Participant prior to (I) the Operating Group Participant's Retirement Date, (II) the date of the Operating Group Participant's death or (III) the date the Operating Group Participant became Totally Disabled, as applicable, and the denominator of which is twelve; provided, however, there shall be no Company Credit under this Section 4.1(b)(iii) for the 2015 Plan Year or the 2016 Plan Year. Any such prorated Company Credit shall be credited to the Participant's Account on the Final Credit Date.

For the avoidance of doubt, an Operating Group Participant shall also be entitled to Company Credits pursuant to Section 4.1(a); provided, however that for the 2013 Plan Year, an Operating Group Participant shall not be entitled to Company Credits pursuant to Section 4.1(a) for any period during a Plan Year when the Active Participant was an Operating Group Participant; provided, further, there shall be no Company Credit under Section 4.1(a) for any Participant for the 2015 Plan Year or the 2016 Plan Year.

(c)*Transition Participants.* Notwithstanding Section 4.1(a) and Section 4.1(b) above, Company Credits (including any Final Company Credits) shall not be credited to the Account of a Transition Participant and ESRP Share Awards shall not be granted to a Transition Participant in respect of any period commencing prior to the Freeze Date applicable to the Transition Participant. A Transition Participant shall continue to earn a Supplemental Defined Benefit in accordance with the relevant terms of the Plan (including any Schedules hereto) until the Freeze Date applicable to the Transition Participant.

(d)*Adjustment by Committee.* Notwithstanding anything to the contrary in Section 4.1(a) and 4.1(b) above, the Committee shall have the discretion to adjust, in a manner that results in Section 409A Compliance: (i) the amount of a Company Credit (including any Final Company Credits or ESRP Share Award credited or granted, as applicable, in respect of a Participant's status as an Active Participant or an Operating Group Participant for a portion of a Plan Year); and (ii) the medium of settlement of an ESRP Share Award, in each case, to the extent necessary to avoid adverse tax consequences to an Operating Group Participant; provided, however, that in no event shall such adjustment diminish the economic benefit to the Participant of a Company Credit or an ESRP Share Award without the Participant's consent.

IN WITNESS WHEREOF, State Street Corporation has caused this instrument to be executed by its duly authorized officer this 20th day of January, 2016.

State Street Corporation

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by: /s/ Todd Gershkowitz

Todd Gershkowitz

Executive Vice President

Head of Global Total Rewards

SECOND AMENDMENT
TO THE
STATE STREET CORPORATION
EXECUTIVE SUPPLEMENTAL RETIREMENT PLAN

Pursuant to the provisions of Section 7.1 of the State Street Corporation Executive Supplemental Retirement Plan, Amended and Restated January 1, 2015 (the "Plan"), State Street Corporation as plan sponsor hereby amends the Plan as follows:

Effective for actions taken on or after January 1, 2017, the current Section 4.1 is amended in its entirety as follows:

2. **Company Credits**

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(e)*Generally*. For Plan Years commencing on and after the Effective Date, an Active Participant shall be entitled to receive Company Credits as follows:

(i) An Active Participant who was a Participant for an entire Plan Year shall receive a Company Credit in the amount of $200,000 on the Annual Credit Date for the Plan Year to his or her Account; provided, however, that the Company Credit received under this Section 4.1(a)(i) for the 2013 Plan Year shall be in the amount of $100,000 and shall not be provided to an Active Participant who is an Operating Group Participant; provided, further, there shall be no Company Credit under this Section 4.1(a)(i) for any Participant for the 2015 Plan Year or any subsequent Plan Year.

(ii) An Active Participant who became an Active Participant during a Plan Year shall receive for such Plan Year a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Active Participant, and the denominator of which is twelve; provided, however, that the Company Credit received under this Section 4.1(a)(ii) for the 2013 Plan Year shall be equal to the product of (x) $100,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Active Participant but not an Operating Group Participant, and the

denominator of which is twelve; provided, further, there shall be no Company Credit under this Section 4.1(a)(ii) for any Participant for the 2015 Plan Year or any subsequent Plan Year. Any such Company Credit shall be credited to the Active Participant's Account on the Annual Credit Date for the relevant Plan Year.

(iii) An Active Participant who becomes a Separated Participant due to Retirement, death or Total Disability during a Plan Year shall receive a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year when such

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Participant was an Active Participant prior to (I) the Active Participant's Retirement Date, (II) the date of the Active Participant's death or (III) the date the Active Participant became Totally Disabled, as applicable, and the denominator of which is twelve; provided, however, that the Company Credit received under this Section 4.1(a)(iii) for the 2013 Plan Year shall be equal to the product of (x) $100,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year when such Participant was an Active Participant but not an Operating Group Participant prior to (I) the Active Participant's Retirement Date, (II) the date of the Active Participant's death or (III) the date the Active Participant became Totally Disabled, as applicable, and the denominator of which is twelve); provided, further, there shall be no Company Credit under this Section 4.1(a)(iii) for any Participant for the 2015 Plan Year or any subsequent Plan Year. Any such prorated Company Credit shall be credited to the Participant's Account on the last Business Day of the month in which the Participant's Retirement, death or Total Disability occurred (the "Final Credit Date").

(f) *Operating Group Participants.* An Operating Group Participant shall be entitled to receive the following for Plan Years commencing on and after the Effective Date:

(i) An Active Participant who is an Operating Group Participant for an entire Plan Year shall be granted on the Annual Credit Date for such Plan Year a deferred share unit award under the Equity Plan (an "ESRP Share Award") with a Fair Market Value on such Annual Credit Date equal to $200,000; provided, however, there shall be no ESRP Share Award under this Section 4.1(b)(i) for the 2015 Plan Year or any subsequent Plan Year. The terms of

the ESRP Share Award shall, in a manner that results in Section 409A Compliance, provide that the award will vest in accordance with Section 4.3 of the Plan and the underlying shares of Stock will be settled to the Operating Group Participant in accordance with Section 4.4 of the Plan, subject, in each case, to Section 7 of the Equity Plan or any successor provision. In addition, the ESRP Share Award shall provide for dividend equivalents. The other terms of the ESRP Share Award shall be governed by the Equity Plan.

(ii) An Active Participant who is an Operating Group Participant for a portion of a Plan Year, other than an Active Participant who becomes a Separated Participant during the Plan Year, shall receive an ESRP Share Award with a Fair Market Value on such Annual Credit Date equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar months in the Plan Year during which the Active Participant was an Operating Group Participant and the denominator of which is twelve; provided, however, there shall be no ESRP Share Award under this Section 4.1(b)(ii) for the 2015 Plan Year or any subsequent Plan Year. Any such ESRP Share Award shall be granted to the Active Participant on the Annual Credit Date for the relevant Plan Year.

(iii) An Active Participant who becomes a Separated Participant due to Retirement, death or Total Disability during a Plan Year at a time when he/she is an Operating Group Participant, shall not be entitled to an ESRP Share Award in respect of such Plan Year but instead for the period of the Plan Year, if any, when the Active Participant was an Operating Group Participant shall be entitled to receive a Company Credit equal to the product of (x) $200,000 and (y) a fraction, the numerator of which is the number of complete calendar

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months in the Plan Year when the Active Participant was an Operating Group Participant prior to (I) the Operating Group Participant's Retirement Date, (II) the date of the Operating Group Participant's death or (III) the date the Operating Group Participant became Totally

Disabled, as applicable, and the denominator of which is twelve; provided, however, there shall be no Company Credit under this Section 4.1(b)(iii) for the 2015 Plan Year or any subsequent Plan Year. Any such prorated Company Credit shall be credited to the Participant's Account on the Final Credit Date.

For the avoidance of doubt, an Operating Group Participant shall also be entitled to Company Credits pursuant to Section 4.1(a); provided, however that for the 2013 Plan Year, an Operating Group Participant shall not be entitled to Company Credits pursuant to Section 4.1(a) for any period during a Plan Year when the Active Participant was an Operating Group Participant; provided, further, there shall be no Company Credit under Section 4.1(a) for any Participant for the 2015 Plan Year or any subsequent Plan Year.

(g) *Transition Participants.* Notwithstanding Section 4.1(a) and Section 4.1(b) above, Company Credits (including any Final Company Credits) shall not be credited to the Account of a Transition Participant and ESRP Share Awards shall not be granted to a Transition Participant in respect of any period commencing prior to the Freeze Date applicable to the Transition Participant. A Transition Participant shall continue to earn a Supplemental Defined Benefit in accordance with the relevant terms of the Plan (including any Schedules hereto) until the Freeze Date applicable to the Transition Participant.

(h) *Adjustment by Committee.* Notwithstanding anything to the contrary in Section 4.1(a) and 4.1(b) above, the Committee shall have the discretion to adjust, in a manner that results in Section 409A Compliance: (i) the amount of a Company Credit (including any Final Company Credits or ESRP Share Award credited or granted, as applicable, in respect of a Participant's status as an Active Participant or an Operating Group Participant for a portion of a Plan Year); and (ii) the medium of settlement of an ESRP Share Award, in each case, to the extent necessary to avoid adverse tax consequences to an Operating Group Participant; provided, however, that in no event shall such adjustment diminish the economic benefit to the Participant of a Company Credit or an ESRP Share Award without the Participant's consent.

IN WITNESS WHEREOF, State Street Corporation has caused this instrument to be executed by its duly authorized officer this 17 day of January, 2017.

State Street Corporation

by /s/ Todd Gershkowitz

Todd Gershkowitz

Executive Vice President

Head of Global Total Rewards

THIRD AMENDMENT
TO THE
STATE STREET CORPORATION
EXECUTIVE SUPPLEMENTAL RETIREMENT PLAN

Pursuant to the provisions of Section 7.1 of the State Street Corporation Executive Supplemental Retirement Plan, Amended and Restated January 1, 2015 (the "Plan"), State Street Corporation as plan sponsor hereby amends the Plan as follows:

Effective for actions taken on or after December 15, 2020, the current Section 4.2(c) and (d) are amended in their entirety as follows:

4.2 Accounts.

(c). Election of Investment Options. A Participant shall elect, in accordance with the Administrative Procedures, one or more Investment Option(s) from a menu of Investment Options provided under the Plan to be used to determine Investment Earnings/Losses credited or debited to his or her Account. A Participant may reallocate the existing balance of his or her Account among the available Investment Options and change Investment Options with respect to future deferrals under the Plan in accordance with the Administrative Procedures. In the event that a Participant fails to select one or more Investment Options for all or a portion of his or her Account (including in the situation where the Investment Option is discontinued and the Participant fails to designate an alternative in accordance with the Administrative Procedures), such amounts shall be deemed invested in the Default Investment Option. Notwithstanding the foregoing, the Final Company Credits credited to the Account of a Participant on the Final Credit Date in connection with his or her death or Total Disability shall not be deemed invested in any Investment Option.

(d). Investment Options. The Committee or the Executive Vice President – Global Human Resources may select the Investment Options. The Committee or the Executive Vice President – Global Human Resources shall be permitted to add, remove or change Investment Options, as deemed appropriate; provided that any such addition, deletion or change shall not be effective with respect to any period prior to the effective date of the change. Each Participant, as a condition to his or her participation in the Plan, agrees to indemnify and hold harmless the Committee, the Executive Vice President – Global Human Resources, the Administrator and the Company, and their agents and representatives, from any losses or damages of any kind relating to the Investment Options made available hereunder.

\IN WITNESS WHEREOF, State Street Corporation has caused this instrument to be executed by its duly authorized officer this 17th day of December, 2020.

STATE STREET CORPORATION

By: /s/ Kathryn M. Horgan

Kathryn M. Horgan
Executive Vice President

Exhibit 10.10

DESCRIPTION OF COMPENSATION ARRANGEMENTS

FOR NON-EMPLOYEE DIRECTORS

For the period between each annual meeting of shareholders (the "Board Year"), non-employee directors receive the following compensation:

- an annual equity award of $195,000 granted in shares of State Street common stock; and
- an annual retainer of $90,000, plus the following additional annual retainers:
    - Lead Director: $125,000;
    - Examining and Audit Committee Chair and Risk Committee Chair: $30,000;
    - Human Resources Committee Chair: $25,000;
    - Nominating and Corporate Governance Committee Chair and Technology and Operations Committee Chair: $20,000; and
    - Each member of the Examining and Audit Committee and each member of the Risk Committee, other than the Lead Director and the Committee Chairs: $20,000.

Each retainer is payable at the director's election in shares of State Street common stock or in cash. All awards of shares of State Street common stock are calculated based on the closing price of our common stock on the NYSE on the date of election (or the date of joining the Board, if later), rounded up to the nearest whole share. Annual retainers and annual equity awards are prorated for any director joining the Board after the beginning of the Board Year.

Beginning with the eleventh Board meeting attended during the Board Year, each non-employee director is entitled to meeting fees of $1,500 per Board meeting attended, payable in cash.

Pursuant to State Street's Deferred Compensation Plan for Directors, directors may elect to defer the receipt of 0% or 100% of their (1) retainers, (2) annual equity award and/or (3) meeting fees. Non-employee directors also may elect to receive their retainers in cash or shares of State Street common stock. Non-employee directors who elect to defer the cash payment of their retainers or meeting fees may choose from four notional investment fund returns for such deferred cash. Deferrals of common stock are adjusted to reflect the hypothetical reinvestment in additional shares of common stock for any dividends or distributions on State Street common stock. Deferred amounts will be paid (a) as elected by the non-employee director, on either the date of their termination of service on the Board or on the earlier of such termination and a future date specified, and (b) in the form elected by the non-employee director as either a lump sum or in installments over a two- to five-year period.

Non-employee directors are also entitled to reimbursement of expenses incurred in attending Board and committee meetings.

Exhibit 21

SUBSIDIARIES OF STATE STREET CORPORATION

The following table presents the name of certain State Street subsidiaries and the state or jurisdiction of organization. Certain subsidiaries of State Street have been omitted in accordance with SEC regulations because, when considered in the aggregate, they did not constitute a "significant subsidiary" of State Street.

Antrim Corporation	Massachusetts
Charles River Systems, Inc	Massachusetts
Currenex, Inc	New York
International Fund Services Ireland Limited	Ireland
International Fund Services (N.A.) LLC	New York
Investors Copley Securities Corporation	Massachusetts
Quincy Securities Corporation	Massachusetts
Sail Trust	Grand Cayman
SSB Realty, LLC	Massachusetts
State Street Australia Limited	Australia
State Street Bank and Trust Company	Massachusetts
State Street Bank International GmbH	Germany
State Street Europe Holdings Germany Sarl & Co KG	Germany
State Street Global Advisors, Inc	Massachusetts
State Street Global Advisors International Holdings Inc	Delaware
State Street Global Advisors Limited	United Kingdom
State Street Global Advisors Switzerland Holdings GmbH	Switzerland
State Street Global Advisors Trust Company	Massachusetts
State Street Global Markets LLC	Massachusetts
State Street Holdings Germany GmbH	Germany
State Street Intermediate Funding LLC	Delaware
State Street International Holdings	Massachusetts
State Street International Holdings Switzerland GmbH	Switzerland
State Street Public Lending Corporation	Massachusetts
State Street Social Investments Corporation	Massachusetts
State Street Trust and Banking Company Limited	Japan
State Street Trust Company Canada	Canada

Exhibit 23

Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements (Form S-3: No. 333-238861, Form S-4: No. 333-248707 and Form S-8: Nos. 333-100001, 333-99989, 333-46678, 333-36793, 333-36409, 333-135696, 333-160171, 333-183656, 333-218048 and 333-233874) of State Street Corporation and in the related Prospectuses of our reports dated February 19, 2021, with respect to the consolidated financial statements of State Street Corporation and the effectiveness of internal control over financial reporting of State Street Corporation, included in this Annual Report (Form 10-K) for the year ended December 31, 2020.

/s/ Ernst & Young LLP

Boston, Massachusetts
February 19, 2021

EXHIBIT 31.1

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Ronald P. O'Hanley, certify that:

1. I have reviewed this Annual Report on Form 10-K of State Street Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present, in all material respects, the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2021

By: /s/ RONALD P. O'HANLEY
Ronald P. O'Hanley,
Chairman, President and Chief Executive Officer

EXHIBIT 31.2

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Eric W. Aboaf, certify that:

1. I have reviewed this Annual Report on Form 10-K of State Street Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present, in all material respects, the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2021

By: /s/ ERIC W. ABOAF

Eric W. Aboaf,

Executive Vice President and Chief Financial Officer

EXHIBIT 32

SECTION 1350 CERTIFICATIONS

To my knowledge, this Report on Form 10-K for the period ended December 31, 2020 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in this Report fairly presents, in all material respects, the financial condition and results of operations of State Street Corporation.

Date: February 19, 2021 By: /s/ RONALD P. O'HANLEY

Ronald P. O'Hanley,
Chairman, President and Chief Executive Officer

Date: February 19, 2021 By: /s/ ERIC W. ABOAF

Eric W. Aboaf,
Executive Vice President and Chief Financial Officer