

STATE STREET CORP  
Form 10-K/A  
March 27, 2017  
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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, DC 20549  
Form 10-K/A  
Amendment No. 1

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended December 31, 2016

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)  
Massachusetts

04-2456637  
(I.R.S. Employer  
Identification No.)

(State or other jurisdiction of incorporation)

One Lincoln Street  
Boston, Massachusetts  
(Address of principal executive office)  
617-786-3000

02111  
(Zip Code)

(Registrant's telephone number, including area code)  
Securities registered pursuant to Section 12(b) of the Act:

(Title of Each Class)

(Name of each exchange on  
which registered)

Common Stock, \$1 par value per share

New York Stock Exchange

Depository Shares, each representing a 1/4,000th ownership interest in a share of  
Non-Cumulative Perpetual Preferred Stock, Series C, without par value per share

New York Stock Exchange

Depository 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

New York Stock Exchange

Depository Shares, each representing a 1/4,000th ownership interest in a share of  
Non-Cumulative Perpetual Preferred Stock, Series E, without par value per share

New York Stock Exchange

Depository Shares, each representing a 1/4,000th ownership interest in a share of  
Non-Cumulative Perpetual Preferred Stock, Series G, without par value per share

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

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required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes  No   
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

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

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

Large accelerated filer  Accelerated filer  Non-accelerated filer  Smaller reporting company

(Do not check if a smaller reporting company)

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the per share price (\$53.92) 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, 2016) was approximately \$20.88 billion

The number of shares of the registrant's common stock outstanding as of January 31, 2017 was 381,939,896.

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 2017 Annual Meeting of Shareholders to be filed pursuant to Regulation 14A on or before May 1, 2017 (Part III).

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STATE STREET CORPORATION  
ANNUAL REPORT ON FORM 10-K/A FOR THE YEAR ENDED  
December 31, 2016

EXPLANATORY NOTE

State Street Corporation is filing this Amendment No. 1 to its Annual Report on Form 10-K for the year ended December 31, 2016 for the sole purpose of correcting the fiscal period referenced in the certifications originally filed as Exhibits 31.1, 31.2 and 32, made with the SEC on February 16, 2017.

This Amendment No. 1 continues to speak as of the date of the original Form 10-K for the year ended December 31, 2016 and the company has not updated or amended the disclosures contained herein to reflect events that have occurred since the original filing, or modified or updated those disclosures in any way other than as described in the preceding paragraph and therefore this Amendment No. 1 should be read in conjunction with the company's filings made with the SEC subsequent to the original Form 10-K filing.

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 ANNUAL REPORT ON FORM 10-K/A FOR THE YEAR ENDED  
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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 \$28.77 trillion of AUCA and \$2.47 trillion of AUM as of December 31, 2016.

As of December 31, 2016, we had consolidated total assets of \$242.70 billion, consolidated total deposits of \$187.16 billion, consolidated total shareholders' equity of \$21.22 billion and 33,783 employees. We operate in more than 100 geographic markets worldwide, including in the U.S., Canada, Europe, the Middle East and Asia.

On the "Investor Relations" section of our corporate website at [www.statestreet.com](http://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](http://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 part of this Form 10-K.

We have Corporate Governance Guidelines, as well as written charters for the Examining and Audit Committee, the Executive Committee, the Executive Compensation Committee, the Nominating and Corporate Governance Committee, the Risk Committee and the Technology 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), summary results of semi-annual State Street-run stress tests which we conduct under the Dodd-Frank Act and resolution plan disclosures required under the Dodd-Frank Act 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 included under Item 8, Financial Statements and Supplementary Data, of 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.

Additional Information

Additional information about our business activities is provided in the sections that follow. For information about our management of credit and counterparty risk; liquidity risk; operational risk; market risk associated with our trading activities; market risk associated with our non-trading, or asset-and-liability management, activities, primarily composed of interest-rate risk; and capital, as well as other risks inherent in our businesses, refer to "Risk Factors" included under Item 1A, the "Financial Condition" section of Item 7, Management's Discussion and Analysis of

Financial Condition and Results of Operations, or Management's Discussion and Analysis, and our consolidated financial statements and accompanying notes included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

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**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- and participant-level accounting; daily pricing and administration; master trust and master custody; record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance; our enhanced custody product, which integrates principal securities lending and custody; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; and performance, risk and compliance analytics to support institutional investors.

We provide mutual fund custody and accounting services in the U.S. We offer clients a broad range of integrated products and services, including accounting, daily pricing and fund administration. We service U.S. tax-exempt assets for corporate and public pension funds, and we provide trust and valuation services for daily-priced portfolios.

We are a service provider outside of the U.S. as well. In Germany, Italy, France and Luxembourg, we provide depotbank services (a fund oversight role created by regulation) for retail and institutional fund assets, as well as custody and other services to pension plans and other institutional clients. In the U.K., we provide custody services for pension fund assets and administration services for mutual fund assets. As of December 31, 2016, we serviced approximately \$1.75 trillion of offshore assets in funds located primarily in Luxembourg, Ireland and the Cayman Islands. As of December 31, 2016, we serviced \$1.49 trillion of assets under custody and administration in the Asia/Pacific region, and in Japan, we serviced approximately 93% of the trust assets serviced by non-domestic trust banks.

We are an alternative asset servicing provider worldwide, servicing hedge, private equity and real estate funds. As of December 31, 2016, we serviced approximately \$1.33 trillion of AUCA in such funds.

**Investment Management**

Our Investment Management line of business, through SSGA, provides a broad array of investment management, investment research and investment advisory services to corporations, public funds and other sophisticated investors. SSGA offers passive and active asset management strategies across equity, fixed-income, alternative, multi-asset solutions (including OCIO) and cash asset classes. Products are distributed directly and through intermediaries using a variety of investment vehicles, including ETFs, such as the SPDR® ETF brand.

Additional information about our lines of business is provided under “Line of Business Information” included under Item 7, Management's Discussion and Analysis, and in Note 24 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K. Additional information about our non-U.S. activities is provided in Note 25 to the consolidated financial statements included under Item 8 of this Form 10-K.

**COMPETITION**

We operate in a highly competitive environment and face global competition in all areas of our business. 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, 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. For Investment Servicing, quality of service, economies of scale, technological expertise, quality and scope of sales and marketing, required levels of capital and price drive competition, and are critical to our servicing business. For Investment Management, key competitive factors include expertise, experience, availability of related service offerings, quality of service and performance and price.

Our competitive success may depend on our ability to develop and market new and innovative services, to adopt or develop new technologies, to bring new services to market in a timely fashion at competitive prices, to continue and expand our relationships with existing clients, and to attract new clients.

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**SUPERVISION AND REGULATION**

State Street is 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 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 may engage in a broader range of activities considered to be "financial in nature." These limits 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 more than 5% 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 in activities that are defined by the Federal Reserve to be financial in nature, either de novo or by acquisition, 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, the following: 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 must 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 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.

The Dodd-Frank Act, which became law in July 2010, has had, and continues to have, a significant effect on the regulatory structure of the financial markets and supervision of bank holding companies, banks and other financial institutions. The Dodd-Frank Act, among other things: established the FSOC to monitor systemic risk posed by financial institutions; enacted new restrictions on proprietary trading and private-fund investment activities by banks and their affiliates, commonly known as the "Volcker rule" (refer to our discussion of the Volcker rule provided below under "Regulatory Capital Adequacy and Liquidity Standards" in this "Supervision and Regulation" section); created a new framework for the regulation of derivatives and the entities that engage in derivatives trading; altered the regulatory capital treatment of trust preferred and other hybrid capital securities; revised the assessment base that is used by the FDIC to calculate deposit insurance premiums; adopted capital planning and stress test requirements for large bank holding companies, including us; and required large financial institutions to develop plans for their resolution under the U.S. Bankruptcy Code (or other specifically applicable insolvency regime) in the event of material financial distress or failure.

In addition, regulatory change is being implemented internationally with respect to financial institutions, including, but not limited to, the implementation of the Basel III final rule (refer to "Regulatory Capital Adequacy and Liquidity Standards" below in this "Supervision and Regulation" section and under "Capital" in "Financial Condition" included under Item 7, Management's Discussion and Analysis, of this Form 10-K for a discussion of Basel III) and the Alternative Investment Fund Managers Directive (AIFMD), the Bank Recovery and Resolution Directive (BRRD), the European Market Infrastructure Resolution (EMIR), the Undertakings for Collective Investments in Transferable Securities (UCITS) directives, the Markets in Financial Instruments Directive II (MiFID II) and the Markets in Financial

Instruments Regulation (MiFIR) (the majority of the provisions of MiFID II and MiFIR will apply from January 3, 2018) and the E.U. data protection regulation.

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 SOX, the Dodd-Frank Act and regulations and rules of the SEC and the NYSE.

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Regulatory Capital Adequacy and Liquidity Standards

Basel III Final Rule

In 2013, U.S. banking regulators jointly issued a final rule implementing the Basel III framework in the U.S. Provisions of the Basel III final rule become effective under a transition timetable which began on January 1, 2014, with full implementation required beginning on January 1, 2019. In 2012, U.S. banking regulators jointly issued a final market risk capital rule to implement the changes to the market risk capital framework in the U.S. The final market risk capital rule became effective and was applicable to State Street on January 1, 2013, and replaced the market risk capital framework associated with Basel I and Basel II.

The Basel III final rule provides for two frameworks: the “standardized” approach, intended to replace Basel I, and the “advanced” approaches, applicable to advanced approaches banking organizations, like State Street, as originally defined under Basel II. The standardized approach modifies the provisions of Basel I related to the calculation of RWA and prescribes new standardized risk weights for certain on- and off-balance sheet exposures.

Among other things, the Basel III final rule does the following:

- Adds new requirements for a minimum common equity tier 1 risk-based capital ratio of 4.5% and a minimum supplementary leverage ratio of 3% for advanced banking organizations;

- Raises the minimum tier 1 risk-based capital ratio from 4% under Basel I and Basel II to 6%;

- Leaves the existing, minimum total capital ratio at 8%;

- Implements the capital conservation and countercyclical capital buffers, referenced below, as well as a G-SIB surcharge included under "Capital" in "Financial Condition" included under Item 7, Management's Discussion and Analysis, of this Form 10-K;

- Implements the previously described standardized approach to replace the calculation of RWA under Basel I; and

- Implements the advanced approaches for the calculation of RWA.

Additionally, beginning January 1, 2018, the SLR rule introduces a higher minimum SLR requirement for the eight U.S. G-SIBs of at least 6% for the insured banking entity (State Street Bank) in order to be well capitalized under the U.S. banking regulators' PCA framework, as well as a requirement of a minimum SLR of 5% for the holding company (State

Street) in order to avoid any limitations on distributions and discretionary bonus payments.

Under the Basel III final rule, a banking organization would be able to make capital distributions, subject to other regulatory constraints, such as regulator 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 applicable G-SIB surcharge over the minimum required common equity tier 1 risk-based capital ratio and each of the minimum required tier 1 and total risk-based capital ratios (plus any potentially applicable countercyclical capital buffer). Banking regulators would establish the minimum countercyclical capital buffer, which is initially set by banking regulators at zero, up to a maximum of 2.5% of total risk-weighted assets under certain economic conditions.

Under the Basel III final rule, our total regulatory capital is divided into three tiers, composed of common equity tier 1 capital, tier 1 capital (which includes common equity tier 1 capital), and tier 2 capital. The total of tier 1 and tier 2 capital, adjusted as applicable, is referred to as total regulatory capital.

Common equity tier 1 capital is composed of core capital elements, such as qualifying common shareholders' equity and related surplus; retained earnings; the cumulative effect of foreign currency translation; and net unrealized gains (losses) on debt and equity securities classified as AFS; reduced by treasury stock. Subject to certain phase-in or phase-out provisions, tier 1 capital is composed of common equity tier 1 capital plus additional tier 1 capital composed of qualifying perpetual preferred stock and minority interests. Goodwill and other intangible assets, net of related deferred tax liabilities, are deducted from tier 1 capital. Subject to certain phase-in or phase-out provisions, tier 2 capital is composed primarily of qualifying subordinated long-term debt.

Certain other items, if applicable, must be deducted from tier 1 and tier 2 capital. These items primarily include deductible investments in unconsolidated banking, financial and insurance entities where we hold more than 50% of

the entities' capital; 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 final rule.

As required by the Dodd-Frank Act, we and State Street Bank, as advanced approaches banking organizations, are subject to a permanent "capital floor", also referred to as the Collins Amendment, in the assessment of our regulatory capital adequacy, including a capital conservation buffer and a countercyclical capital buffer (both buffers are more

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fully described above in this "Supervision and Regulation" section). 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.

### Global Systemically Important Bank

In addition to the Basel III final rule, the Dodd-Frank Act requires the Federal Reserve to establish more stringent capital requirements for large bank holding companies, including State Street. On August 14, 2015, the Federal Reserve published a final rule on the implementation of capital requirements that impose a capital surcharge on U.S. G-SIBs. The surcharge requirements within the final rule began to phase in on January 1, 2016 and will be fully effective on January 1, 2019. The eight U.S. banks deemed to be G-SIBs, including State Street, are required to calculate the G-SIB surcharge 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;

• Method 2: Alters the calculation from Method 1 by factoring in a wholesale funding score in place of substitutability and applying a 2x multiplier to the sum of the five components

As part of the Basel III final rule, the Federal Reserve published estimated G-SIB surcharges for the eight U.S. G-SIBs based on relevant data from 2012 to 2014. Method 2 is identified as the binding methodology for State Street and the applicable surcharge on January 1, 2016 was calculated to be 1.5%. Assuming completion of the phase-in period for the capital conservation buffer, and a countercyclical buffer of 0%, the minimum capital ratios as of January 1, 2019, including a capital conservation buffer of 2.5% and G-SIB surcharge of 1.5% in 2019, would be 10.0% for tier 1 risk-based capital, 12.0% for total risk-based capital, and 8.5% for common equity tier 1 capital, in order for State Street to make capital distributions and discretionary bonus payments without limitation. Further, if State Street fails to exceed the 2% leverage buffer applicable to all U.S. G-SIBs under the Basel III final rule, it will be subject to increased restrictions (depending upon the extent of the shortfall) regarding capital distributions and discretionary executive bonus payments. Not all of our competitors have similarly been designated as systemically important, and therefore some of our competitors may not be subject to the same additional capital requirements.

### Total Loss-Absorbing Capacity (TLAC)

On December 15, 2016, the Federal Reserve released its final rule on TLAC, LTD and clean holding company requirements for U.S. domiciled G-SIBs, such as State Street, that are intended to improve the resiliency and resolvability of certain U.S. banking organizations through new enhanced prudential standards. The TLAC final rule imposes: (1) TLAC requirements (i.e., combined eligible tier 1 regulatory capital and eligible LTD); (2) separate eligible LTD requirements; and (3) clean holding company requirements designed to make short-term unsecured debt (including deposits) and most other ineligible liabilities structurally senior to eligible LTD.

Among other things, the TLAC final rule requires State Street to comply with minimum requirements for external TLAC and external LTD, plus an external TLAC buffer. Specifically, State Street must hold (1) combined eligible tier 1 regulatory capital and eligible LTD in the amount equal to at least 21.5% of total risk-weighted assets (using an estimated G-SIB method 1 surcharge of 1%) and 9.5% of total leverage exposure, as defined by the SLR final rule, and (2) qualifying external LTD equal to the greater of 7.5% of risk-weighted assets (using an estimated G-SIB method 2 surcharge of 1.5%) and 4.5% of total leverage exposure, as defined by the SLR final rule.

State Street must comply with the TLAC final rule starting on January 1, 2019.

### Liquidity Coverage Ratio and Net Stable Funding Ratio

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

In 2014, U.S. banking regulators issued a final rule to implement the BCBS' LCR in the United States. The LCR is intended to promote the short-term resilience of internationally active banking organizations, like State Street, 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. The LCR began being phased in on January 1, 2015, at 80%, with full implementation beginning on January 1, 2017.

We report LCR to the Federal Reserve daily. As of December 31, 2016, our LCR was in excess of 100%. In addition, in December 2016, the Federal Reserve issued a final rule requiring large banking organizations, including us, to publicly disclose certain qualitative and quantitative information about their LCR. We must comply with the disclosure requirements beginning on April 1, 2017.

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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 net interest revenue and our net interest margin. 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. For example, if the percentage of our operational deposits relative to deposits that are not maintained for operational purposes increases, we would expect to require less HQLA in order to maintain our LCR. Conversely, if the percentage of our operational deposits relative to deposits that are not maintained for operational purposes decreases, we would expect to require additional HQLA in order to maintain our LCR.

In October 2014, the BCBS issued final guidance with respect to the NSFR. In the second quarter of 2016, the OCC, Federal Reserve and FDIC issued a proposal to implement the NSFR in the U.S. that is largely consistent with the BCBS guidance. The proposal would require banking organizations to maintain an amount of available stable funding, which is calculated by applying standardized weightings to its equity and liabilities based on their expected stability, that is no less than the amount of its required stable funding, which is calculated by applying standardized weightings to its assets, derivatives exposures, and certain other off-balance sheet exposures based on their liquidity characteristics. If adopted as proposed, the requirements would apply to us and our depository institution subsidiaries beginning January 1, 2018.

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.

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" included under Item 7, Management's Discussion and Analysis, and Note 16 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

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. CCAR is used by the Federal Reserve to evaluate our management of capital, the adequacy of our regulatory capital and the potential requirement for us to maintain capital levels above regulatory minimums. Under the Federal Reserve's capital plan final 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 capital plan must include a description of all of our planned capital actions over a nine-quarter planning horizon, including any issuance of debt or equity capital instruments, any capital distributions, such as payments of dividends on, or purchases 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 final rule that are phased in over the planning horizon, and serve as a source of strength to our U.S. depository institution subsidiaries under supervisory stress scenarios. The capital plan requirements mandate that we receive no objection to our plan from the Federal Reserve before making a capital distribution. These requirements could require us 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 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 purchases of our stock, and may require resubmission of the capital plan to the Federal Reserve for its non-objection if, among other reasons, we would not meet our regulatory capital requirements after making the proposed capital distribution.

For additional information regarding capital planning and stress test requirements and restrictions on dividends, refer to "Capital Planning, Stress Tests and Dividends" in this "Supervision and Regulation" section and Item 5, Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchase of Equity Securities, in Part II of this Form 10-K.

In addition to its capital planning requirements, the Federal Reserve has the authority to prohibit or to limit the payment of dividends by the banking organizations it supervises, including us and State Street Bank, if, in the Federal Reserve's opinion, the payment of a dividend 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

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dividends and purchase our stock, or require us to provide capital assistance to State Street Bank and any other banking subsidiary.

In June 2016, we received the results of the Federal Reserve's review of our 2016 capital plan in connection with its 2016 annual CCAR process. The Federal Reserve did not object to the capital actions we proposed in our 2016 capital plan and, in July 2016, our Board approved a new common stock purchase program authorizing the purchase of up to \$1.4 billion of our common stock through June 30, 2017. As of December 31, 2016, we purchased approximately 9.0 million shares of our common stock at an average per-share cost of \$72.66 and an aggregate cost of approximately \$650 million under this program. Our 2016 capital plan included an increase, subject to approval by our Board, to our quarterly stock dividend to \$0.38 per share from \$0.34 per share, beginning in the third quarter of 2016.

The Federal Reserve, under the Dodd-Frank Act, requires us to conduct semi-annual State Street-run stress tests. Under this rule, we are required to publicly disclose the summary results of our State Street-run stress tests under the severely adverse economic scenario. In October 2016, we provided summary results of our 2016 mid-cycle State Street-run stress tests on the "Investor Relations" section of our corporate website. The rule also subjects us to an annual supervisory stress test conducted by the Federal Reserve.

The Dodd-Frank Act also requires State Street Bank to conduct an annual stress test. State Street Bank must submit its 2017 annual State Street Bank-run stress test to the Federal Reserve by April 5, 2017.

In September 2016, the Federal Reserve proposed revisions to the capital plan and stress test requirements that would, among other things, reduce the de minimis threshold for additional capital distributions that a firm may make during a capital plan cycle without seeking the Federal Reserve's prior approval. The proposal would also establish a one-quarter "blackout period" while the Federal Reserve is conducting CCAR during which firms would not be permitted to submit de minimis exception notices or prior approval requests for additional capital distributions.

**The Volcker Rule**

In December 2013, U.S. regulators issued final regulations to implement the Volcker rule. The Volcker rule prohibits banking entities, including us and our affiliates, from engaging in certain prohibited proprietary trading activities, as defined in the final 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 final Volcker rule regulations).

The Volcker rule became effective in July 2012, and the final implementing regulations became effective in April 2014. We were required to bring our activities and investments into conformance with the Volcker rule and its final regulations by July 21, 2015, with the exception of certain activities and investments. Under a 2016 conformance period extension issued by the Federal Reserve, all investments in and relationships with investments in a covered fund made or entered into after December 31, 2013 by a banking entity and its affiliates, and all proprietary trading activities of those entities, were required to be in conformance with the Volcker rule and its final implementing regulations by July 21, 2016. On July 7, 2016, the Federal Reserve announced a final one-year extension of the general conformance period for banking entities to conform ownership interests in, and relationships with, legacy covered funds to July 21, 2017. On December 12, 2016, the Federal Reserve issued a policy statement with information about how banking entities may seek a statutory extension of the conformance period of five years for certain legacy covered funds that are also illiquid funds.

Whether certain types of investment securities or structures such as CLOs constitute covered funds, as defined in the final Volcker rule regulations, and do not benefit from the exemptions provided in the Volcker rule, and whether a banking organization's investments therein constitute ownership interests remain subject to (1) market, and ultimately regulatory, interpretation and (2) the specific terms and other characteristics relevant to such investment securities and structures.

As of December 31, 2016, we held approximately \$972 million of investments in CLOs. As of the same date, these investments had an aggregate pre-tax net unrealized gain of approximately \$11 million, composed primarily of gross

unrealized gains. Comparatively, as of December 31, 2015, we held approximately \$2.10 billion of investments in CLOs, which had an aggregate pre-tax net unrealized gain of approximately \$43 million composed of gross unrealized gains of \$46 million and gross unrealized losses of \$3 million. In the event that we or our banking regulators conclude that such investments in CLOs, or other investments, are covered funds under the Volcker rule, we may be required to divest such investments. If other banking entities reach similar conclusions with respect to similar investments held by them, the prices of such investments could decline significantly, and we may be required to divest such

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investments at a significant discount compared to the investments' book value. This could result in a material adverse effect on our consolidated statement of income or on our consolidated statement of condition in the period in which such a divestiture occurs.

The final Volcker rule regulations also require banking entities to establish extensive programs designed to ensure compliance with the restrictions of the Volcker rule. We have established a compliance program which we believe complies with the final Volcker rule regulations as currently in effect. Such compliance program restricts our ability in the future to service certain types of funds, in particular covered funds for which SSGA 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.

Enhanced Prudential Standards

The Dodd-Frank Act established a new regulatory framework to regulate banking organizations designated as SIFIs, and has subjected them to heightened prudential standards, including heightened capital, leverage, liquidity and risk management requirements, single-counterparty credit limits and early remediation requirements. Bank holding companies with \$50 billion or more in consolidated assets, which includes us, became automatically subject to the systemic-risk regime in 2010.

The FSOC can recommend prudential standards, reporting and disclosure requirements to the Federal Reserve for SIFIs, 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 new Office of Financial Research within the U.S. Department of the Treasury, also established by the Dodd-Frank Act, can gather data and reports from financial institutions, including us.

In February 2014, the Federal Reserve approved a final rule implementing certain of the Dodd-Frank Act's enhanced prudential standards for large bank holding companies such as State Street. Under the final rule, 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 implemented, the NSFR. The final rule also establishes requirements and

responsibilities for our risk committee and mandates risk management standards. We became subject to these new standards on January 1, 2015.

In March 2016, the Federal Reserve re-proposed rules that would establish single-counterparty credit limits for large banking organizations, with more stringent limits for the largest banking organizations. U.S. G-SIBs, including us, would be subject to a limit of 15% of tier 1 capital for credit exposures to any "major counterparty" (defined as other U.S. G-SIBs, foreign G-SIBs and non-bank SIFIs supervised by the Federal Reserve) and to a limit of 25% of tier 1 capital for credit exposures to any other unaffiliated counterparty.

In May 2016, the Federal Reserve proposed a rule that would impose contractual requirements on certain "qualified financial contracts" to which U.S. G-SIBs, including us, and their subsidiaries are parties. Under the proposal, certain qualified financial contracts 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 provided 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 permit the exercise of cross-default rights 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. If adopted as proposed, the requirements would take effect at the start of the first calendar quarter that begins at least one year after the final rule is issued.

Refer to the risk factor titled "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. This credit exposure and concentration could expose us to financial loss" included under "Risk Factors" under Item 1A of this Form 10-K. In addition, the final rules create a new

early-remediation regime to address financial distress or material management weaknesses determined with reference to four levels of early remediation, including heightened supervisory review, initial remediation, recovery, and resolution assessment, with specific limitations and requirements tied to each level.

The systemic-risk regime also provides that, for institutions 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

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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.

Resolution Planning

State Street, like other bank holding companies with total consolidated assets of \$50 billion or more, periodically submits a plan for its rapid and orderly resolution under the U.S. Bankruptcy Code 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. We have and will continue to focus management attention and resources to meet regulatory expectations with respect to resolution planning. In the event of material financial distress or failure, our preferred resolution strategy, referred to as the single point of entry strategy, provides for the recapitalization prior to the bankruptcy of the parent company of State Street Bank and our other material entities by the parent company (for example, by forgiving inter-company indebtedness of State Street Bank owed, directly or indirectly, to the parent company), and potentially by a capital contribution from a newly formed direct subsidiary of the parent company that would be pre-funded by the parent company. The recapitalization, if successful, is intended to enable State Street Bank and our other material entities to continue their operations. The amount of assets available to support State Street Bank and our other material entities is anticipated to vary over time and may not be sufficient to meet their liquidity and capital needs.

The parent company and the newly formed direct subsidiary would obligate themselves, under a contract we refer to as a support agreement and using up to substantially all of their resources, to recapitalize and/or provide liquidity to State Street Bank and our other material entities in the event of material financial distress. The parent company and the newly formed direct subsidiary would secure their obligations under the support agreement by entering into a contract known as a security agreement and by pledging their rights in the assets that the parent company and the newly formed direct subsidiary would use to fulfill their obligations under the support

agreement to State Street Bank and other material entities. The parent company intends to pre-fund the newly formed direct subsidiary upon the execution of the support agreement by transferring assets to it that will be available for the subsequent provision of capital and liquidity to State Street Bank and our other material entities. These contractual, funding and related arrangements are expected to be in place prior to July 1, 2017 to aid State Street in meeting its regulatory obligations.

Under this single point of entry strategy, State Street Bank and our other material entities would not themselves enter into resolution proceedings. These entities would instead be transferred to a newly organized holding company held by a reorganization trust for the benefit of the parent company’s claimants. The single point of entry 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. 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. In the event that such recapitalization actions were taken and were unsuccessful in stabilizing State Street Bank, equity and debt holders of the parent company would likely, as a consequence, be in a worse position than if the recapitalization did not occur. An expected effect of the single point of entry strategy and the TLAC final rule is that State Street’s losses will be imposed on the holders of eligible long-term debt and other forms of eligible TLAC issued by the parent company, as well as on any other parent company creditors, before any of its losses are imposed on the holders of the debt securities of the parent company’s operating subsidiaries or any depositors or creditors thereof or before U.S. taxpayers are put at risk. The requirements of the single point of entry strategy and the support agreement may adversely impact

our ability to issue, or to competitively price, additional debt and equity securities.

We are required to submit our next annual resolution plan to the Federal Reserve and the FDIC on July 1, 2017. The Federal Reserve and the FDIC may determine that our 2017 resolution plan is not credible or would not facilitate an orderly resolution due to a number of factors, including, but not limited to: (1) challenges we may experience in interpreting and addressing regulatory expectations; (2) any failure to implement remediation actions in a timely manner; (3) the complexities in developing and implementing a comprehensive plan to resolve a global custodial bank; and (4) related costs and

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dependencies. If our resolution plan submission filed on July 1, 2017, or any future submission, fails to meet regulatory expectations to the satisfaction of the Federal Reserve and the FDIC, we could be subject to more stringent capital, leverage or liquidity requirements, restrictions on our growth, activities or operations, or we could be required to divest certain of our assets or operations.

State Street Bank is also required to submit annually to the FDIC a plan for resolution in the event of its failure, referred to as an IDI plan. State Street Bank's next IDI plan is due in October 2017.

**Orderly Liquidation Authority**

Under the Dodd-Frank Act, certain financial companies, including bank holding companies such as State Street, and certain covered subsidiaries, can be subjected to a new orderly liquidation authority. The U.S. Treasury Secretary, in consultation with the President, must first make certain extraordinary financial distress and systemic risk determinations, and action must be recommended by two-thirds of the FDIC Board and two-thirds of the Federal Reserve Board. 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 July 2010, and rulemaking is proceeding in stages, with some regulations now finalized and others planned but not yet proposed. If we were subject to the orderly liquidation authority, the FDIC would be appointed as our receiver, which would give the FDIC considerable powers to resolve us, including: (1) the power to remove officers and directors responsible for our 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 creditors, including by treating junior creditors better than senior 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 December 2013, the FDIC released its proposed single-point-of-entry 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 imposes a new regulatory structure on the over-the-counter 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 adopted and are still in the process of adopting regulations to implement Title VII. 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 over-the-counter 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 final 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. In December 2013, the CFTC 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.

#### Money Market Funds

In July 2014, the SEC adopted amendments to the regulations governing money market funds to address potential systemic risks and improve transparency for money market fund investors. Among other things, the amendments require a floating net asset value for institutional prime money market funds (i.e., money market funds that are either not restricted to natural person investors or not restricted to investing primarily in U.S. government securities) and permit (and in some cases require) all money market funds to impose redemption fees and gates under certain circumstances. As a result of these reforms, money market funds may be required to take certain steps that will affect their structure and/or operations, which could in turn affect the

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liquidity, marketability and return potential of such funds. Full conformance with these amendments was required by October 14, 2016.

Money market reforms are also being considered in Europe. The timing and content of those regulations remains uncertain. The SEC's July 2014 amended regulations, and the potential reforms in Europe, could alter the business models of money market fund sponsors and asset managers, including many of our servicing clients and SSGA, and may result in reduced levels of investment in money market funds. As a result, these requirements may have an adverse impact on our business, our operations or our consolidated results of operations.

**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. 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. 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. As of December 31, 2016, the capital of each of these banking subsidiaries exceeded the minimum legal capital requirements set by those regulatory authorities.

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 are limited with respect to each affiliate to 10% of State Street Bank's capital and surplus, as defined by the aforementioned banking laws, and to 20% in the aggregate for all affiliates, and in some cases are also subject to strict collateral requirements. Under the Dodd-Frank Act, effective in July 2012, derivatives, securities borrowing and securities lending transactions between State Street Bank and its affiliates became subject to these

restrictions. 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 final Volcker rule regulations.

Federal law also requires that certain transactions with affiliates be on terms and under circumstances, including credit standards, that are substantially the same, or at least as favorable to the institution, 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 as well for a depositor preference on amounts realized from the liquidation or other resolution of any depository institution insured by the FDIC.

Our subsidiaries, SSGA FM and SSGA Ltd., act as investment advisers to investment companies registered under the Investment Company Act of 1940. SSGA 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. SSGA 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. SSGA Ltd. is also authorized and regulated by the FCA and is an investment firm

under the MiFID. SSGA FM and SSGA Ltd. each offer a variety of investment management solutions, including active, enhanced and passive equity, active and passive fixed-income, cash management, multi-asset class solutions and real estate. In addition, a major portion of our investment management activities are conducted by State Street Bank, which is subject to supervision primarily by the Federal Reserve with respect to these activities. Our U.S. broker/dealer subsidiary is registered as a broker/dealer with the SEC, is subject to regulation by the SEC (including the SEC's net capital rule) and is a member of the Financial Industry Regulatory Authority, a self-regulatory organization.

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The U.K. broker/dealer business operates through our subsidiary, State Street Global Markets International Limited, which is registered in the U.K. as a regulated securities broker, is authorized and regulated by the FCA and is an investment firm under the MiFID. It is also a member of the London Stock Exchange. In accordance with the rules of the FCA, the U.K. broker/dealer publishes information on its risk management objectives and on policies associated with its regulatory capital requirements and resources. 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.

Our activities as a futures commission merchant are subject to regulation by the CFTC in the U.S. and various regulatory authorities internationally, as well as the membership requirements of the applicable clearinghouses. In addition, we have a subsidiary registered with the CFTC as a swap execution facility, and our U.S. broker/dealer subsidiary also offers a U.S. equities alternative trading system registered with the SEC.

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 ERISA, and is regulated by the U.S. Department of Labor.

Our businesses, including our investment management and securities and futures 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 FCA, the U.K. PRA and the Bank of England 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 and the Luxembourg banks are also subject to direct supervision by the European Central Bank under the ECB Single Supervisory Mechanism; 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 and costs 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, 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 State Street, 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 all applicable AML laws and regulations. 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.

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, AML regulations and U.S. economic sanctions regulations

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promulgated by OFAC. As part of this enforcement action, we are required to, among other things, implement improvements to our compliance programs and to retain an independent firm to conduct a review of account and transaction activity covering a prior three-month period to evaluate whether any suspicious activity not previously reported should have been identified and reported in accordance with applicable regulatory requirements. To the extent deficiencies in our historical reporting are identified as a result of the transaction review or if we fail to comply with the terms of the written agreement, we may become subject to fines and other regulatory sanctions, which may have a material adverse effect on us.

### Deposit Insurance

FDIC-insured depository institutions are required to pay deposit insurance assessments to the FDIC. The Dodd-Frank Act made permanent the general \$250,000 deposit insurance limit for insured deposits.

The FDIC's DIF is funded by assessments on 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 Dodd-Frank Act also directed the FDIC to determine whether and to what extent adjustments to the assessment base are appropriate for "custody banks". The FDIC has concluded that certain liquid assets could be excluded from the deposit insurance assessment base of custody banks that satisfy specified institutional eligibility criteria. This has the effect of reducing the amount of DIF insurance premiums due from custody banks. State Street Bank is 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.

On March 15, 2016, the FDIC issued a final rule that imposes on insured depository institutions with at least \$10 billion in assets, which includes State Street, a surcharge of 4.5 cents per \$100 per annum of their assessment base for deposit insurance, as defined by the FDIC, until the DIF reaches the required ratio of 1.35, which the FDIC estimates would take approximately two years. The surcharge took effect for the assessment period beginning on July 1, 2016.

### 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 the 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 and means that we are expected 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. 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.

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**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.

**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 State Street and its banking subsidiaries. The proposed standards would expand existing cybersecurity 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.

**STATISTICAL DISCLOSURE BY BANK HOLDING COMPANIES**

The following information, included under Items 6, 7 and 8 of 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 revenue and interest expense for each major category of interest-earning assets and interest-bearing liabilities.

“Investment Securities” section included in 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).

Note 4, “Loans and Leases,” to the consolidated financial statements (Item 8) - discloses our policy for placing loans and leases on non-accrual status.

“Loans and Leases” section included in Management’s Discussion and Analysis (Item 7) and Note 4, “Loans and Leases,” to the consolidated financial statements (Item 8) - disclose 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 cross-border outstandings and other loan concentrations of State Street.

“Credit Risk Management” section included in Management’s Discussion and Analysis (Item 7) and Note 4, “Loans and Leases,” to the consolidated financial statements (Item 8) - present the allocation of the allowance for loan and lease 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 short-term borrowings of State Street.





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ITEM 1A. RISK FACTORS

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 the 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, financial portfolio performance, dividend and stock purchase programs, outcomes of legal proceedings, market growth, acquisitions, joint ventures and divestitures, cost savings and transformation initiatives, client growth and new technologies, services and opportunities, as well as industry, 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," "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 national 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, but are not limited to: the financial strength and continuing viability of the counterparties with which we or our clients do business and to which we have investment, credit or financial exposure, including, for example, the direct and indirect effects on counterparties of the sovereign-debt risks in the U.S., Europe and other regions; increases in the volatility of, or declines in the level of, our net interest revenue, changes in the

composition or valuation of the assets recorded in our consolidated statement of condition (and our ability to measure the fair value of investment securities) and the possibility that we may change the manner in which we fund those assets;

the liquidity of the U.S. and international securities markets, particularly the markets for fixed-income securities and inter-bank credits, and the liquidity requirements of our clients;

the level and volatility of interest rates, the valuation of the U.S. dollar relative to other currencies in which we record revenue or accrue expenses and the performance and volatility of securities, credit, currency and other markets in the U.S. and internationally; and the impact of monetary and fiscal policy in the United States and internationally on prevailing rates of interest and currency exchange rates in the markets in which we provide services to our clients; the credit quality, credit-agency ratings and fair values of the securities in our investment securities portfolio, a deterioration or downgrade of which could lead to other-than-temporary impairment of the respective securities and the recognition of an impairment loss in our consolidated statement of income;

our ability to attract deposits and other low-cost, short-term funding, our ability to manage levels of such deposits and the relative portion of our deposits that are determined to be operational under regulatory guidelines and our ability to deploy deposits in a profitable manner consistent with our liquidity needs, regulatory requirements and risk profile; the manner and timing with which the Federal Reserve and other U.S. and foreign regulators implement or reevaluate changes to the regulatory framework applicable to our operations, including implementation or modification of the Dodd-Frank Act, the Basel III final rule and European legislation (such as the Alternative Investment Fund Managers Directive, Undertakings for Collective Investment in Transferable Securities Directives and Markets in Financial Instruments Directive II); among other consequences, these regulatory changes impact the levels of regulatory capital

we must maintain, acceptable levels of credit exposure to third parties, margin requirements applicable to derivatives, and restrictions on banking and financial activities. In addition, our regulatory posture and related expenses have been and will continue to be affected by changes in regulatory expectations for global systemically important financial institutions applicable to, among other things, risk management, liquidity and capital planning, resolution planning, compliance programs, and

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changes in governmental enforcement approaches to perceived failures to comply with regulatory or legal obligations;

we may not successfully implement our plans to have a credible resolution plan by July 2017, or that plan may not be considered to be sufficient by the Federal Reserve and the FDIC, due to a number of factors, including, but not limited to, challenges we may experience in interpreting and addressing regulatory expectations, failure to implement remediation in a timely manner, the complexities of development of a comprehensive plan to resolve a global custodial bank and related costs and dependencies. If we fail to meet regulatory expectations to the satisfaction of the Federal Reserve and the FDIC in any future submission, we could be subject to more stringent capital, leverage or liquidity requirements, or restrictions on our growth, activities or operations;

adverse changes in the regulatory ratios that we are required or will be required to meet, whether arising under the Dodd-Frank Act or the Basel III final rule, or due to changes in regulatory positions, practices or regulations in jurisdictions in which we engage in banking activities, including changes in internal or external data, formulae, models, assumptions or other advanced systems used in the calculation of our capital ratios that cause changes in those ratios as they are measured from period to period;

requirements to obtain the prior approval or non-objection of the Federal Reserve or other U.S. and non-U.S. regulators for the use, allocation or distribution of our capital or other specific capital actions or corporate activities, including, without limitation, acquisitions, investments in subsidiaries, dividends and stock purchases, without which our growth plans, distributions to shareholders, share repurchase programs or other capital or corporate initiatives may be restricted;

changes in law or regulation, or the enforcement of law or regulation, that may adversely affect our business activities or those of our clients or our counterparties, and the products or services that we sell, including additional or increased taxes or assessments thereon, capital adequacy requirements, margin requirements and changes that expose us to risks related to the adequacy of our controls or compliance programs;

economic or financial market disruptions in the U.S. or internationally, including those which may result from recessions or political instability; for example, the U.K.'s decision to exit from the European Union may continue to disrupt

financial markets or economic growth in Europe or, similarly, financial markets may react sharply or abruptly to actions taken by the new administration in the United States;

our ability to develop and execute State Street Beacon, our multi-year transformation program to digitize our business, deliver significant value and innovation for our clients and lower expenses across the organization, any failure of which, in whole or in part, may among other things, reduce our competitive position, diminish the cost-effectiveness of our systems and processes or provide an insufficient return on our associated investment;

our ability to promote a strong culture of risk management, operating controls, compliance oversight, ethical behavior and governance that meets our expectations and those of our clients and our regulators, and the financial, regulatory, reputation and other consequences of our failure to meet such expectations; the impact on our compliance and controls enhancement programs of the appointment of a monitor under the deferred prosecution agreement with the DOJ and compliance consultant expected to be appointed under a potential settlement with the SEC, including the potential for such monitor and compliance consultant to require changes to our programs or to identify other issues that require substantial expenditures, changes in our operations, or payments to clients or reporting to U.S. authorities;

the results of our review of our billing practices, including additional amounts we may be required to reimburse clients, as well as potential consequences of such review, including damage to our client relationships and adverse actions by governmental authorities;

the results of, and costs associated with, governmental or regulatory inquiries and investigations, litigation and similar claims, disputes, or civil or criminal proceedings;

changes or potential changes in the amount of compensation we receive from clients for our services, and the mix of services provided by us that clients choose; the large institutional clients on which we focus are often able to exert considerable market influence, and this, combined with strong competitive market forces, subjects us to significant pressure to reduce the fees we charge, to potentially significant changes in our assets under custody and administration or our assets under management in the event of the acquisition or loss of a client, in whole or in part, and to potentially significant changes in our fee revenue in the event a client re-balances or

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changes its investment approach or otherwise re-directs assets to lower- or higher-fee asset classes;

- the potential for losses arising from our investments in sponsored investment funds;
- the possibility that our clients will incur substantial losses in investment pools for which we act as agent, and the possibility of significant reductions in the liquidity or valuation of assets underlying those pools;
- our ability to anticipate and manage the level and timing of redemptions and withdrawals from our collateral pools and other collective investment products;
- the credit agency ratings of our debt and depositary obligations and investor and client perceptions of our financial strength;
- adverse publicity, whether specific to State Street or regarding other industry participants or industry-wide factors, or other reputational harm;
- our ability to control operational risks, data security breach risks and outsourcing risks, our ability to protect our intellectual property rights, the possibility of errors in the quantitative models we use to manage our business and the possibility that our controls will prove insufficient, fail or be circumvented;
- our ability to expand our use of technology to enhance the efficiency, accuracy and reliability of our operations and our dependencies on information technology and our ability to control related risks, including cyber-crime and other threats to our information technology infrastructure and systems (including those of our third-party service providers) and their effective operation both independently and with external systems, and complexities and costs of protecting the security of such systems and data;
- our ability to grow revenue, manage expenses, attract and retain highly skilled people and raise the capital necessary to achieve our business goals and comply with regulatory requirements and expectations;
- changes or potential changes to the competitive environment, including changes due to regulatory and technological changes, the effects of industry consolidation and perceptions of State Street as a suitable service provider or counterparty;
- our ability to complete acquisitions, joint ventures and divestitures, including the ability to obtain regulatory approvals, the ability to arrange financing as required and the ability to satisfy closing conditions;
- the risks that our acquired businesses and joint ventures will not achieve their anticipated

financial and operational benefits or will not be integrated successfully, or that the integration will take longer than anticipated, that expected synergies will not be achieved or unexpected negative synergies or liabilities will be experienced, that client and deposit retention goals will not be met, that other regulatory or operational challenges will be experienced, and that disruptions from the transaction will harm our relationships with our clients, our employees or regulators;

- our ability to recognize evolving needs of our clients and to develop products that are responsive to such trends and profitable to us, the performance of and demand for the products and services we offer, and the potential for new products and services to impose additional costs on us and expose us to increased operational risk;
- changes in accounting standards and practices; and
- changes in tax legislation and in the interpretation of existing tax laws by U.S. and non-U.S. tax authorities that affect the amount of taxes due.

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 beliefs 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](http://www.sec.gov) or on the "Investor Relations" section of our corporate website at [www.statestreet.com](http://www.statestreet.com).

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Risk Factors

In the normal course of our business activities, we are exposed to a variety of risks. The following is a discussion of various risk factors applicable to State Street. Additional information about our risk management framework is included under “Risk Management” in Management’s Discussion and Analysis included under Item 7 of this Form 10-K. Additional risks beyond those described in 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.

Credit and Counterparty, Liquidity and Market Risks

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. This credit exposure and concentration 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 and 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.

Since mid-2007, a variety of economic, market and other factors have contributed to the perception of many financial institutions as being less creditworthy, as reflected in the credit downgrades of numerous large U.S. and non-U.S. financial institutions in recent years. Also, credit downgrades to several sovereign issuers and other issuers have 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 sovereign or other issuers. Economic, political or market turmoil or other developments may lead to stress on sovereign issuers and increase the potential for sovereign defaults or restructurings, additional credit-rating downgrades or the departure of sovereign issuers from common currencies or economic unions. These same factors may contribute to increased risk of default or downgrading for financial and corporate issuers 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. 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

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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.

**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.

**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. These risks are amplified due to changing regulatory requirements with respect to our financial exposures in the event those subcustodians are unable to return a client's assets, including, in some regulatory regimes, including the E.U.'s UCITS and AIFM directive, requirements that we be responsible for resulting losses suffered by our clients.

**Settlement risks.** We are exposed to settlement risks, particularly in our payments and foreign exchange activities. Those activities may lead to losses in the event of a counterparty breach, failure to provide credit extensions or an operational error. 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 and with respect to clients protected by sovereign immunity.

**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 recalled from the borrower in connection with such transaction. 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 changes, additional collateral is provided by the borrower or collateral is returned to the borrower. In addition, our 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.

**Stable value arrangements.** We provide benefit-responsive contracts, known as wraps, to defined contribution plans that offer a stable value option to their participants. During the financial crisis, the book value of obligations under many of these contracts



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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.

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 to their increased liquidity demands. In the current economic environment, where municipalities are subject to increased investor concern, the risks associated with such businesses increase.

Senior secured bank loans. In recent years, we have increased our investment in senior secured bank loans. 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 our investment in these loans has increased, we have also experienced increases in our provision for loan losses. As this portfolio grows and becomes more seasoned, our allowance for loan losses related to these loans may increase through additional provisions for credit losses.

Under evolving regulatory restrictions on credit exposure we may be required to limit our exposures to specific issuers or groups, including financial institutions and sovereign issuers, to levels that we may currently exceed. These credit exposure restrictions under such evolving regulations may adversely affect our businesses, may require that we expand our credit exposure to a broader range of issuers, including issuers that represent increased credit risk 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 ISDA 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 interdependencies, several of our business units are particularly sensitive to them, including our Global Treasury group, that, among other responsibilities, manages our investment portfolio, our currency trading business, our securities finance business, and our investment management 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.

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 40% of our total assets as of December 31, 2016. The gross interest revenue associated with our investment portfolio represented approximately 17% of our total gross revenue for the year ended December 31, 2016 and has represented as much as 30% 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, without limitation, changes in interest rates, credit spreads, credit performance, credit ratings, our access to liquidity, foreign exchange markets, mark- to-market valuations, and our ability to profitably manage changes in repayment rates of principal with respect to these securities. Despite recent increases to interest rates in the United States, the continued low interest-rate environment that has persisted since the financial crisis began in mid-2007 limits our ability to achieve a net interest margin consistent with our historical averages. Any further increases in interest rates in the United States have the potential to improve net interest revenue and net interest margin over time. However, any such improvement could be mitigated due to a greater disparity between interest rates in the U.S. and international markets, especially to the extent that

interest rates remain low in Europe and Japan. Higher interest rates could also reduce mark-to-market valuations further. In addition, new and proposed regulatory liquidity standards, such as the LCR, require that we maintain minimum levels of high quality liquid assets in our investment portfolio,

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which generally generate lower rates of return than other investment assets, resulting in a negative impact on our net interest revenue and our net interest margin. For additional information regarding these liquidity requirements, refer to the "Liquidity Coverage Ratio and Net Stable Funding Ratio" section of "Supervision and Regulation" included under Item 1, Business, of 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 and lease portfolios represent a smaller proportion (approximately 8% of our total assets as of December 31, 2016), 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 final rule, after-tax changes in the fair value of AFS investment securities 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 incurred credit losses) are not similarly included in the determination of tier 1 capital under the Basel III final 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 mortgage-backed securities, commercial mortgage-backed securities and other asset-backed securities, 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. mortgage-backed and asset-backed securities with exposures to European countries, whose sovereign-debt markets have experienced increased stress 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 large portfolio of U.S. state and municipal bonds. In view of the budget deficits that a number of states and municipalities currently face, the risks associated with this portfolio are significant.

**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. For example, we recorded significant losses not related to credit in connection with the consolidation of our off-balance sheet asset-backed commercial paper conduits in 2009 and the repositioning of our investment portfolio in 2010. 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 other-than-temporary 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 final 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 by 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, net interest revenue and net interest margin. The effect on our net interest revenue has been exacerbated by the effects of

the strong U.S. dollar relative to other currencies, particularly the Euro. If ECB monetary policy continues to pressure European interest rates downward

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and the U.S. dollar remains strong or strengthens, the negative effects on our net interest revenue likely will continue or increase. The overall level of net interest revenue 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 net interest revenue. 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 high quality liquid assets that have lower yields than other investable assets. See also, “Our business activities expose us to interest-rate risk” below.

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 net interest revenue and net interest margin 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, 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 net interest revenue and net interest margin. 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 net interest revenue. 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 “Financial Condition - Market Risk Management - Asset-and-Liability Management Activities” in Management's Discussion and Analysis included under Item 7 of this Form 10-K. If we are unable to effectively manage our 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 custody business; and
- fund the pool of long- and intermediate-term assets that are included in the investment securities carried in our consolidated statement of condition.

Because the demand for credit by our clients 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 portfolio 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. During periods of market disruption, the level of client deposits held by us has in recent years tended to increase; 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, as a consequence, have increased our net interest revenue but have adversely affected our net interest margin.

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 relative interest rates that we are prepared to pay for these 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. To effectively manage our liquidity we routinely transfer assets among affiliated entities, subsidiaries and branches. Internal or external

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factors, such as regulatory requirements and standards, 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, require us to seek external and potentially more costly capital and impact our liquidity position.

In addition, while not obligations of State Street, 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 an asset manager 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 net interest revenue, 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.

Our business and capital-related activities, including our ability to return capital to shareholders and purchase our capital stock, may be adversely affected by our implementation of the revised regulatory capital and liquidity standards that we must meet under the Basel III final rule, the Dodd-Frank Act and other regulatory initiatives, 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.

**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 certain 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 final 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 final rule.

Along with the Basel III final rule, banking regulators also introduced additional new requirements, such as the SLR, LCR and the proposed NSFR. In addition, further capital and liquidity requirements are under consideration by U.S. and international banking regulators, each of which has the potential to have significant effects on our capital and liquidity planning and activities.

For example, the specification of the various elements of the LCR in the final rule, such as the eligibility of assets as high-quality liquid assets, the calculation of net outflows, including the treatment of operational deposits, and the timing of indeterminate maturities, could have a material effect on our business 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 the Basel III final rule, and of other regulatory initiatives related to capital or liquidity, on State Street and State Street Bank are subject to further regulatory guidance, action or rule-making.

### Systemic Importance

As a G-SIB, we generally expect to be held to the most stringent provisions under the Basel III final rule. For example, on August 14, 2015, the Federal Reserve published a final rule on the implementation of capital surcharges for U.S. G-SIBs, and on December 15, 2016, the Federal Reserve released its final rule, which we refer to as the "TLAC final rule," on TLAC, LTD and clean holding company requirements for U.S. G-SIBs. For additional information on these requirements, refer to the "Regulatory Capital Adequacy and Liquidity Standards" section under "Supervision and Regulation" included under Item 1, Business, of this Form 10-K.

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Not all of our competitors have similarly been designated as systemically important, and therefore some of our competitors are not subject to the same additional capital requirements.

**CCAR**

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 Comprehensive Capital Analysis and Review process. That process is used by the Federal Reserve to evaluate our management of capital, the adequacy of our regulatory capital and the potential requirement for us to maintain capital levels above regulatory minimums. The planned capital actions in our capital plan, including stock purchases and dividends, may be objected to by the Federal Reserve, potentially requiring us 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 unanticipated uses of capital could result in a change in our capital plan and its associated capital actions and may require resubmission of the capital plan to the Federal Reserve for its non-objection. We are also subject to asset quality reviews and stress testing by the ECB and may in the future be subject to similar reviews and testing by other regulators.

Our implementation of the new 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 new capital and liquidity requirements under the Basel III final rule, the Dodd- Frank Act or other 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 purchase 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. 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 “Business - Supervision and Regulation - Regulatory Capital Adequacy and

Liquidity Standards” included under Item 1, Business, and “Financial Condition - Capital” in Management's Discussion and Analysis included under Item 7 of this Form 10-K.

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 2016 total fee revenue represented approximately 80% of our total revenue. Fee revenue generated by our investment servicing and investment management businesses is augmented by trading services, securities finance and processing fees and other revenue.

The level of these fees is influenced by several factors, including the mix and volume of our assets under custody and administration and our assets under management, the value and type of securities positions held (with respect to assets under custody) and the volume of portfolio transactions, and the types of products and services used by our clients.

For example, reductions in the level of economic and capital markets activity tend to have a negative effect on our fee revenue, as these often result in reduced asset valuations and transaction volumes. 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.

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.

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.

Since 2009, multiple European economies have been experiencing, and may continue to experience, negative or slow economic growth and difficulties in financing their deficits and servicing their outstanding debt. The slow pace of economic expansion, concerns around sovereign debt sustainability and

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the associated instability in these economies and their major financial institutions have contributed to ongoing volatility in the financial markets. In 2016, the European Central Bank continued to augment its sweeping stimulus measures by maintaining interest rates below zero, boosting and expanding the scope of its asset purchase program and employing other quantitative easing measures to support economic growth, employment and inflation. The divergence between U.S. and European monetary policy has led to increased uncertainty around the strength of the European economies and strength of the Euro.

Contributing to fears about European stability were rising populist sentiments in a number of countries, evidenced by key events in 2016 such as the United Kingdom's vote to exit the Eurozone and an Italian referendum rejecting constitutional change which resulted in the resignation of the Italian Prime Minister. If populist groups gain political momentum and push back against austerity measures adopted by numerous European governments, concerns regarding European sovereign debt may reemerge or other countries may reevaluate their participation in the E.U. or the Euro zone. As attitudes towards economic austerity programs in Europe continue to diverge, the political and economic environment is becoming increasingly complex.

Europe has continued to experience an unprecedented mass-migration of refugees from the Middle East and Africa, which is placing pressure on governments, creating divisions in society and contributing to economic stresses. Finally, the threat of terrorism remains high across Europe with recent attacks in Belgium, France and Germany compounding political and economic uncertainty.

The current geo-political and economic uncertainty create ongoing concern regarding Europe's economic future, persistently high levels of unemployment in many countries, the stability of the Euro, European financial markets generally and certain institutions in particular. Given the scope of our European operations, clients and counterparties, disruptions in the European financial markets, the failure to fully resolve sovereign debt concerns, continued recession or below baseline growth in significant European economies, further attempts by countries to abandon the Eurozone, sub-national independence movements and upcoming elections, the failure of a significant European financial institution, even if not an immediate counterparty to us, persistent weakness in the Euro or prolonged negative interest rates, could have a material adverse impact on our consolidated results of operations or financial condition.

Geopolitical and economic conditions and developments could adversely affect us, particularly if we face increased uncertainty and

unpredictability in managing our businesses.

Global credit and other financial markets can suffer from substantial volatility, illiquidity and disruption, particularly as global monetary authorities begin to withdraw monetary policy easing measures. 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 and emerging markets, such developments could have an adverse affected on our business, as well as the businesses of our clients and our significant counterparties. These factors could be compounded by tighter monetary conditions, trade restrictions and political uncertainty in U.S. and internationally. This environment, the potential for resurgent economic difficulties, the possibility of continuing or additional disruptions and the regulatory and enforcement environment resulting from events in recent years have also affected overall confidence in financial institutions, could further exacerbate liquidity issues and lead to anomalies in the pricing of risk within the securities markets, increase the uncertainty and unpredictability we face in managing our businesses and have an adverse effect on our consolidated results of operations and financial condition.

Numerous global financial services firms and the sovereign debt of some nations experienced credit downgrades in 2016 due to continued weak economic performance and idiosyncratic risk factors. The occurrence of disruptions in global markets, the worsening of economic conditions, continued economic or political uncertainty in Europe or in emerging markets, volatility in the price of oil, or prolonged slower rates of growth in China and other regions, could adversely affect our businesses and the financial services industry in general, and also increase the difficulty and unpredictability of aligning our business strategies, our infrastructure and our operating costs in light of current and future market and economic conditions.

Market disruptions can adversely affect our consolidated results of operations if the value of assets under custody, administration or management decline, while the costs of providing the related services remain constant or increase. 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

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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 investment portfolio holdings. For example, throughout 2016 the effect of a stronger U.S. dollar, particularly relative to the Euro, reduced our servicing fee and management fee revenue and also reduced our expenses. 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. We also 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 or, if our control environment fails to keep pace with product expansion, result in increased risk of loss from such businesses.

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 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. In particular, the Federal Reserve's TLAC final rule, which goes into effect on January 1, 2019, will require State Street to maintain a minimum amount of eligible LTD outstanding, and we may need to issue more long-term debt in order to meet the minimum eligible LTD requirement.

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, including our receipt of waivers from the SEC to maintain the applicability of relevant securities law exemptions for which we would otherwise be disqualified. 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, if needed, on terms acceptable to us. Any diminished ability to raise additional capital, 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.

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 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. 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, including the effects of market or regulatory developments, our announced or rumored business developments or consolidated results of operations, a decline in our stock price or a reduced 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 services we provide them or seek other service providers; or our prospective clients may select other service providers, all of which may have adverse effects on our reputation.

The risk that we may be perceived as less creditworthy relative to other market participants is higher in the current market environment, in which the



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consolidation, and in some instances failure, of financial institutions, including major global financial institutions, have 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.

**Operational, Business and Reputational Risks**

We face extensive and changing government regulation in the U.S. and in foreign 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 in 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, State Street is 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 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, State Street may also engage in a broader range of activities considered to be "financial in nature." Financial holding company status requires State Street and its banking subsidiaries to remain well capitalized and well managed and 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.

Various proposals are being or may be made or are under consideration for legislative, regulatory or

policy amendments or changes following the recent elections in the United States, which resulted in the combination of a new President of the United States and the majority of both Houses of Congress all being members of the same political party. The nature, scope and content of any such amendments or changes, whether implemented by legislative, regulatory, executive or judicial action or interpretation, and any potential related effects on our businesses, results of operations or financial condition, including, without limitation, increased expenses or changes in the demand for our services, or on the U.S.-domestic or global economies or financial markets, are uncertain. 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" included under Item 1, Business, of this Form 10-K.

**Dodd-Frank Act**

The Dodd-Frank Act, which became law in July 2010, has had, and continues to have, a significant impact on the regulatory structure of the global financial markets and has imposed, and is expected to continue to impose, significant additional costs on us. Several elements of the Dodd-Frank Act, such as the Volcker rule and enhanced prudential standards for financial institutions designated as SIFIs, impose or are expected to impose significant additional operational, compliance and risk management costs both in the near-term, as we develop and integrate appropriate systems and procedures, and on a recurring basis thereafter, as we monitor, support and refine those systems and procedures.

A number of regulations implementing the Dodd-Frank Act that are not yet final may be finalized in 2017, with compliance dates soon thereafter, and, as a result of and together with regulatory change in Europe, the costs and impact on our operations of the post-financial crisis regulatory reform are accelerating. We may not anticipate completely all areas in which the Dodd-Frank Act or other regulatory initiatives could affect our business or influence our future activities or the full effects or extent of related operational, compliance, risk management or other costs.

Other provisions of the Dodd-Frank Act and its implementing regulations, such as new rules for swap market participants, additional regulation of financial system utilities, the designation of non-bank institutions as SIFIs, and further requirements to facilitate orderly liquidation of large institutions, could adversely affect our business operations and our competitive position, and could also negatively affect the operational and competitive positions of our clients. The final effects of the Dodd-Frank Act on our business will depend largely on the scope and timing

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of the implementation of the Dodd-Frank Act by regulatory bodies, which in many cases have been delayed, and the exercise of discretion by these regulatory bodies.

Resolution Planning

State Street Corporation, like other bank holding companies with total consolidated assets of \$50 billion or more, periodically submits a plan for its rapid and orderly resolution under the U.S. Bankruptcy Code 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. We have and will continue to focus management attention and resources to meet regulatory expectations with respect to resolution planning. In the event of material financial distress or failure, our preferred resolution strategy, referred to as the single point of entry strategy, provides for the recapitalization of State Street Bank and our other material entities by the parent company (for example, by forgiving inter-company indebtedness of State Street Bank owed, directly or indirectly, to the parent company), and potentially by capital contribution from a newly formed direct subsidiary of the parent company that would be pre-funded by the parent company, prior to the parent company's entry into bankruptcy proceedings. The recapitalization, if successful, is intended to enable State Street Bank and our other material entities to continue their operations. The amount of assets available to support State Street Bank and our other material entities is anticipated to vary over time and may not be sufficient to meet their liquidity and capital needs.

The parent company and the newly formed direct subsidiary would obligate themselves, under a contract we refer to as a support agreement and using up to substantially all of their resources, to recapitalize and/or provide liquidity to State Street Bank and our other material entities in the event of material financial distress. The parent company and the newly formed direct subsidiary would secure their obligations under the support agreement by entering into a contract known as a security agreement and by pledging their rights in the assets that the parent company and the newly formed direct subsidiary would use to fulfill their obligations under the support agreement to State Street Bank and other material entities. The parent company intends to pre-fund the newly formed direct subsidiary upon the execution of the support agreement by transferring assets to it that will be available for the subsequent provision of capital and liquidity to State Street Bank and our

other material entities. These contractual, funding and related arrangements are expected to be in place prior to July 1, 2017 to aid State Street in meeting its regulatory obligations.

Under this single point of entry strategy, State Street Bank and our other material entities would not themselves enter into resolution proceedings. These entities would instead be transferred to a newly organized holding company held by a reorganization trust for the benefit of the parent company's claimants. The single point of entry 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.

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. In the event that such recapitalization actions were taken and were unsuccessful in stabilizing State Street Bank, equity and debt holders of the parent company would likely, as a consequence, be in a worse position than if the recapitalization did not occur. An expected effect of the single point of entry strategy and the TLAC final rule is that State Street's losses will be imposed on the holders of eligible long-term debt and other forms of eligible TLAC issued by the parent company, as well as on other parent company creditors, before any of its losses are imposed on the holders of the debt securities of the parent company's operating subsidiaries or any depositors or creditors thereof or before U.S. taxpayers are put at risk.

The requirements of the single point of entry strategy and the support agreement may adversely impact our ability to issue, or to competitively price, additional debt and equity securities.

We are required to submit our next annual resolution plan to the Federal Reserve and the FDIC on July 1, 2017. The Federal Reserve and the FDIC may determine that our 2017 resolution plan is not credible or would not facilitate an orderly resolution due to a number of factors, including, but not limited to: (1) challenges we may experience in interpreting and addressing regulatory expectations; (2) any failure to implement remediation actions in a timely manner; (3) the complexities in developing and implementing a comprehensive plan to resolve a global custodial bank; and (4) related costs and dependencies. If our resolution plan submission filed on July 1, 2017, or any future submission, fails to meet regulatory expectations to the satisfaction of the Federal Reserve and the FDIC, we could be subject to more stringent capital, leverage or liquidity

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requirements, restrictions on our growth, activities or operations, or we could be required to divest certain of our assets or operations.

### Volcker Rule

U.S. banking regulators have issued final regulations to implement the Volcker rule. The Volcker rule prohibits banking entities, including us and our affiliates, from engaging in specified prohibited proprietary trading activities, subject to exemptions, including for market-making-related activities and risk-mitigating hedging. The Volcker rule also requires banking entities to either restructure or divest specified ownership interests in, and relationships with, covered funds, within the meaning of the final Volcker rule regulations.

Whether various investment securities or structures, such as CLOs, constitute covered funds, as defined in the final Volcker rule regulations, and do not benefit from the exemptions provided in the Volcker rule, and whether a banking organization's investments therein constitute ownership interests, remain subject to (1) market, and ultimately regulatory, interpretation, and (2) the specific terms and other characteristics relevant to such investment securities and structures. We hold significant investments in CLOs. In the event that we or our banking regulators conclude that such investments in CLOs, or other investments, are covered funds, we may be required to divest such investments. If other banking entities reach similar conclusions with respect to similar investments held by them, the prices of such investments could decline significantly, and we may be required to divest such investments at a significant discount compared to the investments' book value. This could result in a material adverse effect on our consolidated results of operations or on our consolidated financial condition in the period in which such a divestiture occurs.

The final Volcker rule regulations also require banking entities to establish extensive programs designed to ensure compliance with the restrictions of the Volcker rule. We have established a compliance program which complies with the final Volcker rule regulations as currently in effect. Such compliance program restricts our ability in the future to service various types of funds, in particular covered funds for which SSGA acts as an advisor and specified types of trustee relationships. Consequently, Volcker rule compliance entails both the cost of a compliance program and loss of certain revenue and future opportunities.

### Systemic Importance

Our qualification under the Dodd-Frank Act in the U.S. as a SIFI, and our designation by the FSB as a G-SIB, to which certain regulatory capital surcharges may apply, will subject us to incrementally higher capital and prudential requirements, increased

scrutiny of our activities and potential further regulatory requirements or increased regulatory expectations than 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 we comply with outsourcing oversight requirements, including with respect to affiliated entities, and data security standards of multiple jurisdictions. Regulatory scrutiny of compliance with these and other laws and regulations is increasing. State Street faces sometimes inconsistent laws and regulations in 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.

In addition to U.S. regulatory initiatives such as the Dodd-Frank Act and implementation of the Basel III final rule, including the Basel III SLR and the proposed NSFR, we are further affected by non-U.S. regulatory initiatives, including, but not limited to, the AIFMD, the BRRD, the EMIR, the UCITS directives, MiFID II and MiFIR, the DPD and GDPR and the upcoming new E.U. General Data Protection Regulations. Recent, proposed or potential

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regulations in the U.S. and E.U. with respect to money market funds, short-term wholesale funding, such as repurchase agreements or securities lending, or other “shadow banking” activities, could also adversely affect not only our own operations but also the operations of the clients to which we provide services. In the E.U., the AIFMD and UCITS V increase the responsibilities and potential liabilities of custodians and depositories to certain of their clients for asset losses.

EMIR requires the reporting of all derivatives to a trade repository, the mandatory clearing of certain derivatives trades via a central counterparty and risk mitigation techniques for derivatives not cleared via a central counterparty. State Street is likely to become indirectly subject to EMIR's risk mitigation obligations when it transacts with E.U. counterparties. EMIR will continue to impact our business activities, and increase costs, in various ways, some of which may be adverse. Further, the European Commission's proposal to introduce a proposed financial transaction tax or similar proposals elsewhere, if adopted, could materially affect the location and volume of financial transactions or otherwise alter the conduct of financial activities, any of which could have a material adverse effect on our business and on our consolidated results of operations or financial condition.

**Consequences of Regulatory Environment and Compliance Risks**

The Dodd-Frank Act and international regulatory changes 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 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 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 these 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 below, “Our businesses may be adversely affected by regulatory enforcement and litigation.”

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

To calculate our credit, market and operational risk exposures, our total risk-weighted assets and our capital ratios for regulatory purposes, the Basel III final rule involves the use of current and historical data, including our own loss data and claims experience 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

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components involve the exercise of judgment based, among other factors, on 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.

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 risk-weighted assets 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 UOMs, 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 our advanced systems, whether resulting from changes in data inputs, regulation or regulatory supervision or interpretation, State Street-specific 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 risk-weighted assets and our capital ratios calculated under the Basel III final 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.

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

In the ordinary course of our business, we are subject to various regulatory, governmental and law enforcement inquiries, investigations and subpoenas. These may be directed generally to participants in the businesses or markets in which we are involved or may be specifically directed at us. In these matters, claims for disgorgement, the imposition of civil or criminal penalties or sanctions and the imposition of other remedial sanctions are possible, any of which could result in increased expenses, client loss or harm to reputation.

From time to time, our clients, or the government on their or its own behalf, make claims and take legal action relating to, among other things, our performance of our fiduciary or contractual responsibilities. Often, the announcement or other publication of such a claim or action, or of any related settlement, may spur the initiation of similar claims by other clients or governmental parties. In any such claims or actions, demands for substantial monetary damages may be asserted against us and may result in financial liability, criminal sanction, changes in our business practices or an adverse effect on our reputation or on client demand for our products and services. 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 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.

In many cases, we are required to self-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 bring the matter to the attention of the appropriate authorities, we may nonetheless experience regulatory fines, liabilities to clients, harm to our reputation or other adverse effects in connection with self-reported matters. 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.

Our operations are subject to regular and ongoing inspection by our bank and other financial market regulators in the U.S. and internationally. In addition, under the deferred prosecution agreement we entered into with the DOJ in early

2017 (referenced in connection with the Transition Management matter discussed below), we have agreed to retain an independent compliance consultant and compliance monitor which will, among other things, evaluate the effectiveness of our compliance controls and business ethics and make related recommendations. Other governmental authorities may impose similar monitors or compliance consultants as part of resolving investigations or other matters. As a result of such inspections and monitoring activities, governmental authorities may identify areas in which we may need

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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. 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.

Further, we may become subject to regulatory scrutiny, inquiries or investigations associated with broad, industry-wide concerns, and potentially client- related inquiries or claims, whether or not we engaged in the relevant activities, and could experience associated increased costs or harm to our reputation.

Our recent experience with matters of this nature includes:

**Invoicing Matter.** In December 2015, we announced a review of the manner in which we invoiced certain expenses to some of our Investment Servicing clients, primarily in the United States, during an 18-year period going back to 1998, and our determination that we had incorrectly invoiced clients for certain expenses. We informed our clients in December 2015 that we will pay to them the amounts we concluded were incorrectly invoiced to them, plus interest. We currently expect to pay at least \$340 million (including interest), in connection with that review, which is ongoing. We are implementing enhancements to our billing processes, and we are reviewing the conduct of our employees and have taken appropriate steps to address conduct inconsistent with our standards, including, in some cases, termination of employment. We are also evaluating other billing practices relating to our Investment Servicing clients, including calculation of asset-based fees. 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 responding to requests for information from, and are cooperating with investigations by, governmental authorities on these matters, including the civil and criminal divisions of the DOJ, the SEC, the

Department of Labor and the Massachusetts Attorney General, which could result in significant fines or other sanctions, civil and criminal, against us. The severity of such fines or other sanctions could take into account factors such as the amount and duration of our incorrect invoicing, the government's assessment of the conduct of our employees, as well as prior conduct such as that which resulted in our recent deferred prosecution agreement in connection with transition management services and our recent settlement of civil claims regarding our indirect foreign exchange business. Any of the foregoing could have a material adverse effect on our reputation or business, including the imposition of restrictions on the operation of our business or a reduction in client demand.

**Transition Management.** In January 2014, we entered into a settlement with the FCA, pursuant to which we paid a fine of £22.9 million (approximately \$37.8 million), as a result of our having charged six clients of our U.K. transition management business during 2010 and 2011 amounts in excess of the contractual terms. The SEC and the DOJ opened separate investigations into this matter. In April 2016, the U.S. Attorney's office in Boston charged two former employees in our transition management business with criminal fraud in connection with their alleged role in this matter, and, in May 2016, the SEC commenced a parallel civil enforcement proceeding against one of these individuals. In January 2017, we announced that we had entered into a deferred prosecution agreement with the DOJ and the United States Attorney for the District of Massachusetts. Under the terms of the agreement with the DOJ, State Street will, among other actions, pay a penalty of \$32.3 million and enter into a deferred prosecution agreement. Pursuant to the terms of the deferred prosecution agreement, State Street has agreed to retain an independent compliance consultant and compliance monitor for a term of three years (subject to extension). State Street is in discussions with the SEC Staff regarding a resolution of the matter and has reached an agreement with the SEC Staff to pay a penalty of \$32.3 million (equal to the penalty being paid to the DOJ). Resolution of the matter is subject to completion of negotiations with the SEC Staff on the other terms of the settlement, followed by review and consideration by the SEC.

Foreign Exchange. In July 2016, we

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announced that we had entered into settlement agreements with the DOJ, the Department of Labor and the Massachusetts Attorney General and the plaintiffs in three putative class action lawsuits with respect to investigations and claims alleging that our indirect foreign exchange rates (including the differences between those rates and indicative interbank market rates at the time we executed the trades) prior to 2008 were not adequately disclosed or were otherwise improper. Those settlements and a settlement with the SEC became final in the fourth quarter of 2016. The total amounts paid in these settlements were \$575 million. In addition to these settlement costs, some investment managers have elected to use other foreign exchange execution methods offered by us or have decided not to use our foreign exchange execution methods. We intend to continue to offer our custody clients a range of execution options for their foreign exchange needs; however, the range of services, costs and profitability vary by execution option. We cannot provide assurance that clients or investment managers who choose to use less or none of our indirect foreign exchange trading, or to use alternatives to our existing indirect foreign exchange trading, will choose the alternatives offered by us. Accordingly, our revenue earned from providing these foreign exchange trading services may decline. Moreover, there can be no assurance that other, potentially material, claims relating to our indirect foreign exchange business will not be asserted against us in the United States or elsewhere. An adverse outcome with respect to such other, unasserted claims could have a material adverse effect on our reputation, our consolidated results of operations or our consolidated financial condition.

**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, AML regulations and U.S. economic sanctions regulations promulgated by OFAC. As part of this enforcement action, we are required to, among other things, implement improvements to our compliance programs and to retain an independent firm to conduct a review of account and transaction activity covering a prior three-month period to evaluate whether any suspicious activity not previously reported should have been identified and reported in accordance with applicable regulatory requirements. To the extent deficiencies in our historical reporting are identified as a result of the transaction review or if we fail to comply with the terms of the written agreement, we may become subject to fines and other regulatory sanctions, which may have a material adverse effect on us.

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 or is at a preliminary stage. We may be unable to accurately estimate our exposure to litigation risk when we record reserves for probable and estimable loss contingencies. As a result, any reserves we establish to cover any settlements, judgments or regulatory fines may not be sufficient to cover our actual financial exposure. 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.

We are subject to variability in our assets under custody and 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.

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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 asset 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 assets under custody and administration or our assets under management, as applicable, in the relevant period. Our assets under management or administration are also affected by decisions by institutional owners to favor or disfavor certain investment instruments or categories. In 2016, for example, we saw redemptions from hedge funds, emerging markets and actively managed advisers, as to which are fees are generally higher, in favor of ETFs, passively managed products and developed markets, as to which our fees are generally lower. As our fee revenue is largely reliant on the levels of our assets under custody and administration and assets under management, these changes in assets levels could have a corresponding significant effect on our results of operations in the relevant period. Similarly, if one or more clients changes the asset class in which a significant portion of assets are invested (e.g., by shifting investments from emerging markets to fixed income), 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. 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 business lines. 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.

Our business may be negatively affected by adverse business decisions or our failure to properly implement or execute strategic programs and priorities.

In order to maintain and grow our business, we must continuously make strategic decisions about our current and future business plans, including plans to target cost initiatives and enhance operational processes and efficiencies, plans to improve existing and to develop new service offerings and enhancements, plans for entering or exiting business lines or geographic markets, plans for acquiring or disposing of businesses, plans to build new systems, migrate from existing systems and other infrastructure

and to address staffing needs.

In October 2015, we announced State Street Beacon, a multi-year program to digitize our business, deliver significant value and innovation for our clients and lower expenses across the organization. Operational process transformations, such as State Street Beacon, entail significant risks. The program, and any future strategic or business plan we implement, may prove to be inadequate to achieve its objectives, may not be responsive to industry or market changes, may result in increased or unanticipated costs, may result in earnings volatility, may take longer than anticipated to implement, may involve elements reliant on the performance of third parties and may not be successfully implemented. In addition, our efforts to manage expenses may be matched or exceeded by our competitors. Any failure to implement State Street Beacon in whole or in part may, among other things, reduce our competitive position, diminish the cost effectiveness of our systems and processes or provide an insufficient return on our associated investment. In particular, elements of the program include investment in systems integration and new technologies, including straight-through-processing, to increase global servicing capabilities, reduce expenses and enhance the client experience, 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 security of our data systems. The transition to new operating processes and technology infrastructure may cause disruptions in our relationships with clients and employees and may present other unanticipated technical or operational hurdles. As a result, we may not achieve some or all of the cost savings or other benefits anticipated through the program. In addition, other systems development initiatives, which are not included in State Street Beacon, may not have access to the same level of 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 permit us to optimize our use of capital or to reduce the risk of operating error. We may not have the resources to pursue all of these objectives, including State Street Beacon, simultaneously.

The success of the program and our other strategic plans could also be affected by market disruptions and unanticipated changes in the overall market for financial services and the global economy. We also may not be able to abandon or alter these plans without significant loss, as the implementation of our decisions may involve significant capital outlays, often far in advance of when we expect to generate any related revenues or cost expectations. Accordingly, our business, our consolidated results of

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operations and our consolidated financial condition may be adversely affected by any failure or delay in our strategic decisions, including the program or elements thereof. For additional information about the program, see "Expenses" in "Consolidated Results of Operations" included under Item 7, Management's Discussion and Analysis, of this form 10-K. 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. Adverse publicity, regulatory actions or fines, litigation, operational failures 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 several years 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 revenue from that business and, with the related deferred prosecution agreement with the DOJ entered into in early 2017, these effects have the potential to continue. The client invoicing matter we announced in December 2015 has the potential to result in similar effects. 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.

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

We may fail to identify and manage risks related to a variety of aspects of our business, including, but not limited to, operational risk, 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. While we currently believe that our risk management process is effective, we cannot provide assurance that those controls, procedures, policies and systems will always be adequate to identify and manage the internal and external, including service provider, risks in our

various businesses. The risk of individuals, either employees or contractors, engaging in conduct harmful or misleading to clients or 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. The financial and reputational impact of control or conduct failures can be significant. Persistent or repeated issues with respect to controls or individual conduct may raise concerns among regulators regarding our culture, governance and control environment. 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 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. If our risk framework is ineffective, either because it fails to keep pace with changes in the financial markets, regulatory or industry requirements, 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.

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 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.

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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.

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 model risk management 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.

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 actively strive to achieve cost savings by shifting certain business processes and business support functions to lower-cost geographic locations, such as India, Poland and China, and by outsourcing. We may accomplish this shift by establishing operations in lower-cost locations, by outsourcing to vendors in various jurisdictions or through joint ventures. This effort exposes us to the risk that we may not maintain service quality, control or effective management within these operations, to the 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 third parties and outsourcing providers. In addition, we are exposed 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. 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 concern exist with respect to maintaining a high level of service delivery. 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. Such relocation or outsourcing of functions also entails costs, such as technology, real estate and restructuring expenses, that may offset or exceed the expected financial benefits of the relocation or

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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 United States or other jurisdictions impose tax and other measures which seek to discourage the use of lower cost jurisdictions.

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 SSGA. 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 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 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.

Our reputation and business prospects may be damaged if our clients incur substantial losses in investment pools in which we act as agent 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. Our willingness in the future 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 could expose us 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

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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. While it is currently not our intention, and we do not have contractual or other obligations to do so, we have in the past guaranteed, and may in the future guarantee, liquidity to investors desiring to make withdrawals from a fund or otherwise take actions to mitigate the impact of market conditions on our clients and if permitted by applicable laws. Making a significant amount of such guarantees could adversely affect our own consolidated liquidity and financial condition. 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. The extreme volatility in the equity markets has led to the potential for the return on passive and quantitative products to deviate from their target returns. 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 certain situations, 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.

Development of new products and services may impose additional costs on us and may expose us to increased operational 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 “Blockchain,” and developing potentially industry-changing new products, services and industry standards. The introduction of new products and services can entail significant time and resources, including regulatory

approvals. Substantial risks and uncertainties are associated with the introduction of new products and services, including technical and control requirements that may need to be developed and implemented, rapid technological change in the industry, our ability to access technical and other information from our clients, the significant and ongoing investments required to bring new products and services to market in a timely manner at competitive prices and the preparation of marketing, sales and other materials that fully and accurately describe the product or service and its underlying risks. 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 these risks in the development and implementation of new products or services could have a material adverse effect on our business and reputation, as well as on our consolidated results of operations and financial condition.

We depend on information technology, and any failures of or damage to, attack on or unauthorized access to our information technology systems or facilities, or those of third parties with which we do business, including as a result of cyber-attacks, could result in significant limits on our ability to conduct our operations and activities, costs and reputational damage.

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. 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-attack, 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. Cyber-threats are sophisticated and continually evolving. We may not implement effective systems and other measures to effectively prevent or mitigate the full diversity of cyber-threats or improve and adapt such systems and measures as such threats evolve and advance. Our computer, communications, data processing, networks, backup, business continuity or other operating, information or technology systems

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and facilities, including those that we outsource to other providers, may 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 could adversely affect our ability to process transactions, provide services or maintain systems availability, maintain compliance and internal controls or otherwise appropriately conduct our business activities. For example, there could be sudden increases in transaction or data volumes, electrical or telecommunications outages, cyber-attacks or employee or contractor error or malfeasance.

The third parties with which we do business, which facilitate our business activities 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 regarding the third parties with which they are similarly interconnected or on which they otherwise rely), and our or their business operations and activities may therefore 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, 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. Our status as a global systemically important financial institution 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 therefore could experience significant related costs and 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 must persist in improving and updating our information technology infrastructure. Updating these systems and facilities can require significant resources and often involves implementation,

integration and security risks that could cause financial, reputational and operational harm. However, 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 and inhibit our ability to meet regulatory requirements.

Any theft, loss 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 confidential information (including client transactional data and personal data about our employees, our clients and our clients' clients). Unauthorized access, or failure of our controls with respect to granting access to our systems, may occur, resulting in theft, loss, or other misappropriation of such information. Any theft, loss, 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.

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, other parties, including former employees, with knowledge of our intellectual property may leave and 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. 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 intellectual property of an acquired business may be an important component of the value that we agree to pay for such a business. However, such acquisitions

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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, or that the technology does not have the acceptance in the marketplace that we anticipated.

Competition for our employees 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 people. 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 evolving compensation restrictions applicable, or which may become applicable, to banks and some asset managers and that potentially are not applicable to other financial services firms in all jurisdictions. The unexpected loss of services of key personnel, both in business units and control functions, 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 employees, 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 or to provide other services to them.

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, 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 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, pricing pressure in many of our core businesses, particularly our custodial and investment management services. 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 or are not subject to as stringent capital or other regulatory requirements as are we. 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.

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, technologies or services, develop closer or more collaborative relationships with our business partners, bolster existing servicing capabilities, 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, 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 cost savings; or we may otherwise be

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adversely affected by acquisition-related charges. 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 \$453 million associated with our acquisition of GE Asset Management in July 2016. 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. During 2016, we recorded no impairment in our consolidated statement of income associated with the impairment of acquisition-related goodwill and other intangible assets.

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 and indemnification provisions, these or other risk-mitigating provisions we put in place may not be sufficient to address these liabilities and contingencies. 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 or non-objections 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 of our acquisitions results in risks to our business and other uncertainties.

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, alliances may not

be successful, 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. Acquisitions of investment servicing businesses entail information technology systems conversions, which involve operational risks and may result in client dissatisfaction and defection. Clients of investment servicing businesses that we have acquired may be competitors of our non-custody businesses. The loss of some of these clients or a significant reduction in the revenues generated from them, for competitive or other reasons, could adversely affect the benefits that we expect to achieve from these acquisitions or cause impairment to goodwill and other intangibles.

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 or employees or to achieve the anticipated benefits of the acquisition. Integration efforts may also divert management attention and resources.

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

We enter into long-term contracts to provide middle office or investment manager and alternative investment manager operations outsourcing services to clients, including services related but not limited to certain trading activities, cash reporting, settlement and reconciliation activities, collateral management and information technology development.

We also may enter into longer-term arrangements with respect to custody, fund administration and depository services. 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 the assets under the clients' management, whether

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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.

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.

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, by the FASB or the SEC or otherwise reflected in U.S. GAAP, 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 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.

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 government, state governments, including Massachusetts, and jurisdictions around the world continue to review proposals to amend tax laws, rules and regulations applicable to our business that could have a negative impact on our capital and/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.

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

Acts of terrorism, natural disasters or the emergence of a 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**

We occupy a total of approximately 7.6 million square feet of office space and related facilities worldwide, of which approximately 6.7 million square feet are leased. Of the total leased space, approximately 2.4 million square feet are located in eastern Massachusetts. An additional 1.5 million square feet are located elsewhere throughout the U.S. and in Canada. We lease approximately 2.0 million square feet in the U.K. and elsewhere in Europe, and approximately 900,000 square feet in the Asia/Pacific region.

Our headquarters is located at State Street Financial Center, One Lincoln Street, Boston, Massachusetts, a 36-story office building. Various divisions of our two lines of business, as well as support functions, occupy space in this building. We lease the entire 1,025,000 square feet of the building, and a related underground parking garage, at One Lincoln Street, under 20-year non-cancelable capital leases expiring in 2023. A portion of the lease payments is offset by subleases for approximately 127,000 square feet of the building.

We occupy four buildings located in Quincy, Massachusetts, one of which we own and three of which we lease. The buildings contain a total of approximately 1.2 million square feet (720,000 square feet owned and 470,000 square feet leased). These, along with the Channel Center, an office building located in Boston, of which we lease the entire 500,000 square feet, function as State Street Bank's principal operations facilities.

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We occupy other principal properties located in Connecticut, Missouri, New Jersey, New York, and Ontario, composed of five leased buildings containing a total of approximately 840,000 square feet, under leases expiring from August 2022 to December 2025. Significant properties in the U.K. and Europe include nine buildings located in England, Scotland, Poland, Ireland, Luxembourg, Germany, and Italy, containing approximately 1.3 million square feet under leases expiring from January 2019 through August 2034. Principal properties located in China, Australia and India consist of four buildings containing approximately 491,000 square feet (includes 83,000 square feet under construction in India) under leases expiring from July 2019 through May 2021.

We believe that our owned and leased facilities are suitable and adequate for our business needs. Additional information about our occupancy costs, including our commitments under non-cancelable leases, is provided in Note 20 to the consolidated financial statements included under Item 8., Financial Statements and Supplementary Data, of this Form 10-K.

**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 included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K, and is incorporated herein by reference.

**ITEM 4. MINE SAFETY DISCLOSURES**

Not applicable.



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## EXECUTIVE OFFICERS OF THE REGISTRANT

The following table presents certain information with respect to each of our executive officers as of February 16, 2017.

Name	Age	Position
Joseph L. Hooley	59	Chairman and Chief Executive Officer
Eric W. Aboaf	52	Executive Vice President
Michael W. Bell	53	Executive Vice President and Chief Financial Officer
Jeffrey N. Carp	60	Executive Vice President, Chief Legal Officer and Secretary
Jeff D. Conway	51	Executive Vice President
Andrew J. Erickson	47	Executive Vice President
Kathryn M. Horgan	51	Executive Vice President
Karen C. Keenan	54	Executive Vice President and Chief Administrative Officer
Andrew P. Kuritzkes	56	Executive Vice President and Chief Risk Officer
Louis D. Maiuri	52	Executive Vice President
Sean P. Newth	41	Senior Vice President, Chief Accounting Officer and Controller
Ronald P. O'Hanley	60	Vice Chairman and Chief Executive Officer and President of SSGA
Alison A. Quirk	55	Executive Vice President
Michael F. Rogers	59	President and Chief Operating Officer
Wai-Kwong Seck	61	Executive Vice President
Antoine Shagoury	46	Executive Vice President
George E. Sullivan	56	Executive Vice President

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

Mr. Hooley joined State Street in 1986 and currently serves as Chairman and Chief Executive Officer. He was appointed Chief Executive Officer in March 2010 and Chairman of the Board in January 2011. He served as our President and Chief Operating Officer from April 2008 until December 2014. From 2002 to April 2008, Mr. Hooley served as Executive Vice President and head of Investor Services and, in 2006, was appointed Vice Chairman and Global Head of Investment Servicing and Investment Research and Trading. Mr. Hooley was elected to serve on the Board of Directors effective October 22, 2009.

Eric Aboaf joined State Street in December 2016 as Executive Vice President. 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 February 2003 to March 2015, he served in several senior management positions for Citigroup, a global investment banking and financial services corporation, including the global treasurer and the chief financial officer of the institutional client group, which included the custody business. Mr. Aboaf will assume the role of State Street's Chief Financial Officer no later than April 1, 2017.

Mr. Bell joined State Street in August 2013 as Executive Vice President and Chief Financial Officer.

Prior to joining State Street, Mr. Bell served as senior executive vice president and chief financial officer of Manulife Financial Corporation, a leading Canada-based financial services group with principal operations in Asia, Canada and the U.S., from 2009 to June 2012. From 2002 to 2009, he served as executive vice president and chief financial officer at Cigna Corporation, a global health services organization where he had previously served in several senior management positions, including as President of Cigna Group Insurance. Mr. Bell will be stepping down as chief

financial officer no later than April 1, 2017.

Mr. Carp joined State Street in 2006 as Executive Vice President and Chief Legal Officer. Later in 2006, he was also appointed Secretary. From 2004 to 2005, Mr. Carp served as executive vice president and general counsel of Massachusetts Financial Services, an investment management and research company. From 1989 until 2004, Mr. Carp was a senior partner at the law firm of Hale and Dorr LLP, where he was an attorney since 1982. Mr. Carp served as State Street's interim Chief Risk Officer from February 2010 until September 2010.

Mr. Conway joined State Street more than 25 years ago and since March 2015 has served as Executive Vice President and Chief Executive Officer for Europe, the Middle East and Africa. Prior to that, Mr. Conway held several other management positions within the Company, including leading Global Exchange, State Street's data and analytics business from April 2013 to March 2015. From 2007 to April 2013, Mr. Conway served as the global head of State Street's Investment Management Services business.

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Mr. Erickson joined State Street in April 1991 and since June 2016 has served as the Executive Vice President and head of Investment Services business in the Americas. Prior to this role, Mr. Erickson was the head of the Global Services business in Asia Pacific from April 2014 to June 2016 and prior to that he was Head of North Asia for Global Services from 2010 to 2014. Mr. Erickson has also held several other positions within State Street during his over 25 years with the Company.

Ms. Horgan joined State Street in April 2009 and currently serves as Executive Vice President, since 2012, and Chief Operating Officer, since 2011, for State Street's Global Human Resources division. Prior to this role, Ms. Horgan served as the senior vice president of human resources for State Street Global Advisors. Prior to 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.

Ms. Keenan joined State Street in July 2007 as part of the acquisition of Investors Financial Services (IBT) and since June 2016 has served as the Chief Administrative Officer for State Street, managing cross-organizational initiatives, overseeing data strategy projects, overseeing the Compliance Department and leading key components of regulatory initiatives. Prior to this role, from July 2015 to June 2016, Ms. Keenan led the Global Markets division worldwide, following her role as the head of Global Markets in EMEA from 2012 to 2016. From 2010 to 2012, Ms. Keenan served as the chief strategy officer for Global Markets. While with IBT, she served as chief financial officer during its initial public offering and its early years as a public company.

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 has served as Executive Vice President and head of State Street Global Markets since June 2016 and head of State Street Global Exchange since July 2015. From 2013 to July 2015, he led the 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 May 2009 to October 2013.

Mr. Newth joined State Street in 2005 and has served as Senior Vice President, Chief Accounting Officer and Corporate Controller since October 2014. Prior to that, he held several senior positions in State Street's Accounting Department, including Director of Accounting Policy from 2009 to 2014 and Deputy Controller from April 2014 to October 2014. Before joining State Street, Mr. Newth served in various transaction services, accounting advisory and assurance roles at KPMG, from 1997 to 2005.

Mr. O'Hanley joined State Street in April 2015 and currently serves as Vice Chairman and the Chief Executive Officer and President of State Street Global Advisors, the investment management arm of State Street Corporation. He was appointed Vice Chairman January 1, 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.

Ms. Quirk joined State Street in 2002, and since January 2012 has served as Chief Human Resources and Citizenship Officer. She has served as Executive Vice President and head of Global Human Resources since March 2010. Prior to that, Ms. Quirk served as Executive Vice President in Global Human Resources and held various senior roles in that group.

Mr. Rogers joined State Street in 2007 as part of the IBT acquisition and was appointed President and Chief Operating Officer in December 2014. In that role, he is responsible for State Street Global Markets, State Street Global Services

Americas, Information Technology, Global Operations, and Global Exchange, State Street's data and analytics business. Prior to that, Mr. Rogers served as head of Global Markets and Global Services - Americas since November 2011 and served as head of Global Services, including alternative investment solutions, for all of the Americas since March 2010. Mr. Rogers was previously head of the Relationship Management group, a role which he held beginning in 2009. From State Street's acquisition of Investors Financial Services Corp. in July 2007 to 2009, Mr. Rogers headed the post-acquisition Investors Financial Services Corp. business and its integration into State Street. Before joining State Street at the time of the acquisition, Mr. Rogers spent 27 years at Investors Financial Services Corp. and its predecessors in various capacities, most recently as President beginning in 2001.

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Mr. Seck joined State Street in September 2011 as Executive Vice President and head of Global Markets and Global Services across Asia Pacific. Prior to joining State Street, Mr. Seck was chief financial officer of the Singapore Exchange for eight years. Previously he held senior-level positions in the Monetary Authority of Singapore, the Government of Singapore Investment Corporation, Lehman Brothers and DBS Bank.

Mr. Shagoury joined State Street in November 2015 and has served as Executive Vice President and Global Chief Information Officer (CIO). Prior to joining State Street, Mr. Shagoury had several senior management positions from February 2010 to November 2015 with the London Stock Exchange Group, a British-based stock exchange and financial information company, including the group chief operating officer and chief information officer.

Mr. Sullivan joined State Street in July 2007 as part of the IBT acquisition and has served as Executive Vice President and global head of State Street's Alternative Investment Solutions group. Mr. Sullivan spent 15 years at IBT, where his role was managing director of Global Fund Services.

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## 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 2,753 shareholders of record as of January 31, 2017. The information required by this item concerning the market prices of, and dividends on, our common stock during the past two years is provided under "Quarterly Summarized Financial Information (Unaudited)" included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K, and is incorporated herein by reference.

In June 2016, our Board approved a common stock purchase program authorizing the purchase by us of up to \$1.4 billion of our common stock through

June 30, 2017. As of December 31, 2016, we had approximately \$750 million remaining under that program.

The following table presents purchases of our common stock and related information for each of the months in the quarter ended December 31, 2016. All shares of our common stock purchased during the quarter ended December 31, 2016 were purchased under the above-described Board-approved program. 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. The common stock purchase program does not have specific price targets and may be suspended at any time.

Period:	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Approximate Dollar Value of Shares That May Purchased Under Publicly Announced Program
October 1 - October 31, 2016	184	\$ 70.52	184	\$ 1,062
November 1 - November 30, 2016	2,438	75.29	2,438	878
December 1 - December 31, 2016	1,615	79.54	1,615	750
Total	4,237	76.70	4,237	750

(Dollars in millions, except per share amounts; shares in thousands)

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" included under Item 7, Management's Discussion and Analysis, and in Note 15 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of 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.

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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.

In 2016, our parent company declared aggregate quarterly common stock dividends to its shareholders of \$1.44 per share, totaling approximately \$559 million. In 2015, our parent company declared aggregate quarterly common stock dividends to its shareholders of \$1.32 per share, totaling approximately \$536 million. 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" included under Item 7, Management's Discussion and Analysis, and in Note 15 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of 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" included under Item 1, Business, of this Form 10-K and the risk factor titled "Our business and capital-related activities, including our ability to return capital to shareholders and purchase our capital stock, may be adversely affected by our implementation of the revised regulatory capital and liquidity standards that we must meet under the Basel III final rule, the Dodd-Frank Act and other regulatory initiatives, 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" included under Item 1A, Risk Factors, of this Form 10-K. Information about our equity compensation plans is included under Item 12, Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters, and in Note 18 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K, and is incorporated herein by reference.





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## SHAREHOLDER RETURN PERFORMANCE PRESENTATION

The graph presented below compares the cumulative total shareholder return on State Street's 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 State Street common stock and in each index on December 31, 2011 at the closing price on the last trading day of 2011, and also

assumes reinvestment of common stock dividends. The S&P Financial Index is a publicly available measure of 63 of the Standard & Poor's 500 companies, representing 25 diversified financial services companies, 21 insurance companies, and 17 banking companies. The KBW Bank Index seeks to reflect the performance of banks and thrifts that are publicly traded in the U.S., and is composed of 24 leading national money center and regional banks and thrifts.

	2011	2012	2013	2014	2015	2016
State Street Corporation	\$100	\$119	\$189	\$205	\$177	\$212
S&P 500 Index	100	116	154	175	177	198
S&P Financial Index	100	129	175	201	198	243
KBW Bank Index	100	133	183	200	201	259

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## ITEM 6.SELECTED FINANCIAL DATA

(Dollars in millions, except per share amounts or where otherwise noted)	2016	2015	2014	2013	2012	
<b>YEARS ENDED DECEMBER 31:</b>						
Total fee revenue	\$8,116	\$8,278	\$8,010	\$7,570	\$7,069	
Net interest revenue	2,084	2,088	2,260	2,303	2,538	
Gains (losses) related to investment securities, net <sup>(1)</sup>	7	(6 )	4	(9 )	23	
Total revenue	10,207	10,360	10,274	9,864	9,630	
Provision for loan losses	10	12	10	6	(3 )	
Total expenses	8,077	8,050	7,827	7,192	6,886	
Income before income tax expense	2,120	2,298	2,437	2,666	2,747	
Income tax expense (benefit) <sup>(2)</sup>	(22 )	318	415	616	700	
Net income from non-controlling interest	1	—	—	—	—	
Net income	\$2,143	\$1,980	\$2,022	\$2,050	\$2,047	
Adjustments to net income <sup>(3)</sup>	(175 )	(132 )	(64 )	(34 )	(42 )	
Net income available to common shareholders	\$1,968	\$1,848	\$1,958	\$2,016	\$2,005	
<b>PER COMMON SHARE:</b>						
Earnings per common share:						
Basic	\$5.03	\$4.53	\$4.62	\$4.52	\$4.23	
Diluted	4.97	4.47	4.53	4.43	4.17	
Cash dividends declared	1.44	1.32	1.16	1.04	.96	
Closing market price (at year end)	\$77.72	\$66.36	\$78.50	\$73.39	\$47.01	
<b>AS OF DECEMBER 31:</b>						
Investment securities	\$97,167	\$100,022	\$112,636	\$116,914	\$121,061	
Average total interest-earning assets	199,184	220,456	209,054	178,101	167,615	
Total assets	242,698	245,155	274,089	243,262	222,561	
Deposits	187,163	191,627	209,040	182,268	164,181	
Long-term debt	11,430	11,497	10,012	9,670	7,408	
Total shareholders' equity	21,219	21,103	21,328	20,248	20,824	
Assets under custody and administration (in billions)	28,771	27,508	28,188	27,427	24,371	
Assets under management (in billions)	2,468	2,245	2,448	2,345	2,086	
Number of employees	33,783	32,356	29,970	29,430	29,650	
<b>RATIOS:</b>						
Return on average common shareholders' equity	10.5	% 9.8	% 9.8	% 10.2	% 10.3	%
Return on average assets	0.93	0.79	0.85	0.99	1.06	
Common dividend payout	28.46	28.99	25.03	22.89	22.57	
Average common equity to average total assets	8.2	7.6	8.4	9.6	10.1	
Net interest margin, fully taxable-equivalent basis	1.13	1.03	1.16	1.37	1.59	
Common equity tier 1 ratio <sup>(4)</sup>	11.7	12.5	12.4	15.3	17.1	
Tier 1 capital ratio <sup>(4)</sup>	14.8	15.3	14.5	17.1	19.1	
Total capital ratio <sup>(4)</sup>	16.0	17.4	16.4	19.5	20.6	
Tier 1 leverage ratio <sup>(4)</sup>	6.5	6.9	6.3	6.8	7.1	
Supplementary leverage ratio <sup>(5)</sup>	5.9	6.2	5.6	NA	NA	

NA: Not applicable.

<sup>(1)</sup> Amount for 2012 reflects a \$46 million loss from the sale of our Greek investment securities.

- (2) Amount for 2012 reflects the net effects of certain tax matters (\$7 million benefit) associated with the 2010 Intesa acquisition.
- (3) Amounts represent preferred stock dividends and the allocation of earnings to participating securities using the two-class method.
- (4) Ratios for 2014 through 2016 were calculated in conformity with the advanced approaches provisions of the Basel III final rule. Ratios for 2012 and 2013 were calculated in conformity with the provisions of Basel I. Ratios for 2014 through 2016 are not directly comparable to ratios for prior years. Refer to Note 16 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.
- (5) The supplementary leverage ratio was calculated using the transitional tier 1 capital as calculated under the supplementary leverage ratio provisions of the Basel III final rule as of the date indicated.

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
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We use acronyms and other defined terms for certain business terms and abbreviations, as defined on the acronyms list and glossary included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
AND RESULTS OF OPERATIONS

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

As of December 31, 2016, we had consolidated total assets of \$242.70 billion, consolidated total deposits of \$187.16 billion, consolidated total shareholders' equity of \$21.22 billion and 33,783 employees. We operate in more than 100 geographic markets worldwide, including in 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- and participant-level accounting; daily pricing and administration; master trust and master custody; record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance; our enhanced custody product, which integrates principal securities lending and custody; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; and performance, risk and compliance analytics to support institutional investors.

Investment Management, through SSGA, provides a broad array of investment management, investment research and investment advisory services to corporations, public funds and other sophisticated investors. SSGA offers passive and active asset management strategies across equity, fixed-income, alternative, multi-asset solutions (including OCIO) and cash asset classes. Products are distributed directly and through intermediaries using a variety of investment vehicles, including ETFs, such as the SPDR® ETF brand.

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 included under Item 8, Financial Statements and Supplementary Data, of 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 included under Item

8, Financial Statements and Supplementary Data, of 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; other-than-temporary impairment of investment securities; 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 in 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 (such as capital ratios calculated under regulatory standards scheduled to be effective in the future) that management uses in evaluating our business and activities.

Non-GAAP financial information should be considered in addition to, 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 net interest revenue, a non-GAAP measure, which reports non-taxable revenue, such as interest revenue associated with tax-exempt investment securities, on a fully taxable-equivalent basis, facilitates an investor's understanding and

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AND RESULTS OF OPERATIONS (Continued)

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, financial portfolio performance, dividend and stock purchase programs, expected outcomes of legal proceedings, market growth, acquisitions, joint ventures and divestitures and new technologies, services and opportunities, as well as industry, 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 "Risk Factors" under Item 1A of 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), summary results of semi-annual 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 accessible on the "Investor Relations" section of our corporate website at [www.statestreet.com](http://www.statestreet.com).

We have included our website address in this report as an inactive textual reference only. Information on our website is not incorporated by reference into 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 included under Item 8, Financial Statements and Supplementary Data, of 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,		
	2016	2015	2014
Total fee revenue	\$8,116	\$8,278	\$8,010
Net interest revenue	2,084	2,088	2,260
Gains (losses) related to investment securities, net	7	(6 )	4
Total revenue	10,207	10,360	10,274
Provision for loan losses	10	12	10
Total expenses	8,077	8,050	7,827
Income before income tax expense	2,120	2,298	2,437
Income tax expense (benefit)	(22 )	318	415
Net income from non-controlling interest	1	—	—
Net income	\$2,143	\$1,980	\$2,022
Adjustments to net income:			
Dividends on preferred stock <sup>(1)</sup>	(173 )	(130 )	(61 )
Earnings allocated to participating securities <sup>(2)</sup>	(2 )	(2 )	(3 )
Net income available to common shareholders	\$1,968	\$1,848	\$1,958
Earnings per common share:			
Basic	\$5.03	\$4.53	\$4.62
Diluted	4.97	4.47	4.53
Average common shares outstanding (in thousands):			
Basic	391,485	407,856	424,223

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Diluted	396,090	413,638	432,007
Cash dividends declared per common share	\$1.44	\$1.32	\$1.16
Return on average common equity	10.5 %	9.8 %	9.8 %

(1) Refer to Note 15 of the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K for additional information regarding our preferred stock dividends.

(2) Represents the portion of net income available to common equity allocated to participating securities, composed of fully vested deferred director stock and unvested restricted stock that contain non-forfeitable rights to dividends during the vesting period on a basis equivalent to dividends paid to common shareholders.

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
AND RESULTS OF OPERATIONS (Continued)

The following "Highlights" and "Financial Results" sections provide information related to significant events, as well as highlights of our consolidated financial results for the year ended December 31, 2016 presented in Table 1: Overview of Financial Results. More detailed information about our consolidated financial results, including comparisons of our financial results for the year ended December 31, 2016 to those for the year ended December 31, 2015, is provided under "Consolidated Results of Operations," which follows these sections. In this Management's Discussion and Analysis, where we describe the effects of changes in foreign exchange rates, those effects are determined by applying applicable weighted average foreign exchange rates from the relevant 2015 period to the relevant 2016 results.

Highlights

In 2016, we secured new asset servicing mandates of \$1.41 trillion, of which approximately \$1.01 trillion was installed prior to December 31, 2016 with the remaining amount expected to be installed in 2017 or later. This does not include loss of business which occurs from time to time or changes in assets under custody and administration usually from changes in market values of customer assets or subscriptions or redemptions from our customer investment products. As more fully described under "Servicing Fees" in "Line of Business - Investment Servicing" in this Management's Discussion and Analysis, in 2017 we were notified that one of our large clients will move a portion of its assets currently with State Street to another service provider. The transition will not be fully complete until 2018.

On July 1, 2016, we completed our previously announced acquisition of GE Asset Management ("GEAM") from General Electric Company, for a total purchase price of approximately \$485 million. This acquisition extends our core investment management capabilities, including in the high-growth OCIO markets, and enhances our capabilities in connection with the delivery of value-added solutions to our client base. In 2016, we incurred acquisition and restructuring costs associated with the acquisition of approximately \$53 million and expect to incur approximately \$80 million of such costs through 2018, including the 2016 costs.

Excluding acquired AUM associated with the GEAM operations of \$118 billion as of

December 31, 2016, net outflows of AUM totaled \$42 billion in 2016.

We declared aggregate common stock dividends of \$1.44 per share, totaling approximately \$559 million, in 2016.

During 2016, we purchased approximately 21.1 million shares of our common stock at an average per-share cost of \$64.70 and an aggregate cost of approximately \$1,365 million. We have approximately \$750 million remaining under our current \$1.4 billion common stock purchase program approved by our Board in July 2016.

Additional information with respect to our common stock purchase program is provided under "Capital" in "Financial Condition" in this Management's Discussion and Analysis.

Financial Results

Total revenue in 2016 decreased slightly compared to 2015, primarily due to a decrease in processing fees and other revenue, partially offset by increases in management fee revenue and securities finance revenue.

Servicing fee revenue decreased 2% in 2016 compared to 2015, primarily due to lower global equity markets, partially offset by stronger net new business.

Management fee revenue increased \$118 million, or 10%, in 2016 compared to 2015, primarily due to the impact of the acquired GEAM business and the elimination of money market fee waivers, partially offset by lower global equity markets.

Return on average common shareholders' equity increased to 10.5% in 2016 compared to 9.8% in 2015.

In 2016, we recorded restructuring charges of \$142 million related to State Street Beacon, our multi-year transformation program to digitize our business, deliver significant value and innovation for our clients and lower expenses across the organization. We expect to achieve estimated annual pre-tax net run-rate expense savings of \$550 million by the end of 2020, relative to 2015, all else equal, for full effect in 2021. We generated \$175 million in estimated annual year over year pre-tax expense savings in 2016 related to State Street Beacon, all else equal, and

expect to generate at least \$140 million in additional annual pre-tax expense savings in 2017. These savings include the effects of the targeted staff reductions announced in

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October 2015. The full effect of the 2016 savings will be felt in 2017. Actual expenses may increase or decrease in the future due to other factors.

Total expenses in 2016 were relatively flat compared to 2015, primarily driven by increases in compensation and employee benefits, information systems and communications and restructuring costs, largely offset by decreases in professional services expenses, securities processing costs and lower litigation related expenses.

In December 2016, we incurred a pre-tax charge of \$249 million (\$161 million after tax, or \$0.41 per share) associated with an amendment of the terms of outstanding deferred cash-settled incentive compensation awards for employees below executive vice president to remove continued service requirements, thereby accelerating the future expense that would have been recognized over the remaining term of the awards (1 to 4 years, depending on the award) had the continued service requirement not been removed. The deferred portion of many of our bonus-eligible employees' total compensation had become disproportionate relative to our peer organizations, hindering our efforts to attract and retain talent. The expense that would otherwise have been associated with the amended awards will no longer be reflected in future periods. We expect that the acceleration of the expense will financially enable us to increase the immediate cash component of our mix of incentive compensation in future periods relative to what we have had in recent years and that the impact of increased immediate cash awards in 2017 will offset the benefit of the acceleration of vesting that would otherwise have been recognized in 2017. The expense impact of future immediate and deferred incentive compensation awards will depend upon corporate performance and market, regulatory, and other factors and conditions, including the form of those awards. The change did not affect deferred equity-settled incentive compensation awards (which, in the aggregate, represent a majority of the outstanding deferred compensation awards for the relevant employees), and we expect that future deferred cash-settled incentive compensation awards will retain the continued service requirement. The payment schedule associated with the recent deferred cash-settled incentive compensation awards will no longer be reflected in future periods.

## CONSOLIDATED RESULTS OF OPERATIONS

This section discusses our consolidated results of operations for 2016 compared to 2015, as well as 2015 compared to 2014, and should be read in conjunction with the consolidated financial statements and accompanying notes to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

## Total Revenue

TABLE 2: TOTAL REVENUE

(Dollars in millions)	Years Ended December 31,			%	%
	2016	2015	2014	Change 2016 vs. 2015	Change 2015 vs. 2014
Fee revenue:					
Servicing fees	\$5,073	\$5,153	\$5,108	(2 )%	1 %
Management fees	1,292	1,174	1,207	10	(3 )
Trading services:					
Foreign exchange trading	654	690	607	(5 )	14
Brokerage and other trading services	445	456	477	(2 )	(4 )
Total trading services	1,099	1,146	1,084	(4 )	6
Securities finance	562	496	437	13	14
Processing fees and other	90	309	174	(71 )	78
Total fee revenue	8,116	8,278	8,010	(2 )	3

## Net interest revenue:

Interest revenue	2,512	2,488	2,652	1	(6 )
Interest expense	428	400	392	7	2
Net interest revenue	2,084	2,088	2,260	—	(8 )
Gains (losses) related to investment securities, net	7	(6 )	4	nm	nm
Total revenue	\$10,207	\$10,360	\$10,274	(1 )	1

<sup>nm</sup> Not meaningful

## Fee Revenue

Table 2: Total Revenue, provides the breakout of fee revenue for the years ended December 31, 2016, 2015 and 2014. Servicing and management fees collectively made up approximately 78% of total fee revenue in 2016, compared to approximately 76% and 79% for 2015 and 2014, respectively. The level of these fees is influenced by several factors, including the mix and volume of our assets under custody and administration and our assets under management, the value and type of securities positions held (with respect to assets under custody), the volume of portfolio transactions, and the types of products and services used by our clients, and is generally affected by changes in worldwide equity and fixed-income security valuations and trends in market asset class preferences.

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AND RESULTS OF OPERATIONS (Continued)

Generally, servicing fees are affected by changes in daily average valuations of assets under custody and administration. Additional factors, such as the relative mix of assets serviced, the level of transaction volumes, changes in service level, the nature of services provided, balance credits, client minimum balances, pricing concessions, the geographical location in which services are provided and other factors, may have a significant effect on our servicing fee revenue.

Management fees are generally affected by changes in month-end valuations of assets under management. Management fees for certain components of managed assets, such as ETFs, are affected by daily average valuations of assets under management. 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 assets under management and the investment strategies employed, management fees may reflect other factors as well, including performance fee arrangements, as well as our relationship pricing for clients using multiple services.

Asset-based management fees for actively managed products are generally charged at a higher percentage of assets under management than for passive products. Actively managed products may also include performance fee arrangements which are recorded when the performance period is complete. Performance fees are generated when the performance of certain managed portfolios exceeds benchmarks specified in the management agreements. Generally, we experience more volatility with performance fees than with more traditional management fees.

In light of the above, we estimate, using relevant information as of December 31, 2016 and assuming that all other factors remain constant, that:

A 10% increase or decrease in worldwide equity valuations, on a weighted average basis, over the relevant periods for which our servicing and management fees are calculated, would result in a corresponding change in our total servicing and management fee revenues of approximately 3%; and

A 10% increase or decrease in worldwide fixed income markets, on a weighted average basis, over the relevant periods for which our servicing and management fees are calculated, would result in a corresponding change in our total servicing and management fee revenues of approximately 1%.

See Table 3: Daily, Month-End and Year-End Equity Indices, for selected equity market indices, and see Table 4: Year-End Debt Indices, for selected debt market 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 can therefore differ from the performance of the indices presented.

Daily averages, month-end averages, and year-end indices demonstrate worldwide changes in equity and debt markets that affect our servicing and management fee revenue. Year-end indices affect the values of assets under custody and administration and assets under management as of those dates. The index names listed in the table are service marks of their respective owners.

Further discussion of fee revenue is provided under "Line of Business Information" in this Management's Discussion and Analysis.

TABLE 3: DAILY, MONTH-END AND YEAR-END EQUITY INDICES

Daily Averages of Indices			Averages of Month-End Indices			Year-End Indices		
Years Ended December 31,			Years Ended December 31,			As of December 31,		
2016	2015	% Change	2016	2015	% Change	2016	2015	% Change

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S&P 500®	2,095	2,061	2	%	2,106	2,052	3	%	2,239	2,044	10	%
NASDAQ®	4,988	4,946	1		5,016	4,933	2		5,383	5,007	8	
MSCI EAFE®	1,645	1,809	(9)	)	1,652	1,806	(9)	)	1,684	1,716	(2)	)
MSCI® Emerging Markets	835	918	(9)	)	842	910	(7)	)	862	794	9	

TABLE 4: YEAR-END DEBT INDICES

	As of December 31,		
	2016	2015	% Change
Barclays Capital U.S. Aggregate Bond Index®	1,976	1,925	3 %
Barclays Capital Global Aggregate Bond Index®	451	442	2

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## Net Interest Revenue

See Table 2: Total Revenue, for the breakout of interest revenue and interest expense for the years ended December 31, 2016, 2015 and 2014. NIR was \$2,084 million for 2016 compared to \$2,088 million and \$2,260 million for 2015 and 2014, respectively.

NIR is defined as interest revenue 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, repurchase agreements, loans and leases and other liquid assets, are financed primarily by client deposits, short-term borrowings and long-term debt.

Net interest margin represents the relationship between annualized fully taxable-equivalent net interest revenue and average total interest-earning assets for the period. It is calculated by dividing fully taxable-equivalent net interest revenue by average interest-earning assets. Revenue that is exempt from income taxes, mainly that earned from certain investment securities (state and political subdivisions), is adjusted to a fully taxable-equivalent basis using a federal statutory income tax rate of 35%, adjusted for applicable state income taxes, net of the related federal tax benefit.

TABLE 5: AVERAGE BALANCES AND INTEREST RATES - FULLY TAXABLE-EQUIVALENT BASIS

(Dollars in millions; fully taxable-equivalent basis)	Years Ended December 31,									
	2016			2015			2014			
	Average Balance	Interest Revenue/ Expense	Rate	Average Balance	Interest Revenue/ Expense	Rate	Average Balance	Interest Revenue/ Expense	Rate	
Interest-bearing deposits with banks	\$53,091	\$ 126	.24 %	\$69,753	\$ 208	.30 %	\$55,353	\$ 196	.35 %	
Securities purchased under resale agreements <sup>(1)</sup>	2,558	146	5.70	3,233	62	1.92	4,077	38	.94	
Trading account assets	921	—	—	1,194	1	.08	959	1	.13	
Investment securities	100,738	1,962	1.95	105,611	2,069	1.96	116,809	2,317	1.98	
Loans and leases	19,013	384	2.02	17,948	311	1.73	15,912	266	1.67	
Other interest-earning assets	22,863	61	.27	22,717	10	.04	15,944	7	.05	
Average total interest-earning assets	\$ 199,184	\$ 2,679	1.34	\$ 220,456	\$ 2,661	1.21	\$ 209,054	\$ 2,825	1.36	
Interest-bearing deposits:										
U.S.	\$30,107	\$ 132	.44 %	\$30,819	\$ 51	.16 %	\$21,296	\$ 21	.10 %	
Non-U.S.	95,551	(47 )	(.05 )	102,491	46	.05	109,003	78	.07	
Securities sold under repurchase agreements <sup>(1)</sup>	4,113	1	.02	8,875	1	.01	8,817	—	—	
Federal funds purchased	31	—	—	21	—	—	20	—	—	
Other short-term borrowings	1,666	7	.40	3,826	6	.15	4,177	5	.12	
Long-term debt	11,401	260	2.29	10,301	250	2.43	9,282	245	2.64	
Other interest-bearing liabilities	5,394	75	1.39	6,471	46	.71	7,351	43	.59	
Average total interest-bearing liabilities	\$ 148,263	\$ 428	.29	\$ 162,804	\$ 400	.25	\$ 159,946	\$ 392	.25	
Interest-rate spread			1.05 %			.96 %			1.11 %	
Net interest revenue—fully taxable-equivalent basis		\$ 2,251			\$ 2,261			\$ 2,433		

Net interest margin—fully taxable-equivalent basis	1.13 %	1.03 %	1.16 %
Tax-equivalent adjustment	(167 )	(173 )	(173 )
Net interest revenue—GAAP basis	\$ 2,084	\$ 2,088	\$ 2,260

<sup>(1)</sup> Reflects the impact of balance sheet netting under enforceable netting agreements.

See Table 5: Average Balances and Interest Rates - Fully Taxable-Equivalent Basis, for the breakout of net interest revenue on a fully taxable-equivalent basis for the years ended December 31, 2016, 2015 and 2014. Net interest revenue on a fully taxable-equivalent basis remained flat in 2016 compared to 2015. Benefits during 2016 from the U.S. rate hike in December 2015 were partially offset by lower global interest rates that affected our revenue from certain floating-rate assets, the rate at which payments from the maturity or prepayment of portfolio holdings could be reinvested, and the effect of the stronger U.S. dollar. Average balances in 2016 reflect management actions to reduce the size of our

balance sheet toward the end of the third quarter of 2015. These actions contributed to the reduction of average interest and non-interest bearing deposits of \$15 billion in 2016 compared to 2015. Additionally, 2016 net interest revenue reflects our efforts to manage the size and composition of our investment portfolio as we seek to optimize our capital and liquidity positions in light of the evolving regulatory environment.

During 2016, the effect of the stronger U.S. dollar relative to other currencies, particularly the GBP, also negatively impacted our net interest revenue. The stronger U.S. dollar had the effect of reducing fully taxable-equivalent net interest revenue

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by approximately \$18 million in 2016 compared to 2015.

During 2015, the effect of the stronger U.S. dollar relative to other currencies, particularly the Euro, also negatively impacted our NIR, as we maintained a portion of our investment portfolio in Euro denominated securities. The stronger U.S. dollar had the effect of reducing fully taxable-equivalent NIR by approximately \$54 million in 2015 compared to 2014.

We recorded aggregate discount accretion in interest revenue of \$82 million in 2016, related to the assets we consolidated onto our balance sheet in 2009 from our asset-backed commercial paper conduits. Subsequent to the commercial paper conduit consolidation in 2009, we have recorded total discount accretion in interest revenue as follows:

TABLE 6: TOTAL DISCOUNT  
ACCRETION IN INTEREST  
REVENUE

(In millions)	Discount Accretion in Interest Revenue
Years Ended December 31,	
2009	\$ 621
2010	712
2011	220
2012	215
2013	137
2014	119
2015	98
2016	82
Total discount accretion	\$ 2,204

The timing and ultimate recognition of any applicable discount accretion depends, in part, on factors that are outside of our control, including anticipated prepayment speeds and credit quality. The impact of these factors is uncertain and can be significantly influenced by general economic and financial market conditions. The timing and recognition of any applicable discount accretion can also be influenced by our ongoing management of the risks and other characteristics associated with our investment securities portfolio, including sales of securities which would otherwise generate interest revenue through accretion.

Depending on the factors discussed above, among others, we anticipate that until the former conduit securities remaining in our investment portfolio mature or are sold, discount accretion will continue to contribute to our net interest revenue, though generally in declining amounts. Assuming that we hold them to maturity, all else being equal, we expect the remaining former conduit securities carried in our investment portfolio as of December 31, 2016 to generate aggregate discount accretion in future periods of approximately \$128 million over their remaining terms, with approximately one third of this discount accretion to be recorded through 2019. We

estimate that we will have approximately \$15 million to \$25 million of discount accretion for 2017, excluding the impact of potentially significant unexpected prepayments.

Changes in the components of interest-earning assets and interest-bearing liabilities are discussed in more detail below. Additional detail about the components of interest revenue and interest expense is provided in Note 17 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

Average total interest-earning assets were lower in 2016 compared to 2015 as a result of the previously described management actions.

Even though we have seen reductions in the overall level of excess deposits during the past year, our clients have continued to place elevated levels of deposits with us, as central bank actions have resulted in high levels of liquidity and low global interest rates. We evaluate deposits as either inherent in our relationship with our custodial clients, which we generally invest in our investment portfolio or excess deposits, which we generally deposit with central banks. Deposits with central banks generate low returns. Consequently, the elevated levels of these transient deposits have contributed to a reduction of our net interest margin relative to historical levels.

The deposits with central banks are also included in our total consolidated assets, and lower deposit levels impact our regulatory leverage ratios. If global interest rates increase, we would expect to see some additional decreases in client deposits. In general, we continue to anticipate higher levels of client deposits when compared to longer-term historical trends, irrespective of the interest rate environment, particularly during periods of market stress. If ECB monetary policy continues to pressure European interest rates downward and the U.S. dollar remains strong or strengthens, the negative effects on our net interest revenue may continue or worsen.

Interest-bearing deposits with banks averaged \$53.09 billion in 2016 compared to \$69.75 billion in 2015. These decreases reflect management's effort to reduce elevated client deposit levels as a component of our balance sheet management actions. These lower levels of deposits reflected our maintenance of cash balances at the Federal Reserve, the ECB and other non-U.S. central banks both to satisfy regulatory reserve requirements, and elevated levels of client deposits and our investment of the excess deposits with central banks.

We expect to continue to invest deposits we deem as elevated in investment securities or short-term assets, including central bank deposits,

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depending on our assessment of the underlying characteristics of the deposits.

Loans and leases averaged \$19.01 billion in 2016 compared to \$17.95 billion in 2015. The increase in average loans and leases resulted from growth in loans to municipalities and our continued investment in senior secured loans, partially offset by a reduction in mutual fund lending.

TABLE 7: U.S. AND NON-U.S. SHORT-DURATION ADVANCES

(Dollars in millions)	Years Ended December 31,		
	2016	2015	2014
Average U.S. short-duration advances	\$2,279	\$2,351	\$2,355
Average non-U.S. short-duration advances	1,355	1,404	1,512
Average total short-duration advances	\$3,634	\$3,755	\$3,867
Average short-duration advances to average loans and leases	19	% 21	% 24

Average loans and leases also includes short-duration advances. The decline in the proportion of average short-duration advances to average loans and leases is primarily due to growth in the other segments of the loan and lease portfolio. Short-duration advances provide liquidity to clients in support of their investment activities.

Average other interest-earning assets increased to \$22.86 billion in 2016 from \$22.72 billion in 2015. Our average other interest-earning assets, largely associated with our enhanced custody business, comprised approximately 12% of our average total interest-earning assets in 2016, compared to approximately 10% of our average total interest-earning assets in 2015. The enhanced custody business, which is our principal securities financing business for our custody clients, generates securities finance revenue. The net interest revenue earned on these transactions is generally lower than the interest earned on other alternative investments.

Aggregate average interest-bearing deposits decreased to \$125.66 billion in 2016 from \$133.31 billion in 2015. The lower levels in 2016 were primarily the result of management's actions to reduce both U.S. and non-U.S. transaction accounts, offset by increases in time deposits. Future deposit levels will be influenced by the underlying asset servicing business, client deposit behavior, as well as market conditions, including the general levels of U.S. and non-U.S. interest rates.

Average other short-term borrowings declined to \$1.67 billion in 2016 from \$3.83 billion in 2015. The decrease was the result of the phase-out of our commercial paper program during 2015, consistent with the objectives of our 2016 recovery and resolution plan developed pursuant to the requirements of the Dodd-Frank Act.

Average long-term debt increased to \$11.40 billion in 2016 from \$10.30 billion in 2015. The increase primarily reflected the issuance of \$3.0 billion of senior debt in August 2015 and \$1.5 billion of senior debt in May 2016, which was partially offset by a \$900 million extendible note called at the end of February 2015 and the maturities of \$200 million of senior debt in December 2015, \$400 million of senior debt in January 2016 and \$1.0 billion of senior debt in March 2016.

Average other interest-bearing liabilities were \$5.39 billion in 2016 compared to \$6.47 billion in 2015, primarily the result of changes in the level of cash collateral received from clients in connection with our enhanced custody business, which is presented on a net basis in accordance with enforceable netting agreements.

Several factors could affect future levels of our net interest revenue and margin, including the volume and mix of client liabilities; actions of various central banks; changes in U.S. and non-U.S. interest rates; changes in the various yield curves around the world; revised or proposed regulatory capital or liquidity standards, or interpretations of those standards; the amount of discount accretion generated by the former conduit securities that remain in our investment securities portfolio; the yields earned on securities purchased compared to the yields earned on securities sold or matured; and changes in our enhanced custody business.

Based on market conditions and other factors, including regulatory requirements, we continue to reinvest the majority of the proceeds from pay-downs and maturities of investment securities in highly-rated securities, such as U.S.

Treasury and agency securities, municipal securities, federal agency mortgage-backed securities and U.S. and non-U.S. mortgage- and asset-backed securities. The pace at which we continue to reinvest and the types of investment securities purchased will depend on the impact of market conditions, the implementation of regulatory standards, and other factors over time. We expect these factors and the levels of global interest rates to influence what effect our reinvestment program will have on future levels of our net interest revenue and net interest margin.

**Provision for Loan Losses**

We recorded a provision for loan losses of \$10 million in 2016 compared to \$12 million in 2015 and \$10 million in 2014. The provisions in these periods were recorded in connection with our exposure to non-investment grade borrowers composed of senior secured loans, which we purchased in connection with our participation in loan syndications in the non-investment grade lending market. Additional information about these senior secured loans is

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provided under "Loans and Leases" in "Financial Condition" in this Management's Discussion and Analysis and in Note 4 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

## Expenses

Table 8: Expenses provides the breakout of expenses for the years ended December 31, 2016, 2015 and 2014.

TABLE 8: EXPENSES

(Dollars in millions)	Years Ended			%	%
	December 31,			Change	Change
	2016	2015	2014	2016	2015
				vs.	vs.
				2015	2014
				%	%
Compensation and employee benefits	\$4,353	\$4,061	\$4,060	7	—
Information systems and communications	1,105	1,022	976	8	5
Transaction processing services	800	793	784	1	1
Occupancy	440	444	461	(1 )	(4 )
Acquisition costs	69	20	58	245	(66 )
Restructuring charges, net	140	5	75	nm	(93 )
Other:					
Professional services	379	490	440	(23 )	11
Amortization of other intangible assets	207	197	222	5	(11 )
Securities processing costs	42	79	68	(47 )	16
Regulatory fees and assessments	82	115	74	(29 )	55
Other	460	824	609	(44 )	35
Total other	1,170	1,705	1,413	(31 )	21
Total expenses	\$8,077	\$8,050	\$7,827	—	3
Number of employees at year-end	33,783	32,356	29,970		

<sup>nm</sup> Not meaningful

Compensation and employee benefits expenses increased 7% in 2016 compared to 2015. The increase was primarily due to costs associated with the acceleration of expense related to certain cash settled deferred incentive compensation awards, costs associated with the acquired GEAM business, and higher costs to support regulatory initiatives and new business, partially offset by State Street Beacon savings, the benefit of the stronger U.S. dollar, and lower employee benefit costs due to benefit eliminations for post-retirement medical/life expense.

In December 2016, we recorded a pre-tax charge of \$249 million (\$161 million after tax) associated with an amendment of the terms of outstanding deferred cash-settled incentive compensation awards for employees below executive vice president to remove continued service requirements, thereby accelerating the future expense that would have been recognized over the remaining term of the awards had the continued service requirement not been removed.

Compensation and employee benefits expenses were flat in 2015 compared to 2014.

Information systems and communications expenses increased 8% in 2016 compared to 2015. The increase was primarily related to investments supporting new business and State Street Beacon, the impact of the acquired GEAM business, and costs related to regulatory initiatives.

Information systems and communications increased 5% in 2015 compared to 2014. The increase was primarily related to \$31 million in additional depreciation costs supporting investments associated with regulatory compliance

initiatives and costs to support new business.

Other expenses decreased 31% in 2016 compared to 2015. The decrease was primarily due to lower litigation-related expenses and higher expenses in 2015 associated with the previously disclosed expense billing matter.

Other expenses increased 21% in 2015 compared to 2014. The increase was primarily due to higher legal accruals and regulatory fees, partially offset by a decrease in amortization of intangible assets due to a write off of intangible assets in 2014.

Our compliance obligations have increased due to new regulations in the U.S. and internationally that have been adopted or proposed in response to the 2008 financial crisis. 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 and systems, as well as significant additional implementation and related costs to enhance our regulatory compliance programs. We anticipate that these evolving and increasing regulatory compliance requirements and expectations, including our efforts to complete our 2017 resolution plan (due to be submitted on July 1, 2017), as discussed under "Liquidity Risk Management" in "Financial Condition" included in this Management's Discussion and Analysis, will continue to affect our expenses. Our employee compensation and benefits, information systems and other expenses could increase, as we further adjust our operations in response to new or proposed requirements and heightened expectations.

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## Acquisition Costs

We recorded acquisition costs of \$69 million, \$20 million and \$58 million in 2016, 2015 and 2014, respectively. In 2016, approximately \$53 million of such costs related to our acquisition of GEAM on July 1, 2016. As we integrate GEAM's operations into our business, we expect to incur total merger and integration costs of approximately \$80 million through 2018. For further information on the GEAM acquisition, refer to Note 1 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

## Restructuring Charges

In October 2015, we announced State Street Beacon, a multi-year program to create cost efficiencies through changes in our operational processes and to further digitize our processes and interfaces with our clients. In connection with State Street Beacon, we expect to incur aggregate pre-tax restructuring charges of approximately \$300 million to \$400 million beginning in 2016 through December 31, 2020 to implement State Street Beacon. We estimate those charges will include approximately \$250 million to \$300 million in severance and benefits costs associated with targeted staff reductions (a substantial portion of which will result in future cash expenditures) and approximately \$50 million to \$100 million in information technology application rationalization and real estate actions. We expect to achieve estimated annual pre-tax net run-rate expense savings of \$550 million by the end of 2020, relative to 2015, all else equal, for full effect in 2021. Actual expenses may increase or decrease in the future due to other factors.

In 2016, we recorded restructuring charges of \$142 million related to State Street Beacon.

The following table presents aggregate restructuring activity for the periods indicated.

TABLE 9: RESTRUCTURING CHARGES

(In millions)	Employee Related Costs	Real Estate Consolidation	Asset and Other Write-offs	Total
Balance at December 31, 2013	\$ 52	\$ 47	\$ 7	\$106
Accruals for Business Operations and IT	32	22	21	75
Payments and other adjustments	(45 )	(46 )	(21 )	(112 )
Balance at December 31, 2014	\$ 39	\$ 23	\$ 7	\$69
Accruals for Business Operations and IT	(5 )	(3 )	13	5
Payments and other adjustments	(25 )	(9 )	(17 )	(51 )
Balance at December 31, 2015	\$ 9	\$ 11	\$ 3	\$23
Accruals for Business Operations and IT	(2 )	—	—	(2 )
Accruals for State Street Beacon	94	18	30	142
Payments and other adjustments	(64 )	(12 )	(31 )	(107 )
Balance at December 31, 2016	\$ 37	\$ 17	\$ 2	\$56

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## Income Tax Expense

Income tax expense (benefit) was \$(22) million in 2016 compared to \$318 million in 2015. Our effective tax rate in 2016 was (1.0)% compared to 13.8% in 2015. The 2016 benefit included a reduction in accrued tax expense attributable to retained foreign earnings and tax benefits from capital actions involving our overseas affiliates. Income tax expense was \$318 million in 2015 compared to \$415 million in 2014. The decrease in tax expense was primarily due to deductions for litigation expense recorded in 2015. Our effective tax rate in 2015 was 13.8% compared to 17.1% in 2014 and included effects of the approval of a tax refund for prior years and the reduction of \$61 million for an Italian deferred tax liability, partially offset by a change in New York tax law.

Additional information regarding income tax expense, including unrecognized tax benefits, and tax contingencies are provided in Notes 22 and 13, to the consolidated financial statements under Item 8, Financial Statements and Supplementary Data, of 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. 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 included under Item 8, Financial Statements and Supplementary Data, in this Form 10-K.

## Investment Servicing

TABLE 10: INVESTMENT SERVICING LINE OF BUSINESS RESULTS

(Dollars in millions, except where otherwise noted)	Years Ended December 31,			%	%
	2016	2015	2014	Change 2016 vs. 2015	Change 2015 vs. 2014
Servicing fees	\$5,073	\$5,153	\$5,108	(2 )%	1 %
Trading services	1,052	1,108	1,039	(5 )	7
Securities finance	562	496	437	13	14
Processing fees and other	105	325	179	(68 )	82
Total fee revenue	6,792	7,082	6,763	(4 )	5
Net interest revenue	2,081	2,086	2,245	—	(7 )
Gains (losses) related to investment securities, net	7	(6 )	4	nm	nm
Total revenue	8,880	9,162	9,012	(3 )	2
Provision for loan losses	10	12	10	(17 )	20
Total expenses	6,660	6,990	6,648	(5 )	5
Income before income tax expense	\$2,210	\$2,160	\$2,354	2	(8 )
Pre-tax margin	25 %	24 %	26 %		
Average assets (in billions)	\$225.3	\$246.6	\$234.2		

<sup>nm</sup> Not meaningful

Net interest revenue remained flat in 2016 compared to 2015, as discussed under "Net Interest Revenue" in "Consolidated Results of Operations - Total Revenue" in this Management's Discussion and Analysis.

Total expenses decreased 5% in 2016 compared to 2015, as discussed in more detail under "Expenses" in "Consolidated Results of Operations" included in this Management's Discussion and Analysis and Note 21 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form

10-K.

In December 2015, we announced a review of the manner in which we invoiced certain expenses to certain of our Investment Servicing clients, primarily in the United States, during a period going back to 1998. We have informed our clients that we will pay to them the expenses we concluded were incorrectly invoiced to them, plus interest. In conjunction with that review, which is ongoing, we are implementing enhancements to our billing processes and reviewing the conduct of our employees and have taken appropriate steps to address conduct inconsistent with our standards, including, in some cases, termination of employment. We are also evaluating other aspects of invoicing relating to billing our Investment Servicing clients, including calculation of asset-based fees. See Note 13 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

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## Servicing Fees

Servicing fees decreased 2% in 2016 compared to 2015, primarily due to lower international market levels, net redemptions in the hedge funds that we service, and the effect of the strong U.S. dollar, partially offset by net new business.

Servicing fees generated outside the U.S. were approximately 42% of total servicing fees in each of 2016, 2015, and 2014.

TABLE 11: COMPONENTS OF ASSETS UNDER CUSTODY AND ADMINISTRATION

As of December 31,

(Dollars in billions)	2016	2015	2014	2013	2012	2015-2016 Annual Growth Rate	2012-2016 Compound Annual Growth Rate
Mutual funds	\$6,841	\$6,768	\$6,992	\$6,811	\$5,852	1 %	4 %
Collective funds	7,501	7,088	6,949	6,428	5,363	6	9
Pension products	5,584	5,510	5,746	5,851	5,339	1	1
Insurance and other products	8,845	8,142	8,501	8,337	7,817	9	3
Total	\$28,771	\$27,508	\$28,188	\$27,427	\$24,371	5	4

TABLE 12: COMPOSITION OF ASSETS UNDER CUSTODY AND ADMINISTRATION

As of December 31,

(Dollars in billions)	2016	2015	2014	2013	2012	2015-2016 Annual Growth Rate	2012-2016 Compound Annual Growth Rate
Equities	\$15,833	\$14,888	\$15,876	\$15,050	\$12,276	6 %	7 %
Fixed-income	9,665	9,264	8,739	9,072	8,885	4	2
Short-term and other investments	3,273	3,356	3,573	3,305	3,210	(2)	—
Total	\$28,771	\$27,508	\$28,188	\$27,427	\$24,371	5	4

TABLE 13: GEOGRAPHIC MIX OF ASSETS UNDER CUSTODY  
AND ADMINISTRATION<sup>(1)</sup>

As of December 31,

(In billions)	2016	2015	2014	2013	2012
North America	\$21,544	\$20,842	\$21,217	\$20,764	\$18,463
Europe/Middle East/Africa	5,734	5,387	5,633	5,511	4,801
Asia/Pacific	1,493	1,279	1,338	1,152	1,107
Total	\$28,771	\$27,508	\$28,188	\$27,427	\$24,371

<sup>(1)</sup> Geographic mix is based on the location in which the assets are serviced.

The increase in total assets under custody and administration as of December 31, 2016 compared to December 31, 2015 primarily resulted from stronger net new business and strengthening U.S. equity markets. Asset levels as of December 31, 2016 did not reflect the estimated \$440 billion of new business in assets to be serviced, which was awarded to us in 2016 and prior periods but not installed prior to December 31, 2016. This new business will be reflected in AUCA in future periods after installation and will generate servicing fee revenue in subsequent periods.

With respect to these new assets, we will provide various services, including accounting, bank loan servicing, compliance reporting and monitoring, custody, depository banking services, foreign exchange, 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.

As a result of a decision to diversify providers, one of our large clients will move a portion of its assets, largely common trust funds, currently with State Street to another service provider. We expect to remain a significant service provider to this client. The transition will not be fully complete until 2018 and represents approximately \$1 trillion in assets with respect to which we will no longer derive revenue post-transition.

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## Trading Services

TABLE 14: TRADING SERVICES REVENUE

(Dollar in millions)	Years Ended December 31,			% Change	% Change
	2016	2015	2014	2016 vs. 2015	2015 vs. 2014
Foreign exchange trading:					
Direct sales and trading	\$386	\$410	\$361	(6 )%	14 %
Indirect foreign exchange trading	268	280	246	(4 )	14
Total foreign exchange trading	654	690	607	(5 )	14
Brokerage and other trading services:					
Electronic foreign exchange services	169	175	181	(3 )	(3 )
Other trading, transition management and brokerage	229	243	251	(6 )	(3 )
Total brokerage and other trading services	398	418	432	(5 )	(3 )
Total trading services revenue	\$1,052	\$1,108	\$1,039	(5 )	7

Trading services revenue is composed of revenue generated by FX trading, as well as revenue generated by brokerage and other trading services as noted in Table 14: Trading Services Revenue.

## Foreign Exchange Trading Revenue

We primarily earn FX trading revenue by acting as a principal market-maker. We offer a range of FX products, services and execution models. Most of our FX products and execution services can be grouped into three broad categories, which are further explained below: "direct sales and trading," "indirect FX trading" and "electronic FX services." With respect to electronic FX services, we provide an execution venue, but do not act as agent or principal.

We also offer a range of brokerage and other trading products tailored specifically to meet the needs of the global pension community, including transition management and commission recapture. In addition, we act as distribution agent for the SPDR® Gold ETF. These products and services are generally differentiated by our role as an agent of the institutional investor. Revenue earned from these services is recorded in other trading, transition management and brokerage revenue within brokerage and other trading services revenue.

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 foreign exchange 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 spreads across product mix tend to result in increases or decreases, as the case may be, in client-related FX revenue.

Revenue earned from direct sales and trading and indirect FX trading is recorded in FX trading revenue.

Total FX trading revenue decreased 5% in 2016 compared to 2015, primarily due to lower volumes. In 2015, significant market events in Europe and China stimulated trading activity, in contrast to 2016, which included reduced trading volumes during the first half of 2016 in advance of the U.K.'s referendum to exit from the European Union, or "Brexit." These decreases were partially offset by greater volumes and market-making activity in the fourth quarter of 2016 following the U.S. Presidential election. Total FX trading revenue comprises:

**Direct sales and trading:** We enter into FX transactions with clients and investment managers that contact our trading desk directly. These trades are all executed at negotiated rates. We refer to this activity, and our principal market-making activities, as "direct sales and trading" and it includes many transactions for funds serviced by third party custodians or prime brokers, as well as those funds under custody at State Street. Direct sales and trading revenue represented 59% of total foreign exchange trading revenue in 2016 and 2015. Our direct sales and trading

revenue decreased by 6% in 2016 compared to 2015. The decrease is primarily due to lower volumes.

Indirect FX trading: Clients or their investment managers may elect to route FX transactions to our FX desk through our asset-servicing operation; we refer to this activity as “indirect FX trading” and, in all cases, we are the funds' custodian. We execute indirect FX trades as a principal at rates disclosed to our clients. Estimated indirect sales and trading revenue represented 41% of total foreign exchange trading revenue in 2016 and 2015. We calculate revenue for indirect FX trading using an attribution methodology. This methodology takes into consideration estimated mark-ups/downs and observed client volumes. Direct sales and trading revenue is all other FX trading revenue other than the revenue attributed to indirect FX trading. Our estimated indirect FX trading revenue decreased 4% in 2016 compared to 2015. The decrease mainly resulted from lower volumes.

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

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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 continue to expect that some clients may choose, over time, to reduce their level of indirect FX trading transactions in favor of other execution methods, including either direct sales and trading transactions or electronic FX services which we provide. To the extent that clients shift to other execution methods that we provide, our FX trading revenue may decrease, even if volumes remain consistent.

Total FX trading revenue increased 14% in 2015 compared to 2014, primarily the result of stronger market-making revenue and higher client volumes.

Total brokerage and other trading services revenue decreased 5% in 2016 compared to 2015. Total brokerage and other trading services revenue comprises:

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. Revenue from such electronic FX services decreased 3% in 2016 compared to 2015.

Other trading, transition management and brokerage revenue: Decreased 6% in 2016 compared to 2015, primarily due to lower revenues resulting from the sale of WM/Reuters in the second quarter of 2016.

Total brokerage and other trading services revenue decreased 3% in 2015 compared to 2014, primarily due to a decrease in transition management revenue, partially offset by an increase in other trading revenue.

In recent years, our transition management revenue was adversely affected by compliance issues in our U.K. business during 2010 and 2011, including settlements with the FCA in 2014 and the DOJ in 2017, the latter including a deferred prosecution agreement. The reputational and regulatory impact of those compliance issues continues and may adversely affect our results in future periods. See Note 13 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

Securities Finance

Our securities finance business consists of three components:

- (1) an agency lending program for SSGA-managed investment funds with a broad range of investment objectives, which we refer to as the SSGA 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.
- See Table 10: Investment Servicing Line of Business Results, for the comparison of securities finance revenue in 2016, 2015 and 2014.

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 and then lends such securities to the subsequent borrower, either a State Street 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 our assets under custody and administration from clients who have designated State Street as an eligible borrower.

Securities finance revenue increased 13% in 2016 compared to 2015. Securities finance revenue increased 14% in 2015 compared to 2014. The increases in both years were primarily the result of growth in our enhanced custody



business.

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 may affect the volume of our securities lending activity and related revenue and profitability in future periods.

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## Processing Fees and Other

Processing fees and other revenue includes diverse types of fees and revenue, including fees from our structured products business, fees from software licensing and maintenance, equity income from our joint venture investments, gains and losses on sales of leased equipment and other assets, derivative financial instruments to support our clients' needs and to manage our interest-rate and currency risk, and amortization of our tax-advantaged investments.

Processing fees and other revenue, presented in Table 10: Investment Servicing Line of Business Results, decreased 68% in 2016 compared to 2015. The decrease was primarily due to a gain from the sale of commercial real estate and a gain from the final paydown of a commercial real estate loan in 2015, increased amortization related to the tax advantaged investment business, unfavorable valuation adjustments, and lower earnings from equity method investments. The decrease was partially offset by a pre-tax gain of \$53 million on the sale of WM/Reuters in 2016. Processing fees and other revenue increased 82% in 2015 compared to 2014. The increase was primarily due to the above noted commercial real estate sale and loan paydown.

## Investment Management

TABLE 15: INVESTMENT MANAGEMENT LINE OF BUSINESS RESULTS

(Dollars in millions, except where otherwise noted)	Years Ended December 31,			%	%
	2016	2015	2014	Change 2016 vs. 2015	Change 2015 vs. 2014
Management fees	\$1,292	\$1,174	\$1,207	10 %	(3 )%
Trading services	47	38	45	24	(16 )
Processing fees and other	(15 )	(16 )	(5 )	(6 )	nm
Total fee revenue	1,324	1,196	1,247	11	(4 )
Net interest revenue	3	2	15	50	(87 )
Total revenue	1,327	1,198	1,262	11	(5 )
Total expenses	1,218	962	960	27	—
Income before income tax expense	\$109	\$236	\$302	(54 )	(22 )
Pre-tax margin	8	% 20	% 24	%	
Average assets (in billions)	\$4.4	\$3.9	\$3.9		

nm Not meaningful

Total revenue for our Investment Management Line of Business, presented in Table 15: Investment Management Line of Business Results, increased 11% in 2016 compared to 2015. Total fee revenue increased 11% in 2016 compared to 2015.

Total revenue and total fee revenue decreased 5% and 4%, respectively, in 2015 compared to 2014.

Total expenses increased in 2016 compared to

2015 primarily due to the incremental costs related to the acquisition of GEAM on July 1, 2016, in addition to the 2016 charge associated with an amendment of the terms of outstanding deferred cash-settled incentive compensation awards for employees below executive vice president to remove continued service requirements, thereby accelerating the future expense that would have been recognized over the remaining term of the awards had the continued service requirement not been removed. These increases were partially offset by savings related to State Street Beacon.

For further information about expenses, refer to "Expenses" in "Consolidated Results of Operations" included in this Management's Discussion and Analysis and Note 21 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

In July 2016, we completed our acquisition of GEAM in a cash transaction with a total purchase price of approximately \$485 million. AUM associated with the acquired GEAM operations totaled \$118 billion as of December 31, 2016. Our consolidated financial statements include the operating results for the acquired business from the date of acquisition, July 1, 2016.

#### Management Fees

Through SSGA, we provide a broad range of investment management strategies, specialized investment management advisory services, OCIO and other financial services for corporations, public funds, and other sophisticated investors. SSGA offers an array of investment management strategies, including passive and active, such as enhanced indexing, using quantitative and fundamental methods for both U.S. and global equity and fixed income securities. SSGA also offers ETFs, such as the SPDR® ETF brand. While certain management fees are directly determined by the values of assets under management and the investment strategies employed, management fees reflect other factors as well, including our relationship pricing for clients who use multiple services, and the benchmarks specified in the respective management agreements related to performance fees.

Management fees increased 10% in 2016 compared to 2015, primarily due to the acquired GEAM operations for the second half of 2016 and a decline in money market fee waivers, partially offset by weaker international markets and the effect of the strong U.S. dollar.

Management fees decreased 3%, in 2015 compared to 2014, primarily due to the stronger U.S. dollar, offset by net new business.

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Management fees generated outside the U.S. were approximately 32% of total management fees in 2016 compared to 35% and 37% in 2015 and 2014, respectively.

TABLE 16: ASSETS UNDER MANAGEMENT BY ASSET CLASS AND INVESTMENT APPROACH

(Dollars in billions)	As of December 31,					2015-2016		2012-2016	
	2016	2015	2014	2013	2012	Annual Growth Rate		Compound Annual Growth Rate	
Equity:									
Active	\$73	\$32	\$39	\$42	\$45	128	%	13	%
Passive	1,401	1,294	1,436	1,334	1,047	8		8	
Total Equity	1,474	1,326	1,475	1,376	1,092	11		8	
Fixed-Income:									
Active	70	18	17	16	17	289		42	
Passive	308	294	302	311	325	5		(1	)
Total Fixed-Income	378	312	319	327	342	21		3	
Cash <sup>(1)</sup>	333	368	399	385	369	(10	)	(3	)
Multi-Asset-Class Solutions:									
Active	19	17	30	23	23	12		(5	)
Passive	107	86	97	110	94	24		3	
Total Multi-Asset-Class Solutions	126	103	127	133	117	22		2	
Alternative Investments <sup>(2)</sup> :									
Active	28	17	17	14	18	65		12	
Passive	129	119	111	110	148	8		(3	)
Total Alternative Investments	157	136	128	124	166	15		(1	)
Total	\$2,468	\$2,245	\$2,448	\$2,345	\$2,086	10		4	

<sup>(1)</sup> Includes both floating- and constant-net-asset-value portfolios held in commingled structures or separate accounts.

<sup>(2)</sup> Includes real estate investment trusts, currency and commodities, including SPDR<sup>®</sup> Gold Fund, for which State Street is not the investment manager, but acts as distribution agent.

TABLE 17: EXCHANGE - TRADED FUNDS BY ASSET CLASS<sup>(1)(2)</sup>

(Dollars in billions)	As of December 31,					2015-2016		2012-2016	
	2016	2015	2014	2013	2012	Annual Growth Rate		Compound Annual Growth Rate	
Alternative Investments <sup>(2)</sup>	\$42	\$34	\$38	\$39	\$79	24	%	(15	)%
Cash	2	3	1	1	1	(33	)	19	
Equity	426	350	388	325	227	22		17	
Fixed-income	51	41	39	34	30	24		14	
Total Exchange-Traded Funds	\$521	\$428	\$466	\$399	\$337	22		12	

(1) ETFs are a component of assets under management presented in the preceding table.

(2) Includes SPDR® Gold Fund, for which State Street is not the investment manager, but acts as distribution agent.

TABLE 18: GEOGRAPHIC MIX OF ASSETS UNDER MANAGEMENT<sup>(1)</sup>

	As of December 31,				
(In billions)	2016	2015	2014	2013	2012
North America	\$1,691	\$1,452	\$1,568	\$1,456	\$1,288
Europe/Middle East/Africa	482	489	559	560	480
Asia/Pacific	295	304	321	329	318
Total	\$2,468	\$2,245	\$2,448	\$2,345	\$2,086

(1) Geographic mix is based on client location or fund management location.

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TABLE 19: ACTIVITY IN ASSETS UNDER MANAGEMENT BY PRODUCT CATEGORY

(In billions)	Equity	Fixed-Income	Cash <sup>(2)</sup>	Multi-Asset-Class Solutions	Alternative Investments <sup>(3)</sup>	Total
Balance as of December 31, 2013	\$ 1,376	\$ 327	\$ 385	\$ 133	\$ 124	\$ 2,345
Long-term institutional inflows <sup>(1)</sup>	285	80	—	43	13	421
Long-term institutional outflows <sup>(1)</sup>	(297 )	(103 )	—	(35 )	(11 )	(446 )
Long-term institutional flows, net	(12 )	(23 )	—	8	2	(25 )
ETF flows, net	31	5	—	—	(2 )	34
Cash fund flows, net	—	—	19	—	—	19
Total flows, net	19	(18 )	19	8	—	28
Market appreciation	113	27	—	(9 )	11	142
Foreign exchange impact	(33 )	(17 )	(5 )	(5 )	(7 )	(67 )
Total market/foreign exchange impact	80	10	(5 )	(14 )	4	75
Balance as of December 31, 2014	1,475	319	399	127	128	2,448
Long-term institutional inflows <sup>(1)</sup>	277	62	—	51	33	423
Long-term institutional outflows <sup>(1)</sup>	(363 )	(70 )	—	(59 )	(31 )	(523 )
Long-term institutional flows, net	(86 )	(8 )	—	(8 )	2	(100 )
ETF flows, net	(29 )	5	1	—	(1 )	(24 )
Cash fund flows, net	—	—	(27 )	—	—	(27 )
Total flows, net	(115 )	(3 )	(26 )	(8 )	1	(151 )
Market appreciation	(13 )	3	—	(12 )	16	(6 )
Foreign exchange impact	(21 )	(7 )	(5 )	(4 )	(9 )	(46 )
Total market/foreign exchange impact	(34 )	(4 )	(5 )	(16 )	7	(52 )
Balance as of December 31, 2015	1,326	312	368	103	136	2,245
Long-term institutional inflows <sup>(1)</sup>	244	90	—	48	13	395
Long-term institutional outflows <sup>(1)</sup>	(301 )	(96 )	—	(34 )	(21 )	(452 )
Long-term institutional flows, net	(57 )	(6 )	—	14	(8 )	(57 )
ETF flows, net	37	9	—	—	6	52
Cash fund flows, net	—	—	(37 )	—	—	(37 )
Total flows, net	(20 )	3	(37 )	14	(2 )	(42 )
Market appreciation	140	10	—	9	14	173
Foreign exchange impact	(10 )	(3 )	(2 )	(3 )	(2 )	(20 )
Total market/foreign exchange impact	130	7	(2 )	6	12	153
Acquisitions and transfers <sup>(4)</sup>	38	56	4	3	11	112
Balance as of December 31, 2016	\$ 1,474	\$ 378	\$ 333	\$ 126	\$ 157	\$ 2,468

(1) Amounts represent long-term portfolios, excluding ETFs.

(2) Includes both floating- and constant-net-asset-value portfolios held in commingled structures or separate accounts.

(3) Includes real estate investment trusts, currency and commodities, including SPDR® Gold Fund, for which State Street is not the investment manager, but acts as distribution agent.

(4) Includes assets under management acquired as part of the acquisition of GEAM on July 1, 2016.

The preceding table does not include approximately \$9 billion of new asset management business which was awarded but not installed as of December 31, 2016. New business will be reflected in AUM in future periods after installation, and will generate management fee revenue in subsequent periods. Total AUM as of December 31, 2016 included 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. This timing can vary significantly.

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## 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 available-for-sale or held-to-maturity 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 20: AVERAGE STATEMENT OF CONDITION<sup>(1)</sup>

(In millions)	Years Ended December 31,		
	2016 Average Balance	2015 Average Balance	2014 Average Balance
Assets:			
Interest-bearing deposits with banks	\$53,091	\$69,753	\$55,353
Securities purchased under resale agreements	2,558	3,233	4,077
Trading account assets	921	1,194	959
Investment securities	100,738	105,611	116,809
Loans and leases	19,013	17,948	15,912
Other interest-earning assets	22,863	22,717	15,944
Average total interest-earning assets	199,184	220,456	209,054
Cash and due from banks	3,157	2,460	4,139
Other non-interest-earning assets	27,386	27,516	24,908
Average total assets	\$229,727	\$250,432	\$238,101
Liabilities and shareholders' equity:			
Interest-bearing deposits:			
U.S.	\$30,107	\$30,819	\$21,296
Non-U.S.	95,551	102,491	109,003
Total interest-bearing deposits	125,658	133,310	130,299
Securities sold under repurchase agreements	4,113	8,875	8,817
Federal funds purchased	31	21	20
Other short-term borrowings	1,666	3,826	4,177
Long-term debt	11,401	10,301	9,282
Other interest-bearing liabilities	5,394	6,471	7,351
Average total interest-bearing liabilities	148,263	162,804	159,946
Non-interest-bearing deposits	44,827	51,675	44,041
Other non-interest-bearing liabilities	14,742	14,626	12,935



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Preferred shareholders' equity	3,060	2,418	1,181
Common shareholders' equity	18,835	18,909	19,998
Average total liabilities and shareholders' equity	\$229,727	\$250,432	\$238,101

(1) Additional information about our average statement of condition, primarily our interest-earning assets and interest-bearing liabilities, is included under "Net Interest Revenue" in "Consolidated Results of Operations - Total Revenue" in this Management's Discussion and Analysis.

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## Investment Securities

TABLE 21: CARRYING VALUES OF INVESTMENT  
SECURITIES

(In millions)	As of December 31,		
	2016	2015	2014
Available-for-sale:			
U.S. Treasury and federal agencies:			
Direct obligations	\$4,263	\$5,718	\$10,655
Mortgage-backed securities	13,257	18,165	20,714
Asset-backed securities:			
Student loans <sup>(1)</sup>	5,596	7,176	12,460
Credit cards	1,351	1,341	3,053
Sub-prime	272	419	951
Other	905	1,764	4,145
Total asset-backed securities	8,124	10,700	20,609
Non-U.S. debt securities:			
Mortgage-backed securities	6,535	7,071	9,606
Asset-backed securities	2,516	3,267	3,226
Government securities	5,836	4,355	3,909
Other	5,613	4,834	5,428
Total non-U.S. debt securities	20,500	19,527	22,169
State and political subdivisions	10,322	9,746	10,820
Collateralized mortgage obligations	2,593	2,987	5,339
Other U.S. debt securities	2,469	2,624	4,109
U.S. equity securities	42	39	39
Non-U.S. equity securities	3	3	2
U.S. money-market mutual funds	409	542	449
Non-U.S. money-market mutual funds	16	19	8
Total	\$61,998	\$70,070	\$94,913

Held-to-maturity<sup>(2)</sup>:

U.S. Treasury and federal agencies:			
Direct obligations	\$17,527	\$20,878	\$5,114
Mortgage-backed securities	10,334	610	62
Asset-backed securities:			
Student loans <sup>(1)</sup>	2,883	1,592	1,814
Credit cards	897	897	897
Other	35	366	577
Total asset-backed securities	3,815	2,855	3,288
Non-U.S. debt securities:			
Mortgage-backed securities	1,150	2,202	3,787
Asset-backed securities	531	1,415	2,868
Government securities	286	239	154
Other	113	65	72
Total non-U.S. debt securities	2,080	3,921	6,881

State and political subdivisions	—	1	9
Collateralized mortgage obligations	1,413	1,687	2,369
Total	\$35,169	\$29,952	\$17,723

(1) Primarily composed of securities guaranteed by the federal government with respect to at least 97% of defaulted principal and accrued interest on the underlying loans.

(2) At amortized cost or fair value on the date of transfer from available-for-sale.

Additional information about our investment securities portfolio is provided in Note 3 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

We manage our investment securities portfolio to align with the interest-rate and duration characteristics of our client liabilities that we consider to be operational deposits 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.

In the fourth quarter of 2016, \$4.9 billion of Agency MBS and Student Loan ABS previously classified as AFS were transferred to HTM and in the fourth quarter of 2015, \$7.1 billion of U.S. Treasuries previously classified as AFS were transferred to HTM. Both 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 \$87 million and \$89 million as of December 31, 2016 and 2015, respectively, within accumulated other comprehensive loss which will be accreted into interest income over the remaining life of the transferred security (ranging from approximately 7 to 49 years).

Approximately 91% of the carrying value of the portfolio was rated “AAA” or “AA” as of December 31, 2016 and 92% as of December 31, 2015.

TABLE 22: INVESTMENT  
PORTFOLIO BY EXTERNAL CREDIT  
RATING

	December 31, 2016		December 31, 2015	
AAA <sup>(1)</sup>	78	%	80	%
AA	13		12	
A	5		5	
BBB	3		2	
Below BBB 1	1		1	
	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.

As of December 31, 2016, the investment portfolio of 12,080 securities was diversified with respect to asset class. Approximately 52% of the aggregate carrying value of the portfolio as of December 31, 2016 was composed of mortgage-backed and asset-backed securities, compared to 51% as of December 31, 2015. The asset-backed securities portfolio, of which approximately 93% and 92% of the carrying value as of December 31, 2016 and December 31, 2015, respectively, was floating-rate, consisted primarily of student loan-backed and credit card-backed securities. Mortgage-backed

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securities were composed of securities issued by the Federal National Mortgage Association and Federal Home Loan Mortgage Corporation, as well as U.S. and non-U.S. large-issuer collateralized mortgage obligations.

In December 2013, U.S. regulators issued final regulations to implement the Volcker rule. The Volcker rule will prohibit banking entities, including us and our affiliates, from engaging in certain prohibited proprietary trading activities, as defined in the final Volcker rule regulations, subject to exemptions for market making-related activities, risk-mitigating hedging, underwriting and certain other activities. The Volcker rule will require banking entities to either restructure or divest certain ownership interests in, and relationships with, covered funds (as such terms are defined in the final Volcker rule regulations).

The Volcker rule became effective in July 2012, and the final implementing regulations became effective in April 2014. Under a 2016 conformance period extension issued by the Federal Reserve, all investments in and relationships with investments in a covered fund made or entered into after December 31, 2013 by a banking entity and its affiliates, and all proprietary trading activities of those entities, were required to be in conformance with the Volcker rule and its final implementing regulations by July 21, 2016. On July 7, 2016, the Federal Reserve announced a final one-year extension of the general conformance period for banking entities to conform ownership interests in and relationships with legacy covered funds to July 21, 2017.

Whether certain types of investment securities or structures such as CLOs constitute covered funds, as defined in the final Volcker rule regulations, and do not benefit from the exemptions provided in the Volcker rule, and whether a banking organization's investments therein constitute ownership interests remain subject to (1) market, and ultimately regulatory, interpretation, and (2) the specific terms and other characteristics relevant to such investment securities and structures.

As of December 31, 2016, we held approximately \$972 million of investments in CLOs. As of the same date, these investments had an aggregate pre-tax net unrealized gain of approximately \$11 million, composed primarily of gross unrealized gains. Comparatively, as of December 31, 2015, we held approximately \$2.10 billion of investments in CLOs which had an aggregate pre-tax net unrealized gain of approximately \$43 million, composed of gross unrealized gains of \$46 million and gross unrealized losses of \$3 million. In the event that we or our banking regulators conclude that such investments in CLOs, or other investments, are covered funds under the Volcker rule, we may be required to divest of such

investments. If other banking entities reach similar conclusions with respect to similar investments held by them, the prices of such investments could decline significantly, and we may be required to divest of such investments at a significant discount compared to the investments' book value. This could result in a material adverse effect on our consolidated results of operations or on our consolidated financial condition in the period in which such a divestiture occurs.

The final Volcker rule regulations also require banking entities to establish extensive programs designed to ensure compliance with the restrictions of the Volcker rule. We have established a compliance program which we believe complies with the final Volcker rule regulations as currently in effect. Such compliance program restricts our ability in the future to engage in certain activities including priority trading and service certain types of funds, in particular covered funds for which SSGA 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.

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## Non-U.S. Debt Securities

Approximately 23% of the aggregate carrying value of our investment securities portfolio was non-U.S. debt securities as of December 31, 2016 and 2015.

TABLE 23: NON-U.S. DEBT  
SECURITIES

(In millions)	As of December	
	2016	2015
Available-for-sale:		
United Kingdom	\$5,093	\$5,754
Australia	4,272	3,316
Canada	2,989	2,400
Japan	1,388	1,348
Netherlands	1,283	1,839
France	1,013	954
Germany	713	990
Italy	676	389
Hong Kong	664	—
South Korea	634	1,052
Norway	508	524
Belgium	360	234
Spain	266	150
Finland	223	319
Sweden	188	123
Other <sup>(1)</sup>	230	135
Total	\$20,500	\$19,527
Held-to-maturity:		
United Kingdom	\$504	\$1,067
Netherlands	473	684
Australia	374	917
Germany	329	832
Singapore	180	129
Other <sup>(2)</sup>	220	292
Total	\$2,080	\$3,921

<sup>(1)</sup> Included approximately \$164 million and \$55 million as of December 31, 2016 and December 31, 2015, respectively, related to Ireland, Portugal and Austria, all of which were related to mortgage-backed securities and auto loans.

<sup>(2)</sup> Included approximately \$178 million and \$265 million as of December 31, 2016 and December 31, 2015, respectively, related to Spain, Italy, Portugal and Norway, all of which were related to mortgage-backed securities and auto loans.

Approximately 88% and 89% of the aggregate carrying value of these non-U.S. debt securities was rated "AAA" or "AA" as of December 31, 2016 and December 31, 2015, 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, 2016 and December 31, 2015, approximately 65% and 70%,

respectively, of the aggregate carrying value of these non-U.S. debt securities was floating-rate, and accordingly, we consider these securities to have minimal interest-rate risk.

As of December 31, 2016, our non-U.S. debt securities had an average market-to-book ratio of 100.5%, and an aggregate pre-tax net unrealized gain of approximately \$119 million, composed of gross unrealized gains of \$153 million and gross unrealized losses of \$34 million. These unrealized amounts included a pre-tax net unrealized gain of \$60 million, composed of gross unrealized gains of \$79 million and gross unrealized losses of \$19 million, associated with non-U.S. debt securities available-for-sale.

As of December 31, 2016, the underlying collateral for non-U.S. mortgage- and asset-backed securities primarily included Australian, Dutch and U.K. prime mortgages and German automobile loans. The securities listed under “Canada” were composed of Canadian government securities and corporate debt and covered bonds. The securities listed under “France” were composed of automobile loans, prime mortgages, and corporate debt and covered bonds. The securities listed under “Japan” were substantially composed of Japanese government securities and corporate debt. The securities listed under “South Korea” were composed of South Korean government securities.

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## Municipal Obligations

We carried approximately \$10.32 billion of municipal securities classified as state and political subdivisions in our investment securities portfolio as of December 31, 2016 as shown in Table 21: Carrying Values of Investment Securities, all of which were classified as AFS. As of the same date, we also provided approximately \$9.25 billion of credit and liquidity facilities to municipal issuers.

TABLE 24: STATE AND MUNICIPAL OBLIGORS<sup>(1)</sup>

(Dollars in millions)	Total Municipal Securities	Credit and Liquidity Facilities <sup>(2)</sup>	Total	% of Total Municipal Exposure	
As of December 31, 2016					
State of Issuer:					
Texas	\$ 1,781	\$ 1,685	\$3,466	18	%
California	523	2,298	2,821	14	
New York	740	1,293	2,033	10	
Massachusetts	916	1,071	1,987	10	
Washington	708	234	942	5	
Maryland	488	411	899	5	
Total	\$ 5,156	\$ 6,992	\$12,148		
As of December 31, 2015					
State of Issuer:					
Texas	\$ 1,250	\$ 1,962	\$3,212	17	%
California	444	2,220	2,664	14	
New York	817	1,259	2,076	11	
Massachusetts	927	731	1,658	9	
Maryland	454	413	867	5	
Total	\$ 3,892	\$ 6,585	\$10,477		

<sup>(1)</sup> Represented 5% or more of our aggregate municipal credit exposure of approximately \$19.57 billion and \$18.50 billion across our businesses as of December 31, 2016 and December 31, 2015, respectively.

<sup>(2)</sup> Includes municipal loans which are also presented within Table 27.

Our aggregate municipal securities exposure presented in Table 24: State and Municipal Obligors, was concentrated primarily with highly-rated counterparties, with approximately 92% of the obligors rated "AAA" or "AA" as of December 31, 2016. As of that date, approximately 51% and 43% of our aggregate municipal securities exposure was associated with general obligation and revenue bonds, respectively. In addition, we had no exposures associated with industrial development or land development bonds. 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 other-than-temporary impairment of our municipal securities is provided in Note 3 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.





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TABLE 25: CONTRACTUAL MATURITIES AND YIELDS

As of December 31, 2016 (Dollars in millions)	Under 1 Year		1 to 5 Years		6 to 10 Years		Over 10 Years	
	Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield
Available-for-sale <sup>(1)</sup> :								
U.S. Treasury and federal agencies:								
Direct obligations	\$2,722	0.77%	\$1,114	1.91%	\$44	3.09%	\$383	2.28%
Mortgage-backed securities	213	3.20	1,533	2.56	3,022	3.41	8,489	2.98
Asset-backed securities:								
Student loans	590	1.55	3,181	1.36	757	1.46	1,068	1.69
Credit cards	4	0.75	1,052	1.55	295	1.96	—	—
Sub-prime	3	1.73	1	2.20	2	1.40	266	1.52
Other	1	1.11	21	0.92	883	2.42	—	—
Total asset-backed securities	598		4,255		1,937		1,334	
Non-U.S. debt securities:								
Mortgage-backed securities	1,301	2.28	3,339	1.08	731	1.24	1,164	2.87
Asset-backed securities	289	0.66	1,877	0.46	346	1.06	4	2.07
Government securities	4,372	0.55	987	0.97	477	1.29	—	—
Other	1,901	1.48	3,304	0.95	408	1.60	—	—
Total non-U.S. debt securities	7,863		9,507		1,962		1,168	
State and political subdivisions <sup>(2)</sup>	509	4.76	2,347	5.01	5,548	6.25	1,918	6.32
Collateralized mortgage obligations	2	1.15	44	2.73	871	3.05	1,676	3.26
Other U.S. debt securities	508	3.89	1,003	4.25	922	2.29	36	1.44
Total	\$12,415		\$19,803		\$14,306		\$15,004	
Held-to-maturity <sup>(1)</sup> :								
U.S. Treasury and federal agencies:								
Direct obligations	\$400	0.75%	\$14,888	2.11%	\$2,167	1.73%	\$72	0.83%
Mortgage-backed securities	—	—	193	2.57	1,536	2.89	8,605	2.88
Asset-backed securities:								
Student loans	442	1.22	201	1.53	349	1.16	1,891	1.43
Credit cards	99	0.79	798	1.17	—	—	—	—
Other	7	1.12	18	2.27	8	1.12	2	1.34
Total asset-backed securities	548		1,017		357		1,893	
Non-U.S. debt securities:								
Mortgage-backed securities	148	1.22	339	0.56	47	2.63	616	1.02
Asset-backed securities	163	0.05	368	0.57	—	—	—	—
Government securities	180	1.04	106	0.25	—	—	—	—
Other	71	2.02	42	0.01	—	—	—	—
Total non-U.S. debt securities	562		855		47		616	
Collateralized mortgage obligations	102	2.92	23	2.97	488	1.77	800	2.07
Total	\$1,612		\$16,976		\$4,595		\$11,986	

<sup>(1)</sup> The maturities of mortgage-backed securities, asset-backed securities and collateralized mortgage obligations are based on expected principal payments.

<sup>(2)</sup> Yields were calculated on a fully taxable-equivalent basis, using applicable federal and state income tax rates.

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## Impairment

Impairment exists when the fair value of an individual security is below its amortized cost basis. Impairment of a security is further assessed to determine whether such impairment is other-than-temporary. When the impairment is deemed to be other-than-temporary, we record the loss in our consolidated statement of income. In addition, for AFS and HTM debt securities, we record impairment in our consolidated statement of income when management intends to sell (or may be required to sell) the securities before they recover in value, or

when management expects 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 change in the net unrealized gain/(loss) position as of December 31, 2016 compared to December 31, 2015, presented in Table 26: Amortized Cost, Fair Value and Net Unrealized Gains (Losses) of Investment Securities, was primarily attributable to higher interest rates.

TABLE 26: AMORTIZED COST, FAIR VALUE AND NET UNREALIZED GAINS (LOSSES)  
OF INVESTMENT SECURITIES

(In millions)	December 31, 2016			December 31, 2015		
	Net		Fair Value	Net		Fair Value
	Amortized Cost	Unrealized Gain (Losses)		Amortized Cost	Unrealized Gain (Losses)	
Available-for-sale <sup>(1)</sup>	\$62,056	\$ (58 )	\$61,998	\$69,843	\$ 227	\$70,070
Held-to-maturity <sup>(1)</sup>	35,169	(175 )	34,994	29,952	(154 )	29,798
Total investment securities	\$97,225	\$ (233 )	\$96,992	\$99,795	\$ 73	\$99,868
Net after-tax unrealized gain (loss)		\$ (140 )			\$ 44	

<sup>(1)</sup> AFS securities are carried at fair value, with after-tax net unrealized gains and losses recorded in AOCI. HTM securities are carried at amortized cost, and unrealized gains and losses are not recorded in our consolidated financial statements.

We conduct periodic reviews of individual securities to assess whether OTTI exists. Our assessment of OTTI 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, OTTI could increase, in particular the credit-related component that would be recorded in our consolidated statement of income.

We recorded net losses from OTTI of \$2 million and \$1 million in 2016 and 2015, respectively. Management considers the aggregate decline in fair value of the remaining investment securities and the resulting gross unrealized losses of \$820 million as of December 31, 2016 to be temporary and not the result of any material changes in the credit characteristics of the securities. Additional information with respect to OTTI, net impairment losses and gross unrealized losses is provided in Note 3 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

Our evaluation of potential OTTI of structured credit securities with collateral in the U.K. and Italy takes into account the outcome from the Brexit referendum and the Italian constitutional referendum, and assumes no disruption of payments on these securities.

Our evaluation of potential OTTI of mortgage-backed securities with collateral in Spain, Italy, Ireland, and Portugal takes into account slow economic growth, austerity measures, and government intervention in the corresponding mortgage markets and assumes a conservative baseline macroeconomic environment. Our baseline view assumes a

recessionary period characterized by high unemployment and by additional declines in housing prices between 3% and 23%. Our evaluation of OTTI in our base case does not assume a disorderly sovereign debt restructuring or a break-up of the Eurozone.

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## Loans and Leases

TABLE 27: U.S. AND NON- U.S. LOANS AND LEASES

(In millions)	As of December 31,				
	2016	2015	2014	2013	2012
Domestic:					
Commercial and financial	\$16,412	\$15,899	\$14,515	\$10,305	\$9,265
Commercial real estate	27	28	28	209	411
Lease financing	338	337	335	339	380
Total domestic	16,777	16,264	14,878	10,853	10,056
Non-U.S.:					
Commercial and financial	2,476	1,957	2,653	1,877	1,467
Lease financing	504	578	668	756	784
Total non-U.S.	2,980	2,535	3,321	2,633	2,251
Total loans and leases	\$19,757	\$18,799	\$18,199	\$13,486	\$12,307
Average loans and leases	\$19,013	\$17,948	\$15,912	\$13,781	\$11,610

The increase in loans in the commercial and financial segment as of December 31, 2016 compared to December 31, 2015 was primarily driven by higher levels of senior secured bank loans and loans to municipalities.

As of December 31, 2016 and December 31, 2015, our investment in senior secured loans totaled approximately \$3.5 billion and \$3.1 billion, respectively. In addition, we had binding unfunded commitments as of December 31, 2016 and December 31, 2015 of \$76 million and \$186 million, respectively, to participate in such syndications.

These senior secured loans, which are primarily rated "speculative" under our internal risk-rating framework (refer to Note 4 to the consolidated

financial statements included under Item 8, Financial Statements and Supplementary Data, in this Form 10-K), are externally rated "BBB," "BB" or "B," with approximately 92% and 93% of the loans rated "BB" or "B" as of December 31, 2016 and December 31, 2015, 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.

Loans to municipalities included in the commercial and financial segment were \$1.4 billion and \$1.0 billion as of December 31, 2016 and December 31, 2015, respectively.

As of December 31, 2016 and December 31, 2015, unearned income deducted from our investment in leveraged lease financing was \$94 million and \$102 million, respectively, for U.S. leases and \$192 million and \$231 million, respectively, for non-U.S. leases.

Additional information about all of our loan-and-lease segments, as well as underlying classes, is provided in Note 4 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

No loans, including CRE loans, were modified in troubled debt restructurings in 2016 or 2015.

TABLE 28: CONTRACTUAL MATURITIES FOR LOANS AND LEASES

(In millions)	As of December 31, 2016			
	Total	Under 1 Year	1 to 5 Years	Over 5 Years
Domestic:				
Commercial and financial	\$16,412	\$ 9,508	\$ 5,028	\$ 1,876
Commercial real estate	27	27	—	—
Lease financing	338	67	69	202

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Total domestic	16,777	9,602	5,097	2,078
Non-U.S.:				
Commercial and financial	2,476	1,510	821	145
Lease financing	504	117	86	301
Total non-U.S.	2,980	1,627	907	446
Total loans and leases	\$19,757	\$ 11,229	\$ 6,004	\$ 2,524

TABLE 29: CLASSIFICATION OF LOAN AND LEASE BALANCES DUE AFTER ONE YEAR

(In millions)	As of December 31, 2016
Loans and leases with predetermined interest rates	\$ 3,336
Loans and leases with floating or adjustable interest rates	5,192
Total	\$ 8,528

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TABLE 30: ALLOWANCE FOR LOAN AND LEASE LOSSES

(In millions)	Years Ended December 31,				
	2016	2015	2014	2013	2012
Allowance for loan and lease losses:					
Beginning balance	\$46	\$38	\$28	\$22	\$22
Provision for loan and lease losses <sup>(1)</sup>	10	12	10	6	(3)
Charge-offs <sup>(2)</sup>	(3)	(4)	—	—	—
Recoveries <sup>(3)</sup>	—	—	—	—	3
Ending balance	\$53	\$46	\$38	\$28	\$22

<sup>(1)</sup> The provision for loan and lease losses is related to commercial and financial loans in 2016, 2015, 2014 and 2013. The \$(3) million provision related to CRE loans in 2012.

<sup>(2)</sup> The charge-offs are related to commercial and financial loans.

<sup>(3)</sup> Includes \$3 million in recoveries related to CRE loans for 2012.

The provision of \$10 million and the charge-offs of \$3 million recorded in 2016 were associated with our exposure to senior secured loans to non-investment grade institutional borrowers, which were purchased in connection with our participation in syndicated loans.

As of December 31, 2016 and December 31, 2015, approximately \$44 million and \$35 million, respectively, of our allowance for loan and lease losses were related to senior secured loans included in the commercial and financial segment. As this portfolio grows and matures, our allowance for loan and lease losses related to these loans may increase through additional provisions for credit losses. The remaining \$9 million and \$11 million as of December 31, 2016 and December 31, 2015, respectively, were related to other components of commercial and financial loans.

**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 foreign exchange 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, foreign exchange 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 31: Cross-Border Outstandings, represented approximately 28%, 25% and 17% of our consolidated total assets as of December 31, 2016, 2015 and 2014, respectively.

TABLE 31: CROSS-BORDER OUTSTANDINGS<sup>(1)</sup>

(In millions)	Investment Securities and Other Assets	Derivatives		Total Cross-Border Outstandings
		and Securities on Loan		

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December 31, 2016

United Kingdom	\$ 18,712	\$ 1,761	\$ 20,473
Japan	17,922	1,171	19,093
Germany	13,812	484	14,296
Australia	5,122	986	6,108
Luxembourg	3,389	762	4,151
Canada	3,179	781	3,960

December 31, 2015

United Kingdom	\$ 16,965	\$ 1,589	\$ 18,554
Japan	17,328	87	17,415
Germany	12,111	569	12,680
Australia	4,035	292	4,327
Canada	3,156	1,113	4,269
Luxembourg	3,034	514	3,548

December 31, 2014

United Kingdom	\$ 15,288	\$ 1,769	\$ 17,057
Japan	9,465	644	10,109
Australia	5,981	1,039	7,020
Netherlands	4,425	330	4,755
Canada	3,227	974	4,201
Germany	3,075	792	3,867

(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.

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As of December 31, 2016, aggregate cross-border outstandings in countries which amounted to between 0.75% and 1% of our consolidated assets totaled approximately \$1.84 billion and \$2.38 billion to France and Netherlands, respectively. As of December 31, 2015, aggregate cross-border outstandings in countries which amounted to between 0.75% and 1% of our consolidated assets totaled approximately \$2.20 billion to Netherlands. As of December 31, 2014, there were no countries whose aggregate cross-border outstandings amounted to between 0.75% and 1% of our total 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 Item 1A, Risk Factors, of 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 State Street 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 State Street's 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” under Item 7, Management's Discussion and Analysis, of this Form 10-K.

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Disclosures about our management of significant risks can be found on the following pages within this Form 10-K.

	Form 10-K Page Number
<u>Governance and Structure</u>	<u>82</u>
<u>Credit Risk Management</u>	<u>86</u>
<u>Liquidity Risk Management</u>	<u>91</u>
<u>Operational Risk Management</u>	<u>96</u>
<u>Market Risk Management</u>	<u>99</u>
<u>Model Risk Management</u>	<u>106</u>
<u>Strategic Risk Management</u>	<u>107</u>

## 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 ECC, as well as the Technology Committee, 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 State Street.

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 State Street 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.

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MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS (Continued)

Management Risk Governance Committee Structure

Executive Management Committees:

Management Risk and Capital Committee (MRAC)	Business Conduct Risk Committee (BCRC)	Technology and Operational Risk Committee (TORC)
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Risk Committees:

Asset-Liability Committee (ALCO)	Credit Risk and Policy Committee (CRPC)	Fiduciary Review Committee	Operational Risk Committee	Technology Risk Governance Committee
Trading and Market Risk Committee (TMRC)	Basel Oversight Committee (BOC)	New Business and Product Approval Committee	Executive Continuity Steering Committee	Executive Information Security Committee
Recovery and Resolution Planning Executive Review Board	Model Risk Committee (MRC)	Compliance and Ethics Committee	Third Party Risk Management Steering Committee	Access Control Board
CCAR Steering Committee	SSGA Risk Committee	Legal Entity Oversight Committee	Business Controls Steering Committee	Global Transitions Oversight Committee

Country Risk Committee

Data Governance Board

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 CRO is responsible for State Street’s risk management globally, leads ERM and has a dual reporting line to State Street’s 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 State Street.

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Board Committees

The Board has four committees which assist it in discharging its responsibilities with respect to risk management: the RC, the E&A Committee, the ECC, and the Technology Committee.

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 and business risks, as well as compliance and reputational risk and related policies.

In addition, the RC provides oversight on strategic capital governance principles and controls, 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 the operation of our 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 ECC has direct responsibility for the oversight of all compensation plans, policies, and programs of State Street in which executive officers participate and incentive, retirement, welfare as well as equity plans in which certain other employees of State Street participate. In addition, the ECC 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 Technology Committee leads and assists in the Board's oversight of the role of technology in executing State Street's strategy and supporting State Street's global business and operational requirements. The Technology Committee reviews the use of technology in our activities and operations, as well as significant technology and technology-

related strategies, investments and policies. In addition, the Technology Committee reviews and approves technology and technology-related risk matters, including information and cyber security.

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, which is co-chaired by our CRO and the CFO, regularly presents a report to the RC outlining developments in the risk environment and performance trends in our key business areas.

BCRC provides additional risk governance and leadership, by overseeing our business practices in terms of our compliance with laws, regulations and our standards of business conduct, our commitments to clients and others with

whom we do business, and potential reputational risks. Management considers adherence to high ethical standards to be critical to the success of our business and to our reputation. The BCRC is co-chaired by our CAO and our Chief Legal Officer.

TORC oversees and assesses the effectiveness of corporate-wide technology and operational risk management programs, to manage and control technology and operational risk consistently across the organization. TORC is co-chaired by the Chief Administrative Officer and the Chief Information 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:

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MRAC

ALCO oversees the management of our consolidated statement of condition and the management of our global liquidity, our interest-rate risk, and our non-traded market risk positions, as well as the business activities of our Global Treasury group and the risks associated with the generation of net interest revenue and overall balance sheet management. ALCO's roles and responsibilities are designed to work complementary to, and be coordinated with, MRAC, which approves our 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 SSGA Risk Committee is the most senior oversight and decision making committee for risk management within SSGA; the committee is responsible for overseeing the alignment of SSGA's strategy, budget, and risk appetite, as well as alignment with State Street 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.

BCRC

- 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 its culture of compliance and high standards of ethical behavior; and

The Legal Entity Oversight Committee establishes standards with respect to the governance of State Street 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.



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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
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TORC

The Technology Risk Governance Committee provides regular reporting to TORC and escalates technology risk issues to TORC, as appropriate;

The Executive Continuity Steering Committee reviews overall business continuity program performance, provides for executive accountability for compliance with the business continuity program and standards, and reviews and approves major changes or exceptions to program policy and standards;

The Executive Information Security Committee is responsible for managing the Enterprise Information Security posture and program, including cyber security protections, provides enterprise-wide oversight of the Information Security Program to provide that controls are measured and managed, and serves as an escalation point for issues identified during the execution of information technology activities and risk mitigation;

The Third Party Risk Management Steering Committee provides oversight over the vendor management program, approves policies, and serves as an escalation path for program compliance exceptions;

The Access Control Board establishes and provides appropriate governance and controls over our access control security framework;

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 Business Controls Steering Committee is responsible for overseeing and monitoring the execution and ongoing monitoring of our program of enhanced business controls practices across the organization;

The Global Transitions Oversight Committee is responsible for establishing a framework to monitor and oversee transitions between and among State Street legal entities against State Street resolvability principles, to monitor compliance with that framework to support optimization of State Street's global operating footprint through increased consistency, transparency and sharing of best practices among State Street legal

entities, and to serve as a forum for review and discussion of issues impacting internal transitions among State Street legal entities; and

The Data Governance Board is responsible for overseeing State Street's data governance vision, strategies and priorities and ensuring alignment of data governance policies and practices with corporate strategy and with State Street's obligations to comply with data-related regulations.

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 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 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.

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 State Street 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

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
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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 comprehensive 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 Risk group within ERM is responsible for the assessment, approval and monitoring of credit risk across State Street. 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 appropriate 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 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 State Street 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

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internal credit rating based on our rating scale is assigned. Credit ratings are reviewed and approved by the Credit 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 a small number of 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 ratings require higher levels of approval for a comparable PD and limit size compared to less risky counterparties with lower ratings;

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 our potential credit losses through various types of risk mitigation. In our day-to-day management of credit risks, we utilize and recognize the following types of risk mitigation.

**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 and highly-rated securities (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 generally 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 can be liquidated if or when required. Generally, when collateral is of lower quality, more difficult to value or more challenging to liquidate, higher discounts to

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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 the netting of rights and obligations arising under derivative or other transactions that have been entered into under such an agreement upon the counterparty's default, resulting 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 with our counterparties may preclude us from reducing settlement risk, notwithstanding the legal right to require the same under the master netting agreement.

**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 State Street include financial guarantees, letters of credit, bankers' acceptances, PUA contracts and insurance.

ERM and Legal teams have established a review process to evaluate guarantees under the applicable requirements of State Street 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. Pursuant to the Basel III final rule, we are permitted to reflect the application of credit risk mitigation which may include, for example, guarantees, collateral, netting, secured interests in non-financial assets and credit default swaps. State Street does not actively use credit default swaps as a risk mitigation tool, although it increasingly applies the recognition of guarantees, collateral and security over non-financial assets to mitigate overall risk within its counterparty credit portfolio.

**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 State Street are undertaken by the Credit 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

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
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outlook, changes in State Street's 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 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.** Periodic 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 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 State Street. 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.

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Specific activities of GCR include the following:

- Separate and objective assessments of our credit and counterparty exposures to determine the nature and extent of risk undertaken by the business units;
- Periodic credit process and credit product reviews, focusing on and assessing credit analysis, policy compliance, prudent transaction structure and underwriting standards, administration and documentation, risk-rating integrity, and relevant trends;
- Identification and monitoring of developing counterparty, market and/or industry sector trends to limit risk of loss and protect capital;
- Regular and formal reporting of reviews, including findings and requisite actions to remedy identified deficiencies;
- Allocation of resources for specialized risk assessments (on an as-needed basis);
- Assessment of the level of the allowance for loan and lease losses and OTTI; and
- Liaison with auditors and regulatory personnel on matters relating to risk rating, reporting, and measurement.

Reserve for Credit Losses

We maintain an allowance for loan and lease losses to support our on-balance sheet credit exposures. We also maintain a reserve for unfunded commitments and letters of credit to support our off-balance credit exposure. The two components together represent the reserve for credit losses. Review and evaluation of the adequacy of the reserve 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, the volume of adversely classified loans, previous loss experience, current trends, and economic conditions and their effect on our counterparties. Additional information about the allowance for loan and lease losses is provided in Note 4 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

Liquidity Risk Management

Liquidity risk is defined as the potential that our financial condition or overall viability could be adversely affected by an actual or perceived inability to meet cash and collateral obligations. The goal of liquidity risk management is to maintain, even in the event of stress, our ability to meet our cash and collateral obligations.

Liquidity is managed to meet our financial obligations in a timely and cost-effective manner, as well as maintain sufficient flexibility to fund strategic corporate initiatives as they arise. Our effective

management of liquidity involves the assessment of the potential mismatch between the future cash demands of our clients and our available sources of cash under both normal and adverse economic and business conditions.

We manage our liquidity on a global, consolidated basis. We also manage liquidity on a stand-alone basis at the 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. Our parent company is managed to a more conservative liquidity profile, reflecting narrower market access. Our parent company typically holds enough cash, primarily in the form of interest-bearing deposits or time deposits with its banking subsidiaries, to meet its current debt maturities and cash needs, as well as those projected over the next one-year period. As of December 31, 2016, the value of our parent company's net liquid assets totaled \$3.64 billion, compared with \$5.73 billion as of December 31, 2015. As of December 31, 2016, our parent company has approximately \$450 million of senior notes outstanding that will mature in the next twelve months.

Based on our level of consolidated liquid assets and our ability to access the capital markets for additional funding when necessary, including our ability to issue debt and equity securities under our current universal shelf registration, management considers our overall liquidity as of December 31, 2016 to be sufficient to meet its current commitments and business needs, including accommodating the transaction and cash management needs of its clients.

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, 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

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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, which generally include commercial paper 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 State Street-specific events 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 State Street-specific assumptions. 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 a State Street-specific event 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 unencumbered highly liquid securities, cash and cash equivalents reported on our consolidated statement of condition. We restrict the eligibility of securities of asset liquidity to U.S. Government and federal agency securities (including mortgage-backed securities), selected non-U.S. Government and supranational securities as well as certain other high-quality securities which

generally are more liquid than other types of assets even in times of stress. Our asset liquidity metric is similar to the HQLA under the U.S. LCR, and our HQLA, under the LCR final rule definition, were estimated to be \$100.93 billion and \$109.39 billion as of December 31, 2016 and December 31, 2015, respectively.

TABLE 32: COMPONENTS OF HQLA BY TYPE OF ASSET

(In millions)	December 31, December 31,	
	2016	2015
Excess Central Bank Balances	\$ 65,790	\$ 66,063
U.S. Treasuries	15,821	22,518
Other Investment securities	13,753	16,952
Foreign government	5,561	3,861
Total	\$ 100,925	\$ 109,394

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With respect to highly liquid short-term investments presented in the preceding table, due to the continued elevated level of client deposits as of December 31, 2016, we maintained cash balances in excess of regulatory requirements governing deposits with the Federal Reserve of approximately \$65.79 billion at the Federal Reserve, the ECB and other non-U.S. central banks, compared to \$66.06 billion as of December 31, 2015. The lower levels of deposits with central banks as of December 31, 2016 compared to December 31, 2015 was due to normal deposit volatility. The decrease in other investment securities as of December 31, 2016 compared to December 31, 2015, presented in the table above, was primarily associated with repositioning the investment portfolio in light of the liquidity requirements of the LCR.

Liquid securities carried in our asset liquidity include securities pledged without corresponding advances from the 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.

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, 2016 and December 31, 2015, we had no outstanding primary credit borrowings from the FRBB discount window or any other central bank facility, and as of the same dates, no FHLB advances were outstanding.

In addition to the securities included in our asset liquidity, we have significant amounts of other unencumbered investment securities. The aggregate fair value of those securities was \$38.23 billion as of December 31, 2016, compared to \$41.00 billion as of December 31, 2015. These securities are available sources of liquidity, although not as rapidly deployed as those included in our asset liquidity.

Measures of liquidity include LCR, NSFR and TLAC which are described in "Supervision and Regulation" included under Item 1, Business, of this Form 10-K.

Uses of Liquidity

Significant uses of our liquidity could result from the following: withdrawals of client deposits; draw-downs of unfunded commitments to extend credit or to purchase securities, generally provided through lines of credit; and short-duration advance facilities. Such circumstances would generally arise under stress conditions including deterioration in credit ratings. We had unfunded commitments to extend credit with gross contractual amounts totaling \$28.15 billion and \$26.57 billion as of December 31, 2016

and December 31, 2015, respectively. These amounts do not reflect the value of any collateral. As of December 31, 2016, approximately 73% of our unfunded commitments to extend 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," included under Item 1, Business, of this Form 10-K.

Funding

Deposits

We provide products and services including custody, accounting, administration, daily pricing, foreign exchange 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 State Street entities in various currencies. We invest these client deposits in a combination of investment securities and short-duration financial instruments whose mix is determined by the characteristics of the deposits.

For the past several years, we have frequently experienced higher client deposit inflows toward the end of each fiscal quarter or the end of the fiscal year. As a result, we believe average client deposit balances are more reflective of



ongoing funding than period-end balances.

TABLE 33: CLIENT DEPOSITS

(In millions)	December 31,		Average Balance Years Ended December 31,	
	2016	2015	2016	2015
Client deposits <sup>(1)</sup>	\$176,693	\$177,907	\$156,029	\$171,425

<sup>(1)</sup> Balance as of December 31, 2016 and December 31, 2015 excluded term wholesale CDs of \$10.47 billion and \$13.72 billion, respectively; average balances in 2016 and 2015 excluded average CDs of \$14.46 billion and \$13.56 billion, respectively.

#### Short-Term Funding

We phased out our commercial paper program prior to December 31, 2015, consistent with the objectives of our 2015 recovery and resolution plan developed pursuant to the requirements of the Dodd-Frank Act. Accordingly, we had no commercial paper outstanding as of December 31, 2016 or December 31, 2015.

Our on-balance sheet liquid assets are also an integral component of our liquidity management strategy. These assets provide liquidity through

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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 at reasonable rates of interest 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 \$4.40 billion and \$4.50 billion as of December 31, 2016 and December 31, 2015, respectively. State Street Bank currently maintains a line of credit with a financial institution of CAD 1.40 billion, or approximately \$1.04 billion as of December 31, 2016, 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, 2016, there was no balance outstanding on this line of credit.

**Long-Term Funding**

As of December 31, 2016, State Street Bank had Board authority to issue unsecured senior debt securities from time to time, provided that the aggregate principal amount of such unsecured senior debt outstanding at any one time does not exceed \$5 billion. As of December 31, 2016, \$4 billion was available for issuance pursuant to this authority. As of December 31, 2016, State Street Bank also had Board authority to issue an additional \$500 million of subordinated debt.

State Street Corporation maintains an effective universal shelf registration that allows for the public offering and sale of debt securities, capital securities, common stock, depository shares and preferred stock, and warrants to purchase such securities, including any shares into which the preferred stock and depository shares may be convertible, or any combination thereof. We have issued in the past, and we may issue in the future, securities pursuant to our shelf registration. The issuance of debt or equity securities will depend on future market conditions, funding needs and other factors.

**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, serve markets, and engage 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 or termination payments 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 disclosed in Note 10 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of 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.

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TABLE 34: CREDIT RATINGS

	As of December 31, 2016			
	Standard & Poor's	Moody's Investors Service	Fitch	Dominion Bond Rating Service
State Street:				
Senior debt	A	A1	AA-	AA (Low)
Subordinated debt	A-	A2	A+	A (High)
Junior subordinated debt	BBB	A3	BBB+	A (High)
Preferred stock	BBB	Baa1	BBB	A (Low)
Outlook	Stable	Stable	Stable	Stable
State Street Bank:				
Short-term deposits	A-1+	P-1	F1+	R-1 (High)
Long-term deposits	AA-	Aa1	AA+	AA
Senior debt/Long-term issuer	AA-	Aa3	AA	AA
Subordinated debt	A	Aa3	A+	AA (Low)
Outlook	Stable	Stable	Stable	Stable

## Contractual Cash Obligations and Other Commitments

The long-term contractual cash obligations included within Table 35: Long-Term Contractual Cash Obligations were recorded in our consolidated statement of condition as of December 31, 2016, except for operating leases and the interest portions of long-term debt and capital leases.

TABLE 35: LONG-TERM CONTRACTUAL CASH OBLIGATIONS

(In millions)	PAYMENTS DUE BY PERIOD				
	Total	Less than 1 year	1-3 years	4-5 years	Over 5 years
Long-term debt <sup>(1) (2)</sup>	\$ 11,137	\$ 450	\$ 1,423	\$ 3,155	\$ 6,109
Operating leases	1,149	205	323	241	380
Capital lease obligations <sup>(2)</sup>	325	57	99	90	79
Total contractual cash obligations	\$ 12,611	\$ 712	\$ 1,845	\$ 3,486	\$ 6,568

<sup>(1)</sup> Long-term debt excludes capital 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, 2016.

<sup>(2)</sup> Additional information about contractual cash obligations related to long-term debt and operating and capital leases is provided in Notes 9 and 20 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K. Our consolidated statement of cash flows, also included under Item 8 of this Form 10-K, provides additional liquidity information.

Total contractual cash obligations shown in Table 35: 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 Notes 8 and 9 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of 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, 2016 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 included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K. We have obligations under pension and other post-retirement benefit plans, more fully described in Note 19 to the consolidated financial statements included under Item 8 of this Form 10-K, which are not included in Table 35: Long-Term Contractual Cash Obligations.

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TABLE 36: OTHER COMMERCIAL COMMITMENTS

(In millions)	DURATION OF COMMITMENT				
	Total amounts committed <sup>(1)</sup>	Less than 1 year	1-3 years	4-5 years	Over 5 years
Indemnified securities financing	\$360,452	\$360,452	\$—	\$—	\$—
Stable value protection <sup>(2)</sup>	27,182	27,182	—	—	—
Unfunded credit facilities	28,154	18,403	5,823	3,862	66
Standby letters of credit	3,459	836	2,234	389	—
Purchase obligations <sup>(3)</sup>	235	55	62	45	73
Total commercial commitments	\$419,482	\$406,928	\$8,119	\$4,296	\$ 139

<sup>(1)</sup> Total amounts committed reflect participations to independent third parties, if any.

<sup>(2)</sup> The stable value commitments do not have a contractual maturity date; however, the agreements may generally be terminated by State Street at any time upon settlement of any outstanding payment obligations. Refer to Note 12 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K for further information.

<sup>(3)</sup> 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 36: Other Commercial Commitments, except for purchase obligations, is provided in Note 12 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of 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 State Street fails to properly exercise its fiduciary duties in its provision of products or services to clients. Legal risk is the risk of loss resulting from failure to comply with laws and contractual obligations as well as prudent ethical standards in business practices in addition to exposure to litigation from all aspects of State Street's activities. 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 RC, 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 State Street. 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 BCRC, TORC, the Operational Risk Committee, the Executive Information Security Committee, 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, provides cross-business oversight of operational risk 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 COSO framework and other industry leading practices, and is designed foremost to

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address State Street's 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 State Street;
- 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 State Street's 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 State Street. 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 Corporate Risk Analytics group develops and maintains operational risk capital estimation models, and ERM's Operations group calculates State Street's 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 State Street.

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, Assessment and Measurement

The objective of risk identification, assessment and measurement is to understand business unit strategy, risk profile and potential exposures. It is achieved through a series of risk assessments across State Street 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 RCSA 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

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State Street's 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.

The primary measurement tool used is an internally developed loss distribution approach model, referred to as the 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 \$3.57 billion and \$44.58 billion, respectively, as of December 31, 2016; 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 State Street 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, referred to as the LEDR, to support processes related to analysis, management reporting and the calculation of required capital. Internal loss event data provides State Street-specific frequency and severity information to our capital calculation process for historical loss events experienced by State Street. 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 annually across State Street 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. Workshops are aligned with specific UOMs and business units where appropriate. The results of these workshops are used to benchmark our LDA model results to determine that our calculation of required capital considers relevant risk-related information.

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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

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metrics, such as RCSA 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**

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.

**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 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.

**Reporting**

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 State Street and information that details its progress on managing risks.

**Documentation and Guidelines**

Documentation and guidelines allow for consistency and repeatability of the various processes that support the operational risk framework across State Street.

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 State Street's 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.

**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 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.

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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, 2016, the notional amount of these derivative contracts was \$1.45 trillion, of which \$1.42 trillion was composed of foreign exchange forward, swap and spot contracts. We seek to match positions closely with the objective of minimizing 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 State Street 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 components:

- A trading market risk management process led by ERM, separate from the business units' discrete activities;
- Clearly 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;

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- 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 covered positions policy, 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 spot foreign exchange, 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 covered positions policy. 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.

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Value-at-Risk, Stress Testing and Stressed VaR

As noted above, 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

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;

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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

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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.

**Stress Testing and Stressed VaR**

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).

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 identifies 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 automatically incorporated.

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.

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.

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## 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 outcomes, or P&L, 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 net interest revenue, 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 one back-testing exception in 2016 and one back-testing exception in 2015. In reference to the 2016 exception, the trading P&L that day exceeded the VaR based on the prior day's closing positions, following a large depreciation in the U.S. dollar against several major and emerging market currencies, primarily attributable to U.S. GDP growth rate being lower than expected and market reaction to Bank of Japan's decision to leave the interest rate unchanged. In reference to the 2015 exception, the trading P&L that day exceeded the VaR based on the prior day's closing positions, following a large depreciation in the U.S. dollar against several major and emerging market currencies, which depreciation can be attributed to a decision and related statements by the Federal

Reserve's Federal Open Market Committee to hold interest rates at current levels.

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. MVG examined back testing results for the market risk regulatory capital model used for 2016. 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 quarters ended December 31, 2016 and September 30, 2016, and as of December 31, 2016 and September 30, 2016, as measured by our VaR methodology:

TABLE 37: TEN-DAY VaR ASSOCIATED WITH TRADING ACTIVITIES FOR COVERED POSITIONS

	Quarter Ended December 31, 2016			Quarter Ended September 30, 2016			As of December 31, 2016	As of September 30, 2016
(In thousands)	Average	Maximum	Minimum	Average	Maximum	Minimum	VaR	VaR
Global Markets	\$8,307	\$ 15,847	\$ 3,048	\$7,594	\$ 14,160	\$ 4,215	\$ 4,088	\$ 9,393
Global Treasury	527	756	333	563	762	399	756	584
Total VaR	\$8,285	\$ 15,723	\$ 2,970	\$7,497	\$ 14,048	\$ 4,124	\$ 3,938	\$ 9,746

TABLE 38: TEN-DAY STRESSED VaR ASSOCIATED WITH TRADING ACTIVITIES FOR COVERED POSITIONS

	Quarter Ended December 31, 2016			Quarter Ended September 30, 2016			As of December 31, 2016	As of September 30, 2016
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(In thousands)	Average	Maximum	Minimum	Average	Maximum	Minimum	Stressed VaR	Stressed VaR
Global Markets	\$36,168	\$ 52,057	\$ 18,883	\$35,056	\$ 56,298	\$ 20,763	\$ 26,811	\$ 41,487
Global Treasury	10,275	13,868	7,030	11,080	15,123	7,611	11,342	10,283
Total Stressed VaR	\$38,645	\$ 55,899	\$ 20,646	\$37,194	\$ 53,771	\$ 23,077	\$ 28,624	\$ 45,019

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The twelve month average of our stressed VaR-based measure was approximately \$39 million for the quarter ended December 31, 2016, compared to an average of approximately \$37 million for the quarter ended September 30, 2016. The decline in the total VaR and stressed VaR-based measures as of December 31, 2016, compared to September 30, 2016, was driven mainly by lower end of day foreign exchange positions on December 31, 2016 compared to September 30, 2016.

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, 2016 and September 30, 2016. The totals of the VaR-based and stressed VaR-based measures for the three attributes for each VaR and stressed-VaR component 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.

TABLE 39: TEN-DAY VaR ASSOCIATED WITH TRADING  
ACTIVITIES BY RISK FACTOR<sup>(1)</sup>

(In thousands)	As of December 31, 2016			As of September 30, 2016		
	Foreign Exchange Risk	Interest Rate Risk	Volatility Risk	Foreign Exchange Risk	Interest Rate Risk	Volatility Risk
By component:						
Global Markets	\$3,279	\$3,281	\$ 102	\$7,198	\$4,407	\$ 160
Global Treasury	220	737	—	184	576	—
Total VaR	\$3,269	\$3,004	\$ 102	\$7,082	\$4,589	\$ 160

TABLE 40: TEN-DAY STRESSED VaR ASSOCIATED WITH  
TRADING ACTIVITIES BY RISK FACTOR<sup>(1)</sup>

(In thousands)	As of December 31, 2016			As of September 30, 2016		
	Foreign Exchange Risk	Interest Rate Risk	Volatility Risk	Foreign Exchange Risk	Interest Rate Risk	Volatility Risk
By component:						
Global Markets	\$5,026	\$36,563	\$ 111	\$23,236	\$47,093	\$ 183
Global Treasury	258	11,597	—	229	10,310	—
Total Stressed VaR	\$5,056	\$36,592	\$ 111	\$22,837	\$43,256	\$ 183

<sup>(1)</sup> 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 NIR under varying economic conditions, while protecting the economic value of the assets and liabilities carried in our consolidated statement of condition from the adverse effects of changes in interest rates. While many market factors affect the level of NIR 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 NIR 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 manage interest rate risk on a consolidated basis using two different, but complementary, approaches. NIR sensitivity is a short-term, earnings-based simulation that measures re-pricing mismatches on the balance sheet. It compares our baseline view of NIR over a twelve-month horizon, based on our internal forecast of interest rates, to a wide range of instantaneous and gradual rate shocks. The baseline NIR forecast includes our expectations for new business growth, changes in balance sheet mix and investment portfolio positioning. In our interest rate shocks, investment portfolio balances can fluctuate with the level of rates as prepayment

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assumptions change, however deposit balances remain consistent with the baseline. On the other hand, economic value of equity sensitivity is a discounted cash flow model designed to estimate the change in fair value of assets and liabilities under a series of immediate interest rate shocks. It measures the duration mismatch of the spot balance sheet only and does not include the impact of new business.

While there are clear differences between NIR and EVE sensitivity, there are several important similarities. First, both measures utilize consistent data and assumptions when modeling positions currently held on the balance sheet. Second, each approach assumes no management action is taken to mitigate the adverse effects of interest rate changes on our financial performance (and thus provides a conservative view of interest rate risk). NIR and EVE sensitivity metrics are continuously monitored as market conditions change and managed within internally-approved risk limits and guidelines.

**Net Interest Revenue at Risk**

In the table below, we report the expected change in net interest revenue over the next twelve months from +/-100 basis point instantaneous and gradual parallel rate shocks. Note that in each scenario, all currencies interest rates are shifted higher or lower. For the two gradual parallel rate scenarios, or interest rate ramps, the change in rates is applied evenly throughout the horizon. In each scenario, we assume no change in client behavior as a result of the changes in interest rates.

We also routinely measure NIR sensitivity to non-parallel rate shocks to isolate the impact of short-term or long-term market rates. In the up 100 basis point instantaneous shock, the majority of the benefit stems from the short-end of the yield curve. Additionally, we quantify how much of the change is a result of shifts in U.S. and non-U.S. rates. In the up 100 basis point instantaneous shock, approximately 60% of the benefit is driven by U.S. rates.

TABLE 41: NIR SENSITIVITY

(In millions)	December 31, 2016	December 31, 2015
Rate change:	Exposure/Benefit	
+100 bps shock	\$ 585	\$ 471
-100 bps shock	(265 )	(181 )
+100 bps ramp	284	198
-100 bps ramp	(161 )	(96 )

Other important factors which affect the levels of NIR are the size and mix of assets carried in our consolidated statement of condition; asset and liability spreads; the slope and interest-rate level of U.S. and non-U.S. dollar yield curves and the relationship between them; the pace of change in global market

interest rates; and management actions taken in response to the preceding conditions.

As of December 31, 2016, NIR sensitivity remains positioned to benefit from rising interest rates. Compared to prior year-end, the increase in asset sensitivity is primarily driven by fixed-rate deposit growth and slower forecasted re-pricing on interest-bearing deposits. Gradual rate shocks have a similar positioning compared with instantaneous shocks, but are less impactful due to the severity of the rate shift.

**Economic Value of Equity**

The following table highlights our economic value of equity sensitivity to a +/-200 basis point instantaneous rate shock, relative to spot interest rates. Management compares the change in EVE sensitivity against State Street's aggregate tier 1 and tier 2 risk-based capital, calculated in conformity with current applicable regulatory requirements.

TABLE 42: EVE SENSITIVITY

	December 31, 2016	December 31, 2015	December 31, 2015
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(In millions)	(as reported)		(pro forma)
Rate change:	Exposure/Benefit		
+200 bps shock	\$(1,092)	\$ (2,355 )	\$ (791 )
-200 bps shock	877	1,655	(25 )

As of December 31, 2016, economic value of equity sensitivity remains exposed to upward shifts in interest rates. Compared to prior year, the increased exposure in the up rate shock was primarily driven by an increase in our modeled deposit duration, partially offset by investment portfolio activity. In the second quarter of 2016, we refined our deposit modeling framework to better reflect recent client activity and pricing actions. These enhancements extended our expected deposit duration resulting in a significant exposure reduction in the up 200 basis point scenario. To allow for comparison between periods, we have included December 31, 2015 pro-forma information to show what the results would have been under the same model refinements that are included as of December 31, 2016.

#### Model Risk Management

The use of quantitative 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 new source of risk. In large banking organizations like State Street, model results influence business decisions, and model failure could have a harmful effect on our financial performance. As a result, the Model Risk Management Framework seeks to mitigate model risk at State Street.

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Our model risk management 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.

**Governance**

Models used in the regulatory capital calculation can only be deployed for use after receiving a satisfactory validation review and approval decision from Model Risk Management.

ERM's Model Risk Management group is responsible for defining the corporate-wide model risk governance framework, and maintains policies that achieve the framework's objectives. 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 staff with technical expertise, reports to MRAC, and provides guidance and oversight to the Model Risk Management 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 Model Validation Group for validation on a regular basis, as per existing policy.

**Model Validation**

MVG is part of Model Risk Management within ERM and performs model validations. MVG is independent, as contemplated by applicable bank regulatory requirements, of both the developers and users of the models. MVG validates models through a review process that assesses the appropriateness, accuracy, and suitability of data inputs, methodologies, 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 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 model validation and issues a model use decision that may be accompanied by mandatory remedial actions and compensating controls. Second, these decisions are reviewed, challenged, and confirmed by the MRC. Finally, model use decisions, risk ratings, and overall levels of model risk are 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

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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 State Street 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

Our primary federal banking regulator is the Federal Reserve. Both State Street and State Street Bank are subject to the minimum regulatory capital requirements established by the Federal Reserve and defined in FDICIA. 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 goals with respect to capital management is to exceed all applicable minimum regulatory capital requirements and 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 holder 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

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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.

**Stress Testing**

We administer a robust State Street-wide stress-testing program that executes multiple 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 incurred by State Street, 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. Over the past few years, stress scenarios have included a deep recession in the U.S., 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.

In connection with the focus on our key risks, each stress test incorporates idiosyncratic loss events tailored to State Street's 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.

The Federal Reserve requires bank holding companies with total consolidated assets of \$50 billion or more, which includes State Street, 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 State Street's capital adequacy and/or future performance under adverse conditions, the stress testing processes provide important insights for capital planning, risk management, and strategic decision-making at State Street.

**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 Planning group within Global Treasury is responsible for the Capital Policy and guidelines, development of the Capital Plan, the management of global capital, capital optimization, and business unit capital management.

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 are one among a group of 30 institutions worldwide that have been identified by the FSB and the BCBS as G-SIBs. Our designation as a G-SIB requires us to maintain an additional capital buffer above the Basel III final rule minimum common equity tier 1 capital ratio of 4.5%, based on a number of factors, as evaluated by banking regulators.

We and our depository institution subsidiaries are subject to the current Basel III minimum risk-based capital and leverage ratio guidelines. The Basel III final rule incorporates several multi-year transition provisions for capital components and minimum ratio requirements for common equity tier 1 capital, tier 1 capital and total capital. Additional information about G-SIBs is provided under “Regulatory Capital Adequacy and Liquidity

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Standards" in "Supervision and Regulation" under Item 1, Business, of this Form 10-K.

Regulatory Capital

We and State Street Bank, as advanced approaches banking organizations, are subject to the current Basel III minimum risk-based capital and leverage ratio guidelines. The Basel III final rule incorporates several multi-year transition provisions for capital components and minimum ratio requirements for common equity tier 1 capital, tier 1 capital and total capital. The transition period started in January 2014 and will be completed by January 1, 2019, which is concurrent with the full implementation of the Basel III final rule in the U.S.

Among other things, the Basel III final rule introduced a minimum common equity tier 1 risk-based capital ratio of 4.5% and raises the minimum tier 1 risk-based capital ratio from 4% to 6%. In addition, for advanced approaches banking organizations such as State Street, the Basel III final rule imposes a minimum supplementary tier 1 leverage ratio of 3%, the numerator of which is tier 1 capital and the denominator of which includes both on-balance sheet assets and certain off-balance sheet exposures.

The Basel III final rule also introduced a capital conservation buffer and a countercyclical capital buffer that add to the minimum risk-based capital ratios. Specifically, the final rule limits a banking organization's ability to make capital distributions and discretionary bonus payments to executive officers if it fails to maintain a common equity tier 1 capital conservation buffer of more than 2.5% of total risk-weighted assets and, if deployed during periods of excessive credit growth, a common equity tier 1 countercyclical capital buffer of up to 2.5% of total risk-weighted assets, above each of the minimum common equity tier 1, and tier 1 and total risk-based capital ratios. The countercyclical capital buffer is currently set at zero by U.S. banking regulators.

To maintain the status of our parent company as a financial holding company, we and our insured depository institution subsidiaries are required to be "well-capitalized" by maintaining capital ratios above the minimum requirements. Effective on January 1,

2015, the "well-capitalized" standard for our banking subsidiaries was revised to reflect the higher capital requirements in the Basel III final rule.

In addition to introducing new capital ratios and buffers, the Basel III final rule revises the eligibility criteria for regulatory capital instruments and provides for the phase-out of existing capital instruments that do not satisfy the new criteria. For example, existing trust preferred capital securities were phased out from tier 1 capital over a two-year period that ended on January 1, 2016, and subsequently, the qualification of these securities as tier 2 capital will be phased out over a multi-year transition period beginning on January 1, 2016 and ending on January 1, 2022. As of December 31, 2016, we retired the trusts related to our trust preferred securities and the underlying indentures do not qualify as tier 2 regulatory capital.

Under the Basel III final rule, certain new items are deducted from common equity tier 1 capital and certain regulatory capital deductions were modified as compared to the previously applicable capital regulations. Among other things, the final rule requires significant investments in the common stock of unconsolidated financial institutions, as defined, and certain deferred tax assets that exceed specified individual and aggregate thresholds to be deducted from common equity tier 1 capital. As an advanced approaches banking organization, after-tax unrealized gains and losses on AFS investment securities flow through to and affect State Street's and State Street Bank's common equity tier 1 capital, subject to a phase-in schedule.

We are required to use the advanced approaches framework as provided in the Basel III final rule to determine our risk-based capital requirements. The Dodd-Frank Act applies a "capital floor" to advanced approaches banking organizations, such as State Street and State Street Bank. 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 the PCA framework.



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The following table sets forth the transition to full implementation and the minimum risk-based capital ratio requirements under the Basel III final rule. This does not include the potential imposition of an additional countercyclical capital buffer.

TABLE 43: BASEL III FINAL RULES TRANSITION ARRANGEMENTS AND MINIMUM RISK-BASED CAPITAL RATIOS<sup>(1) (2)</sup>

	2015	2016	2017	2018	2019
Capital conservation buffer (Common Equity Tier 1)	— %	0.625 %	1.250 %	1.875 %	2.500 %
G-SIB surcharge (CET1) <sup>(1)</sup>	—	0.375	0.750	1.125	1.500
Minimum common equity tier 1 <sup>(3)</sup>	4.5	5.500	6.500	7.500	8.500
Minimum tier 1 capital <sup>(3)</sup>	6.0	7.000	8.000	9.000	10.000
Minimum total capital <sup>(3)</sup>	8.0	9.000	10.000	11.000	12.000

<sup>(1)</sup> As part of the G-SIB Surcharge final rule, the Federal Reserve published estimated G-SIB surcharges for the eight U.S. G-SIBs based on relevant data from 2012-2014 and the estimated resulting G-SIB surcharge for State Street is 1.5%. Including the 1.5% surcharge, State Street's minimum risk-based capital ratio requirements, as of January 1, 2019 would be 8.5% for common equity tier 1, 10.0% for tier 1 capital and 12.0% for total capital.

<sup>(2)</sup> Minimum ratios shown above do not reflect the countercyclical buffer, currently set at zero by U.S. banking regulators.

<sup>(3)</sup> Minimum common equity tier 1 capital, minimum tier 1 capital and minimum total capital presented include the transitional capital conservation buffer as well as the estimated transitional G-SIB surcharge being phased-in beginning January 1, 2016 through January 1, 2019 based on an estimated 1.5% surcharge in all periods. The specific calculation of State Street's and State Street Bank's risk-based capital ratios will change as the provisions of the Basel III final rule related to the numerator (capital) and denominator (risk-weighted assets) are phased in, and as our risk-weighted assets calculated using the advanced approaches change due to potential changes in methodology. These ongoing methodological changes will result 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.

The following table presents the regulatory capital structure and related regulatory capital ratios for State Street 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.

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 final rule are phased in, the ratios presented in the table for each period are not directly comparable. Refer to the footnotes following the table.

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TABLE 44: REGULATORY CAPITAL STRUCTURE AND RELATED REGULATORY CAPITAL RATIOS

(In millions)	State Street				State Street Bank			
	Basel III Advanced Approaches December 31, 2016 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2016 <sup>(2)</sup>	Basel III Advanced Approaches December 31, 2015 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2015 <sup>(2)</sup>	Basel III Advanced Approaches December 31, 2016 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2016 <sup>(2)</sup>	Basel III Advanced Approaches December 31, 2015 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2015 <sup>(2)</sup>
Common shareholders' equity:								
Common stock and related surplus	\$10,286	\$10,286	\$10,250	\$10,250	\$11,376	\$11,376	\$10,938	\$10,938
Retained earnings	17,459	17,459	16,049	16,049	12,285	12,285	10,655	10,655
Accumulated other comprehensive income (loss)	(1,936 )	(1,936 )	(1,422 )	(1,422 )	(1,648 )	(1,648 )	(1,230 )	(1,230 )
Treasury stock, at cost	(7,682 )	(7,682 )	(6,457 )	(6,457 )	—	—	—	—
Total	18,127	18,127	18,420	18,420	22,013	22,013	20,363	20,363
Regulatory capital adjustments:								
Goodwill and other intangible assets, net of associated deferred tax liabilities <sup>(3)</sup>	(6,348 )	(6,348 )	(5,927 )	(5,927 )	(6,060 )	(6,060 )	(5,631 )	(5,631 )
Other adjustments	(155 )	(155 )	(60 )	(60 )	(148 )	(148 )	(85 )	(85 )
Common equity tier 1 capital	11,624	11,624	12,433	12,433	15,805	15,805	14,647	14,647
Preferred stock	3,196	3,196	2,703	2,703	—	—	—	—
Trust preferred capital securities subject to phase-out from tier 1 capital	—	—	237	237	—	—	—	—
Other adjustments	(103 )	(103 )	(109 )	(109 )	—	—	—	—
Tier 1 capital	14,717	14,717	15,264	15,264	15,805	15,805	14,647	14,647
Qualifying subordinated long-term debt	1,172	1,172	1,358	1,358	1,179	1,179	1,371	1,371
Trust preferred capital securities phased out of tier 1 capital	—	—	713	713	—	—	—	—
ALLL and other	19	77	12	66	15	77	8	66
Other adjustments	1	1	2	2	—	—	—	—
Total capital	\$15,909	\$15,967	\$17,349	\$17,403	\$16,999	\$17,061	\$16,026	\$16,084

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Risk-weighted assets:									
Credit risk	\$50,900	\$98,125	\$51,733	\$93,515	\$47,383	\$94,413	\$47,677	\$89,164	
Operational risk <sup>(4)</sup>	44,579	NA	43,882	NA	44,043	NA	43,324	NA	
Market risk <sup>(5)</sup>	3,822	1,751	3,937	2,378	3,822	1,751	3,939	2,378	
Total risk-weighted assets	\$99,301	\$99,876	\$99,552	\$95,893	\$95,248	\$96,164	\$94,940	\$91,542	
Adjusted quarterly average assets	\$226,310	\$226,310	\$221,880	\$221,880	\$222,584	\$222,584	\$217,358	\$217,358	

Capital Ratios <sup>(1)</sup> :	2016										
	Minimum Requirements										
Capital Ratios <sup>(1)</sup> :	2015										
	Including Capital Minimum Requirements <sup>(7)</sup> and G-SIB Surcharge <sup>(6)</sup>										
Common equity tier 1 capital	5.5%	4.5%	11.7%	11.6%	12.5%	13.0%	16.6%	16.4%	15.4%	16.0%	%
Tier 1 capital	7.0	6.0	14.8	14.7	15.3	15.9	16.6	16.4	15.4	16.0	
Total capital	9.0	8.0	16.0	16.0	17.4	18.1	17.8	17.7	16.9	17.6	
Tier 1 leverage	4.0	4.0	6.5	6.5	6.9	6.9	7.1	7.1	6.7	6.7	

NA: Not applicable.

(1) Common equity tier 1 capital, tier 1 capital and total capital ratios as of December 31, 2016 and December 31, 2015 were calculated in conformity with the advanced approaches provisions of the Basel III final rule. Tier 1 leverage ratio as of December 31, 2016 and December 31, 2015 were calculated in conformity with the Basel III final rule.

(2) Common equity tier 1 capital, tier 1 capital and total capital ratios as of December 31, 2016 and December 31, 2015 were calculated in conformity with the standardized approach provisions of the Basel III final rule. Tier 1 leverage ratio as of December 31, 2016 and December 31, 2015 were calculated in conformity with the Basel III final rule.

(3) Amounts for State Street and State Street Bank as of December 31, 2016 consisted of goodwill, net of associated deferred tax liabilities, and 60% of other intangible assets, net of associated deferred tax liabilities. Amounts for State Street and State Street Bank as of December 31, 2015 consisted of goodwill, net of deferred tax liabilities and 40% of other intangible assets, net of associated deferred tax liabilities. Intangible assets, net of associated deferred tax liabilities is phased in as a deduction from capital, in conformity with the Basel III final rule.

(4) 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 risk RWA under the advanced approaches depending on the severity of the loss event and its categorization among the seven Basel-defined UOMs.

(5) Market risk risk-weighted assets reported in conformity with the Basel III advanced approaches included a CVA which reflected the risk of potential fair-value adjustments for credit risk reflected in our valuation of over-the-counter derivative contracts. The CVA was not provided for in the final market risk capital rule; however, it was required by the advanced approaches provisions of the Basel III final rule. We used a simple CVA approach in conformity with the Basel III advanced approaches.

(6) Minimum requirements will be phased in up to full implementation beginning on January 1, 2019; minimum requirements listed are as of December 31, 2016. See Table 43: Basel III Final Rules Transition Arrangements and Minimum Risk Based Capital Ratios.

(7) Minimum requirements will be phased in up to full implementation beginning on January 1, 2019; minimum requirements listed are as of December 31, 2015. See Table 43: Basel III Final Rules Transition Arrangements and Minimum Risk Based Capital Ratios.

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As of January 1, 2015 we used the standardized provisions of the Basel III final rule in addition to the advanced approaches provisions which were previously implemented in the second quarter of 2014, and the lower of our regulatory capital ratios calculated under the advanced approaches and those ratios calculated under the standardized approach are applied in the assessment of our capital adequacy for regulatory capital purposes. Beginning in the second quarter of 2014, until January 1, 2015, we used the advanced approaches provisions in the Basel III final rule, and transitional provisions of the Basel III final rule, and the lower of our regulatory capital ratios calculated under the advanced approaches and those ratios calculated under the transitional provisions were applied in the assessment of our capital adequacy for regulatory capital purposes.

Our common equity tier 1 capital decreased \$809 million as of December 31, 2016 compared to December 31, 2015 as a result of purchases by us of our common stock of approximately \$1.37 billion, declarations of common and preferred stock dividends of \$732 million, foreign currency translation impact on accumulated other comprehensive income, the impact of the phase-in provisions of the Basel III final rule related to other intangible assets and the impact of the acquired GEAM business on deductions for goodwill and intangibles. The decreases in common equity tier 1 capital were mostly offset by net income. In the same comparative period, our tier 1 capital decreased \$547 million, due to the decrease in common equity tier 1 capital and the phase out of trust preferred capital securities of \$237 million from tier 1 to tier 2 capital, offset by \$493 million issuance of preferred stock in April 2016. Total capital decreased \$1.44 billion under advanced approaches and decreased \$1.44 billion under standardized approach due to the changes to tier 1 capital, and the retirement of the trusts related to our trust preferred capital securities. State Street Bank's tier 1 capital increased \$1.16 billion, and total capital increased \$973 million and \$977 million under the advanced and standardized approaches, respectively, as of December 31, 2016, compared to December 31, 2015. The increase resulted from year-to-date net income and the GEAM acquisition, partly offset by the phase-in provisions of the Basel III final rule related to other intangible assets, the previously-described impact to accumulated other comprehensive income and dividends paid to State Street.

The table below presents a roll-forward of common equity tier 1 capital, tier 1 capital and total capital for the years ended December 31, 2016 and 2015.

TABLE 45: CAPITAL ROLL-FORWARD

(In millions)	State Street			
	Basel III Advanced Approach December 31, 2016	Basel III Standardized Approach December 31, 2016	Basel III Advanced Approaches December 31, 2015	Basel III Standardized Approach December 31, 2015
Common equity tier 1 capital:				
Common equity tier 1 capital balance, beginning of period	\$12,433	\$12,433	\$13,327	\$13,327
Net income	2,143	2,143	1,980	1,980
Changes in treasury stock, at cost	(1,225)	(1,225)	(1,299)	(1,299)
Dividends declared	(732)	(732)	(666)	(666)
Goodwill and other intangible assets, net of associated deferred tax liabilities	(421)	(421)	(58)	(58)
Effect of certain items in accumulated other comprehensive income (loss)	(514)	(514)	(780)	(780)
Other adjustments	(60)	(60)	(71)	(71)
Changes in common equity tier 1 capital	(809)	(809)	(894)	(894)
Common equity tier 1 capital balance, end of period	11,624	11,624	12,433	12,433



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Additional tier 1 capital:				
Tier 1 capital balance, beginning of period	15,264	15,264	15,618	15,618
Change in common equity tier 1 capital	(809)	)(809	)(894	)(894 )
Net issuance of preferred stock	493	493	742	742
Trust preferred capital securities phased out of tier 1 capital	(237)	)(237	)(238	)(238 )
Other adjustments	6	6	36	36
Changes in tier 1 capital	(547)	)(547	)(354	)(354 )
Tier 1 capital balance, end of period	14,717	14,717	15,264	15,264
Tier 2 capital:				
Tier 2 capital balance, beginning of period	2,085	2,139	2,097	2,097
Net issuance and changes in long-term debt qualifying as tier 2	(186)	)(186	)(260	)(260 )
Trust preferred capital securities phased into tier 2 capital	(713)	)(713	) 238	238
Changes in ALLL and other	7	11	12	66
Change in other adjustments	(1)	)(1	)(2	)(2 )
Changes in tier 2 capital	(893)	)(889	)(12	)42
Tier 2 capital balance, end of period	1,192	1,250	2,085	2,139
Total capital:				
Total capital balance, beginning of period	17,349	17,403	17,715	17,715
Changes in tier 1 capital	(547)	)(547	)(354	)(354 )
Changes in tier 2 capital	(893)	)(889	)(12	)42
Total capital balance, end of period	\$15,909	\$ 15,967	\$ 17,349	\$ 17,403

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The following table presents a roll-forward of the Basel III advanced approaches risk-weighted assets for the years ended December 31, 2016 and 2015.

TABLE 46: ADVANCED APPROACHES RWA ROLL-FORWARD

(In millions)	State Street	
	December 31, 2016	December 31, 2015
Total risk-weighted assets, beginning of period	\$99,552	\$107,827
Changes in credit risk-weighted assets:		
Net increase (decrease) in investment securities-wholesale	(1,027 )	597
Net increase (decrease) in loans and leases	575	(944 )
Net increase (decrease) in securitization exposures	(3,246 )	(9,569 )
Net increase (decrease) in repo-style transaction exposures	606	842
Net increase (decrease) in OTC derivatives exposures	1,812	(1,317 )
Net increase (decrease) in all other <sup>(1)</sup>	447	(4,750 )
Net increase (decrease) in credit risk-weighted assets	(833 )	(15,141 )
Net increase (decrease) in credit valuation adjustment	512	(618 )
Net increase (decrease) in market risk-weighted assets	(627 )	(532 )
Net increase (decrease) in operational risk-weighted assets	697	8,016
Total risk-weighted assets, end of period	\$99,301	\$99,552

<sup>(1)</sup> Includes assets not in a definable category, cleared transactions, non-material portfolio, other wholesale, cash and due from, and interest-bearing deposits with banks, equity exposures, and 6% credit risk supervisory charge.

As of December 31, 2016, total advanced approaches risk-weighted assets decreased \$251 million compared to December 31, 2015, mainly due to a decrease in credit risk and market risk, partially offset by an increase in operational risk and credit valuation adjustment. The decrease in credit risk was mainly due to a decrease in securitization exposures as a result of sell-offs and maturities as well as calls of agency debt securities within our wholesale investment portfolio, mostly offset by an increase in derivatives exposure from marked-to-market FX contracts stemming from a stronger dollar and an increase in securities finance agency lending. The market risk decrease was a result of reduced end of day positions in FX and interest rate risk. Operational risk increased approximately \$700 million mainly due to an increase in loss event frequency. The increase in credit valuation adjustment was driven by an increase in the marked-to-market FX contracts.

As of December 31, 2015, total advanced approaches risk-weighted assets decreased \$8.28 billion compared to December 31, 2014, primarily the result of a reduction in credit risk due to sales, maturities and amortization of the securitized investment portfolio and the subsequent reinvestment in HQLA, a decrease associated with the usage of the

alternative modified look through approach for investments in investment funds, and a decline in over-the-counter foreign exchange derivatives mainly due to a decrease in volumes and the addition of new netting agreements. The decreases were partially offset by an \$8.02 billion increase in operational risk, which reflects adjustments to the model inputs.

The following table presents a roll-forward of the Basel III standardized approach risk-weighted assets for the years ended December 31, 2016 and 2015.

TABLE 47: STANDARDIZED APPROACH RWA ROLL-FORWARD

(In millions)	State Street	
	December 31, 2016	December 31, 2015

	December 31, 2016	December 31, 2015
Total estimated risk-weighted assets, beginning of period <sup>(1)</sup>	\$95,893	\$125,011
Changes in credit risk-weighted assets:		
Net increase (decrease) in investment securities- wholesale	(1,471 )	(2,579 )
Net increase (decrease) in loans and leases	998	(539 )
Net increase (decrease) in securitization exposures	(3,144 )	(9,569 )
Net increase (decrease) in repo-style transaction exposures	4,994	(7,535 )
Net increase (decrease) in OTC derivatives exposures	3,462	(4,007 )
Net increase (decrease) in all other <sup>(2)</sup>	(229 )	(4,357 )
Net increase (decrease) in credit risk-weighted assets	4,610	(28,586 )
Net increase (decrease) in market risk-weighted assets	(627 )	(532 )
Total risk-weighted assets, end of period	\$99,876	\$95,893

<sup>(1)</sup> Standardized approach risk-weighted assets as of the periods noted above were calculated using State Street's estimates, based on our then current interpretation of the Basel III final rule.

<sup>(2)</sup> Includes assets not in a definable category, cleared transactions, other wholesale, cash and due from, and interest-bearing deposits with banks and equity exposures.

As of December 31, 2016, total standardized approach risk-weighted assets increased \$3.98 billion compared to December 31, 2015, primarily the result of an increase in securities finance agency lending, an increase in market values of FX contracts, partially offset by a decrease in securitization exposures, wholesale investments and market risk. The decrease in securitization was due to sell-offs and maturities while the decrease in wholesale investments was due calls of agency debt securities. Market risk reduction is resulting from a lower stressed VaR.

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The regulatory capital ratios as of December 31, 2016, presented in Table 44: Regulatory Capital Structure and Related Regulatory Capital Ratios, are calculated under the standardized approach and advanced approaches in conformity with the Basel III final rule. The advanced approaches-based ratios (actual and estimated pro forma) reflect calculations and determinations with respect to our capital and related matters as of December 31, 2016, based on State Street and external data, quantitative formulae, statistical models, historical correlations and assumptions, collectively referred to as "advanced systems," in effect and used by State Street for those purposes as of the time we first reported such ratios in a quarterly report on Form 10-Q. 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 risk-weighted assets 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 UOMs, 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, State Street-specific 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 final 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. Models implemented under the Basel III final rule, particularly those implementing the advanced approaches, remain subject to regulatory review and approval. The full effects of the Basel III final rule on State Street and State Street Bank are therefore subject to further evaluation and also to further regulatory guidance, action or rule-making.

Estimated Basel III Fully Phased-in Capital Ratios

Table 48: Regulatory Capital Structure and Related Regulatory Capital Ratios - State Street, and Table 49: Regulatory Capital Structure and Related Regulatory Capital Ratios - State Street Bank, present our capital ratios for State Street and State Street Bank as of December 31, 2016, calculated in conformity with the advanced approaches provisions and standardized approach of the Basel III final rule on a pro forma basis under the fully phased-in provisions of the Basel III final rule.

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STATE STREET

December 31, 2016 (In millions)	Basel III Advanced Approaches		Basel III Standardized Approach		Basel III Standardized Approach	
	Phase-In Provisions	Fully Phased-In Pro-Forma Estimate	Phase-In Provisions	Fully Phased-In Pro-Forma Estimate	Phase-In Provisions	Fully Phased-In Pro-Forma Estimate
Total common shareholders' equity	\$18,127	\$(104)	\$18,023	\$18,127	\$(104)	\$18,023
Regulatory capital adjustments:						
Goodwill and other intangible assets, net of associated deferred tax liabilities	(6,348 )	(561 )	(6,909 )	(6,348 )	(561 )	(6,909 )
Other adjustments	(155 )	(104 )	(259 )	(155 )	(104 )	(259 )
Common equity tier 1 capital	11,624	(769 )	10,855	11,624	(769 )	10,855
Additional tier 1 capital:						
Preferred stock	3,196	—	3,196	3,196	—	3,196
Trust preferred capital securities	—	—	—	—	—	—
Other adjustments	(103 )	103	—	(103 )	103	—
Additional tier 1 capital	3,093	103	3,196	3,093	103	3,196
Tier 1 capital	14,717	(666 )	14,051	14,717	(666 )	14,051
Tier 2 capital:						
Qualifying subordinated long-term debt	1,172	—	1,172	1,172	—	1,172
Trust preferred capital securities	—	—	—	—	—	—
ALLL and other	19	—	19	77	—	77
Other	1	(1 )	—	1	(1 )	—
Tier 2 capital	1,192	(1 )	1,191	1,250	(1 )	1,249
Total capital	\$15,909	\$(667)	\$15,242	\$15,967	\$(667)	\$15,300
Risk weighted assets	\$99,301	\$33	\$99,334	\$99,876	\$31	\$99,907
Adjusted average assets	226,310	(474 )	225,836	226,310	(474 )	225,836
Total assets for SLR	251,033	(474 )	250,559	251,033	(474 )	250,559
Capital ratios <sup>(1)</sup> :	Minimum Requirement	Minimum Requirement Including Capital Conservation Buffer and G-SIB	Minimum Requirement Including Capital Conservation Buffer and G-SIB			

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		Surcharge 2016	Surcharge 2019								
Common equity tier 1 capital <sup>(2)</sup>	4.5%	5.5%	8.5%	11.7	%	10.9	%	11.6	%	10.9	%
Tier 1 capital	6.0	7.0	10.0	14.8		14.1		14.7		14.1	
Total capital	8.0	9.0	12.0	16.0		15.3		16.0		15.3	
Tier 1 leverage	4.0	NA	NA	6.5		6.2		6.5		6.2	
Supplementary leverage	5.0	NA	NA	5.9		5.6		5.9		5.6	

NA: Not applicable.

<sup>(1)</sup> Common equity tier 1 ratio is calculated by dividing common equity tier 1 capital (numerator) by risk-weighted assets (denominator); tier 1 capital ratio is calculated by dividing tier 1 capital (numerator) by risk-weighted assets (denominator); total capital ratio is calculated by dividing total capital (numerator) by risk-weighted assets (denominator); tier 1 leverage ratio is calculated by dividing tier 1 capital (numerator) by adjusted average assets (denominator); and supplementary leverage ratio, or SLR, is calculated by dividing tier 1 capital (numerator) by total assets for SLR (denominator).

<sup>(2)</sup> Common equity tier 1 ratios were calculated in conformity with the provisions of the Basel III final rule; refer to Table 44: Regulatory Capital Structure and Related Regulatory Capital Ratios.

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AND RESULTS OF OPERATIONS (Continued)TABLE 49: REGULATORY CAPITAL STRUCTURE AND RELATED REGULATORY CAPITAL RATIOS -  
STATE STREET BANK

December 31, 2016 (In millions)	Basel III Advanced Approaches		Basel III Standardized Approach		Basel III Advanced Approaches		Basel III Standardized Approach	
	Phase-In Provisions	Fully Phased-In Pro-Forma Estimate	Phase-In Provisions	Fully Phased-In Pro-Forma Estimate	Phase-In Provisions	Fully Phased-In Pro-Forma Estimate	Phase-In Provisions	Fully Phased-In Pro-Forma Estimate
Total common shareholders' equity	\$22,013	\$(96 )	\$21,917	\$22,013	\$(96 )	\$21,917		
Regulatory capital adjustments:								
Goodwill and other intangible assets, net of associated deferred tax liabilities	(6,060 )	(540 )	(6,600 )	(6,060 )	(540 )	(6,600 )		
Other adjustments	(148 )	—	(148 )	(148 )	—	(148 )		
Common equity tier 1 capital	15,805	(636 )	15,169	15,805	(636 )	15,169		
Additional tier 1 capital:								
Preferred stock	—	—	—	—	—	—		
Other adjustments	—	—	—	—	—	—		
Additional tier 1 capital	—	—	—	—	—	—		
Tier 1 capital	15,805	(636 )	15,169	15,805	(636 )	15,169		
Tier 2 capital:								
Qualifying subordinated long-term debt	1,179	—	1,179	1,179	—	1,179		
ALLL and other	15	—	15	77	—	77		
Other	—	—	—	—	—	—		
Tier 2 capital	1,194	—	1,194	1,256	—	1,256		
Total capital	\$16,999	\$(636)	\$16,363	\$17,061	\$(636)	\$16,425		
Risk weighted assets	\$95,248	\$(262)	\$94,986	\$96,164	\$(249)	\$95,915		
Adjusted average assets	222,584	(454 )	222,130	222,584	(454 )	222,130		
Total assets for SLR	247,409	(454 )	246,955	247,409	(454 )	246,955		
Capital ratios <sup>(1)</sup> :	Minimum Requirement	Minimum Requirement Including Capital Conservation Buffer and G-SIB Surcharge 2016	Minimum Requirement Including Capital Conservation Buffer and G-SIB Surcharge 2019					
Common equity tier 1 capital <sup>(2)</sup>	4.5%	5.5%	8.5%	16.6 %	16.0 %	16.4 %	15.8 %	
Tier 1 capital	6.0	7.0	10.0	16.6	16.0	16.4	15.8	
Total capital	8.0	9.0	12.0	17.8	17.2	17.7	17.1	
Tier 1 leverage	4.0	NA	NA	7.1	6.8	7.1	6.8	
	6.0	NA	NA	6.4	6.1	6.4	6.1	

Supplementary  
leverage

NA: Not applicable.

(1) Common equity tier 1 capital ratio is calculated by dividing common equity tier 1 capital (numerator) by risk-weighted assets (denominator); tier 1 capital ratio is calculated by dividing tier 1 capital (numerator) by risk-weighted assets (denominator); total capital ratio is calculated by dividing total capital (numerator) by risk-weighted assets (denominator); tier 1 leverage ratio is calculated by dividing tier 1 capital (numerator) by adjusted average assets (denominator); and supplementary leverage ratio is calculated by dividing tier 1 capital (numerator) by total assets for SLR (denominator).

(2) Common equity tier 1 ratios were calculated in conformity with the provisions of the Basel III final rule; refer to Table 44: Regulatory Capital Structure and Related Regulatory Capital Ratios.

Fully phased-in pro-forma estimates of common shareholders' equity include 100% of accumulated other comprehensive income, including accumulated other comprehensive income attributable to available-for-sale securities, cash flow hedges and defined benefit pension plans. Fully phased-in pro-forma estimates of common equity tier 1 capital reflect 100% of applicable deductions, including but not limited to, intangible assets net of deferred tax liabilities. Fully phased-in tier 1 capital reflects the transition of trust preferred capital securities from tier 1 capital to tier 2 capital. For both Basel III advanced and standardized approaches, fully phased-in pro-forma estimates of risk-weighted assets reflect the exclusion of intangible assets, offset by additions related to non-significant equity exposures and deferred tax assets related to temporary differences.

The Volcker rule, including the required capital deduction for investments in a covered fund, became effective on July 21, 2015, for investments in and relationships with a covered fund made after December 31, 2013. The Federal Reserve issued an order extending the Volcker rule's general conformance period until July 21, 2016 for legacy covered funds and announced its intention to grant banking entities an additional one-year extension of the conformance period until July 21, 2017. As a result, for legacy covered funds, the Volcker rule capital deduction will not become effective until July 21, 2017. On July 7, 2016, the Federal Reserve formally announced the extension of the general conformance period to July 21, 2017. For additional information on the Volcker rule, refer to "Supervision and Regulation" included under Item 1, Business, of this Form 10-K.

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## Supplementary Leverage Ratio

In 2014, U.S. banking regulators issued final rules implementing an SLR, for certain bank holding companies, like State Street, and their insured depository institution subsidiaries, like State Street Bank, which we refer to as the SLR final rule. Upon implementation, the SLR final rule requires that, as of January 1, 2018, (i) State Street Bank maintain an SLR of at least 6% to be well capitalized under the U.S. banking regulators' PCA framework and (ii) State Street maintain an SLR of at least 5% to avoid

limitations on capital distributions and discretionary bonus payments. In addition to the SLR, State Street is subject to a minimum tier 1 leverage ratio of 4%, which differs from the SLR primarily in that the denominator of the tier 1 leverage ratio is only a quarterly average of on-balance sheet assets and does not include any off-balance sheet exposures. Beginning with reporting for March 31, 2015, State Street was required to include SLR disclosures, calculated on a transitional basis, with its other Basel disclosures.

TABLE 50: SUPPLEMENTARY LEVERAGE RATIO

December 31, 2016

(Dollars in millions)	Transitional SLR	Phase-In Provisions	Fully Phased-in Pro Forma SLR Estimate
State Street:			
Tier 1 capital	\$ 14,717	\$ (666 )	\$ 14,051
On- and off-balance sheet leverage exposure	257,509	—	257,509
Less: regulatory deductions	(6,476 )	(474 )	(6,950 )
Total assets for SLR	\$251,033	\$ (474 )	\$250,559
Supplementary leverage ratio	5.9	% (0.3 )%	5.6 %
State Street Bank:			
Tier 1 capital	\$ 15,805	\$ (636 )	\$ 15,169
On- and off-balance sheet leverage exposure	253,487	—	253,487
Less: regulatory deductions	(6,078 )	(454 )	(6,532 )
Total assets for SLR	\$247,409	\$ (454 )	\$246,955
Supplementary leverage ratio	6.4	% (0.3 )%	6.1 %

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## 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, 2016:

TABLE 51: PREFERRED STOCK ISSUED AND OUTSTANDING

	Issuance Date	Depository Shares Issued	Ownership Interest per Depository Share	Liquidation Preference Per Share	Liquidation Preference Per Depository Share	Net Proceeds of Offering (In millions)	Redemption Date <sup>(1)</sup>
Preferred Stock <sup>(2)</sup> :							
Series C	August 2012	20,000,000	1/4,000th	\$ 100,000	\$ 25	\$ 488	September 15, 2017
Series D	February 2014	30,000,000	1/4,000th	100,000	25	742	March 15, 2024
Series E	November 2014	30,000,000	1/4,000th	100,000	25	728	December 15, 2019
Series F	May 2015	750,000	1/100th	100,000	1,000	742	September 15, 2020
Series G	April 2016	20,000,000	1/4,000th	100,000	25	493	March 15, 2026

<sup>(1)</sup> On the redemption date, or any dividend declaration date thereafter, the preferred stock and corresponding depository shares may be redeemed by us, in whole or in part, at the liquidation price per share and liquidation price per depository share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

<sup>(2)</sup> The preferred stock and corresponding depository 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 depository share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

The following table presents the dividends declared for each of the series of preferred stock issued and outstanding for the periods indicated:

TABLE 52: PREFERRED STOCK DIVIDENDS

	Years Ended December 31,			Years Ended December 31,		
	2016			2015		
	Dividends Declared per Share	Dividends Declared per Depository Share	Total (In millions)	Dividends Declared per Share	Dividends Declared per Depository Share	Total (In millions)
Preferred Stock:						
Series C	\$5,250	\$ 1.32	\$ 26	\$5,250	\$ 1.32	\$ 26
Series D	5,900	1.48	44	5,900	1.48	44
Series E	6,000	1.52	45	6,333	1.60	48
Series F	5,250	52.50	40	1,663	16.63	12

Series G	3,626	0.90	18	—	—	—
Total			\$ 173			\$ 130

In January 2017, we declared dividends on our Series C, D, E, F and G preferred stock of approximately \$1,313, \$1,475, \$1,500, \$2,625 and \$1,338, respectively, per share, or approximately \$0.33, \$0.37, \$0.38, \$26.26 and \$0.33, respectively, per depositary share. These dividends total approximately \$6 million, \$11 million, \$11 million, \$20 million and \$7 million on our Series C, D, E, F and G preferred stock, respectively, which will be paid in March 2017.

#### Common Stock

In July 2016, our Board approved a common stock purchase program authorizing the purchase of up to \$1.4 billion of our common stock through June 30, 2017 (the 2016 Program). In March 2015, our Board approved a common stock purchase program authorizing the purchase of up to \$1.8 billion of our common stock through June 30, 2016 (the 2015 Program). The table below presents the activity under both the 2016 Program and the 2015 Program during the year ended December 31, 2016.

TABLE 53: SHARES REPURCHASED

	Shares Purchased (In millions)	Average Cost per Share	Total Purchased (In millions)
2016 Program	9.0	\$ 72.66	\$ 650
2015 Program	12.1	58.83	715
Total	21.1	\$ 64.70	\$ 1,365

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The table below presents the dividends declared on common stock for the periods indicated:

TABLE 54: COMMON STOCK DIVIDENDS

Years Ended December 31,			
Dividends		Dividends	
Declared	Total	Declared	Total
per	(In	per	(In
Share	millions)	Share	millions)
2016		2015	
Common Stock \$1.44	\$ 559	\$1.32	\$ 536

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 included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

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 and State Street's capital positions, its 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 \$360.45 billion as of December 31, 2016, compared to \$320.44 billion as of December 31, 2015. 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 \$377.92 billion and \$335.42 billion as

collateral for indemnified securities on loan as of December 31, 2016 and December 31, 2015, 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 \$377.92 billion and \$335.42 billion, referenced above, \$60.00 billion and \$63.06 billion was invested in indemnified repurchase agreements as of December 31, 2016 and December 31, 2015, respectively. We or our agents held \$63.96 billion and \$67.02 billion as collateral for indemnified investments in repurchase agreements as of December 31, 2016 and December 31, 2015, respectively.

Additional information about our securities finance activities and other off-balance sheet arrangements is provided in Notes 10 and 12 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of 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 included under Item 8, Financial Statements and Supplementary Data, of 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

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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 State Street have been identified by management as those associated with recurring fair-value measurements, OTTI of investment securities, 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, AFS investment securities and derivative 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 included under Item 8, Financial Statements and Supplementary Data, of 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).

As of December 31, 2016, including the effect of netting, we categorized approximately 6% of our financial assets carried at fair value in level 1, approximately 92% of our financial assets carried at fair value in level 2, and approximately 2% of our financial assets carried at fair value in level 3 of the fair value hierarchy. As of December 31, 2015, including the effect of netting, we categorized approximately 8% of our financial assets carried at fair value in level 1, approximately 89% of our financial assets carried at fair value in level 2, and approximately 3% of our financial assets carried at fair value in level 3 of the fair value hierarchy.

As of December 31, 2016, on the same basis, we categorized none of our financial liabilities carried at fair value in level 1, approximately 100% of our financial liabilities carried at fair value in level 2, and less than 1% of our

financial liabilities carried at fair value in level 3 of the fair value hierarchy. As of December 31, 2015, on the same basis, we categorized approximately 2% of our financial liabilities carried at fair value in level 1, we categorized approximately 98% of our financial liabilities carried at fair value in level 2, and less than 1% of our financial liabilities carried at fair value in level 3 of the fair value hierarchy.

The assets categorized in level 1 were primarily U.S. Treasury obligations and trading account assets. Fair value for these securities was measured by management using unadjusted quoted prices in active markets for identical securities.

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The assets categorized in level 2 were primarily AFS investment securities and derivative instruments. Fair value for the investment securities was measured by management primarily using information obtained from independent third parties. Information obtained from third parties is subject to review by management as part of a validation process. Management utilizes a process to verify the information provided, including an understanding of 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.

The derivative instruments categorized in level 2 primarily comprised of foreign exchange and interest-rate contracts used in our trading activities, for which fair value was measured by management using discounted cash flow techniques, with inputs consisting of observable spot and forward points, as well as observable interest rate curves. The substantial majority of our financial assets categorized in level 3 were asset-backed AFS securities. Level-3 assets also included foreign exchange derivative contracts. The aggregate fair value of our financial assets and liabilities categorized in level 3 as of December 31, 2016 decreased approximately 45% compared to 2015, primarily the result of transfers out of level 3 and paydowns of asset-backed and non-U.S. debt securities.

With respect to derivative instruments, we evaluated the impact on valuation of the credit risk of our counterparties and of our own credit. We considered such factors as the market-based probability of default by us and our counterparties, and our current and expected potential future net exposures by remaining maturities, in determining the appropriate measurements of fair value. Valuation adjustments associated with derivative instruments were not significant to our consolidated financial performance in 2016, 2015 or 2014.

**Other-Than-Temporary Impairment of Investment Securities**

Our portfolio of fixed-income investment securities constitutes a significant portion of the assets carried in our consolidated statement of condition. U.S. GAAP requires the use of expected future cash flows to evaluate OTTI of these investment securities. The amount and timing of these expected future cash flows are significant estimates used in our evaluation of OTTI. An OTTI is

triggered if the intent is to sell the security or the security will more likely than not have to be sold before the amortized cost basis is recovered. Additional information with respect to management's assessment of OTTI is provided in Note 3 to the consolidated financial statements included under Item 8, Financial Statements, of this Form 10-K.

Expectations of defaults and prepayments are the most significant assumptions underlying our estimates of future cash flows. In determining these estimates, management relies on relevant and reliable information, including but not limited to deal structure, including optional and mandatory calls, market interest-rate curves, industry standard asset-class-specific prepayment models, recent prepayment history, independent credit ratings, and recent actual and projected credit losses. Management considers this information based on its relevance and uses its best judgment in order to determine its assumptions for underlying cash-flow expectations and resulting estimates. Management reviews its underlying assumptions and develops expected future cash-flow estimates at least quarterly. Additional detail with respect to the sensitivity of these default and prepayment assumptions is provided under "Investment Securities" in "Financial Condition" of this Management's Discussion and Analysis.

**Impairment of 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 and core deposit intangible assets, 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, while other intangible assets are amortized over their estimated useful lives.

Goodwill is ultimately supported by revenue from our Investment Servicing and Investment Management lines of business. A decline in earnings as a result of a lack of growth, or our inability to deliver cost-effective services over sustained periods, could lead to a perceived impairment of goodwill, which would be evaluated and, if necessary, be recorded as a write-down of the reported amount of goodwill through a charge to other expenses in our consolidated statement of income.

On an annual basis, or more frequently if circumstances arise, management reviews goodwill and evaluates events or other developments that may indicate impairment of the carrying amount. We perform this evaluation at the reporting unit level,

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION  
AND RESULTS OF OPERATIONS (Continued)

which is one level below our two major lines of business. The evaluation methodology for potential impairment is inherently complex and involves significant management judgment in the use of estimates and assumptions.

We evaluate goodwill for impairment using a two-step process. First, we compare the aggregate fair value of the reporting unit to its carrying amount, including goodwill. If the fair value exceeds the carrying amount, no impairment exists. If the carrying amount of the reporting unit exceeds the fair value, then we compare the "implied" fair value of the reporting unit's goodwill to its carrying amount. If the carrying amount of the goodwill exceeds the implied fair value, then goodwill impairment is recognized by writing the goodwill down to the implied fair value. The implied fair value of the goodwill is determined by allocating the fair value of the reporting unit to all of the assets and liabilities of that unit, as if the unit had been acquired in a business combination and the overall fair value of the unit was the purchase price.

To determine the aggregate fair value of the reporting unit being evaluated for goodwill impairment, we use one of two principal methodologies: a market approach, based on a comparison of the reporting unit to publicly-traded companies in similar lines of business; or an income approach, based on the value of the cash flows that the business can be expected to generate in the future.

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. Additional information about goodwill and other intangible assets, including information by line of business, is provided in Note 5 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

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 a two-step process. First, if the intangible asset's estimated future net undiscounted cash flows are greater than the carrying value, there is no indication of impairment, but if the intangible asset's net undiscounted cash flows are

less than its carrying value, there is an indication that the intangible asset is not recoverable and we proceed to the second step of the impairment test. In the second step, if the fair value of the intangible asset is below the carrying value, an impairment is recognized by writing the intangible asset down to its fair value. We evaluate intangible assets for impairment on an annual basis, or more frequently if circumstances arise that may indicate an impairment of the carrying amount.

Our evaluation of goodwill and other intangible assets indicated that no significant impairment occurred in 2016, 2015 or 2014. Goodwill and other intangible assets recorded in our consolidated statement of condition as of December 31, 2016 totaled approximately \$5.81 billion and \$1.75 billion, respectively, compared to \$5.67 billion and \$1.77 billion, respectively, as of December 31, 2015.

**Contingencies**

The significant estimates and judgments related with establishing litigation reserves are discussed in Note 13 of the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.

**RECENT ACCOUNTING DEVELOPMENTS**

Information with respect to recent accounting developments is provided in Note 1 to the consolidated financial statements included under Item 8, Financial Statements and Supplementary Data, of this Form 10-K.



ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The information provided under "Market Risk Management" in "Financial Condition" included under Item 7, Management's Discussion and Analysis, of 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" included under Item 5, Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities, and under "Capital" in "Financial Condition" under Item 7, Management's Discussion and Analysis, of this Form 10-K.

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Report of Independent Registered Public Accounting Firm

The Shareholders and Board of Directors of  
State Street Corporation

We have audited the accompanying consolidated statements of condition of State Street Corporation (the "Corporation") as of December 31, 2016 and 2015, and 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, 2016. These financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of State Street Corporation at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, 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), State Street Corporation's internal control over financial reporting as of December 31, 2016, 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 16, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP  
Boston, Massachusetts  
February 16, 2017

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STATE STREET CORPORATION  
CONSOLIDATED STATEMENT OF INCOME

(Dollars in millions, except per share amounts)	Years Ended December		
	31, 2016	2015	2014
Fee revenue:			
Servicing fees	\$5,073	\$5,153	\$5,108
Management fees	1,292	1,174	1,207
Trading services	1,099	1,146	1,084
Securities finance	562	496	437
Processing fees and other	90	309	174
Total fee revenue	8,116	8,278	8,010
Net interest revenue:			
Interest revenue	2,512	2,488	2,652
Interest expense	428	400	392
Net interest revenue	2,084	2,088	2,260
Gains (losses) related to investment securities, net:			
Gains (losses) from sales of available-for-sale securities, net	10	(5)	15
Losses from other-than-temporary impairment	(2)	(1)	(1)
Losses reclassified (from) to other comprehensive income	(1)	—	(10)
Gains (losses) related to investment securities, net	7	(6)	4
Total revenue	10,207	10,360	10,274
Provision for loan losses	10	12	10
Expenses:			
Compensation and employee benefits	4,353	4,061	4,060
Information systems and communications	1,105	1,022	976
Transaction processing services	800	793	784
Occupancy	440	444	461
Acquisition and restructuring costs	209	25	133
Professional services	379	490	440
Amortization of other intangible assets	207	197	222
Other	584	1,018	751
Total expenses	8,077	8,050	7,827
Income before income tax expense	2,120	2,298	2,437
Income tax expense (benefit)	(22)	318	415
Net income from non-controlling interest	1	—	—
Net income	\$2,143	\$1,980	\$2,022
Net income available to common shareholders	\$1,968	\$1,848	\$1,958
Earnings per common share:			
Basic	\$5.03	\$4.53	\$4.62
Diluted	4.97	4.47	4.53
Average common shares outstanding (in thousands):			
Basic	391,485	407,856	424,223
Diluted	396,090	413,638	432,007
Cash dividends declared per common share	\$1.44	\$1.32	\$1.16

The accompanying notes are an integral part of these consolidated financial statements.

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STATE STREET CORPORATION  
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

(In millions)	Years Ended December		
	31, 2016	2015	2014
Net income	\$2,143	\$1,980	\$2,022
Other comprehensive income (loss), net of related taxes:			
Foreign currency translation, net of related taxes of (\$11), (\$101) and (\$94), respectively	(372 )	(735 )	(889 )
Net unrealized gains (losses) on available-for-sale securities, net of reclassification adjustment and net of related taxes of (\$119), (\$195) and \$269, respectively	(181 )	(331 )	437
Net unrealized gains (losses) on available-for-sale securities designated in fair value hedges, net of related taxes of \$16, \$5 and (\$15), respectively	23	12	(24 )
Other-than-temporary impairment on held-to-maturity securities related to factors other than credit, net of related taxes of \$5, \$8 and \$12, respectively	7	13	18
Net unrealized gains (losses) on cash flow hedges, net of related taxes of (\$42), \$24 and \$74, respectively	(64 )	17	115
Net unrealized gains (losses) on retirement plans, net of related taxes of \$1, \$51 and (\$50), respectively	(11 )	89	(69 )
Other comprehensive income (loss)	(598 )	(935 )	(412 )
Total comprehensive income	\$1,545	\$1,045	\$1,610

The accompanying notes are an integral part of these consolidated financial statements.





STATE STREET CORPORATION  
CONSOLIDATED STATEMENT OF CONDITION

	December 31,	
	2016	2015
(Dollars in millions, except per share amounts)		
Assets:		
Cash and due from banks	\$1,314	\$1,207
Interest-bearing deposits with banks	70,935	75,338
Securities purchased under resale agreements	1,956	3,404
Trading account assets	1,024	849
Investment securities available-for-sale	61,998	70,070
Investment securities held-to-maturity (fair value of \$34,994 and \$29,798)	35,169	29,952
Loans and leases (less allowance for losses of \$53 and \$46)	19,704	18,753
Premises and equipment (net of accumulated depreciation of \$3,333 and \$4,820)	2,062	1,894
Accrued interest and fees receivable	2,644	2,346
Goodwill	5,814	5,671
Other intangible assets	1,750	1,768
Other assets	38,328	33,903
Total assets	\$242,698	\$245,155
Liabilities:		
Deposits:		
Non-interest-bearing	\$59,397	\$65,800
Interest-bearing—U.S.	30,911	29,958
Interest-bearing—non-U.S.	96,855	95,869
Total deposits	187,163	191,627
Securities sold under repurchase agreements	4,400	4,499
Other short-term borrowings	1,585	1,754
Accrued expenses and other liabilities	16,901	14,643
Long-term debt	11,430	11,497
Total liabilities	221,479	224,020
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	491
Series D, 7,500 shares issued and outstanding	742	742
Series E, 7,500 shares issued and outstanding	728	728
Series F, 7,500 shares issued and outstanding	742	742
Series G, 5,000 shares issued and outstanding	493	—
Common stock, \$1 par, 750,000,000 shares authorized:		
503,879,642 and 503,879,642 shares issued	504	504
Surplus	9,782	9,746
Retained earnings	17,459	16,049
Accumulated other comprehensive income (loss)	(2,040)	(1,442)
Treasury stock, at cost (121,940,502 and 104,227,647 shares)	(7,682)	(6,457)
Total shareholders' equity	21,219	21,103
Non-controlling interest-equity	—	32
Total shareholders' equity	21,219	21,135
Total liabilities and shareholders' equity	\$242,698	\$245,155

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		Surplus	Retained Earnings	Accumulated TREASURY Other Comprehensive Income (Loss)		Shares	Amount	Total
		Shares	Amount							
Balance as of December 31, 2013	\$ 491	503,883	\$ 504	\$9,776	\$13,265	\$ (95 )		69,754	\$(3,693)	\$20,248
Net income					2,022					2,022
Other comprehensive loss						(412 )				(412 )
Preferred stock issued	1,470									1,470
Cash dividends declared:										
Common stock - \$1.16 per share					(490 )					(490 )
Preferred stock					(61 )					(61 )
Common stock acquired								23,749	(1,650 )	(1,650 )
Common stock awards and options exercised, including income tax benefit of \$72		(3 )		17				(4,805 )	185	202
Other				(2 )	1			(13 )		(1 )
Balance as of December 31, 2014	\$ 1,961	503,880	\$ 504	\$9,791	\$14,737	\$ (507 )		88,685	\$(5,158)	\$21,328
Net income					1,980					1,980
Other comprehensive income						(935 )				(935 )
Preferred stock issued	742									742
Cash dividends declared:										
Common stock - \$1.32 per share					(536 )					(536 )
Preferred stock					(130 )					(130 )
Common stock acquired								20,521	(1,520 )	(1,520 )
Common stock awards and options exercised, including income tax benefit of \$70				(41 )				(4,976 )	221	180
Other				(4 )	(2 )			(2 )		(6 )
Balance as of December 31, 2015	\$ 2,703	503,880	\$ 504	\$9,746	\$16,049	\$ (1,442 )		104,228	\$(6,457)	\$21,103
Net income					2,143					2,143
Other comprehensive loss						(598 )				(598 )
Preferred stock issued	493									493
Cash dividends declared:										
Common stock - \$1.44 per share					(559 )					(559 )
Preferred stock					(173 )					(173 )

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Common stock acquired							21,098	(1,365 )	(1,365 )
Common stock awards and options exercised, including income tax benefit of \$13			36				(3,369 )	139	175
Other					(1 )		(16 )	1	—
Balance as of December 31, 2016	\$ 3,196	503,880	\$ 504	\$9,782	\$17,459	\$ (2,040 )	121,941	\$(7,682)	\$21,219

The accompanying notes are an integral part of these consolidated financial statements.

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STATE STREET CORPORATION  
CONSOLIDATED STATEMENT OF CASH FLOWS

(In millions)	Years Ended December		
	31, 2016	2015	2014
Operating Activities:			
Net income	\$2,143	\$1,980	\$2,022
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Deferred income tax (benefit) expense	(358 )	(168 )	60
Amortization of other intangible assets	207	197	222
Other non-cash adjustments for depreciation, amortization and accretion, net	722	604	477
(Gains) losses related to investment securities, net	(7 )	6	(4 )
Change in trading account assets, net	(175 )	75	(81 )
Change in accrued interest and fees receivable, net	(298 )	(104 )	(119 )
Change in collateral deposits, net	(18 )	(6,662 )	(4,362 )
Change in unrealized (gains) losses on foreign exchange derivatives, net	(1,057 )	982	(2,042 )
Change in other assets, net	1,772	1,156	3,612
Change in accrued expenses and other liabilities, net	(1,147 )	(48 )	(635 )
Other, net	506	579	289
Net cash provided by (used in) operating activities	2,290	(1,403 )	(561 )
Investing Activities:			
Net (increase) decrease in interest-bearing deposits with banks	4,403	18,185	(29,266)
Net (increase) decrease in securities purchased under resale agreements	1,448	(1,014 )	3,840
Proceeds from sales of available-for-sale securities	1,401	12,309	9,766
Proceeds from maturities of available-for-sale securities	30,070	28,025	36,120
Purchases of available-for-sale securities	(30,162)	(25,397)	(43,146)
Proceeds from maturities of held-to-maturity securities	7,942	3,842	3,217
Purchases of held-to-maturity securities	(8,425 )	(9,398 )	(3,778 )
Net increase in loans and leases	(924 )	(561 )	(4,785 )
Business acquisitions	(437 )	—	—
Purchases of equity investments and other long-term assets	(643 )	(366 )	(182 )
Purchases of premises and equipment, net	(613 )	(703 )	(427 )
Other, net	170	73	149
Net cash provided by (used in) investing activities	4,230	24,995	(28,492)
Financing Activities:			
Net increase (decrease) in time deposits	8,488	(9,878 )	54,404
Net decrease in all other deposits	(12,952)	(7,535 )	(27,632)
Net increase (decrease) in other short-term borrowings	(268 )	(7,074 )	1,575
Proceeds from issuance of long-term debt, net of issuance costs	1,492	2,983	994
Payments for long-term debt and obligations under capital leases	(1,441 )	(1,155 )	(788 )
Proceeds from issuance of preferred stock, net	493	742	1,470
Proceeds from exercises of common stock options	—	4	14
Purchases of common stock	(1,365 )	(1,520 )	(1,650 )
Excess tax benefit related to stock-based compensation	13	70	72
Repurchases of common stock for employee tax withholding	(122 )	(222 )	(232 )
Payments for cash dividends	(723 )	(655 )	(539 )
Other, net	(28 )	—	—
Net cash (used in) provided by financing activities	(6,413 )	(24,240)	27,688
Net increase (decrease)	107	(648 )	(1,365 )
Cash and due from banks at beginning of period	1,207	1,855	3,220

Cash and due from banks at end of period	\$1,314	\$1,207	\$1,855
Supplemental disclosure:			
Interest paid	\$441	\$385	\$398
Income taxes paid, net	371	211	358

The accompanying notes are an integral part of these consolidated financial statements.

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STATE STREET CORPORATION  
 NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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We use acronyms and other defined terms for certain business terms and abbreviations, as defined on the acronyms list and glossary accompanying these consolidated financial statements.

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STATE STREET CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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. Our principal banking subsidiary is State Street Bank.

We have two lines of business:

Investment Servicing provides products and services including: custody; product- and participant-level accounting; daily pricing and administration; master trust and master custody; record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance; our enhanced custody product, which integrates principal securities lending and custody; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; and performance, risk and compliance analytics to support institutional investors.

Investment Management, through SSGA, provides a broad array of investment management, investment research and investment advisory services to corporations, public funds and other sophisticated investors. SSGA offers passive and active asset management strategies across equity, fixed-income, alternative, multi-asset solutions (including OCIO) and cash asset classes. Products are distributed directly and through intermediaries using a variety of investment vehicles, including ETFs, such as the SPDR® ETF brand.

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 processing fees and other revenue in our consolidated statement of income. Investments not meeting the criteria for equity-method treatment 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

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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 Revenue:**

Fees from investment servicing, investment management, securities finance, trading services and certain types of processing fees and other revenue are recorded in our consolidated statement of income based on estimates or specific contractual terms, including mutually agreed changes to terms, as transactions occur or services are rendered, provided that persuasive evidence exists, the price to the client is fixed or determinable and collectability is reasonably assured. Amounts accrued at period-end are recorded in accrued interest and fees receivable in our consolidated statement of condition. Performance fees generated by our investment management activities are recorded when earned, based on predetermined benchmarks associated with the applicable fund's performance.

Interest revenue on interest-earning assets and interest expense on interest-bearing liabilities are recorded in our consolidated statement of income as components of net interest revenue, 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.

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**Acquisition:**

On July 1, 2016, we completed our acquisition of GE Asset Management ("GEAM") from General Electric Company, with a total purchase price of approximately \$485 million.

The acquisition of GEAM extends our core investment management capabilities, including in the high growth OCIO markets, and enhances our capabilities in connection with the delivery of value added solutions to our client base.

AUM associated with the acquired GEAM operations was \$112 billion as of the date of acquisition.

We accounted for this acquisition as a business combination and, in accordance with ASC Topic 805, Business Combinations, we have recorded assets acquired and liabilities assumed at their respective fair values as of the acquisition date. Our consolidated financial statements include the operating results for the acquired business from the date of acquisition, July 1, 2016.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Recent Accounting Developments:

Relevant standards that were recently issued but not yet adopted

Standard	Description	Date of Adoption	Effects on the financial statements or other significant matters
ASU 2014-09, Revenue from Contracts with Customers (Topic 606)	The standard, and its related amendments, will replace existing revenue recognition standards and expand the disclosure requirements for revenue arrangements with customers. Under the new standard, revenue is recognized when a customer obtains control of promised goods or services and is recognized in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. The guidance permits two methods of adoption: retrospectively to each prior reporting period presented (full retrospective method), or retrospectively with the cumulative effect of initially applying the guidance recognized at the date of initial application (the modified retrospective method).	January 1, 2018	<p>We are currently assessing the full impact of the revenue recognition standard and its amendments on our consolidated financial statements and evaluating the alternative methods of adoption.</p> <p>The standard does not apply to revenue associated with financial instruments, including loans and securities, or revenue recognized under other U.S. GAAP standards. Therefore net interest revenue, securities gains/ losses, revenue related to derivative instruments are not impacted by the standard. Our implementation efforts include the scoping of material revenue streams into cohorts, analysis of underlying contracts for each cohort, business unit workshops to further assess specific contracts and products, and the development of updated disclosures. Based on our efforts to date, we expect both the timing and amount of our material revenue streams, including servicing fees, management fees, trading services, and securities finance to remain substantially unchanged as these revenues likely will continue to be recognized over time. Specifically, under the new standard we expect to recognize revenue related to these activities ratably over the term of the related agreements with customers as the customer simultaneously benefits from the services as they are performed. Due to the complexity of certain of our agreements, the actual revenue recognition treatment required under the standard will be dependent on contract-specific terms, and certain aspects may vary in some instances from recognition ratably over the contract term. While we have not yet identified any material changes, we continue to monitor industry progress and focus our assessment on areas such as any additional costs that may require capitalization under the new standard as well as assessing the impact of changes to principal and agent guidance. The new</p>

standard modified some of the principal and agent considerations which may result in changes to gross or net treatment of revenue and expenses but would not affect final net income.

Although we currently expect no material changes to the timing or amount of revenue, we are still assessing the operational and disclosure impacts of each transition method.

ASU 2016-01, Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities

The standard makes limited amendments to the guidance on the classification and measurement of financial instruments. Under the new standard, all equity securities will be measured at fair value through earnings with certain exceptions, including investments accounted for January 1, 2018 under the equity method of accounting. In addition, the FASB clarified the guidance related to valuation allowance assessments when recognizing deferred tax assets on unrealized losses on available-for-sale debt securities. This standard must be applied on a retrospective basis.

We are currently assessing the impact of the standard on our consolidated financial statements. Based on our initial assessments, we do not currently anticipate this standard to have a material impact on our consolidated financial statements due to the limited number of investments on our consolidated statement of condition that are within scope of the standard.

ASU 2016-02, Leases (Topic 842)

The standard represents a wholesale change to lease accounting and requires all leases, other than short-term leases, to be reported on balance sheet through recognition of a right-of-use asset and a corresponding liability for January 1, 2019 future lease obligations. The standard also requires extensive disclosures for assets, expenses, and cash flows associated with leases, as well as a maturity analysis of lease liabilities.

We are currently assessing the impact of the standard on our consolidated financial statements, but we anticipate an increase in assets and liabilities due to the recognition of the required right-of-use asset and corresponding liability for all lease obligations that are currently classified as operating leases, primarily real estate leases for office space, as well as additional disclosure on all our lease obligations.

ASU 2016-05, Derivatives and Hedging (Topic 815): Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships (a consensus of the Emerging Issues Task Force)

The standard clarifies that the novation of a derivative contract that is part of a hedge accounting relationship does not automatically require a dedesignation of that hedge relationship. This may be applied on a prospective or modified retrospective basis.

January 1, 2017

State Street will apply this standard prospectively as applicable, but we do not anticipate a material impact on our consolidated financial statements.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Relevant standards that were recently issued but not yet adopted (continued)

Standard	Description	Date of Adoption	Effects on the financial statements or other significant matters
ASU 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting	The standard simplifies the guidance related to stock compensation, including the accounting for income taxes by eliminating the windfall pool and requiring recognition of all excess tax benefits and deficiencies within the statement of income, as well as changes in the accounting for forfeitures, classification in the statement of cash flows and tax withholding requirements.	January 1, 2017	We anticipate increased income statement volatility due to the recognition of all excess tax benefits and deficiencies within the consolidated statement of income. Income statement volatility will be driven by the number of shares vesting in any given period, and the change in share price between grant date and vesting. Directionally, increasing share prices from grant date to vesting date will result in lower income tax expense and higher net income.
ASU 2016-13, Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments	The standard requires immediate recognition of expected credit losses for financial assets carried at amortized cost, including trade and other receivables, loans and commitments, held-to-maturity debt securities, and other financial assets, held at the reporting date to be measured based on historical experience, current conditions, and reasonable supportable forecasts. Credit losses on available for sale securities will be recorded as an allowance versus a write-down of the amortized cost basis of the security and will allow for a reversal of impairment loss when the credit of the issuer improves.	January 1, 2020	Upon adoption of the standard on January 1, 2017, excess tax benefits accumulated in surplus of approximately \$352 million will be reversed through retained earnings. We are currently assessing the impact of the standard on our consolidated financial statements, but we anticipate a significant implementation effort to ensure that expected credit losses are calculated in accordance with the standard. We have established a steering committee to provide cross-functional governance over the project plan and key decisions, and are currently developing key accounting policies, evaluating existing credit loss models and processes and identifying a complete set of data requirements and sources. Based on our analysis to date, we expect a significant effort to develop new or modified credit loss models and that the timing of the recognition of credit losses will accelerate under the new standard.
ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force)	The standard amends the statement of cash flow guidance to address specific cash flow issues with the objective of reducing the existing diversity in practice.	January 1, 2018	We are currently assessing the impact of the standard on our consolidated financial statements, however based on our current presentation we do not anticipate a significant change to our financial statement presentation of the statement of cash flows.

Relevant standards that were adopted during the year ended December 31, 2016:



We adopted ASU 2015-02, Consolidation (Topic 810): Amendments to the Consolidation Analysis, effective January 1, 2016. The implementation of the new standard did not result in any significant changes to our previous consolidation conclusions.

We adopted ASU 2015-03, Simplifying the Presentation of Debt Issuance Costs, effective January 1, 2016 with retrospective application for all prior periods presented. The implementation of this standard resulted in debt issuance costs of \$38 million and \$37 million as of December 31, 2016 and December 31, 2015, respectively, being netted against long-term debt in our consolidated statement of condition.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Note 2. Fair Value

## Fair-Value Measurements:

We carry trading account assets, AFS investment 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 carried in trading account assets.

We may carry U.S. government securities in our AFS portfolio in connection with our asset-and-liability management activities. Our level 1 financial assets also include active exchange-traded equity securities and non-cash collateral received from counterparties in connection with our enhanced custody business.

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 investment securities available-for-sale, as well as various types of foreign exchange and interest-rate derivative instruments.

Fair value for our investment securities available-for-sale 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 and our own credit risk. We consider factors such as the likelihood of default by us and 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, 2016 and 2015.

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STATE STREET CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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 is 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 or dealer quotes, or through the use of internally-developed pricing models. Management has evaluated its methodologies used to measure fair value, but 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 more difficult. 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. No transfers of financial assets or liabilities between levels 1 and 2 occurred during 2016 or 2015.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(In millions)	Fair-Value Measurements on a Recurring Basis as of December 31, 2016				Total Net Carrying Value in Consolidated Statement of Condition
	Quoted 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 <sup>(1)</sup>	
Assets:					
Trading account assets:					
U.S. government securities	\$ 30	\$ —	\$ —		\$ 30
Non-U.S. government securities	495	174	—		669
Other	—	325	—		325
Total trading account assets	525	499	—		1,024
AFS Investment securities:					
U.S. Treasury and federal agencies:					
Direct obligations	3,824	439	—		4,263
Mortgage-backed securities	—	13,257	—		13,257
Asset-backed securities:					
Student loans	—	5,499	97		5,596
Credit cards	—	1,351	—		1,351
Sub-prime	—	272	—		272
Other <sup>(2)</sup>	—	—	905		905
Total asset-backed securities	—	7,122	1,002		8,124
Non-U.S. debt securities:					
Mortgage-backed securities	—	6,535	—		6,535
Asset-backed securities	—	2,484	32		2,516
Government securities	—	5,836	—		5,836
Other <sup>(3)</sup>	—	5,365	248		5,613
Total non-U.S. debt securities	—	20,220	280		20,500
State and political subdivisions	—	10,283	39		10,322
Collateralized mortgage obligations	—	2,577	16		2,593
Other U.S. debt securities	—	2,469	—		2,469
U.S. equity securities	—	42	—		42
Non-U.S. equity securities	—	3	—		3
U.S. money-market mutual funds	—	409	—		409
Non-U.S. money-market mutual funds	—	16	—		16
Total investment securities available-for-sale	3,824	56,837	1,337		61,998
Other assets:					
Derivative instruments:					
Foreign exchange contracts	—	16,476	8	\$(9,163)	7,321
Interest-rate contracts	—	68	—	(68)	—
Total derivative instruments	—	16,544	8	(9,231)	7,321
Total assets carried at fair value	\$4,349	\$ 73,880	\$ 1,345	\$(9,231)	\$ 70,343
Liabilities:					
Accrued expenses and other liabilities:					
Derivative instruments:					

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Foreign exchange contracts	\$—	\$ 15,948	\$ 8	\$(10,456)	\$ 5,500
Interest-rate contracts	—	348	—	(226 )	122
Other derivative contracts	—	380	—	—	380
Total derivative instruments	—	16,676	8	(10,682 )	6,002
Total liabilities carried at fair value	\$—	\$ 16,676	\$ 8	\$(10,682)	\$ 6,002

(1) Represents counterparty netting against level 2 financial assets and liabilities where a legally enforceable master netting agreement exists between State Street and the counterparty. Netting also reflects asset and liability reductions of \$906 million and \$2,356 million, respectively, for cash collateral received from and provided to derivative counterparties.

(2) As of December 31, 2016, the fair value of other asset-backed securities was primarily composed of \$905 million of collateralized loan obligations.

(3) As of December 31, 2016, the fair value of other non-U.S. debt securities was primarily composed of \$3,769 million of covered bonds and \$988 million of corporate bonds.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(In millions)	Fair-Value Measurements on a Recurring Basis as of December 31, 2015				Total Net Carrying Value in Consolidated Statement of Condition
	Quoted Prices in Markets (Level 1)	Pricing Methods with Significant Observable Market Inputs (Level 2)	Pricing Methods with Significant Unobservable Market Inputs (Level 3)	Impact of Netting <sup>(1)</sup>	
Assets:					
Trading account assets:					
U.S. government securities	\$ 32	\$ —	\$ —		\$ 32
Non-U.S. government securities	479	—	—		479
Other	10	328	—		338
Total trading account assets	521	328	—		849
AFS Investment securities:					
U.S. Treasury and federal agencies:					
Direct obligations	5,206	512	—		5,718
Mortgage-backed securities	—	18,165	—		18,165
Asset-backed securities:					
Student loans	—	6,987	189		7,176
Credit cards	—	1,341	—		1,341
Sub-prime	—	419	—		419
Other <sup>(2)</sup>	—	—	1,764		1,764
Total asset-backed securities	—	8,747	1,953		10,700
Non-U.S. debt securities:					
Mortgage-backed securities	—	7,071	—		7,071
Asset-backed securities	—	3,093	174		3,267
Government securities	—	4,355	—		4,355
Other <sup>(3)</sup>	—	4,579	255		4,834
Total non-U.S. debt securities	—	19,098	429		19,527
State and political subdivisions	—	9,713	33		9,746
Collateralized mortgage obligations	—	2,948	39		2,987
Other U.S. debt securities	—	2,614	10		2,624
U.S. equity securities	—	39	—		39
Non-U.S. equity securities	—	3	—		3
U.S. money-market mutual funds	—	542	—		542
Non-U.S. money-market mutual funds	—	19	—		19
Total investment securities available-for-sale	5,206	62,400	2,464		70,070
Other assets:					
Derivatives instruments:					
Foreign exchange contracts	—	11,311	5	\$(6,562)	4,754
Interest-rate contracts	—	135	—	(115)	20
Other derivative contracts	—	5	—	(2)	3
Total derivative instruments	—	11,451	5	(6,679)	4,777
Other	2	—	—	—	2
Total assets carried at fair value	\$ 5,729	\$ 74,179	\$ 2,469	\$(6,679)	\$ 75,698
Liabilities:					

## Accrued expenses and other liabilities:

## Trading account liabilities:

U.S. government securities	\$5	\$ —	\$ —	\$—	\$ 5
Non-U.S. government securities	76	—	—	—	76
Other	5	13	—	—	18
Derivative instruments:					
Foreign exchange contracts	—	10,863	5	(6,995 )	3,873
Interest-rate contracts	—	182	—	(24 )	158
Other derivative contracts	—	103	—	(2 )	101
Total derivative instruments	—	11,148	5	(7,021 )	4,132
Other	2	—	—	—	2
Total liabilities carried at fair value	\$88	\$ 11,161	\$ 5	\$ (7,021 )	\$ 4,233

(1) Represents counterparty netting against level 2 financial assets and liabilities where a legally enforceable master netting agreement exists between State Street and the counterparty. Netting also reflects asset and liability reductions of \$776 million and \$1.12 billion, respectively, for cash collateral received from and provided to derivative counterparties.

(2) As of December 31, 2015, the fair value of other asset-backed securities was primarily composed of \$1,764 million of collateralized loan obligations.

(3) As of December 31, 2015, the fair value of other non-U.S. debt securities was primarily composed of \$3,184 million of covered bonds and \$613 million of corporate bonds.



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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following tables present activity related to our level 3 financial assets during the years ended December 31, 2016 and 2015, respectively. Transfers into and out of level 3 are reported as of the beginning of the period presented. During the years ended December 31, 2016 and 2015, transfers out of level 3 were mainly related to certain mortgage- and asset-backed securities, including non-U.S. debt securities, for which fair value was measured using prices for which observable market information became available.

(In millions)	Fair Value Measurements Using Significant Unobservable Inputs Year Ended December 31, 2016							Fair Value as of December 31, 2016 <sup>(2)</sup>	Change in Unrealized Gains (Losses) Related to Financial Instruments Held as of December 31, 2016
	Fair Value as of December 31, 2015	Recorded in Revenue	Recorded in Other Comprehensive Income <sup>(1)</sup>	Purchases	Sales	Settlements	Transfers out of Level 3		
Assets:									
AFS Investment securities:									
U.S. Treasury and federal agencies, mortgage-backed securities	\$—	\$ —	\$ —	\$ 325	\$—	\$—	\$(325 )	\$ —	
Asset-backed securities:									
Student loans	189	1	3	—	—	—	(96 )	97	
Other	1,764	31	(23 )	469	(82 )	(1,254 )	—	905	
Total asset-backed securities	1,953	32	(20 )	469	(82 )	(1,254 )	(96 )	1,002	
Non-U.S. debt securities:									
Mortgage-backed securities	—	—	—	90	—	—	(90 )	—	
Asset-backed securities	174	—	—	196	—	(60 )	(278 )	32	
Other	255	—	—	222	—	(7 )	(222 )	248	
Total Non-U.S. debt securities	429	—	—	508	—	(67 )	(590 )	280	
State and political subdivisions	33	—	9	—	—	(3 )	—	39	
Collateralized mortgage obligations	39	—	2	89	(66 )	(27 )	(21 )	16	
Other U.S. debt securities	10	—	—	—	—	(10 )	—	—	
Total AFS investment securities	2,464	32	(9 )	1,391	(148 )	(1,361 )	(1,032 )	1,337	
Other assets:									
Derivative instruments:									
Foreign exchange contracts	5	9	—	3	—	(9 )	—	8	\$ 5
Total derivative instruments	5	9	—	3	—	(9 )	—	8	5
Total assets carried at fair value	\$2,469	\$ 41	\$ (9 )	\$ 1,394	\$(148)	\$(1,370 )	\$(1,032)	\$ 1,345	\$ 5

(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 trading services.

(2) There were no transfers of assets into level 3 during the year ended December 31, 2016.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(In millions)	Fair-Value Measurements Using Significant Unobservable Inputs Year Ended December 31, 2015								Fair Value as of December 31, 2015	Change in Unrealized Gains (Losses) Related to Financial Instruments Held as of December 31, 2015
	Fair Value as of December 31, 2014	Recorded in Revenue	Recorded in Other Comprehensive Income <sup>(1)</sup>	Purchases	Sales	Settlements	Transfers into Level 3	Transfers out of Level 3		
Assets:										
Investment securities available-for-sale:										
Asset-backed securities:										
Student loans	\$259	\$ 1	\$ (4 )	\$ —	\$ —	\$ (6 )	\$ —	\$ (61 )	\$ 189	
Other	3,780	53	(50 )	—	(1,105 )	(914 )	—	—	1,764	
Total asset-backed securities	4,039	54	(54 )	—	(1,105 )	(920 )	—	(61 )	1,953	
Non-U.S. debt securities:										
Mortgage-backed securities	—	—	—	43	—	—	97	(140 )	—	
Asset-backed securities	295	2	(1 )	249	—	(190 )	4	(185 )	174	
Other	371	—	(1 )	111	—	(39 )	—	(187 )	255	
Total non-U.S. debt securities	666	2	(2 )	403	—	(229 )	101	(512 )	429	
State and political subdivisions	38	1	(3 )	—	—	(3 )	—	—	33	
Collateralized mortgage obligations	614	(1 )	(2 )	294	(88 )	(105 )	—	(673 )	39	
Other U.S. debt securities	9	—	—	—	—	—	10	(9 )	10	
Total AFS investment securities	5,366	56	(61 )	697	(1,193 )	(1,257 )	111	(1,255 )	2,464	
Other assets:										
Derivative instruments:										
Foreign exchange contracts	81	48	—	9	—	(133 )	—	—	5	\$ (4 )
Total derivative instruments	81	48	—	9	—	(133 )	—	—	5	(4 )
Total assets carried at fair value	\$5,447	\$ 104	\$ (61 )	\$ 706	\$(1,193)	\$(1,390 )	\$ 111	\$(1,255)	\$ 2,469	\$ (4 )

(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 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 or dealer quotes are not included in the table, as the specific inputs applied are not provided by the broker/dealer.

(Dollars in millions)	Quantitative Information about Level 3 Fair-Value Measurements					
	Fair Value		Valuation Technique	Significant Unobservable Input <sup>(1)</sup>	Weighted-Average	
	As of December 31, 2016	As of December 31, 2015			As of December 31, 2016	As of December 31, 2015
Significant unobservable inputs readily available to State Street:						
Assets:						
Asset-backed securities, other	\$ 1	\$ 28	Discounted cash flows	Credit spread	0.3 %	(0.1 )%
State and political subdivisions	39	33	Discounted cash flows	Credit spread	1.8	2.2
Derivative instruments, foreign exchange contracts	8	5	Option model	Volatility	14.4	9.3
Total	\$48	\$ 66				
Liabilities:						
Derivative instruments, foreign exchange contracts	\$8	\$ 5	Option model	Volatility	14.4	9.2
Total	\$8	\$ 5				

(1) Significant changes in these unobservable inputs would result in significant changes in fair value measurement.

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STATE STREET CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Fair Value Estimates:

Estimates of fair value for financial instruments not carried at fair value on a recurring basis 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 repriced 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.

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; federal funds purchased; 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 senior secured bank 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.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following tables present the reported amounts and estimated fair values of the financial assets and liabilities not carried at fair value on a recurring basis, as they would be categorized within the fair-value hierarchy, as of the dates indicated.

(In millions)	Reported Amount	Estimated Fair Value	Fair-Value Hierarchy		
			Quoted Prices in Active Markets (Level 1)	Market Pricing Methods with Significant Observable Market Inputs (Level 2)	Pricing Methods with Significant Unobservable Market Inputs (Level 3)
December 31, 2016					
Financial Assets:					
Cash and due from banks	\$ 1,314	\$ 1,314	\$ 1,314	\$ —	\$ —
Interest-bearing deposits with banks	70,935	70,935	—	70,935	—
Securities purchased under resale agreements	1,956	1,956	—	1,956	—
Investment securities held-to-maturity	35,169	34,994	17,400	17,439	155
Net loans (excluding leases)	18,862	18,877	—	18,781	96
Financial Liabilities:					
Deposits:					
Non-interest-bearing	\$ 59,397	\$ 59,397	\$ —	\$ 59,397	\$ —
Interest-bearing - U.S.	30,911	30,911	—	30,911	—
Interest-bearing - non-U.S.	96,855	96,855	—	96,855	—
Securities sold under repurchase agreements	4,400	4,400	—	4,400	—
Other short-term borrowings	1,585	1,585	—	1,585	—
Long-term debt	11,430	11,618	—	11,282	336

(In millions)	Reported Amount	Estimated Fair Value	Fair-Value Hierarchy		
			Quoted Prices in Active Markets (Level 1)	Market Pricing Methods with Significant Observable Market Inputs (Level 2)	Pricing Methods with Significant Unobservable Market Inputs (Level 3)
December 31, 2015					
Financial Assets:					
Cash and due from banks	\$ 1,207	\$ 1,207	\$ 1,207	\$ —	\$ —
Interest-bearing deposits with banks	75,338	75,338	—	75,338	—
Securities purchased under resale agreements	3,404	3,404	—	3,404	—
Investment securities held-to-maturity	29,952	29,798	—	29,798	—
Net loans (excluding leases) <sup>(1)</sup>	17,838	17,792	—	17,667	125
Financial Liabilities:					
Deposits:					
Non-interest-bearing	\$ 65,800	\$ 65,800	\$ —	\$ 65,800	\$ —
Interest-bearing - U.S.	29,958	29,958	—	29,958	—
Interest-bearing - non-U.S.	95,869	95,869	—	95,869	—
Securities sold under repurchase agreements	4,499	4,499	—	4,499	—
Other short-term borrowings	1,754	1,754	—	1,754	—
Long-term debt	11,497	11,604	—	11,215	389

<sup>(1)</sup> Includes \$14 million of loans classified as held-for-sale that were measured at fair value on a non-recurring basis as of December 31, 2015.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Note 3. Investment Securities

Investment securities held by us are classified as either trading, AFS, or HTM 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.

Trading assets are carried at fair value. Both realized and unrealized gains and losses on trading assets are recorded in trading services revenue in our consolidated statement of income. Debt and marketable equity securities classified as AFS are carried at fair value, 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.

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## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents the amortized cost and fair value, and associated unrealized gains and losses, of investment securities as of the dates indicated:

(In millions)	December 31, 2016				December 31, 2015			
	Amortized Cost	Gross Unrealized Gains	Unrealized Losses	Fair Value	Amortized Cost	Gross Unrealized Gains	Unrealized Losses	Fair Value
Available-for-sale:								
U.S. Treasury and federal agencies:								
Direct obligations	\$4,265	\$7	\$ 9	\$4,263	\$5,717	\$6	\$ 5	\$5,718
Mortgage-backed securities	13,340	76	159	13,257	18,168	131	134	18,165
Asset-backed securities:								
Student loans <sup>(1)</sup>	5,659	12	75	5,596	7,358	16	198	7,176
Credit cards	1,377	—	26	1,351	1,378	—	37	1,341
Sub-prime	289	1	18	272	448	2	31	419
Other <sup>(2)</sup>	895	10	—	905	1,724	43	3	1,764
Total asset-backed securities	8,220	23	119	8,124	10,908	61	269	10,700
Non-U.S. debt securities:								
Mortgage-backed securities	6,506	35	6	6,535	7,010	72	11	7,071
Asset-backed securities	2,513	4	1	2,516	3,272	2	7	3,267
Government securities	5,834	8	6	5,836	4,348	7	—	4,355
Other <sup>(3)</sup>	5,587	31	5	5,613	4,817	29	12	4,834
Total non-U.S. debt securities	20,440	78	18	20,500	19,447	110	30	19,527
State and political subdivisions	10,233	201	112	10,322	9,402	371	27	9,746
Collateralized mortgage obligations	2,610	18	35	2,593	2,993	16	22	2,987
Other U.S. debt securities	2,481	18	30	2,469	2,611	31	18	2,624
U.S. equity securities	39	6	3	42	33	9	3	39
Non-U.S. equity securities	3	—	—	3	3	—	—	3
U.S. money-market mutual funds	409	—	—	409	542	—	—	542
Non-U.S. money-market mutual funds	16	—	—	16	19	—	—	19
Total	\$62,056	\$427	\$ 485	\$61,998	\$69,843	\$735	\$ 508	\$70,070
Held-to-maturity:								
U.S. Treasury and federal agencies:								
Direct obligations	\$17,527	\$17	\$ 58	\$17,486	\$20,878	\$2	\$ 217	\$20,663
Mortgage-backed securities	10,334	20	221	10,133	610	2	8	604
Asset-backed securities:								
Student loans <sup>(1)</sup>	2,883	5	30	2,858	1,592	—	47	1,545
Credit cards	897	2	—	899	897	—	1	896
Other	35	—	—	35	366	2	1	367
Total asset-backed securities	3,815	7	30	3,792	2,855	2	49	2,808
Non-U.S. debt securities:								
Mortgage-backed securities	1,150	70	15	1,205	2,202	109	26	2,285
Asset-backed securities	531	—	—	531	1,415	4	3	1,416
Government securities	286	3	—	289	239	—	1	238
Other	113	1	—	114	65	—	—	65
Total non-U.S. debt securities	2,080	74	15	2,139	3,921	113	30	4,004
State and political subdivisions	—	—	—	—	1	—	—	1
Collateralized mortgage obligations	1,413	42	11	1,444	1,687	60	29	1,718

Total \$35,169 \$160 \$ 335 \$34,994 \$29,952 \$179 \$ 333 \$29,798

(1) Primarily composed 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, 2016 and December 31, 2015, the fair value of other ABS was primarily composed of \$905 million and \$1,764 million, respectively, of collateralized loan obligations.

(3) As of December 31, 2016 and December 31, 2015, the fair value of other non-U.S. debt securities was primarily composed of \$3,769 million and \$3,184 million, respectively, of covered bonds and \$988 million and \$613 million, as of December 31, 2016 and December 31, 2015, respectively, of corporate bonds.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Aggregate investment securities with carrying values of approximately \$46 billion and \$41 billion as of December 31, 2016 and 2015, respectively, were designated as pledged for public and trust deposits, short-term borrowings and for other purposes as provided by law.

In the fourth quarter of 2016, \$4.9 billion of Agency MBS and Student Loan ABS previously classified as AFS were transferred to HTM and in the fourth quarter of 2015, \$7.1 billion, of U.S. Treasuries previously classified as AFS were transferred to HTM. Both 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 \$87 million and \$89 million as of December 31, 2016 and 2015, respectively, within accumulated other comprehensive loss which will be accreted into interest income over the remaining life of the transferred security (ranging from approximately 7 to 49 years).

The following tables present the aggregate fair values of 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:

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

December 31, 2016 (In millions)	Less than 12 months		12 months or longer		Total	
	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	\$651	\$ 8	\$180	\$ 1	\$831	\$ 9
Mortgage-backed securities	7,072	131	1,114	28	8,186	159
Asset-backed securities:						
Student loans	54	—	3,745	75	3,799	75
Credit cards	795	1	494	25	1,289	26
Sub-prime	1	—	252	18	253	18
Other	75	—	—	—	75	—
Total asset-backed securities	925	1	4,491	118	5,416	119
Non-U.S. debt securities:						
Mortgage-backed securities	442	1	893	5	1,335	6
Asset-backed securities	253	—	276	1	529	1
Government securities	1,314	6	—	—	1,314	6
Other	670	4	218	1	888	5
Total non-U.S. debt securities	2,679	11	1,387	7	4,066	18
State and political subdivisions	3,390	102	304	10	3,694	112
Collateralized mortgage obligations	1,259	31	162	4	1,421	35
Other U.S. debt securities	944	24	157	6	1,101	30
U.S. equity securities	8	—	5	3	13	3
Total	\$16,928	\$ 308	\$7,800	\$ 177	\$24,728	\$ 485
Held-to-maturity:						
U.S. Treasury and federal agencies:						
Direct obligations	\$8,891	\$ 57	\$86	\$ 1	\$8,977	\$ 58
Mortgage-backed securities	6,838	221	—	—	6,838	221
Asset-backed securities:						
Student loans	705	9	1,235	21	1,940	30
Credit cards	33	—	—	—	33	—
Other	18	—	9	—	27	—
Total asset-backed securities	756	9	1,244	21	2,000	30
Non-U.S. mortgage-backed securities:						
Mortgage-backed securities	54	2	330	13	384	15
Asset-backed securities	28	—	35	—	63	—
Government securities	180	—	—	—	180	—
Total non-U.S. debt securities	262	2	365	13	627	15
Collateralized mortgage obligations	537	4	204	7	741	11
Total	\$17,284	\$ 293	\$1,899	\$ 42	\$19,183	\$ 335

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

December 31, 2015 (In millions)	Less than 12 months		12 months or longer		Total	
	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	\$3,123	\$ 4	\$121	\$ 1	\$3,244	\$ 5
Mortgage-backed securities	5,729	48	3,166	86	8,895	134
Asset-backed securities:						
Student loans	2,841	54	3,217	144	6,058	198
Credit cards	838	7	490	30	1,328	37
Sub-prime	7	—	387	31	394	31
Other	720	3	43	—	763	3
Total asset-backed securities	4,406	64	4,137	205	8,543	269
Non-U.S. debt securities:						
Mortgage-backed securities	1,457	7	437	4	1,894	11
Asset-backed securities	2,190	7	22	—	2,212	7
Government securities	1,691	—	—	—	1,691	—
Other	1,548	5	527	7	2,075	12
Total non-U.S. debt securities	6,886	19	986	11	7,872	30
State and political subdivisions	206	1	658	26	864	27
Collateralized mortgage obligations	1,511	14	217	8	1,728	22
Other U.S. debt securities	475	9	178	9	653	18
U.S. equity securities	—	—	5	3	5	3
Total	\$22,336	\$ 159	\$9,468	\$ 349	\$31,804	\$ 508
Held-to-maturity:						
U.S. Treasury and federal agencies:						
Direct obligations	\$16,370	\$ 120	\$3,005	\$ 97	\$19,375	\$ 217
Mortgage-backed securities	560	8	—	—	560	8
Asset-backed securities:						
Student loans	896	25	615	22	1,511	47
Credit cards	636	1	—	—	636	1
Other	102	—	31	1	133	1
Total asset-backed securities	1,634	26	646	23	2,280	49
Non-U.S. debt securities:						
Mortgage-backed securities	338	2	524	24	862	26
Asset-backed securities	1,015	3	69	—	1,084	3
Government securities	128	1	—	—	128	1
Other	—	—	43	—	43	—
Total non-U.S. debt securities	1,481	6	636	24	2,117	30
Collateralized mortgage obligations	634	9	537	20	1,171	29
Total	\$20,679	\$ 169	\$4,824	\$ 164	\$25,503	\$ 333

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents contractual maturities of debt investment securities by carrying amount as of December 31, 2016. The maturities of certain asset-backed securities, mortgage-backed securities, 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.

December 31, 2016 (In millions)	Under 1 Year	1 to 5 Years	6 to 10 Years	Over 10 Years	Total
Available-for-sale:					
U.S. Treasury and federal agencies:					
Direct obligations	\$2,722	\$1,114	\$44	\$383	\$4,263
Mortgage-backed securities	213	1,533	3,022	8,489	13,257
Asset-backed securities:					
Student loans	590	3,181	757	1,068	5,596
Credit cards	4	1,052	295	—	1,351
Sub-prime	3	1	2	266	272
Other	1	21	883	—	905
Total asset-backed securities	598	4,255	1,937	1,334	8,124
Non-U.S. debt securities:					
Mortgage-backed securities	1,301	3,339	731	1,164	6,535
Asset-backed securities	289	1,877	346	4	2,516
Government securities	4,372	987	477	—	5,836
Other	1,901	3,304	408	—	5,613
Total non-U.S. debt securities	7,863	9,507	1,962	1,168	20,500
State and political subdivisions	509	2,347	5,548	1,918	10,322
Collateralized mortgage obligations	2	44	871	1,676	2,593
Other U.S. debt securities	508	1,003	922	36	2,469
Total	\$12,415	\$19,803	\$14,306	\$15,004	\$61,528
Held-to-maturity:					
U.S. Treasury and federal agencies:					
Direct obligations	\$400	\$14,888	\$2,167	\$72	\$17,527
Mortgage-backed securities	—	193	1,536	8,605	10,334
Asset-backed securities:					
Student loans	442	201	349	1,891	2,883
Credit cards	99	798	—	—	897
Other	7	18	8	2	35
Total asset-backed securities	548	1,017	357	1,893	3,815
Non-U.S. debt securities:					
Mortgage-backed securities	148	339	47	616	1,150
Asset-backed securities	163	368	—	—	531
Government securities	180	106	—	—	286
Other	71	42	—	—	113
Total non-U.S. debt securities	562	855	47	616	2,080
Collateralized mortgage obligations	102	23	488	800	1,413
Total	\$1,612	\$16,976	\$4,595	\$11,986	\$35,169

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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.

(In millions)	Years Ended		
	December 31,		
	2016	2015	2014
Gross realized gains from sales of AFS investment securities	\$15	\$57	\$64
Gross realized losses from sales of AFS investment securities	(5 )	(62 )	(49 )
Net impairment losses			
Gross losses from OTTI	(2 )	(1 )	(1 )
Losses reclassified (from) to other comprehensive income	(1 )	—	(10 )
Net impairment losses <sup>(1)</sup>	(3 )	(1 )	(11 )
Gains (losses) related to investment securities, net	\$7	\$(6)	\$4

<sup>(1)</sup> Net impairment losses, recognized in our consolidated statement of income, were composed of the following:

Impairment associated with expected credit losses	\$(1)	\$—	\$(10)
Impairment associated with adverse changes in timing of expected future cash flows	(2 )	(1 )	(1 )
Net impairment losses	\$(3)	\$(1)	\$(11)

The following table presents a roll-forward with respect to net impairment losses that have been recognized in income for the periods indicated.

(In millions)	Years Ended		
	December 31,		
	2016	2015	2014
Balance, beginning of period	\$92	\$115	\$122
Additions:			
Losses for which OTTI was previously recognized	2	1	11
Deductions:			
Previously recognized losses related to securities sold or matured	(28 )	(24 )	(12 )
Losses related to securities intended or required to be sold	—	—	(6 )
Balance, end of period	\$66	\$92	\$115

Interest revenue 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, resulting in amortization or accretion, accordingly.

For debt securities acquired for which we consider it probable as of the date of acquisition that we will be unable to collect all contractually required principal, interest and other payments, the excess of our estimate of undiscounted future cash flows from these securities over their initial recorded investment is accreted into interest revenue on a level-yield basis over the securities' estimated remaining terms.

Subsequent decreases in these securities' expected future cash flows are either recognized prospectively through an adjustment of the yields on the securities over their remaining terms, or are evaluated for other-than-temporary impairment. Increases in expected future cash flows are recognized prospectively over the securities' estimated remaining terms through the recalculation of their yields.

For certain debt securities acquired which are considered to be beneficial interests in securitized financial assets, the excess of our estimate of undiscounted future cash flows from these securities over their initial recorded investment is accreted into interest revenue on a level-yield basis over the securities' estimated remaining terms. Subsequent decreases in these securities' expected future cash flows are either recognized prospectively through an adjustment of

the yields on the securities over their remaining terms, or are evaluated for other-than-temporary impairment. Increases in expected future cash flows are recognized prospectively over the securities' estimated remaining terms through the recalculation of their yields.

**Impairment:**

We conduct periodic reviews of individual securities to assess whether OTTI exists. Impairment exists when the current fair value of an individual security is below its amortized cost basis. When the decline in the security's fair value is deemed to be other than temporary, the loss is recorded in our consolidated statement of income. In addition, for AFS and HTM debt securities, impairment is recorded in our consolidated statement of income when management intends to sell (or may be required to sell) the securities before they recover in value, or when management expects 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).

Our review of impaired securities generally includes:

- the identification and evaluation of securities that have indications of potential OTTI, 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;



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STATE STREET CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

the analysis of the underlying collateral for mortgage- and asset-backed securities;  
the analysis of individual impaired securities, including consideration of the length of time the security has been in an unrealized loss position, 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 OTTI and those that would not support OTTI; and

documentation of the results of these analyses.

Factors considered in determining whether impairment is other than temporary include:

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 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.

The following provides a description of our process for the identification and assessment of OTTI, as well as information about OTTI recorded in 2016, 2015 and 2014 and changes in period-end unrealized losses, for major security types as of December 31, 2016.

U.S. Agency Securities

Our portfolio of U.S. agency direct obligations and mortgage-backed securities receives the implicit

or explicit backing of the U.S. government in conjunction with specified financial support of the U.S. Treasury. We recorded no OTTI on these securities in 2016, 2015 or 2014. The overall increase in the unrealized losses on these securities as of December 31, 2016 was primarily attributable to interest rate increases in 2016.

Asset-Backed Securities - Student Loans

Asset-backed securities collateralized by student loans are primarily composed of securities collateralized by FFELP loans. FFELP loans benefit from a federal government guarantee of at least 97% of defaulted principal and accrued interest, with additional credit support provided in the form of over-collateralization, subordination and excess spread, which collectively total in excess of 100%. Accordingly, the vast majority of FFELP loan-backed securities are protected from traditional consumer credit risk.

We recorded no OTTI on these securities in 2016, 2015 or 2014. The gross unrealized losses in our FFELP loan-backed securities portfolio as of December 31, 2016 were primarily attributable to the widening FFELP spreads during the year as some rating agencies are reviewing the FFELP market for bonds with cash flows that might extend past their legal final maturities.

Our assessment of OTTI of these securities considers, among many other factors, the strength of the U.S. government guarantee, the performance of the underlying collateral, and the remaining average term of the FFELP loan-backed securities portfolio, which was approximately 4.1 years as of December 31, 2016.

In the fourth quarter of 2016, Moody's and Fitch downgraded approximately \$1.7 billion of FFELP loan-backed securities in our portfolio due to potential extension of student loan repayments beyond the securities' legal final maturity dates. Approximately \$2.2 billion of our FFELP loan-backed portfolio are on credit watch negative by Fitch. Based on the limited price impact on the overall FFELP loan-backed securities portfolio and recent remedial actions

by issuers, including amending loan-backed securities maturity dates and exercising cleanup calls, the credit quality of the FFELP loan-backed securities portfolio remains stable and we, as a bondholder, remain protected from principal loss as a result of the aforementioned federal government guarantee and over-collateralization. Downside risks remain should remedial actions fail to address the extension risks.

Our total exposure to private student loan-backed securities was less than \$200 million as of December 31, 2016. Our assessment of OTTI of

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

private student loan-backed securities considers, among other factors, the impact of high unemployment rates on the collateral performance of private student loans. We recorded no OTTI on these securities in 2016, 2015 or 2014.

Non-U.S. Mortgage- and Asset-Backed Securities

Non-U.S. mortgage- and asset-backed securities are primarily composed of U.K., Australian and Dutch securities collateralized by residential mortgages and German securities collateralized by automobile loans and leases. Our assessment of impairment with respect to these securities considers the location of the underlying collateral, collateral enhancement and structural features, expected credit losses under base-case and stressed conditions and the macroeconomic outlook for the country in which the collateral is located, including housing prices and unemployment. Where appropriate, any potential loss after consideration of the above-referenced factors is further evaluated to determine whether any OTTI exists.

We recorded OTTI of \$2 million, \$1 million, and \$1 million in 2016, 2015 and 2014, respectively, on non-U.S. residential mortgage-backed securities in our consolidated statement of income associated with adverse changes in the timing of expected future cash flows from the securities.

Our assessment of OTTI of these securities takes into account government intervention in the corresponding mortgage markets and assumes a conservative baseline macroeconomic environment for this region, factoring in slower economic growth and continued government austerity measures. Our baseline view assumes a recessionary period characterized by high unemployment and by additional housing price declines of between 3% and 23% across these four countries. Our evaluation of OTTI in our base case does not assume a disorderly sovereign-debt restructuring or a break-up of the Eurozone. In addition, we perform stress testing and sensitivity analysis in order to understand the impact of more severe assumptions on potential OTTI.

State and Political Subdivisions and Other U.S. Debt Securities

Our municipal securities portfolio primarily includes securities issued by U.S. states and their municipalities. A portion of this portfolio is held in connection with our tax-exempt investment program, more fully described in Note 14. Our portfolio of other U.S. debt securities is primarily composed of securities issued by U.S. corporations. Our assessment of OTTI of these portfolios considers, among other factors, adverse conditions specifically related to the industry, geographic area or

financial condition of the issuer; the structure of the security, including collateral, if any, and payment schedule; rating agency changes to the security's credit rating; the volatility of the fair value changes; and our intent and ability to hold the security until its recovery in value. If the impairment of the security is credit-related, we estimate the future cash flows from the security, tailored to the security and considering the above-described factors, and any resulting impairment deemed to be other-than-temporary is recorded in our consolidated statement of income.

We recorded no OTTI on these securities in 2016, 2015 or 2014. The decline in the unrealized losses on these securities as of December 31, 2016 was primarily attributable to the narrowing of spreads and U.S. Treasury rates in 2016.

U.S. Non-Agency Residential Mortgage-Backed Securities

We assess OTTI of our portfolio of U.S. non-agency residential mortgage-backed securities using cash flow models, tailored for each security, that estimate the future cash flows from the underlying mortgages, using the security-specific collateral and transaction structure. Estimates of future cash flows are subject to management judgment. The future cash flows and performance of our portfolio of U.S. non-agency residential mortgage-backed securities are a function of a number of factors, including, but not limited to, the condition of the U.S. economy, the condition of the U.S. residential mortgage markets, and the level of loan defaults, prepayments and loss severities. Management's estimates of future losses for each security also consider the underwriting and historical performance of each specific security, the underlying collateral type, vintage, borrower profile, third-party guarantees, current levels of subordination, geography and other factors.

We recorded no OTTI on these securities in 2016, 2015 or 2014.

U.S. Non-Agency Commercial Mortgage-Backed Securities

With respect to our portfolio of U.S. non-agency commercial mortgage-backed securities, OTTI is assessed by considering a number of factors, including, but not limited to, the condition of the U.S. economy and the condition of the U.S. commercial real estate market, as well as capitalization rates. Management estimates of future losses for each security also consider the underlying collateral type, property location, vintage, debt-service coverage ratios, expected property income, servicer advances and estimated property values, as well as current levels of subordination. In 2016, we recorded \$1 million of OTTI on these securities, all associated with

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expected credit losses. We recorded no OTTI on these securities 2015. In 2014, we recorded \$10 million of OTTI on these securities, all associated with expected credit losses.

The estimates, assumptions and other risk factors utilized in our assessment of impairment as described above are used by management to identify securities which are subject to further analysis of potential credit losses. Additional analyses are performed using more stressful assumptions to further evaluate the sensitivity of losses relative to the above-described factors. However, since the assumptions are based on the unique characteristics of each security, management uses a range of estimates for prepayment speeds, default, and loss severity forecasts that reflect the collateral profile of the securities within each asset class. In addition, in measuring expected credit losses, the individual characteristics of each security are examined to determine whether any additional factors would increase or mitigate the expected loss. Once losses are determined, the timing of the loss will also affect the ultimate OTTI, since the loss is ultimately subject to a discount commensurate with the purchase yield of the security.

After a review of the investment portfolio, taking into consideration 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 mortgage- and asset-backed securities and other relevant factors, and excluding OTTI recorded in 2016, management considers the aggregate decline in fair value of the investment securities portfolio and the resulting gross pre-tax unrealized losses of \$820 million related to 1,727 securities as of December 31, 2016 to be temporary, and not the result of any material changes in the credit characteristics of the securities.

## Note 4. Loans and Leases

Loans are generally recorded at their principal amount outstanding, net of the allowance for loan losses, unearned income, and any net unamortized deferred loan origination fees. Acquired loans have been initially recorded at fair value based on management's expectation with respect to future principal and interest collection as of the date of acquisition. Acquired loans are held for investment, and as such their initial fair value is not adjusted subsequent to acquisition. Loans that are classified as held-for-sale are measured at lower of cost or fair value on an individual basis. Interest revenue 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 revenue over the term of the related loan, beginning with the initial borrowing. Fees on commitments and letters of credit are amortized to processing fees and other revenue over the commitment period when funding is not known or expected.

Leveraged-lease investments are reported at the aggregate of lease payments receivable and estimated residual values, net of non-recourse debt and unearned income. Lease residual values are reviewed regularly for other-than-temporary impairment, with valuation adjustments recorded against processing fees and other revenue. Unearned income is recognized to yield a level rate of return on the net investment in the leases. Gains and losses on residual values of leased equipment sold are recorded in processing fees and other revenue.

The following table presents our recorded investment in loans and leases, by segment, as of the dates indicated:

(In millions)	December 31, 2016	December 31, 2015
Domestic:		
Commercial and financial:		
Loans to investment funds	\$ 11,734	\$ 11,915
Senior secured bank loans	3,256	2,929
Loans to municipalities	1,352	962
Other	70	93
Commercial real estate	27	28
Lease financing	338	337

Total domestic	16,777	16,264
Non-U.S.:		
Commercial and financial:		
Loans to investment funds	2,224	1,752
Senior secured bank loans	252	205
Lease financing	504	578
Total non-U.S.	2,980	2,535
Total loans and leases	19,757	18,799
Allowance for loan and lease losses (53 ) (46 )		
Loans and leases, net of allowance	\$ 19,704	\$ 18,753

We segregate our loans and leases into three segments: commercial and financial loans, commercial real estate loans, and lease financing. We further classify commercial and financial loans as loans to investment funds, senior secured bank loans, loans to municipalities, and other. 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 to mutual fund clients, purchased senior secured bank loans,

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and loans to municipalities. Investment fund lending is composed of short-duration revolving credit lines providing liquidity to fund clients in support of their transaction flows associated with securities' settlement activities. Certain loans are pledged as collateral for access to the Federal Reserve's discount window. As of December 31, 2016 and December 31, 2015, the loans pledged as collateral totaled \$1.5 billion and \$2.5 billion, respectively. The lease financing segment includes our investment in leveraged lease financing. The

components of our net investment in leveraged lease financing, included in the lease financing segment in the preceding table, were as follows as of December 31:

(In millions)	2016	2015
Net rental income receivable	\$1,039	\$1,159
Estimated residual values	89	89
Unearned income	(286 )	(333 )
Investment in leveraged lease financing	842	915
Less: related deferred income tax liabilities	(313 )	(334 )
Net investment in leveraged lease financing	\$529	\$581

The following tables present our recorded investment in each class of loans and leases by credit quality indicator as of the dates indicated:

December 31, 2016		Commercial	Lease	Total
(In millions)	and Financial	Real Estate	Financing	Loans and Leases
Investment grade <sup>(1)</sup>	\$ 14,889	\$ 27	\$ 842	\$ 15,758
Speculative <sup>(2)</sup>	3,984	—	—	3,984
Substandard <sup>(4)</sup>	15	—	—	15
Total	\$ 18,888	\$ 27	\$ 842	\$ 19,757
December 31, 2015		Commercial	Lease	Total
(In millions)	and Financial	Real Estate	Financing	Loans and Leases
Investment grade <sup>(1)</sup>	\$ 14,288	\$ 28	\$ 888	\$ 15,204
Speculative <sup>(2)</sup>	3,537	—	27	3,564
Special mention <sup>(3)</sup>	31	—	—	31
Total	\$ 17,856	\$ 28	\$ 915	\$ 18,799

<sup>(1)</sup> Investment-grade loans and leases consist of counterparties with strong credit quality and low expected credit risk and probability of default. Ratings apply to counterparties with a strong capacity to support the timely repayment of any financial commitment.

<sup>(2)</sup> Speculative loans and leases 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.

<sup>(3)</sup> Special mention loans and leases consist of counterparties with potential weaknesses that, if uncorrected, may result in deterioration of repayment prospects.

<sup>(4)</sup> Substandard loans and leases consist of counterparties with well-defined weakness that jeopardizes repayment with the possibility we will sustain some loss.

We use an internal risk-rating system to assess our risk of credit loss for each loan or lease. 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.

In assessing the risk rating assigned to each individual loan or lease, 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, 2016.

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The following table presents our recorded investment in loans and leases, disaggregated based on our impairment methodology, as of the dates indicated:

(In millions)	December 31, 2016				December 31, 2015			
	Commercial and Financial	Commercial Real Estate	Lease Financing	Total Loans and Leases	Commercial and Financial	Commercial Real Estate	Lease Financing	Total Loans and Leases
Loans and leases <sup>(1)</sup> :								
Individually evaluated for impairment	\$ 15	\$ —	\$ —	\$ 15	\$ —	\$ —	\$ —	\$ —
Collectively evaluated for impairment	18,873	27	842	19,742	17,856	28	915	18,799
Total	\$ 18,888	\$ 27	\$ 842	\$ 19,757	\$ 17,856	\$ 28	\$ 915	\$ 18,799

<sup>(1)</sup> For those portfolios where there are a small number of loans each with a large balance, we review each loan annually for indicators of impairment. For those loans where no such indicators are identified, the loans are collectively evaluated for impairment. As of December 31, 2016, \$195 thousand of the allowance for loan and lease loss related to commercial and financial loans individually evaluated for impairment, and the remainder of the allowance related to commercial and financial loans collectively evaluated for impairment. As of December 31, 2015, all of the allowance for loan and lease loss related to commercial and financial loans collectively evaluated for impairment.

The following table presents information related to our recorded investment in impaired loans and leases for the dates or periods indicated. As of December 31, 2015, we had no impaired loans and leases.

(In millions)	As of December 31, 2016			Year Ended December 31, 2016	
	Recorded Investment	Unpaid Principal Balance <sup>(1)</sup>	Related Allowance <sup>(2)</sup>	Average Interest Recorded Investment	Revenue Recognized
Commercial and financial <sup>(1)</sup>	\$ 15	\$ 15	\$ —	\$ 15	\$ —
Total	\$ 15	\$ 15	\$ —	\$ 15	\$ —

<sup>(1)</sup> As of December 31, 2016, the related allowance for loan loss was approximately \$195 thousand. This relates to one loan, which was on non-accrual status.

<sup>(2)</sup> As of December 31, 2016 and December 31, 2015, with exception of the aforementioned specific allowance, all of the allowance for loan and lease losses of \$53 million and \$46 million, respectively, related to loans that were not impaired.

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. No loans were modified in troubled debt restructurings during the years ended December 31, 2016 and December 31, 2015.

We generally place loans on non-accrual status once principal or interest payments are 60 days contractually past due, or earlier if management determines that full collection is not probable. Loans 60 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 revenue. For loans on non-accrual status, revenue 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, 2016, there was one commercial and financial loan on non-accrual status, no CRE loans or leases were on non-accrual status, and no loans and leases were 90 days or more contractually past due. As of December 31, 2015, no loans or leases were on non-accrual status or 90 days or more contractually past due.

Allowance for loan and lease losses

The allowance for loan and lease losses, recorded as a reduction of loans and leases in our consolidated statement of condition, represents management's estimate of incurred credit losses in our loan and lease portfolio as of the balance sheet date. The allowance is evaluated on a regular basis by management. Factors considered in evaluating the appropriate level of the allowance for each segment of our loan-and-lease portfolio include loss experience, the probability of default reflected in our internal risk rating of the counterparty's creditworthiness, 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.

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Loans and leases are charged off to the allowance for loan and lease losses in the reporting period in which either an event occurs that confirms the existence of a loss on a loan or lease or a portion of a loan or lease is determined to be uncollectible. In addition, any impaired loan or lease that is determined to be collateral-dependent is reduced to an amount equal to the fair value of the collateral less costs to sell. A loan or lease is identified as collateral-dependent when management determines that it is probable that the underlying collateral will be the sole source of repayment. Recoveries are recorded on a cash basis as adjustments to the allowance.

The following table presents activity in the allowance for loan and lease losses for the periods indicated:

(In millions)	Years Ended December 31,		
	2016	2015	2014
	Total Loans and Leases	Total Loans and Leases	Total Loans and Leases
Allowance for loan and lease losses <sup>(1)</sup> :			
Beginning balance	\$46	\$ 38	\$ 28
Provision for loan and lease losses	10	12	10
Charge-offs	(3 )	(4 )	—
Ending balance	\$53	\$ 46	\$ 38

<sup>(1)</sup> The provisions and charge-offs for loans and leases were attributable to exposure to senior secured loans to non-investment grade borrowers, purchased in connection with our participation in syndicated loans.

Loans and leases are reviewed on a regular basis, and any provisions for loan and lease losses that are recorded reflect management's estimate of the amount necessary to maintain the allowance for loan and lease losses at a level considered appropriate to absorb estimated incurred losses in the loan and lease portfolio.

**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, represents management's estimate of probable credit losses 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 reserve is evaluated on a regular basis by management. Factors considered in evaluating the appropriate level of this reserve are similar to those considered with respect to the allowance for loan and lease losses. Provisions to maintain the reserve at a level considered by us to be appropriate to absorb estimated incurred credit losses in outstanding facilities are 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 and core deposit intangible assets, 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 annual evaluation for impairment. Other intangible assets, which are also subject to annual 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, and core deposit intangible assets, which are amortized 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.

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## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents changes in the carrying amount of goodwill during the periods indicated:

(In millions)	December 31, 2016			December 31, 2015		
	Investment Servicing	Investment Management	Total	Investment Servicing	Investment Management	Total
Goodwill:						
Beginning balance	\$5,641	\$ 30	\$5,671	\$5,793	\$ 33	\$5,826
Acquisitions <sup>(1)</sup>	—	236	236	—	—	—
Divestitures and other reductions	(11 )	—	(11 )	—	—	—
Foreign currency translation	(80 )	(2 )	(82 )	(152 )	(3 )	(155 )
Ending balance	\$5,550	\$ 264	\$5,814	\$5,641	\$ 30	\$5,671

<sup>(1)</sup> Amounts for 2016 reflect our acquisition of GEAM, which is more fully described in Note 1.

The following table presents changes in the net carrying amount of other intangible assets during the periods indicated:

(In millions)	December 31, 2016			December 31, 2015		
	Investment Servicing	Investment Management	Total	Investment Servicing	Investment Management	Total
Other intangible assets:						
Beginning balance	\$1,753	\$ 15	\$1,768	\$1,998	\$ 27	\$2,025
Acquisitions <sup>(1)</sup>	—	217	217	16	—	16
Divestitures	(8 )	—	(8 )	—	—	—
Amortization	(186 )	(21 )	(207 )	(187 )	(10 )	(197 )
Foreign currency translation and other, net	(20 )	—	(20 )	(74 )	(2 )	(76 )
Ending balance	\$1,539	\$ 211	\$1,750	\$1,753	\$ 15	\$1,768

<sup>(1)</sup> Amounts for 2016 reflect our acquisition of GEAM, which is more fully described in Note 1.

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:

(In millions)	December 31, 2016			December 31, 2015		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Other intangible assets:						
Client relationships	\$2,620	\$ (1,306 )	\$ 1,314	\$2,486	\$ (1,198 )	\$ 1,288
Core deposits	661	(277 )	384	667	(246 )	421
Other	132	(80 )	52	147	(88 )	59
Total	\$3,413	\$ (1,663 )	\$ 1,750	\$3,300	\$ (1,532 )	\$ 1,768

Amortization expense related to other intangible assets was \$207 million, \$197 million and \$222 million in 2016, 2015 and 2014, respectively. An impairment of approximately \$9 million associated with intangible assets was included in amortization expense in 2014.

Expected future amortization expense for other intangible assets recorded as of December 31, 2016 is as follows:

(In millions)	Future Years Ending December 31, Amortization
2017	\$ 208
2018	186
2019	169
2020	166

2021

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Note 6. Other Assets

The following table presents the components of other assets as of the dates indicated:

(In millions)	December 31,	
	2016	2015
Receivable - securities lending <sup>(1)</sup>	\$ 21,204	\$ 20,121
Derivative instruments, net	7,321	4,777
Bank-owned life insurance	3,158	3,078
Investments in joint ventures and other unconsolidated entities	2,363	2,034
Collateral, net	2,236	1,344
Accounts receivable	886	1,018
Prepaid expenses	333	284
Deferred tax assets, net of valuation allowance <sup>(2)</sup>	210	182
Deposits with clearing organizations	132	127
Income taxes receivable	106	154
Receivable for securities settlement	40	311
Other <sup>(3)</sup>	339	473
Total	\$ 38,328	\$ 33,903

<sup>(1)</sup> Refer to Note 11 for further information on the impact of collateral on our financial statement presentation of securities borrowing transactions.

<sup>(2)</sup> Deferred tax assets and liabilities recorded in our consolidated statement of condition are netted within the same tax jurisdiction as of December 31, 2015. Gross deferred tax assets and liabilities are presented in Note 22.

<sup>(3)</sup> Includes amounts held in escrow accounts at third parties related to the negotiated settlements in the indirect foreign exchange legal matter presented in Note 13.

## Note 7. Deposits

As of December 31, 2016, we had \$55.03 billion of time deposits outstanding, of which \$214 million were non-U.S. and all of which are scheduled to mature in 2017. As of December 31, 2015, we had \$46.55 billion of time deposits outstanding, of which \$127 million were non-U.S. As of December 31, 2016 and 2015, substantially all U.S. and non-U.S. time deposits were in amounts of \$100,000 or more.

## Note 8. Short-Term Borrowings

Our short-term borrowings include securities sold under repurchase agreements, federal funds purchased and other short-term borrowings; other short-term borrowings include borrowings associated with our tax-exempt investment program, more fully described in Note 14. We phased out our commercial paper program prior to December 31, 2015 consistent with the objectives of our 2015 recovery and resolution plan developed pursuant to the requirements of the Dodd-Frank Act.

Collectively, short-term borrowings had weighted-average interest rates of 0.13% and 0.05% in 2016 and 2015, respectively.

The following tables present 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			Federal Funds			
	Repurchase Agreements			Purchased			
	2016	2015	2014	2016	2015	2014	
Balance as of December 31	\$4,400	\$4,499	\$8,925	\$—	\$6	\$21	
Maximum outstanding as of any month-end	5,572	10,977	10,955	29	29	29	
Average outstanding during the year	4,113	8,875	8,817	31	21	20	
Weighted-average interest rate as of year-end	.040	% .020	% .005	% .00	.03%	.01	%

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Weighted-average interest rate for the year	.02	.01	.00	.17	.01	.00
				Corporate		
				Commercial		
				Paper		
				Program <sup>(1)</sup>		
(Dollars in millions)	2016	2015	2014	2015	2014	
Balance as of December 31	\$1,158	\$1,748	\$1,870	\$—	\$2,485	
Maximum outstanding as of any month-end	1,726	1,865	1,938	2,912	2,485	
Average outstanding during the year	1,512	1,807	1,903	1,897	1,136	
Weighted-average interest rate as of year-end	.67	% .03	% .06	% .00	.16	%
Weighted-average interest rate for the year	.36	.06	.08	.26	.17	

<sup>(1)</sup> We phased out our commercial paper program prior to December 31, 2015.



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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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 \$4.49 billion underlying the repurchase agreements remained in our investment securities portfolio as of December 31, 2016.

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, 2016. The table excludes repurchase agreements collateralized by securities purchased under resale agreements and collateralized by trading account assets.

(In millions)	U.S. Government Securities Sold		Repurchase Agreements <sup>(1)</sup>
	Amortized Cost	Fair Value	Amortized Cost
Overnight maturity	\$4,490	\$ 4,491	\$ 4,400

<sup>(1)</sup> 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 \$30.86 billion for 2016 and \$30.30 billion for 2015. State Street Bank currently maintains a line of credit of CAD 1.40 billion, or approximately \$1.04 billion as of December 31, 2016, 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, 2016 and 2015, there was no balance outstanding on this line of credit.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Note 9. Long-Term Debt

(Dollars in millions)

Issuance Date	Maturity Date	Coupon Rate	Seniority	Interest Due Dates	As of December 31,	
					2016	2015 <sup>(6)</sup>
Statutory business trusts <sup>(5)</sup> :						
April 30, 2007	June 15, 2037	Floating-rate	Junior subordinated debentures	3/15; 6/15; 9/15; 12/15	\$—	\$793
May 15, 1998	May 15, 2028	Floating-rate	Junior subordinated debentures	2/15; 5/15; 8/15; 11/15	—	155
Parent company and non-banking subsidiary issuances:						
August 18, 2015	August 18, 2025	3.55 %	Senior notes	2/18; 8/18 <sup>(1)</sup>	1,293	1,301
August 18, 2015	August 18, 2020	2.55 %	Senior notes	2/18; 8/18 <sup>(1)</sup>	1,192	1,194
November 19, 2013	November 20, 2023	3.7 %	Senior notes	5/20; 11/20 <sup>(1)</sup>	1,033	1,046
December 15, 2014	December 16, 2024	3.3 %	Senior notes	6/16; 12/16 <sup>(1)</sup>	999	1,007
May 15, 2013	May 15, 2023 <sup>(2)</sup>	3.1 %	Subordinated notes	5/15; 11/15 <sup>(1)</sup>	987	993
April 30, 2007 <sup>(5)</sup>	June 15, 2037	Floating-rate	Junior subordinated debentures	3/15; 6/15; 9/15; 12/15	793	—
March 7, 2011	March 7, 2021	4.375 %	Senior notes	3/7; 9/7 <sup>(1)</sup>	738	738
May 19, 2016	May 19, 2021	1.95 %	Senior notes	5/19; 11/19 <sup>(1)</sup>	726	—
May 19, 2016	May 19, 2026	2.65 %	Senior notes	5/19; 11/19 <sup>(1)</sup>	704	—
February 11, 2011	March 15, 2018 <sup>(3)</sup>	4.956 %	Junior subordinated debentures	3/15; 9/15 <sup>(1)</sup>	511	519
August 18, 2015	August 18, 2020	Floating-rate	Senior notes	2/18; 5/18; 8/18; 11/18	499	498
May 15, 2013	May 15, 2018	1.35 %	Senior notes	5/15; 11/15 <sup>(1)</sup>	497	495
April 30, 2007	April 30, 2017	5.375 %	Senior notes	4/30; 10/30	450	449
May 15, 1998 <sup>(5)</sup>	May 15, 2028	Floating-rate	Junior subordinated debentures	2/15; 5/15; 8/15; 11/15	150	—
June 21, 1996	June 15, 2026 <sup>(4)</sup>	7.35 %	Senior notes	6/15; 12/15	150	150
March 7, 2011	March 7, 2016	2.875 %	Senior notes	3/7	—	1,001
Parent company:						
Long-term capital leases					293	334
State Street Bank issuances:						
September 24, 2003	October 15, 2018 <sup>(2)</sup>	5.25 %	Subordinated notes	4/15; 10/15	415	424
December 8, 2005	January 15, 2016	5.3 %	Subordinated notes	1/15	—	400
Total long-term debt					\$11,430	\$11,497

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, 2016, the carrying value of long-term debt associated with these fair value hedges decreased \$15 million. As of December 31, 2015, the carrying value of long-term debt associated with these fair value hedges increased \$105 million. 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.

We do not have the right to redeem the debenture prior to maturity other than upon the occurrence of specified events. Such redemption is subject to federal regulatory approval. The junior subordinated debenture qualify for inclusion in tier 2 regulatory capital under current federal regulatory capital guidelines.

(4) We may not redeem the note prior to their maturity.

On December 21, 2016, the statutory business trusts were liquidated and the floating-rate junior subordinated debentures issuances of the statutory business trusts were exchanged for a like principal amount of State Street Corporation's floating-rate junior subordinated debentures with the same maturity dates.

(6) Refer to Note 1 regarding the retrospective application of ASU 2015-03, which resulted in the netting of debt issuance costs within long-term debt.

We maintain an effective universal shelf registration that allows for the offering and sale of debt securities, capital securities, common stock, depositary shares and preferred stock, and warrants to purchase such securities, including any shares into which the preferred stock and depositary shares may be convertible, or any combination thereof.

As of December 31, 2016, State Street Bank had Board authority to issue unsecured senior debt securities from time to time, provided that the aggregate principal amount of such unsecured senior debt outstanding at any one time does not exceed \$5 billion. As of December 31, 2016, \$4 billion was available for issuance pursuant to this authority. As of December 31, 2016, State Street Bank also had Board authority to issue an additional \$500 million of subordinated debt.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Statutory Business Trusts:

As of December 31, 2015, we had two statutory business trusts, State Street Capital Trusts I and IV, which as of December 31, 2015 had collectively issued \$955 million of trust preferred capital securities. Proceeds received by each of the trusts from their capitalization and from their capital securities issuances were invested in junior subordinated debentures issued by the parent company. The junior subordinated debentures were the sole assets of Capital Trusts I and IV. Each of the trusts was wholly-owned by us; however, in conformity with U.S. GAAP, we did not record the trusts in our consolidated financial statements.

Payments made by the trusts to holders of the capital securities were dependent on our payments made to the trusts on the junior subordinated debentures. Our fulfillment of these commitments had the effect of providing a full, irrevocable and unconditional guarantee of the trusts' obligations under the capital securities. While the capital securities issued by the trusts were not recorded in our consolidated statement of condition, a portion of the junior subordinated debentures qualified for inclusion in tier 1 regulatory capital with the remainder qualifying for inclusion in tier 2 regulatory capital under current federal regulatory capital guidelines. Information about restrictions on our ability to obtain funds from our subsidiary banks is provided in Note 16.

Interest paid by the parent company on the debentures was recorded in interest expense. Distributions to holders of the capital securities by the trusts were payable from interest payments received on the debentures and were due quarterly by State Street Capital Trusts I and IV, subject to deferral for up to five years under certain conditions. The capital securities were subject to mandatory redemption in whole at the stated maturity upon repayment of the debentures, with an option by us to redeem the debentures at any time. Such optional redemption was subject to federal regulatory approval.

Effective December 21, 2016, the liquidation date, State Street Capital Trusts I and IV were dissolved in accordance with the terms of State Street Capital Trusts I and IV, and we exchanged the floating-rate capital securities of State Street Capital Trust I due in 2028 for a like principal amount of State Street Corporation floating-rate junior subordinated debentures due in 2028, and we exchanged the floating-rate capital securities of State Street Capital Trust IV due in 2037 for a like principal amount of State Street Corporation floating-rate junior subordinated debentures due in 2037.

The next scheduled interest payment on the State Street Corporation floating-rate junior subordinated debentures due in 2028 and 2037 will include any accrued and unpaid distributions on the floating rate capital securities of State Street Capital Trust I due in 2028 and State Street Capital Trust IV due in 2037, respectively.

Parent Company:

As of December 31, 2016 and 2015, long-term capital leases included \$278 million and \$308 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

A derivative financial instrument is a financial instrument or other contract which has one or more referenced indices and one or more notional amounts, either no initial net investment or a smaller initial net investment than would be expected for similar types of contracts, and which requires or permits net settlement.

We use derivative financial instruments to support our clients' needs and to manage our interest-rate and currency risk. In undertaking these 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 options and interest-rate contracts. Our derivative positions include derivative contracts held by a consolidated sponsored investment fund (refer to Note 14). We record derivatives in our consolidated statement of condition at their fair value on a recurring basis.

Interest rate contracts involve an agreement with a counterparty to exchange cash flows based on the movement of an underlying interest rate index. An interest rate swap agreement involves the exchange of a series of interest payments, at either a fixed or variable rate, based on the notional amount without the exchange of the underlying principal

amount. An interest rate option contract provides the purchaser, for a premium, the right, but not the obligation, to receive an interest rate based upon a predetermined notional amount during a specified period. An interest rate futures contract is a commitment to buy or sell, at a future date, a financial instrument at a contracted price; it may be settled in cash or through the delivery of the contracted instrument.

Foreign exchange contracts involve an agreement to exchange one currency for another currency at an agreed-upon rate and settlement date. Foreign exchange contracts generally consist of

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

foreign exchange forward and spot contracts, option contracts and cross-currency swaps. Future cash requirements, if any, related to foreign exchange contracts are represented by the gross amount of currencies to be exchanged under each contract unless we and the counterparty have agreed to pay or to receive the net contractual settlement amount on the settlement date.

Derivative financial instruments involve the management of interest-rate and foreign currency risk, and involve, to varying degrees, market risk and credit and counterparty risk (risk related to repayment). 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 use a variety of risk management tools and methodologies to measure, monitor and manage the market risk associated with our trading activities, which include our use of derivative financial instruments. One such risk-management measure is VaR. VaR is an estimate of potential loss for a given period within a stated statistical confidence interval. We use a risk measurement system to measure VaR daily. We have adopted standards for measuring VaR, and we maintain regulatory capital for market risk in accordance with currently applicable regulatory market risk requirements.

Derivative financial instruments are also subject to credit and counterparty risk, which we manage by performing credit reviews, maintaining individual counterparty limits, entering into netting arrangements and requiring the receipt of collateral. Cash collateral received from and provided to counterparties in connection with derivative financial instruments is recorded in accrued expenses and other liabilities and other assets, respectively, in our consolidated statement of condition. As of December 31, 2016 and 2015, we had recorded approximately \$1.99 billion and \$1.40 billion, respectively, of cash collateral received from counterparties and approximately \$4.39 billion and \$1.65 billion, respectively, of cash collateral provided to counterparties in connection with derivative financial instruments in our consolidated statement of condition.

Certain of our derivative assets and liabilities as of December 31, 2016 and 2015 are subject to master netting agreements with our derivative counterparties. Certain of these agreements contain credit risk-related contingent features in which the counterparty has the right to declare us in default and accelerate cash settlement of our net derivative liabilities with the counterparty in the event that our

credit rating falls below specified levels. The aggregate fair value of all derivative instruments with credit risk-related contingent features that were in a net liability position as of December 31, 2016 totaled approximately \$1.19 billion, against which we provided \$92 million of underlying collateral. If our credit rating were downgraded below levels specified in the agreements, the maximum additional amount of payments related to termination events that could have been required pursuant to these contingent features, assuming no change in fair value, as of December 31, 2016 was approximately \$1.10 billion. Such accelerated settlement would be at fair value and therefore not affect our consolidated results of operations.

On the date a derivative contract is entered into, we designate the derivative as: (1) a hedge of the fair value of a recognized fixed-rate asset or liability or of an unrecognized firm commitment (a “fair value” hedge); (2) a hedge of a forecast transaction or of the variability of cash flows to be received or paid related to a recognized variable-rate asset or liability (a “cash flow” hedge); (3) a foreign currency fair value or cash flow hedge (a “foreign currency” hedge); (4) a hedge of a net investment in a non-U.S. operation; or (5) a derivative utilized in either our trading activities or in our asset-and-liability management activities that is not designated as a hedge of an asset or liability.

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.

Unrealized gains and losses on foreign exchange and interest-rate contracts are reported at fair value in our consolidated statement of condition as a component of other assets and accrued expenses and other liabilities, respectively, on a gross basis, except where such gains and losses arise from contracts covered by qualifying master

netting agreements.

**Derivatives Not Designated as Hedging Instruments:**

In connection with our trading activities, we use derivative financial instruments in our role as a financial intermediary and as both a manager and servicer of financial assets, in order to accommodate our clients' investment and risk management needs. In addition, we use derivative financial instruments for

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

risk management purposes as economic hedges, which are not formally designated as accounting hedges, in order to contribute to our overall corporate earnings and liquidity. These activities are designed to generate trading services revenue and to manage volatility in our net interest revenue. The level of market risk that we assume is a function of our overall objectives and liquidity needs, our clients' requirements and market volatility.

With respect to 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 contracts and options 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 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 and interest rate swaps, interest rate forward contracts, and interest rate futures. In the aggregate, we seek to match positions closely with the objective of minimizing related currency and interest-rate risk. We also use foreign currency swap contracts to manage the foreign exchange risk associated with certain foreign currency-denominated liabilities. The foreign exchange swap contracts are entered into for periods generally consistent with foreign currency exposure of the underlying transactions.

The entire changes in the fair value of the derivatives utilized in our trading activities are recorded in trading services revenue, and the entire changes in fair value of derivatives utilized in our asset-and-liability management activities are recorded in processing fees and other revenue.

We offer products that provide book-value protection primarily to plan participants in stable value funds managed by non-affiliated investment managers of post-retirement defined contribution benefit plans, particularly 401(k) plans. We account for the associated contingencies, more fully described in Note 12, individually as derivative financial instruments. These contracts are valued quarterly and unrealized losses, if any, are recorded in other expenses in our consolidated statement of income.

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 State Street. 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. Interest rate risk, defined as the sensitivity of income or financial condition to variations in interest rates, is a significant non-trading market risk to which our assets and liabilities are exposed. We manage our interest rate risk by identifying, quantifying and hedging our exposures, using fixed-rate portfolio securities and a variety of derivative financial instruments, most frequently interest-rate swaps. Interest rate swap agreements alter the interest-rate characteristics of specific balance sheet assets or liabilities. We use foreign exchange forward and swap contracts to hedge foreign exchange exposure to various foreign currencies with respect to certain assets and liabilities. Our hedging relationships are formally designated, and qualify for hedge accounting, as fair value, cash flow or net investment hedges.

**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. Differences between the gains and losses on the hedging derivative and the gains and losses on the hedged asset or liability attributable to the hedged risk represent hedge ineffectiveness. We use interest rate or foreign exchange contracts in this manner to manage our exposure to changes in the fair value of hedged items caused by changes in interest rates or foreign exchange rates. Changes in the fair value of a derivative that is highly effective, and that is designated and qualifies as a fair value hedge, are recorded in processing fees and other revenue, along with



the changes in fair value of the hedged asset or liability attributable to the hedged risk.

We have entered into interest rate swap agreements to modify our interest revenue from certain AFS investment securities from a fixed rate to a floating rate. The hedged AFS investment securities included hedged trusts that had a weighted-average life of approximately 4.5 years

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

We have entered into interest rate swap agreements to modify our interest expense on eight senior notes and two subordinated notes from fixed rates to floating rates. The senior and subordinated notes are hedged with interest rate swap contracts with notional amounts, maturities and fixed-rate coupon terms that effectively hedge the fixed-rate notes. The interest rate swap contracts convert the fixed-rate coupons to floating rates indexed to LIBOR, thereby mitigating our exposure to fluctuations in the fair values of the senior and subordinated notes stemming from changes in the benchmark interest rates. The table below summarizes the maturities and the paid fixed interest rates for the hedged senior and subordinated notes:

December 31, 2016 Maturity Paid Fixed Interest Rate

## Senior Notes

2018	1.35%
2020	2.55
2021	1.95
2021	4.38
2023	3.70
2024	3.30
2025	3.55
2026	2.65

## Subordinated Notes

2018	4.96
2023	3.10

We have entered into foreign exchange swap contracts to hedge the change in fair value attributable to foreign exchange movements in our foreign currency denominated investment securities and deposits. These forward contracts convert the foreign currency risk to U.S. dollars, thereby mitigating our exposure to fluctuations in the fair value of the securities and deposits attributable to changes in foreign exchange rates. Generally, no ineffectiveness is recorded in earnings, since the notional amount of the hedging instruments is aligned with the carrying value of the hedged securities and deposits. The forward points on the hedging instruments are considered to be a hedging cost, and accordingly are excluded from the evaluation of hedge effectiveness and recorded in net interest revenue. Changes in the fair value of a derivative that are highly effective, and that are designated and qualify as a foreign currency hedge, are recorded in processing fees and other revenue.

## Cash Flow Hedges

Derivatives categorized as cash flow hedges are utilized to offset the variability of cash flows to be received from or paid on a floating-rate asset or liability. Ineffectiveness of cash flow hedges is defined as the extent to which the changes in fair value of the derivative exceed the changes in the present value of the forecasted cash flows attributable to the forecasted transaction.

We have entered into foreign exchange contracts to hedge the change in cash flows attributable to foreign exchange movements in foreign currency denominated investment securities. These foreign exchange contracts convert the foreign currency risk to U.S. dollars, thereby mitigating our exposure to fluctuations in the cash flows of the securities attributable to changes in foreign exchange rates. Generally, no ineffectiveness is recorded in earnings, since the critical terms of the hedging instruments and the hedged securities are aligned. Changes in the fair value of the derivative that are highly effective, and that are designated and qualify as a foreign currency hedge, are recorded in other comprehensive income.

## Net Investment Hedges

We have entered into foreign exchange contracts to protect the net investment in our foreign operations against adverse changes in exchange rates. These forward contracts convert the foreign currency risk to U.S. dollars, thereby

mitigating our exposure to fluctuations in the fair value of our net investments in our foreign operations attributable to changes in foreign exchange rates. The changes in fair value of the foreign exchange forward contracts are recorded, net of taxes, in the foreign currency translation component of other comprehensive income. Effectiveness of net investment hedges is based on the overall changes in the fair value of the forward contracts and we measure the ineffectiveness of net investment hedge based on changes in forward foreign currency rates. There was no ineffectiveness for our net investment hedge during 2016.

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## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents the aggregate contractual, or notional, amounts of derivative financial instruments entered into in connection with our trading and asset-and-liability management activities as of the dates indicated:

(In millions)	December 31, 2016	December 31, 2015
Derivatives not designated as hedging instruments:		
Interest-rate contracts:		
Swap agreements and forwards	\$	—\$ 336
Futures	13,455	2,621
Foreign exchange contracts:		
Forward, swap and spot	1,414,765	1,274,277
Options purchased	337	403
Options written	202	404
Credit derivative contracts:		
Credit swap agreements <sup>(1)</sup>	—	141
Commodity and equity contracts:		
Commodity <sup>(1)</sup>	—	113
Equity <sup>(1)</sup>	—	87
Other:		
Stable value contracts	27,182	24,583
Deferred value awards <sup>(2)(3)</sup>	409	320
Derivatives designated as hedging instruments:		
Interest-rate contracts:		
Swap agreements	10,169	9,398
Foreign exchange contracts:		
Forward and swap	8,564	4,515

<sup>(1)</sup> Primarily composed of positions held by a consolidated sponsored investment fund, more fully described in Note 14.

<sup>(2)</sup> Represents grants of deferred value awards to employees; refer to discussion in this note under "Derivatives Not Designated as Hedging Instruments."

<sup>(3)</sup> Amount as of December 31, 2016 reflects \$249 million related to the acceleration of expense associated with certain cash settled deferred incentive compensation awards.

In connection with our asset-and-liability management activities, we have entered into interest-rate contracts designated as fair value hedges to manage our interest rate risk. The following tables present the aggregate notional amounts of these interest rate contracts and the related assets or liabilities being hedged as of the dates indicated:

(In millions)	December 31, 2016 <sup>(1)</sup> Fair Value Hedges
Investment securities available-for-sale	\$ 1,444
Long-term debt <sup>(2)</sup>	8,725
Total	\$ 10,169
	December 31,

	2015 <sup>(1)</sup>
	Fair
(In millions)	Value
	Hedges
Investment securities available-for-sale	\$ 1,698
Long-term debt <sup>(2)</sup>	7,700
Total	\$ 9,398

<sup>(1)</sup> As of December 31, 2016 and 2015, there were no interest-rate contracts designated as cash flow hedges.

<sup>(2)</sup> As of December 31, 2016, these fair value hedges decreased the carrying value of long-term debt presented in our consolidated statement of condition by \$15 million. As of December 31, 2015, these fair value hedges increased the carrying value of long-term debt presented in our consolidated statement of condition by \$105 million.

Notional amounts of derivative financial instruments are not recorded in the consolidated statement of condition. They are provided here as an indication of the volume of our derivative activity and do not represent a measure of our potential gains or losses. The notional amounts are not required to be exchanged for most of our derivative contracts and they generally serve as a reference to calculate the fair values of the derivatives.

The following table presents the contractual and weighted-average interest rates for long-term debt, which include the effects of the fair value hedges presented in the table above, for the periods indicated:

	Years Ended December 31,					
	2016			2015		
	Contractual Rates	Rate Including Impact of Hedges		Contractual Rates	Rate Including Impact of Hedges	
Long-term debt	3.40%	2.29%		3.57%	2.42%	

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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 disclosed in Note 11.

(In millions)	Derivative Assets <sup>(1)</sup>	
	Fair Value	
	December 31, 2016	December 31, 2015
Derivatives not designated as hedging instruments:		
Foreign exchange contracts	\$ 15,982	\$ 10,799
Interest-rate contracts	—	2
Other derivative contracts	—	5
Total	\$ 15,982	\$ 10,806

Derivatives designated as hedging instruments:		
Foreign exchange contracts	\$ 502	\$ 517
Interest-rate contracts	68	133
Total	\$ 570	\$ 650

<sup>(1)</sup> Derivative assets are included within other assets in our consolidated statement of condition.

(In millions)	Derivative Liabilities <sup>(1)</sup>	
	Fair Value	
	December 31, 2016	December 31, 2015
Derivatives not designated as hedging instruments:		
Foreign exchange contracts	\$ 15,881	\$ 10,795
Other derivative contracts	380	103
Interest-rate contracts	—	2
Total	\$ 16,261	\$ 10,900

Derivatives designated as hedging instruments:		
Foreign exchange contracts	\$ 75	\$ 73
Interest-rate contracts	348	180
Total	\$ 423	\$ 253

<sup>(1)</sup> 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	Amount of Gain (Loss) on Derivative Recognized in Consolidated Statement of Income Years Ended		
		December 31,		
		2016	2015	2014
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	Trading services revenue	\$ 662	\$ 686	\$ 612

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Interest-rate contracts	Processing fees and other revenue	1	—	—
Interest-rate contracts	Trading services revenue	(7 )	(2 )	1
Credit derivative contracts	Trading services revenue	(1 )	(1 )	1
Credit derivative contracts	Processing fees and other revenue	—	—	(1 )
Other derivative contracts	Trading services revenue	(2 )	8	(2 )
Other derivative contracts <sup>(1)</sup>	Compensation and employee benefits	(448 )	(149 )	(106 )
Total		\$205	\$542	\$505

<sup>(1)</sup> Amount in 2016 reflects \$249 million related to the acceleration of expense associated with certain cash settled deferred incentive compensation awards.

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## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(In millions)	Location of Gain (Loss) on Derivative in Consolidated Statement of Income	Amount of Gain (Loss) on Derivative Recognized in Consolidated Statement of Income			Hedged Item in Fair Value Hedging Relationship	Location of Gain (Loss) on Hedged Item in Consolidated Statement of Income	Amount of Gain (Loss) on Hedged Item Recognized in Consolidated Statement of Income		
		Years Ended					Years Ended		
		2016	2015	2014			2016	2015	2014
Derivatives designated as fair value hedges:									
Foreign exchange contracts	Processing fees and other revenue	\$(6 )	\$(101)	\$(92)	Investment securities	Processing fees and other revenue	\$6	\$101	\$92
Foreign exchange contracts	Processing fees and other revenue	221	(241 )	—	FX deposit	Processing fees and other revenue	(221 )	241	—
Interest-rate contracts	Processing fees and other revenue	43	16	(44 )	Available-for-sale securities	Processing fees and other revenue <sup>(1)</sup>	(40 )	(17 )	39
Interest-rate contracts	Processing fees and other revenue	(98 )	61	150	Long-term debt	Processing fees and other revenue	100	(54 )	(138)
Total		\$160	\$(265)	\$14			\$(155)	\$271	\$(7 )

<sup>(1)</sup> In 2016, 2015 and 2014, \$23 million of net unrealized gains, \$12 million of net unrealized gains and \$24 million net unrealized losses, respectively, on AFS investment securities designated in fair value hedges were recognized in OCI.

Differences between the gains (losses) on the derivative and the gains (losses) on the hedged item, excluding any amounts recorded in net interest revenue, represent hedge ineffectiveness.

(In millions)	Amount of Gain (Loss) on Derivative Recognized in Other Comprehensive Income			Location of Gain (Loss) Reclassified from OCI to Consolidated Statement of Income		Amount of Gain (Loss) Reclassified from OCI to Consolidated Statement of Income			Location of Gain (Loss) on Derivative Recognized in Consolidated Statement of Income			Amount of Gain (Loss) on Derivative Recognized in Consolidated Statement of Income		
	Years Ended					Years Ended			Years Ended			Years Ended		
	2016	2015	2014			2016	2015	2014	2016	2015	2014	2016	2015	2014
Derivatives designated as cash flow hedges:														
Interest-rate contracts	\$—	\$—	\$(2 )	Net interest revenue		\$—	\$(4 )	\$(4 )	Net interest revenue		\$—	\$—	\$3	
Foreign exchange contracts	(39 )	55	126	Net interest revenue		—	—	—	Net interest revenue		24	10	6	
Total	\$(39 )	\$55	\$124			\$(4 )	\$(4 )				\$24	\$10	\$9	



Derivatives  
designated as  
net investment  
hedges:

Foreign exchange contracts	\$ 109	\$ —	\$ —	Gains (Losses) related to investment securities, net	\$ —	\$ —	\$ —	Gains (Losses) related to investment securities, net	\$ —	\$ —	\$ —
Total	\$ 109	\$ —	\$ —		\$ —	\$ —	\$ —		\$ —	\$ —	\$ —

Note 11. Offsetting Arrangements

We manage credit and counterparty risk by entering into enforceable netting agreements and other collateral arrangements with counterparties to derivative contracts and secured financing transactions, including resale and repurchase agreements, and principal securities borrowing and lending agreements. These netting agreements mitigate our counterparty credit risk by providing for a single net settlement with a counterparty of all financial transactions covered by the agreement in an event of default as defined under such agreement. In limited cases, a netting agreement may also provide for the periodic netting of settlement payments with respect to multiple different transaction types in the normal course of business. Certain of our derivative contracts are executed under either standardized netting agreements or, for exchange-traded

derivatives, the relevant contracts for a particular exchange which contain enforceable netting provisions. In certain cases, we may have cross-product netting arrangements which allow for netting and set-off of a variety of types of derivatives with a single counterparty. A derivative netting arrangement creates an enforceable right of set-off that becomes effective, and effects the realization or settlement of individual financial assets and liabilities, only following a specified event of default. Collateral requirements associated with our derivative contracts are determined after a review of the creditworthiness of each counterparty, and the requirements are monitored and adjusted daily, typically based on net exposure by counterparty. Collateral is generally in the form of cash or highly liquid U.S. government securities.

In connection with secured financing transactions, we enter into netting agreements and

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

other collateral arrangements with counterparties, which provide for the right to liquidate collateral in the event of default. Collateral is generally required in the form of cash, equity securities or fixed-income securities. Default events may include the failure to make payments or deliver securities timely, material adverse changes in financial condition or insolvency, the breach of minimum regulatory capital requirements, or loss of license, charter or other legal authorization necessary to perform under the contract.

In order for an arrangement to be eligible for netting, we must have a reasonable basis to conclude that such netting arrangements are legally enforceable. The analysis of the legal enforceability of an arrangement differs by jurisdiction, depending on the laws of that jurisdiction. In many jurisdictions, specific legislation exists that provides for the enforceability in bankruptcy of close-out netting under a netting agreement, typically by way of specific exception from more general prohibitions on the exercise of creditor rights.

When we have a legally enforceable netting arrangement between us and the derivative counterparty and the relevant transaction is the type of transaction that is recorded in our consolidated statement of condition, we offset derivative assets

and liabilities, and the related collateral received and provided, in our consolidated statement of condition. We also offset assets and liabilities related to secured financing transactions with the same counterparty or clearinghouse which have the same maturity date and are settled in the normal course of business on a net basis.

Collateral that we receive in the form of securities in connection with secured financing transactions and derivative contracts can be transferred or re-pledged as collateral in many instances to enter into repurchase agreements or securities finance or derivative transactions. The securities collateral received in connection with our securities finance activities is recorded at 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, 2016 and December 31, 2015, the fair value of securities received as collateral from third parties where we are permitted to transfer or re-pledge the securities totaled \$1.77 billion and \$3.05 billion, respectively, and the fair value of the portion that had been transferred or re-pledged as of the same date was \$166 million and \$262 million, respectively.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following tables present information about the offsetting of assets related to derivative contracts and secured financing transactions, as of the dates indicated:

		December 31, 2016			Gross Amounts Not Offset in Statement of Condition	
(In millions)	Gross Amounts of Recognized Assets <sup>(1)</sup>	Gross Amounts Offset in Statement of Condition <sup>(3)</sup>	Net Amounts of Assets Presented in Statement of Condition	Cash and Securities Received <sup>(5)</sup>	Net Amount <sup>(6)</sup>	
Assets:						
Derivatives:						
Foreign exchange contracts	\$ 16,484	\$ (8,257)	\$ 8,227		\$ 8,227	
Interest-rate contracts	68	(68)	—		—	
Cash collateral and securities netting	NA	(906)	(906)	\$ (247)	(1,153)	)
Total derivatives	16,552	(9,231)	7,321	(247)	7,074	
Other financial instruments:						
Resale agreements and securities borrowing <sup>(4)</sup>	58,677	(35,517)	23,160	(22,939)	221	
Total derivatives and other financial instruments	\$ 75,229	\$ (44,748)	\$ 30,481	\$ (23,186)	\$ 7,295	
Assets:						
		December 31, 2015			Gross Amounts Not Offset in Statement of Condition	
(In millions)	Gross Amounts of Recognized Assets <sup>(1)</sup>	Gross Amounts Offset in Statement of Condition <sup>(3)</sup>	Net Amounts of Assets Presented in Statement of Condition	Cash and Securities Received <sup>(5)</sup>	Net Amount <sup>(6)</sup>	
Derivatives:						
Foreign exchange contracts	\$ 11,316	\$ (5,896)	\$ 5,420		\$ 5,420	
Interest-rate contracts	135	(5)	130		130	
Other derivative contracts	5	(2)	3		3	
Cash collateral and securities netting	NA	(776)	(776)	\$ (405)	(1,181)	)
Total derivatives	11,456	(6,679)	4,777	(405)	4,372	
Other financial instruments:						
Resale agreements and securities borrowing <sup>(4)</sup>	62,522	(38,997)	23,525	(22,875)	650	
Total derivatives and other financial instruments	\$ 73,978	\$ (45,676)	\$ 28,302	\$ (23,280)	\$ 5,022	

NA: Not applicable.

<sup>(1)</sup> Amounts include all transactions regardless of whether or not they are subject to an enforceable netting arrangement.

(2) Derivative amounts are carried at fair value and securities financing amounts are carried at amortized cost, except for securities collateral which is also carried at fair value. Refer to Note 1 and Note 2 for additional information on the measurement basis of these 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) Included in the \$23,160 million as of December 31, 2016 were \$1,956 million of resale agreements and \$21,204 million of collateral provided related to securities borrowing. Included in the \$23,525 million as of December 31, 2015 were \$3,404 million of resale agreements and \$20,121 million 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.

(5) Includes securities in connection with our securities borrowing transactions.

(6) Includes amounts secured by collateral not determined to be subject to enforceable netting arrangements.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following tables present information about the offsetting of liabilities related to derivative contracts and secured financing transactions, as of the dates indicated:

(In millions)	December 31, 2016			Gross Amounts Not Offset in Statement of Condition	
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in Statement of Condition <sup>(1)(2)</sup>	Net Amounts of Liabilities Presented in Statement of Condition <sup>(3)</sup>	Cash and Securities Provided <sup>(5)</sup>	Net Amount <sup>(6)</sup>
Liabilities:					
Derivatives:					
Foreign exchange contracts	\$ 15,956	\$ (8,253)	) \$ 7,703	\$ 7,703	
Interest-rate contracts	348	(73)	) 275	275	
Other derivative contracts	380	—	) 380	380	
Cash collateral and securities netting	NA	(2,356)	) (2,356)	\$(180)	(2,536)
Total derivatives	16,684	(10,682)	) 6,002	(180)	5,822
Other financial instruments:					
Repurchase agreements and securities lending <sup>(4)</sup>	44,933	(35,517)	) 9,416	(7,059)	2,357
Total derivatives and other financial instruments	\$61,617	\$ (46,199)	) \$ 15,418	\$(7,239)	\$ 8,179

(In millions)	December 31, 2015			Gross Amounts Not Offset in Statement of Condition	
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in Statement of Condition <sup>(1)(2)</sup>	Net Amounts of Liabilities Presented in Statement of Condition <sup>(3)</sup>	Cash and Securities Provided <sup>(5)</sup>	Net Amount <sup>(6)</sup>
Liabilities:					
Derivatives:					
Foreign exchange contracts	\$ 10,868	\$ (5,896)	) \$ 4,972	\$ 4,972	
Interest-rate contracts	182	(5)	) 177	177	
Other derivative contracts	103	(2)	) 101	101	
Cash collateral and securities netting	NA	(1,118)	) (1,118)	\$(64)	(1,182)
Total derivatives	11,153	(7,021)	) 4,132	(64)	4,068
Other financial instruments:					
Resale agreements and securities lending <sup>(4)</sup>	46,766	(38,997)	) 7,769	(5,350)	2,419
Total derivatives and other financial instruments	\$57,919	\$ (46,018)	) \$ 11,901	\$(5,414)	\$ 6,487

NA: Not applicable.

- (1) Amounts include all transactions regardless of whether or not they are subject to an enforceable netting arrangement.
- (2) Derivative amounts are carried at fair value and securities financing amounts are carried at amortized cost, except for securities collateral which is also carried at fair value. Refer to Note 1 and Note 2 for additional information on the measurement basis of these 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) Included in the \$9,416 million as of December 31, 2016 were \$4,400 million of repurchase agreements and \$5,016 million of collateral received related to securities lending. Included in the \$7,769 million as of December 31, 2015 were \$4,499 million of repurchase agreements and \$3,270 million of collateral received related to securities lending. 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.
- (5) Includes securities provided in connection with our securities lending transactions.
- (6) Includes amounts secured by collateral not determined to be subject to enforceable netting arrangements.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The securities transferred under resale and repurchase agreements typically are U.S. Treasury, agency and agency mortgage-backed securities. 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 the Company with 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 tables summarize our repurchase agreements and securities lending transactions by category of collateral pledged and remaining maturity of these agreements as of the periods indicated:

(In millions)	Remaining Contractual Maturity of the Agreements As of December 31, 2016			
	Overnight and Continuodays	Up to 30 days	30 – 90 days	Total
Repurchase agreements:				
U.S. Treasury and agency securities	\$35,509	\$ —	\$ —	\$35,509
Total	35,509	—	—	35,509
Securities lending transactions:				
Corporate debt securities	53	—	—	53
Equity securities	8,337	—	1,034	9,371
Total	8,390	—	1,034	9,424
Gross amount of recognized liabilities for repurchase agreements and securities lending	\$43,899	\$ —	\$1,034	\$44,933
(In millions)	Remaining Contractual Maturity of the Agreements As of December 31, 2015			
	Overnight and Continuodays	Up to 30 days	30 – 90 days	Total
Repurchase agreements:				
U.S. Treasury and agency securities	\$37,157	\$5	\$ —	\$37,162
Non-U.S. sovereign debt	—	97	—	97
Total	37,157	102	—	37,259
Securities lending transactions:				
Corporate debt securities	1	—	—	1
Equity securities	8,502	—	1,002	9,504
Non-U.S. sovereign debt	2	—	—	2
Total	8,505	—	1,002	9,507
Gross amount of recognized liabilities for repurchase agreements and securities lending	\$45,662	\$102	\$1,002	\$46,766





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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 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, 2016	December 31, 2015
Commitments <sup>(1)</sup> :		
Unfunded credit facilities	\$ 28,154	\$ 26,570

Guarantees<sup>(2)</sup>:

Indemnified securities financing	\$ 360,452	\$ 320,436
Stable value protection	27,182	24,583
Standby letters of credit	3,459	4,700

<sup>(1)</sup> The potential losses associated with these commitments equal the gross contractual amounts, and do not consider the value of any collateral.

<sup>(2)</sup> 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 of liquidity facilities for our fund and municipal lending clients and undrawn lines of credit related to senior secured bank loans.

As of December 31, 2016, 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 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, 2016	December 31, 2015
Fair value of indemnified securities financing	\$ 360,452	\$ 320,436
Fair value of cash and securities held by us, as agent, as collateral for indemnified securities financing	377,919	335,420
Fair value of collateral for indemnified securities financing invested in indemnified repurchase agreements	60,003	63,055
	63,959	67,016

Fair value of cash and securities held by us or our agents as collateral for investments in indemnified repurchase agreements

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 a State Street client or a broker/dealer. Collateral provided and received in connection with such transactions is recorded in other assets and accrued expenses and other liabilities, respectively, in our consolidated statement of condition. As of December 31, 2016 and December 31, 2015, we had approximately \$21.20 billion and \$20.12 billion, respectively, of collateral provided and approximately \$5.02 billion and \$3.27 billion, respectively, of collateral received from clients in connection with our participation in principal securities finance transactions.

Stable Value Protection

In the normal course of our business, we offer products that provide book-value protection, primarily to plan participants in stable value funds managed by non-affiliated investment managers of post-retirement defined contribution benefit plans, particularly 401(k) plans. The book-value protection is provided on portfolios of intermediate investment grade fixed-income securities, and is intended to provide safety and stable growth of principal invested. The protection is intended to cover any shortfall in the event that a significant number of plan participants withdraw funds when book value exceeds market value and the liquidation of the assets is not sufficient to redeem the participants. The investment

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

parameters of the underlying portfolios, combined with structural protections, are designed to provide cushion and guard against payments even under extreme stress scenarios.

These contingencies are individually accounted for as derivative financial instruments. The notional amounts of the stable value contracts are presented as “derivatives not designated as hedging instruments” in the table of aggregate notional amounts of derivative financial instruments provided in Note 10. We have not made a payment under these contingencies that we consider material to our consolidated financial condition, and management believes that the probability of payment under these contingencies in the future, that we would consider material to our consolidated financial condition, is remote.

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 damages, 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 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 proceedings on a case-by-case basis. When we have a liability that we deem probable and that we deem can be reasonably estimated as of the date of our consolidated financial statements, we accrue for our estimate of the 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 proceedings and the

reasonably estimable loss (or range thereof) are inherently difficult to predict, especially in the early stages of proceedings. Even if a loss is probable, due to many complex factors, such as speed of discovery and the timing of court decisions or rulings, a loss or range of loss might not be reasonably estimated until the later stages of the proceeding.

As of December 31, 2016, our aggregate accruals for legal loss contingencies and regulatory matters totaled approximately \$90 million (excluding amounts relating to client reimbursements in connection with errors in invoicing certain of our Investment Servicing clients, described 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. We may be subject to proceedings in the future that, if adversely resolved, would have a material adverse effect on our businesses or on our future consolidated financial statements. Except where otherwise noted below, we have not established accruals with respect to the claims discussed and do not believe that potential exposure is probable and can be reasonably estimated. The following discussion provides information with respect to significant legal and regulatory matters.

Foreign Exchange

In 2016, we settled our previously disclosed litigation and governmental investigations regarding our FX execution service that we refer to as indirect FX. Such settlements were satisfied from the previously established reserves.

Transition Management

In January 2014, we entered into a settlement with the FCA, pursuant to which we paid a fine of £22.9 million (approximately \$37.8 million), as a result of our having charged six clients of our U.K. transition management

business during 2010 and 2011 amounts in excess of the contractual terms. The SEC and the DOJ opened separate investigations into this matter. In April 2016, the U.S. Attorney's office in Boston charged two former employees in our transition management business with criminal fraud in connection with their alleged role in this matter, and, in May 2016, the SEC commenced a parallel civil enforcement proceeding against one of these individuals. On January 18, 2017, we announced that we had entered into a settlement agreement with the DOJ and the United States Attorney for the District of Massachusetts to resolve their investigation. Under

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

the terms of the agreement, we, among other things, paid a fine of \$32.3 million and entered into a deferred prosecution agreement. Under the deferred prosecution agreement, we agreed to retain an independent compliance consultant and compliance monitor for a term of three years (subject to extension) which will, among other things, evaluate the effectiveness of our compliance controls and business ethics and make related recommendations.

As previously disclosed, we are also in discussions with the SEC Staff regarding a resolution of their investigation, and have reached an agreement in principle with the Staff of the SEC to pay a penalty of \$32.3 million (equal to the fine being paid to the DOJ). Resolution of the matter is subject to completion of negotiations with the SEC Staff on other terms of the settlement, followed by review and consideration by the SEC.

As of December 31, 2016 we had accrued \$65 million with respect to the DOJ and the SEC investigations, which includes \$23 million accrued in the fourth quarter.

GovEx

We are cooperating in an ongoing inquiry by the SEC relating to the GovEx electronic trading platform, which was offered and operated by State Street Global Markets, LLC from September 2009 to July 2015. The subjects of the inquiry are our communications related to volume, pricing and functionalities of the platform. We are currently engaged in discussions with the Staff of the SEC concerning a possible resolution of this matter, and have reached an agreement in principle with the Staff to pay a penalty of \$3 million. Resolution of the matter is subject to completion of negotiations with the SEC Staff on other terms of the settlement, followed by review and consideration by the SEC. As of December 31, 2016, we had accrued \$3 million for this matter.

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, AML regulations and U.S. economic sanctions regulations promulgated by OFAC. As part of this enforcement action, we are required to, among other things, implement improvements to our compliance programs and to retain an independent firm to conduct a review of account and transaction activity covering a prior three-month period to evaluate whether any suspicious activity not previously reported should

have been identified and reported in accordance with applicable regulatory requirements. To the extent deficiencies in our historical reporting are identified as a result of the transaction review or if we fail to comply with the terms of the written agreement, we may become subject to fines and other regulatory sanctions, which may have a material adverse effect on us.

Invoicing Matter

In December 2015, we announced a review of the manner in which we invoiced certain expenses to some of our Investment Servicing clients, primarily in the United States, during an 18-year period going back to 1998, and our determination that we had incorrectly invoiced clients for certain expenses. We informed our clients in December 2015 that we will pay to them the amounts we concluded were incorrectly invoiced to them, plus interest. We currently expect to pay at least \$340 million (including interest), in connection with that review, which is ongoing. We are implementing enhancements to our billing processes, and we are reviewing the conduct of our employees and have taken appropriate steps to address conduct inconsistent with our standards, including, in some cases, termination of employment. We are also evaluating other billing practices relating to our Investment Servicing clients, including calculation of asset-based fees.

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 responding to requests for information from, and are cooperating with investigations by, governmental authorities on these matters, including the civil and criminal divisions of the DOJ, the SEC, the Department of Labor and the Massachusetts Attorney General, which could result in significant fines or other sanctions, civil and criminal, against us. The severity of such fines or other sanctions could take into account factors such as the amount and duration of our

incorrect invoicing, the government's assessment of the conduct of our employees, as well as prior conduct such as that which resulted in our recent deferred prosecution agreement in connection with transition management services and our recent settlement of civil claims regarding our indirect foreign exchange business. Any of the foregoing could have a material adverse effect on our reputation or business, including the imposition of restrictions on the operation of our business or a reduction in client demand. Resolution of these matters could also have

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

a material adverse effect on our consolidated results of operations for the period or periods in which such matters are resolved or an accrual is determined to be required. No accrual, other than a reserve for client reimbursement, is reflected on our consolidated statement of condition as of December 31, 2016.

In April 2016, the Massachusetts Secretary of State commenced an administrative enforcement proceeding against State Street Global Markets, LLC, alleging that our conduct concerning expense invoices caused State Street Global Markets, LLC to violate state law governing the securities industry by virtue of our alleged control of State Street Global Markets, LLC. The complaint sought to impose a censure, a fine and to provide for reimbursement or other relief. In December 2016, the proceeding was concluded pursuant to an agreement with the Secretary of State.

Shareholder Litigation

In January 2017, a State Street shareholder filed a purported class action complaint against the Company alleging that statements made by the Company in its annual reports for the 2011-15 period regarding its internal controls and procedures were misleading due to the omission of information regarding the Transition Management and Invoicing Matters discussed above.

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. Additional information with respect to our provision for income taxes and tax benefits, including unrecognized tax benefits, is provided in Note 22.

We are presently under audit by a number of tax authorities, including the Internal Revenue Service, which completed their field audit procedures on our U.S. income tax returns for the tax years 2012 and 2013. The earliest tax year open to examination in jurisdictions where we have material operations is 2010. Management believes that we have sufficiently accrued liabilities as of December 31, 2016 for 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 State Street does not have a variable interest in the VIE, no further analysis is required and State Street does not consolidate the VIE. If State Street holds 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. State Street is 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 asset-backed securities, which we carry in our investment securities portfolio. These asset-backed securities 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 asset-backed securities 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, 2016 and December 31, 2015, we carried AFS investment securities, composed of securities related to state and political subdivisions, with a fair value of \$1.35 billion and \$2.10 billion, respectively, and other short-term borrowings of \$1.16 billion and \$1.75 billion, respectively, in our consolidated statement of condition in connection with these trusts. The interest revenue and interest expense generated by the investments and certificated interests, respectively, are recorded as components of net interest revenue when earned or incurred.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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 trusts to third-party investors and to State Street 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 4.5 years as of December 31, 2016, compared to approximately 5.4 years as of December 31, 2015. Under separate legal agreements, we provide liquidity facilities to these trusts and, with respect to certain securities, letters of credit. As of December 31, 2016, our commitments to the trusts under these liquidity facilities and letters of credit totaled \$1.16 billion and \$351 million, respectively, and none of the liquidity facilities 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 nor third-party investors in the trusts have any recourse to State Street's 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 SSGA in which our clients are investors, including sponsored investment funds and other similar investment structures. Substantially all of our assets under management 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 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, 2016, we have no consolidated funds. As of December 31, 2015, the aggregate assets and liabilities of our consolidated funds totaled \$321 million and \$228 million, respectively.

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 State Street. 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 State Street's general credit.

As of December 31, 2016 and December 31, 2015, 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 \$121 million and \$93 million as of December 31, 2016 and December 31, 2015, respectively, and represented the carrying value of our investments, which are recorded in either AFS investment securities or 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.



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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 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, 2016:

	Issuance Date	Depository Shares Issued	Ownership Interest per Depository Share	Liquidation Preference Per Share	Liquidation Preference Per Depository Share	Net Proceeds of Offering (In millions)	Redemption Date <sup>(1)</sup>
Preferred Stock <sup>(2)</sup> :							
Series C	August 2012	20,000,000	1/4,000th	\$ 100,000	\$ 25	\$ 488	September 15, 2017
Series D	February 2014	30,000,000	1/4,000th	100,000	25	742	March 15, 2024
Series E	November 2014	30,000,000	1/4,000th	100,000	25	728	December 15, 2019
Series F	May 2015	750,000	1/100th	100,000	1,000	742	September 15, 2020
Series G	April 2016	20,000,000	1/4,000th	100,000	25	493	March 15, 2026

<sup>(1)</sup> On the redemption date, or any dividend declaration date thereafter, the preferred stock and corresponding depository shares may be redeemed by us, in whole or in part, at the liquidation price per share and liquidation price per depository share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

<sup>(2)</sup> The preferred stock and corresponding depository 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 depository share plus any declared and unpaid dividends, without accumulation of any undeclared dividends.

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, 2016			2015		
	Dividends Declared per Share	Dividends Declared per Depository Share	Total (In millions)	Dividends Declared per Share	Dividends Declared per Depository Share	Total (In millions)
Preferred Stock:						
Series C	\$5,250	\$ 1.32	\$ 26	\$5,250	\$ 1.32	\$ 26
Series D	5,900	1.48	44	5,900	1.48	44
Series E	6,000	1.52	45	6,333	1.60	48
Series F	5,250	52.50	40	1,663	16.63	12
Series G	3,626	0.90	18	—	—	—
Total			\$ 173			\$ 130

In January 2017, we declared dividends on our Series C, D, E, F and G preferred stock of approximately \$1,313, \$1,475, \$1,500, \$2,625 and \$1,338, respectively, per share, or approximately \$0.33, \$0.37, \$0.38, \$26.26 and \$0.33,

respectively, per depositary share. These dividends total approximately \$6 million, \$11 million, \$11 million, \$20 million and \$7 million on our Series C, D, E, F and G preferred stock, respectively, which will be paid in March 2017.  
Common Stock:

In July 2016, our Board approved a common stock purchase program authorizing the purchase of up to \$1.4 billion of our common stock through June 30, 2017 (the 2016 Program). In March 2015, our Board approved a common stock purchase program authorizing the purchase of up to \$1.8 billion of our common stock through June 30, 2016 (the 2015 Program). The table below presents the activity under both the 2016 Program and the 2015 Program during the year ended December 31, 2016.

	Shares Purchased (In millions)	Average Cost per Share	Total Purchased (In millions)
2016 Program	9.0	\$ 72.66	\$ 650
2015 Program	12.1	58.83	715
Total	21.1	\$ 64.70	\$ 1,365

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The table below presents the dividends declared on common stock for the periods indicated:

	Years Ended December 31,	
	Dividends Total Declared (In per Share 2016	Dividends Total Declared (In per Share 2015
	millions)	millions)
Common Stock	\$ 1.44 \$ 559	\$ 1.32 \$ 536

Accumulated Other Comprehensive Income (Loss):

The following table presents the after-tax components of AOCI as of December 31:

(In millions)	2016	2015	2014
Net unrealized gains on cash flow hedges	\$229	\$293	\$276
Net unrealized gains (losses) on available-for-sale securities portfolio	(225 )	9	273
Net unrealized gains (losses) related to reclassified available-for-sale securities	25	(28 )	39
Net unrealized gains (losses) on available-for-sale securities	(200 )	(19 )	312
Net unrealized losses on available-for-sale securities designated in fair value hedges	(86 )	(109 )	(121 )
Other-than-temporary impairment on available-for-sale securities related to factors other than credit	—	—	1
Net unrealized gains (losses) on hedges of net investments in non-U.S. subsidiaries	95	(14 )	(14 )
Other-than-temporary impairment on held-to-maturity securities related to factors other than credit	(9 )	(16 )	(29 )
Net unrealized losses on retirement plans	(194 )	(183 )	(272 )
Foreign currency translation	(1,875 )	(1,394 )	(660 )
Total	\$(2,040)	\$(1,442)	\$(507)

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 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, 2014	\$ 276	\$ 192	\$ (14 )	\$ (29 )	\$ (272 )	\$ (660 )	\$(507 )
Other comprehensive income (loss) before reclassifications	20	(314 )	—	15	1	(734 )	(1,012 )
Amounts reclassified into (out of) earnings	(3 )	(6 )	—	(2 )	88	—	77
Other comprehensive income (loss)	17	(320 )	—	13	89	(734 )	(935 )
Balance as of December 31, 2015	\$ 293	\$ (128 )	\$ (14 )	\$ (16 )	\$ (183 )	\$ (1,394 )	\$(1,442)
Other comprehensive income (loss) before reclassifications	(64 )	(164 )	109	8	—	(478 )	(589 )
Amounts reclassified into (out of) earnings	—	6	—	(1 )	(11 )	(3 )	(9 )
Other comprehensive income (loss)	(64 )	(158 )	109	7	(11 )	(481 )	(598 )

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Balance as of December 31, 2016    \$ 229    \$ (286    )    \$ 95    \$ (9    )    \$ (194    )    \$ (1,875    )    \$ (2,040)

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents after-tax reclassifications into earnings for the periods indicated:

(In millions)	Years Ended December 31, 2016 2015		Affected Line Item in Consolidated Statement of Income
	Amounts Reclassified into (out of) Earnings		
Cash flow hedges:			
Interest-rate contracts, net of related taxes of \$0 and \$2, respectively	\$ —	\$ (3 )	Net interest revenue
Available-for-sale securities:			
Net realized gains from sales of available-for-sale securities, net of related taxes of (\$4) and \$1, respectively	6	(6 )	Net gains (losses) from sales of available-for-sale securities
Held-to-maturity securities:			
Other-than-temporary impairment on held-to-maturity securities related to factors other than credit, net of related taxes of \$1 and \$0, respectively	(1 )	(2 )	Losses reclassified (from) to other comprehensive income
Retirement plans:			
Amortization of actuarial losses, net of related taxes of (\$1) and (\$51), respectively	(11 )	88	Compensation and employee benefits expenses
Foreign currency translation:			
Sales of non-U.S. entities, net of related taxes of (\$2) and \$0, respectively	(3 )	—	Processing fees and other revenue
Total reclassifications into (out of) AOCI	\$ (9 )	\$ 77	

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STATE STREET CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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, State Street and State Street Bank, as advanced approaches banking organizations, are subject to a permanent "capital floor" in the calculation and assessment of their 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 will change as the provisions of the Basel III final rule related to the

numerator (capital) and denominator (risk-weighted assets) are phased in, and as we begin calculating our risk-weighted assets using the advanced approaches. These ongoing methodological changes will result 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, 2016, State Street and State Street Bank exceeded all regulatory capital adequacy requirements to which they were subject. As of December 31, 2016, 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, 2016 that have changed the capital categorization of State Street Bank.

The following table presents the regulatory capital structure, total risk-weighted assets, related regulatory capital ratios and the minimum required regulatory capital ratios for State Street 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 final rule are phased in, the ratios presented in the table for each period-end are not directly comparable. Refer to the footnotes following the table.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(In millions)	State Street				State Street Bank			
	Basel III Advanced Approaches December 31, 2016 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2016 <sup>(2)</sup>	Basel III Advanced Approaches December 31, 2015 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2015 <sup>(2)</sup>	Basel III Advanced Approaches December 31, 2016 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2016 <sup>(2)</sup>	Basel III Advanced Approaches December 31, 2015 <sup>(1)</sup>	Basel III Standardized Approach December 31, 2015 <sup>(2)</sup>
Common shareholders' equity:								
Common stock and related surplus	\$10,286	\$10,286	\$10,250	\$10,250	\$11,376	\$11,376	\$10,938	\$10,938
Retained earnings	17,459	17,459	16,049	16,049	12,285	12,285	10,655	10,655
Accumulated other comprehensive income (loss)	(1,936 )	(1,936 )	(1,422 )	(1,422 )	(1,648 )	(1,648 )	(1,230 )	(1,230 )
Treasury stock, at cost	(7,682 )	(7,682 )	(6,457 )	(6,457 )	—	—	—	—
Total	18,127	18,127	18,420	18,420	22,013	22,013	20,363	20,363
Regulatory capital adjustments:								
Goodwill and other intangible assets, net of associated deferred tax liabilities <sup>(3)</sup>	(6,348 )	(6,348 )	(5,927 )	(5,927 )	(6,060 )	(6,060 )	(5,631 )	(5,631 )
Other adjustments	(155 )	(155 )	(60 )	(60 )	(148 )	(148 )	(85 )	(85 )
Common equity tier 1 capital	11,624	11,624	12,433	12,433	15,805	15,805	14,647	14,647
Preferred stock	3,196	3,196	2,703	2,703	—	—	—	—
Trust preferred capital securities subject to phase-out from tier 1 capital	—	—	237	237	—	—	—	—
Other adjustments	(103 )	(103 )	(109 )	(109 )	—	—	—	—
Tier 1 capital	14,717	14,717	15,264	15,264	15,805	15,805	14,647	14,647
Qualifying subordinated long-term debt	1,172	1,172	1,358	1,358	1,179	1,179	1,371	1,371
Trust preferred capital securities phased out of tier 1 capital	—	—	713	713	—	—	—	—
ALLL and other	19	77	12	66	15	77	8	66

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Other adjustments	1	1	2	2	—	—	—	—
Total capital	\$15,909	\$15,967	\$17,349	\$17,403	\$16,999	\$17,061	\$16,026	\$16,084
Risk-weighted assets:								
Credit risk	\$50,900	\$98,125	\$51,733	\$93,515	\$47,383	\$94,413	\$47,677	\$89,164
Operational risk <sup>(4)</sup>	44,579	NA	43,882	NA	44,043	NA	43,324	NA
Market risk <sup>(5)</sup>	3,822	1,751	3,937	2,378	3,822	1,751	3,939	2,378
Total risk-weighted assets	\$99,301	\$99,876	\$99,552	\$95,893	\$95,248	\$96,164	\$94,940	\$91,542
Adjusted quarterly average assets	\$226,310	\$226,310	\$221,880	\$221,880	\$222,584	\$222,584	\$217,358	\$217,358

Capital Ratios:	2016 Minimum Requirements Including 2015 Capital Minimum Conservation Buffer and G-SIB Surcharge <sup>(6)</sup>									
	Including 2015 Capital Minimum Conservation Buffer and G-SIB Surcharge <sup>(6)</sup>			2016		2015		2016		2015
Common equity tier 1 capital	5.5%	4.5%	11.7%	11.6%	12.5%	13.0%	16.6%	16.4%	15.4%	16.0%
Tier 1 capital	7.0	6.0	14.8	14.7	15.3	15.9	16.6	16.4	15.4	16.0
Total capital	9.0	8.0	16.0	16.0	17.4	18.1	17.8	17.7	16.9	17.6
Tier 1 leverage	4.0	4.0	6.5	6.5	6.9	6.9	7.1	7.1	6.7	6.7

NA: Not applicable.

<sup>(1)</sup> Common equity tier 1 capital, tier 1 capital and total capital ratios as of December 31, 2016 and December 31, 2015 were calculated in conformity with the advanced approaches provisions of the Basel III final rule. Tier 1 leverage ratio as of December 31, 2016 and December 31, 2015 were calculated in conformity with the Basel III final rule.

<sup>(2)</sup> Common equity tier 1 capital, tier 1 capital and total capital ratios as of December 31, 2016 and December 31, 2015 were calculated in conformity with the standardized approach provisions of the Basel III final rule. Tier 1 leverage ratio as of December 31, 2016 and December 31, 2015 were calculated in conformity with the Basel III final rule.

<sup>(3)</sup> Amounts for State Street and State Street Bank as of December 31, 2016 consisted of goodwill, net of associated deferred tax liabilities, and 60% of other intangible assets, net of associated deferred tax liabilities. Amounts for State Street and State Street Bank as of December 31, 2015 consisted of goodwill, net of deferred tax liabilities and 40% of other intangible assets, net of associated deferred tax liabilities. Intangible assets, net of associated deferred tax liabilities is phased in as a deduction from capital, in conformity with the Basel III final rule.

(4) 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 risk RWA under the advanced approaches depending on the severity of the loss event and its categorization among the seven Basel-defined UOMs.

(5) Market risk risk-weighted assets reported in conformity with the Basel III advanced approaches included a CVA which reflected the risk of potential fair-value adjustments for credit risk reflected in our valuation of over-the-counter derivative contracts. The CVA was not provided for in the final market risk capital rule; however, it was required by the advanced approaches provisions of the Basel III final rule. We used a simple CVA approach in conformity with the Basel III advanced approaches.

(6) Minimum requirements will be phased in up to full implementation beginning on January 1, 2019; minimum requirements listed are as of December 31, 2016.

(7) Minimum requirements will be phased in up to full implementation beginning on January 1, 2019; minimum requirements listed are as of December 31, 2015.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Note 17. Net Interest Revenue

The following table presents the components of interest revenue and interest expense, and related net interest revenue, for the periods indicated:

(In millions)	Years Ended		
	December 31,		
	2016	2015	2014
Interest revenue:			
Deposits with banks	\$ 126	\$ 208	\$ 196
Investment securities:			
U.S. Treasury and federal agencies	821	735	672
State and political subdivisions	224	227	231
Other investments	756	934	1,241
Securities purchased under resale agreements	146	62	38
Loans and leases	378	311	266
Other interest-earning assets	61	11	8
Total interest revenue	2,512	2,488	2,652
Interest expense:			
Deposits	85	97	99
Securities sold under repurchase agreements	1	—	—
Short-term borrowings	7	7	5
Long-term debt	260	250	245
Other interest-bearing liabilities	75	46	43
Total interest expense	428	400	392
Net interest revenue	\$2,084	\$2,088	\$2,260

## Note 18. Equity-Based Compensation

We record compensation expense for equity-based awards, such as restricted stock, 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 award's eligibility to receive dividends. The fair value of stock options and stock appreciation rights is determined using the Black-Scholes valuation model.

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.

As of December 31, 2016, a cumulative total of 65.7 million shares had been awarded under the 2006 Equity Incentive Plan, or 2006 Plan, compared with cumulative totals of 60.9 million shares and 56.9 million shares as of December 31, 2015 and 2014, respectively. The 2006 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 options awards, or shares not delivered when performance conditions have not been met, to be added back to the pool of shares available for awards. From inception to December 31, 2016, 23.7 million shares had been

awarded under the 2006 Plan but not delivered, and have become available for reissue. A total of 18.5 million shares are available for future issuance under the 2006 Plan.

The exercise price of non-qualified and incentive stock options and stock appreciation rights may not be less than the fair value of such shares on the date of grant. Stock options and stock appreciation rights granted under the 1997 Equity Incentive Plan, or 1997 Plan, and the 2006 Plan, collectively the Plans, generally vest over four years and expire no later than ten years from the date of grant. No common stock options or stock appreciation rights have been granted since 2009. For restricted stock awards granted under the Plans, common stock is issued at the time of grant and recipients have dividend and voting rights. In general, these grants vest over three to four years. As of December 31, 2016 there are no outstanding stock options or restricted stock awards.

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,

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

such as deferred stock awards and performance based awards, if it is determined that a material risk-taker made risk-based decisions that exposed State Street 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 stock options, stock appreciation rights, restricted stock awards, 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 \$268 million, \$319 million and \$329 million for the years ended December 31, 2016, 2015 and 2014, respectively. Such expense for 2016, 2015 and 2014 excluded \$9 million, \$10 million and \$20 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 charges recorded in each respective year. The following table presents information about the Plans as of December 31, 2016, and related activity during the years indicated:

	Shares (In thousands)	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (In years)	Total Intrinsic Value (In millions)
Stock Options and Stock Appreciation Rights:				
Outstanding as of December 31, 2014	1,861	\$ 74.12		
Exercised	(398 )	62.63		
Forfeited or expired	(257 )	81.71		
Outstanding as of December 31, 2015	1,206	76.29		
Exercised	(227 )	70.59		
Forfeited or expired	(24 )	81.71		
Outstanding and exercisable as of December 31, 2016 <sup>(1)</sup>	955	\$ 77.52	0.7	\$ 2.6

<sup>(1)</sup> Consists of zero shares subject to stock options and 955 thousand stock appreciation rights.

The total intrinsic value of options and stock appreciation rights exercised during the years ended December 31, 2016, 2015 and 2014 was \$1 million, \$5 million and \$14 million, respectively. As of December 31, 2016, there was no unrecognized compensation cost related to stock options and stock appreciation rights.

The following tables present activity related to other common stock awards during the years indicated:

	Shares (In thousands)	Weighted-Average Grant Date Fair Value
Restricted Stock Awards:		
Outstanding as of December 31, 2014	31	\$ 41.27
Vested	(31 )	41.22
Forfeited	—	—
Outstanding as of	—	\$ —

December  
31, 2015<sup>(1)</sup>

<sup>(1)</sup> No restricted stock awards were issued or outstanding in 2016.

The total fair value of restricted stock awards vested for the years ended December 31, 2015 and 2014, based on the weighted average grant date fair value in each respective year, was \$1 million and \$54 million, respectively. As of December 31, 2015, all restricted stock awards had vested, and no new restricted stock awards were granted in 2016.

	Shares (In thousands)	Weighted-Average Grant Date Fair Value
Deferred Stock Awards:		
Outstanding as of December 31, 2014	12,431	\$ 51.47
Granted	3,461	72.98
Vested	(6,910)	) 49.17
Forfeited	(246)	) 59.22
Outstanding as of December 31, 2015	8,736	61.59
Granted	4,336	52.49
Vested	(4,897)	) 56.18
Forfeited	(361)	) 60.12
Outstanding as of December 31, 2016	7,814	\$ 60.01

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The total fair value of deferred stock awards vested for the years ended December 31, 2016, 2015 and 2014, based on the weighted average grant date fair value in each respective year, was \$275 million, \$340 million and \$310 million, respectively. As of December 31, 2016, total unrecognized compensation cost related to deferred stock awards, net of estimated forfeitures, was \$252 million, which is expected to be recognized over a weighted-average period of 2.4 years.

	Shares (In thousands)	Weighted-Average Grant Date Fair Value
Performance Awards:		
Outstanding as of December 31, 2014	1,627	\$ 49.46
Granted	400	72.24
Forfeited	(1 )	41.02
Paid out	(861 )	45.09
Outstanding as of December 31, 2015	1,165	60.45
Granted	506	50.81
Forfeited	—	—
Paid out	(424 )	49.27
Outstanding as of December 31, 2016	1,247	\$ 60.37

The total fair value of performance awards paid out for the years ended December 31, 2016, 2015 and 2014, based on the weighted average grant date fair value in each respective year, was \$21 million, \$39 million and \$44 million, respectively. As of December 31, 2016, total unrecognized compensation cost related to performance awards, net of estimated forfeitures, was \$3.9 million, which is expected to be recognized over a weighted-average period of 2.1 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, including exercises of stock options. We have a general policy concerning purchases of our common stock to meet issuances under our employee benefit plans, including option exercises and 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. See Note 15 for further information on our common stock purchase program

## 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. State Street has 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 \$16 million, \$46 million and \$32 million in 2016, 2015 and 2014, 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 \$1.23 billion, \$136 million and \$21 million, respectively, as of December 31, 2016 and \$1.18 billion, \$155 million and \$30 million, respectively, as of December 31, 2015. 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 \$32 million and \$16 million as of December 31, 2016 and 2015, respectively. The non-qualified supplemental retirement plans were underfunded by \$136 million and \$155 million as of December 31, 2016 and 2015, respectively. The other post-retirement benefit plans

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

were underfunded by \$21 million and \$30 million as of December 31, 2016 and 2015, 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 \$132 million, \$130 million, and \$147 million in 2016, 2015 and 2014, respectively.

**Note 20. Occupancy Expense and Information Systems and Communications Expense**

Occupancy expense and information systems and communications expense include depreciation of buildings, leasehold improvements, computer hardware and software, equipment, and furniture and fixtures. Total depreciation expense in 2016, 2015 and 2014 was \$472 million, \$443 million and \$417 million, respectively.

We lease 1,025,000 square feet at One Lincoln Street, our headquarters building located in Boston, Massachusetts, and a related underground parking garage, under 20-year, non-cancelable capital leases expiring in September 2023. A portion of the lease payments is offset by subleases for approximately 127,000 square feet of the building. As of December 31, 2016 and 2015, an aggregate net book value of \$194 million and \$231 million, respectively, related to the above-described capital leases was recorded in premises and equipment, with the related

liability recorded in long-term debt, in our consolidated statement of condition.

Capital lease asset amortization is recorded in occupancy expense on a straight-line basis in our consolidated statement of income over the respective lease term. Lease payments are recorded as a reduction of the liability, with a portion recorded as imputed interest expense. In 2016, 2015 and 2014, interest expense related to these capital lease obligations, reflected in net interest revenue, was \$22 million, \$32 million and \$38 million, respectively. As of December 31, 2016 and 2015, accumulated amortization of capital lease assets was \$365 million and \$334 million, respectively.

We have entered into non-cancelable operating leases for premises and equipment. Nearly all of these leases include renewal options. Costs related to operating leases for office space are recorded in occupancy expense. Costs related to operating leases for equipment are recorded in information systems and communications expense. Both are recorded on a straight-line basis.

Total rental expense net of sublease revenue in 2016, 2015 and 2014 amounted to \$194 million, \$190 million and \$204 million, respectively. Total rental expense was reduced by sublease revenue of \$4 million in both 2016 and 2015, and \$6 million in 2014.

The following table presents a summary of future minimum lease payments under non-cancelable capital and operating leases as of December 31, 2016. Aggregate future minimum rental commitments have been reduced by aggregate sublease rental commitments of \$43 million for capital leases and \$16 million for operating leases.

(In millions)	Capital Operating		Total
	Leases	Leases	
2017	\$ 57	\$ 205	\$262
2018	53	185	238
2019	46	138	184
2020	45	123	168
2021	45	118	163
Thereafter	79	380	459
Total minimum lease payments	325	\$ 1,149	\$ 1,474
Less amount representing interest payments (76 )			
Present value of minimum lease payments	\$ 249		

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Note 21. Expenses

The following table presents the components of other expenses for the periods indicated:

(In millions)	Years Ended		
	December 31,		
	2016	2015	2014
Insurance	\$93	\$126	\$80
Regulatory fees and assessments	82	115	74
Litigation	50	422	173
Securities processing	42	79	68
Other	317	276	356
Total other expenses	\$584	\$1,018	\$751

## Acquisition Costs

We recorded acquisition costs of \$69 million, \$20 million and \$58 million in 2016, 2015 and 2014, respectively. Costs incurred in 2016 include approximately \$53 million related to our acquisition of GEAM on July 1, 2016. For further information on the GEAM acquisition, refer to Note 1.

## Restructuring Charges

In the year ended December 31, 2016, we recorded restructuring charges of \$142 million related to State Street Beacon.

The following table presents aggregate restructuring activity for the periods indicated.

(In millions)	Employee Related Costs	Real Estate Consolidation	Asset and Other Write-offs	Total
Balance at December 31, 2013	\$ 52	\$ 47	\$ 7	\$106
Accruals for Business Operations and IT	32	22	21	75
Payments and other adjustments	(45 )	(46 )	(21 )	(112 )
Balance at December 31, 2014	\$ 39	\$ 23	\$ 7	\$69
Accruals for Business Operations and IT	(5 )	(3 )	13	5
Payments and other adjustments	(25 )	(9 )	(17 )	(51 )
Balance at December 31, 2015	\$ 9	\$ 11	\$ 3	\$23
Accruals for Business Operations and IT	(2 )	—	—	(2 )
Accruals for State Street Beacon	94	18	30	142
Payments and other adjustments	(64 )	(12 )	(31 )	(107 )
Balance at December 31, 2016	\$ 37	\$ 17	\$ 2	\$56

## 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 years ended December 31:

(In millions)	2016	2015	2014
Current:			

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Federal	\$(14)	\$52	\$59
State	30	92	39
Non-U.S.	320	342	257
Total current expense	336	486	355
Deferred:			
Federal	(311)	(39)	38
State	38	40	10
Non-U.S.	(85)	(169)	12
Total deferred (benefit) expense	(358)	(168)	60
Total income tax expense (benefit)	\$(22)	\$318	\$415

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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 years ended December 31:

	2016	2015	2014
U.S. federal income tax rate	35.0 %	35.0 %	35.0 %
Changes from statutory rate:			
State taxes, net of federal benefit	2.0	4.2	1.5
Tax-exempt income	(6.1 )	(5.6 )	(5.1 )
Business tax credits <sup>(1)</sup>	(13.6)	(9.4)	(6.8)
Foreign tax differential	(7.7 )	(9.6)	(8.5)
Foreign designated earnings	(6.8 )	—	—
Foreign capital transactions	(4.3 )	—	—
Tax refund	—	(2.8)	—
Litigation expense	1.4	2.7	1.3
Other, net	(0.9 )	(0.7)	(0.3)
Effective tax rate	(1.0 )%	13.8 %	17.1 %

<sup>(1)</sup> Business tax credits include low-income housing, production and investment tax credits.

The 2016 foreign designated earnings include the benefits attributable to the change in designation of certain of our foreign earnings as indefinitely invested overseas. The foreign capital transactions include the tax benefits from incremental foreign tax credits and a foreign affiliate tax loss. The increase in business tax credits is attributable to an increase in alternative energy investments.

In 2015 we recognized benefits associated with the reduction of an Italian deferred tax liability and the approval of a tax refund for prior years, partially offset by a change in New York tax law.

The amount of income tax expense (benefit) related to net gains (losses) from sales of investment securities was \$4 million, \$(3) million and \$5 million in 2016, 2015 and 2014, respectively. Pre-tax income attributable to our operations located outside the U.S. was approximately \$1.22 billion, \$1.30 billion and \$1.33 billion for 2016, 2015 and 2014, respectively.

Pre-tax earnings of our non-U.S. subsidiaries are subject to U.S. income tax when effectively repatriated. As of December 31, 2016, we have chosen to indefinitely reinvest approximately \$5.5 billion of earnings of certain of our non-U.S. subsidiaries. No provision has been recorded for U.S. income taxes that could be incurred upon repatriation. As of December 31, 2016, if such earnings had been repatriated to the U.S., we would have provided for approximately \$1.1 billion of additional income tax expense.

The following table presents significant components of our gross deferred tax assets and gross deferred tax liabilities as of December 31:

(In millions)	2016	2015
Deferred tax assets:		
Unrealized losses on investment securities, net	\$157	\$57
Deferred compensation	285	167
Defined benefit pension plan	116	143
Restructuring charges and other reserves	199	383
Foreign currency translation	225	155
Tax credit carryforwards	425	—
Other	105	32
Total deferred tax assets	1,512	937
Valuation allowance for deferred tax assets	(66 )	(27 )
Deferred tax assets, net of valuation allowance	\$1,446	\$910

## Deferred tax liabilities:

Leveraged lease financing	\$313	\$334
Fixed and intangible assets	886	804
Non-U.S. earnings	164	265
Other	120	121
Total deferred tax liabilities	\$1,483	\$1,524

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 is sufficient taxable income of the appropriate nature within the carryback and carryforward periods to realize these assets.

As of December 31, 2016, we had deferred tax assets associated with tax credit carryforwards of \$425 million. Of the total tax credit carryforwards, \$406 million expire through 2036 and the remaining do not expire. As of December 31, 2016 and 2015, we had deferred tax assets associated with non-U.S. and state loss carryforwards of \$46 million and \$26 million, respectively, included in “other” in the table above. Of the total loss carryforwards of \$46 million as of December 31, 2016, \$31 million do not expire, and the remaining \$15 million expire through 2035. The loss carryforwards have a valuation allowance of \$38 million and \$22 million for 2016 and 2015.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents activity related to unrecognized tax benefits as of December 31:

(In millions)	2016	2015
Beginning balance	\$63	\$163
Decrease related to agreements with tax authorities	(13 )	(122 )
Increase related to tax positions taken during current year	7	8
Increase related to tax positions taken during prior year	14	14
Ending balance	\$71	\$63

The amount of unrecognized tax benefits that, if recognized, would reduce income tax expense and our effective tax rate was \$63 million as of December 31, 2016. Unrecognized tax benefits do not include accrued interest of approximately \$5 million and \$3 million as of December 31, 2016 and 2015.

It is reasonably possible that the unrecognized tax benefits could decrease by up to \$14 million within the next 12 months due to the resolution of various audits, of which \$5 million would reduce our income tax expense and our effective tax rate. Management believes that we have sufficient accrued liabilities as of December 31, 2016 for tax exposures and related interest expense.

We recorded interest and penalties related to income taxes as a component of income tax expense. Income tax expense included related interest and penalties of approximately \$2 million and \$5 million in 2016 and 2015, 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 common stock options and other equity-based awards. The effect of common stock options and other 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 restricted stock, 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 years indicated:

(Dollars in millions, except per share amounts)	Years Ended December		
	2016	2015	2014
Net income	\$2,143	\$1,980	\$2,022
Less:			
Preferred stock dividends	(173 )	(130 )	(61 )
Dividends and undistributed earnings allocated to participating securities <sup>(1)</sup>	(2 )	(2 )	(3 )
Net income available to common shareholders	\$1,968	\$1,848	\$1,958
Average common shares outstanding (In thousands):			
Basic average common shares	391,485	407,856	424,223
Effect of dilutive securities: common stock options and common stock awards	4,605	5,782	7,784
Diluted average common shares	396,090	413,638	432,007
Anti-dilutive securities <sup>(2)</sup>	2,143	661	1,498
Earnings per Common Share:			
Basic	\$5.03	\$4.53	\$4.62
Diluted <sup>(3)</sup>	4.97	4.47	4.53

- (1) Represents the portion of net income available to common equity allocated to participating securities, composed of fully vested deferred director stock and unvested restricted stock that contain non-forfeitable rights to dividends during the vesting period on a basis equivalent to dividends paid to common shareholders.
- (2) Represents common stock options and other equity-based awards outstanding but not included in the computation of diluted average common shares, because their effect was anti-dilutive. Refer to Note 18 for additional information about equity-based awards.
- (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.

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STATE STREET CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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 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- and participant-level accounting; daily pricing and administration; master trust and master custody; record-keeping; cash management; foreign exchange, brokerage and other trading services; securities finance; our enhanced custody product, which integrates principal securities lending and custody; deposit and short-term investment facilities; loans and lease financing; investment manager and alternative investment manager operations outsourcing; and performance, risk and compliance analytics to support institutional investors.

We provide shareholder services, which include mutual fund and collective investment fund shareholder accounting, through 50%-owned affiliates, Boston Financial Data Services, Inc. and the International Financial Data Services group of companies.

Investment Management, through SSGA, provides a broad array of investment management, investment research and investment advisory services to corporations, public funds and other sophisticated investors. SSGA offers passive and active asset management strategies across equity, fixed-income, alternative, multi-asset solutions (including OCIO) and cash asset classes. Products are distributed directly and through intermediaries using a variety of investment vehicles, including ETFs, such as the SPDR<sup>®</sup> ETF brand.

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 trading services and securities finance activities, represents approximately 75% to 80% of our consolidated total revenue. The remaining 20% to 25% is composed of processing fees and other revenue as well as net interest revenue, 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 for the periods indicated.

The "Other" column for the year ended December 31, 2016 included net costs of \$199 million composed of the following -

Net acquisition and restructuring costs of \$209 million; and

Net severance cost adjustments associated with staffing realignment of \$(10) million.

The "Other" column for the year ended December 31, 2015 included net costs of \$98 million composed of the following -

Net acquisition and restructuring costs of \$25 million; and

Net severance costs associated with staffing realignment of \$73 million.

The “Other” column for the year ended December 31, 2014 included net costs of \$219 million composed of the following -

Net acquisition and restructuring costs of \$133 million;

Net severance costs associated with staffing realignment of \$84 million; and

Net provisions for litigation exposure and other costs of \$2 million.

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The amounts in the “Other” columns were not allocated to State Street's 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 2016.

	Years Ended December 31,												
	Investment Servicing			Investment Management			Other			Total			
(Dollars in millions, except where otherwise noted)	2016	2015	2014	2016	2015	2014	2016	2015	2014	2016	2015	2014	
Servicing fees	\$5,073	\$5,153	\$5,108	\$—	\$—	\$—	\$—	\$—	\$—	\$5,073	\$5,153	\$5,108	
Management fees	—	—	—	1,292	1,174	1,207	—	—	—	1,292	1,174	1,207	
Trading services	1,052	1,108	1,039	47	38	45	—	—	—	1,099	1,146	1,084	
Securities finance	562	496	437	—	—	—	—	—	—	562	496	437	
Processing fees and other	105	325	179	(15 )	(16 )	(5 )	—	—	—	90	309	174	
Total fee revenue	6,792	7,082	6,763	1,324	1,196	1,247	—	—	—	8,116	8,278	8,010	
Net interest revenue	2,081	2,086	2,245	3	2	15	—	—	—	2,084	2,088	2,260	
Gains (losses) related to investment securities, net	7	(6 )	4	—	—	—	—	—	—	7	(6 )	4	
Total revenue	8,880	9,162	9,012	1,327	1,198	1,262	—	—	—	10,207	10,360	10,274	
Provision for loan losses	10	12	10	—	—	—	—	—	—	10	12	10	
Total expenses	6,660	6,990	6,648	1,218	962	960	199	98	219	8,077	8,050	7,827	
Income before income tax expense	\$2,210	\$2,160	\$2,354	\$109	\$236	\$302	\$(199)	\$(98)	\$(219)	\$2,120	\$2,298	\$2,437	
Pre-tax margin	25	% 24	% 26	% 8	% 20	% 24	%			21	% 22	% 24	%

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Average assets (in billions)	\$225.3	\$246.6	\$234.2	\$4.4	\$3.9	\$3.9	\$229.7	\$250.5	\$238.1
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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## Note 25. 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.

Non-U.S. revenue in 2016, 2015 and 2014 included \$1.05 billion, \$938 million and \$1.02 billion, respectively, in the U.K., primarily from our London operations.

The following table presents our U.S. and non-U.S. financial results for the periods indicated:

(In millions)	2016		2015		2014	
	Non-U.S.	Total	Non-U.S.	Total	Non-U.S.	Total
Total revenue	\$4,419	\$5,788	\$4,428	\$5,932	\$4,644	\$5,630
Income before income taxes	1,047	1,073	1,193	1,105	1,343	1,094

Non-U.S. assets were \$79.1 billion and \$78.1 billion as of December 31, 2016 and 2015, respectively.

## Note 26. 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

(In millions)	Years Ended December 31,		
	2016	2015	2014
Cash dividends from consolidated banking subsidiary	\$640	\$585	\$1,470
Cash dividends from consolidated non-banking subsidiaries and unconsolidated entities	75	171	138
Other, net	92	73	63
Total revenue	807	829	1,671
Interest expense	249	209	193
Other expenses	107	310	55
Total expenses	356	519	248
Income tax benefit	(47)	(186)	(83)
Income before equity in undistributed income of consolidated subsidiaries and unconsolidated entities	498	496	1,506
Equity in undistributed income of consolidated subsidiaries and unconsolidated entities:			
Consolidated banking subsidiary	1,629	1,384	360
Consolidated non-banking subsidiaries and unconsolidated entities	16	100	156
Net income	\$2,143	\$1,980	\$2,022

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## STATEMENT OF CONDITION - PARENT COMPANY

(In millions)	December 31,	
	2016	2015
Assets:		
Interest-bearing deposits with consolidated banking subsidiary	\$3,635	\$5,735
Trading account assets	325	308
Investment securities available-for-sale	39	35
Investments in subsidiaries:		
Consolidated banking subsidiary	22,147	20,584
Consolidated non-banking subsidiaries	2,687	2,816
Unconsolidated entities	297	315
Notes and other receivables from:		
Consolidated banking subsidiary	2,743	1,558
Consolidated non-banking subsidiaries and unconsolidated entities	126	275
Other assets	461	478
Total assets	\$32,460	\$32,104
Liabilities:		
Accrued expenses and other liabilities	\$514	\$643
Long-term debt	10,727	10,326
Total liabilities	11,241	10,969
Shareholders' equity	21,219	21,135
Total liabilities and shareholders' equity	\$32,460	\$32,104

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## STATE STREET CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## STATEMENT OF CASH FLOWS - PARENT COMPANY

(In millions)	Years Ended		
	December 31,		
	2016	2015	2014
Net cash provided by operating activities	\$417	\$926	\$1,767
Investing Activities:			
Net decrease (increase) in interest-bearing deposits with consolidated banking subsidiary	2,100	295	(1,610 )
Investments in consolidated banking and non-banking subsidiaries	(7,600)	(7,959)	(1,142 )
Sale or repayment of investment in consolidated banking and non-banking subsidiaries	6,703	7,891	1,011
Business acquisitions	(395 )	—	—
Net cash provided by (used in) investing activities	808	227	(1,741 )
Financing Activities:			
Net increase (decrease) in commercial paper	—	(2,485)	667
Proceeds from issuance of long-term debt, net of issuance costs	1,492	2,983	994
Payments for long-term debt	(1,000)	—	(750 )
Proceeds from issuance of preferred stock, net of issuance costs	493	742	1,470
Proceeds from exercises of common stock options	—	4	14
Purchases of common stock	(1,365)	(1,520)	(1,650 )
Repurchases of common stock for employee tax withholding	(122 )	(222 )	(232 )
Payments for cash dividends	(723 )	(655 )	(539 )
Net cash used in financing activities	(1,225)	(1,153)	(26 )
Net change	—	—	—
Cash and due from banks at beginning of year	—	—	—
Cash and due from banks at end of year	\$—	\$—	\$—

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## 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 net interest revenue for the years indicated.

(Dollars in millions; fully taxable-equivalent basis)	Years Ended December 31,									
	2016			2015			2014			
	Average Balance	Interest	Average Rate	Average Balance	Interest	Average Rate	Average Balance	Interest	Average Rate	
Assets:										
Interest-bearing deposits with U.S. banks	\$ 19,639	\$ 102	.52 %	\$ 52,135	\$ 136	.26 %	\$ 45,158	\$ 115	.25 %	
Interest-bearing deposits with non-U.S. banks	33,452	24	.07	17,618	72	.41	10,195	81	.80	
Securities purchased under resale agreements	2,558	146	5.70	3,233	62	1.92	4,077	38	.94	
Trading account assets	921	—	—	1,194	1	.08	959	1	.13	
Investment securities:										
U.S. Treasury and federal agencies <sup>(1)</sup>	46,551	821	1.76	40,056	735	1.84	32,481	672	2.07	
State and political subdivisions <sup>(1)</sup>	10,326	385	3.73	10,481	399	3.81	10,619	404	3.81	
Other investments	43,861	756	1.72	55,074	935	1.70	73,709	1,241	1.68	
Loans	18,136	354	1.95	17,007	276	1.62	14,838	231	1.56	
Lease financing <sup>(1)</sup>	877	30	3.44	941	35	3.74	1,074	35	3.26	
Other interest-earning assets	22,863	61	.27	22,717	10	.04	15,944	7	.05	
Total interest-earning assets <sup>(1)</sup>	199,184	2,679	1.34	220,456	2,661	1.21	209,054	2,825	1.36	
Cash and due from banks	3,157			2,460			4,139			
Other assets	27,386			27,516			24,908			
Total assets	\$ 229,727			\$ 250,432			\$ 238,101			
Liabilities and shareholders' equity:										
Interest-bearing deposits:										
Time	\$ 19,223	\$ 125	.65 %	\$ 20,758	\$ 44	.21 %	\$ 7,254	\$ 15	.20 %	
Savings	10,884	7	.06	10,061	7	.07	14,042	6	.04	
Non-U.S.	95,551	(47 )	(.05 )	102,491	46	.05	109,003	78	.07	
Total interest-bearing deposits	125,658	85	.07	133,310	97	.07	130,299	99	.08	
Securities sold under repurchase agreements	4,113	1	.02	8,875	1	.01	8,817	—	—	
Federal funds purchased	31	—	—	21	—	—	20	—	—	
Other short-term borrowings	1,666	7	.40	3,826	6	.15	4,177	5	.12	
Long-term debt	11,401	260	2.29	10,301	250	2.43	9,282	245	2.64	
Other interest-bearing liabilities	5,394	75	1.39	6,471	46	.71	7,351	43	.59	
Total interest-bearing liabilities	148,263	428	.29	162,804	400	.25	159,946	392	.25	
Non-interest-bearing deposits:										
Special time	32,589			34,774			5,862			
Demand	12,107			16,746			37,900			
Non-U.S. <sup>(2)</sup>	131			155			279			



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Other liabilities	14,742	14,626	12,935
Shareholders' equity	21,895	21,327	21,179
Total liabilities and shareholders' equity	\$229,727	\$250,432	\$238,101
Net interest revenue, fully taxable-equivalent basis	\$2,251	\$2,261	\$2,433
Excess of rate earned over rate paid	1.05 %	.96 %	1.11 %
Net interest margin <sup>(3)</sup>	1.13	1.03	1.16

- 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 revenue with a corresponding charge to income tax expense. This method facilitates the comparison of the performance of these assets. The adjustments
- (1) are computed using a federal income tax rate of 35%, adjusted for applicable state income taxes, net of the related federal tax benefit. The fully taxable-equivalent adjustments included in interest revenue presented above were \$167 million, \$173 million and \$173 million for the years ended December 31, 2016, 2015 and 2014, respectively, and were substantially related to tax-exempt securities (state and political subdivisions).
- (2) Non-U.S. non-interest-bearing deposits were \$337 million, \$95 million and \$180 million as of December 31, 2016, 2015 and 2014, respectively.
- (3) Net interest margin is calculated by dividing fully taxable-equivalent net interest revenue by average total interest-earning assets.

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The following table summarizes changes in fully taxable-equivalent interest revenue 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, (In millions; fully taxable-equivalent basis)	2016 Compared to 2015			2015 Compared to 2014		
	Change in Volume	Change in Rate	Net (Decrease) Increase	Change in Volume	Change in Rate	Net (Decrease) Increase
Interest revenue related to:						
Interest-bearing deposits with U.S. banks	\$(84 )	\$ 50	\$ (34 )	\$17	\$ 4	\$ 21
Interest-bearing deposits with non-U.S. banks	65	(113 )	(48 )	59	(68 )	(9 )
Securities purchased under resale agreements	(13 )	97	84	(8 )	32	24
Trading account assets	—	(1 )	(1 )	—	—	—
Investment securities:						
U.S. Treasury and federal agencies	120	(34 )	86	157	(94 )	63
State and political subdivisions	(6 )	(8 )	(14 )	(5 )	—	(5 )
Other investments	(191 )	12	(179 )	(313 )	7	(306 )
Loans	18	60	78	34	11	45
Lease financing	(2 )	(3 )	(5 )	(4 )	4	—
Other interest-earning assets	—	51	51	3	—	3
Total interest-earning assets	(93 )	111	18	(60 )	(104 )	(164 )
Interest expense related to:						
Deposits:						
Time	(3 )	84	81	27	2	29
Savings	1	(1 )	—	(2 )	3	1
Non-U.S.	(3 )	(90 )	(93 )	(5 )	(27 )	(32 )
Securities sold under repurchase agreements	—	—	—	—	1	1
Federal funds purchased	—	—	—	—	—	—
Other short-term borrowings	(3 )	4	1	—	1	1
Long-term debt	27	(17 )	10	27	(22 )	5
Other interest-bearing liabilities	(8 )	37	29	(5 )	8	3
Total interest-bearing liabilities	11	17	28	42	(34 )	8
Net interest revenue	\$(104)	\$ 94	\$ (10 )	\$(102)	\$ (70 )	\$ (172 )

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## Quarterly Summarized Financial Information (Unaudited)

(Dollars in millions, except per share amounts; shares in thousands)	2016 Quarters				2015 Quarters			
	Fourth	Third	Second	First	Fourth	Third	Second	First
Total fee revenue	\$2,014	\$2,079	\$2,053	\$1,970	\$2,044	\$2,103	\$2,076	\$2,055
Interest revenue	616	647	620	629	603	614	629	642
Interest expense	102	110	99	117	109	101	94	96
Net interest revenue	514	537	521	512	494	513	535	546
Gains (losses) related to investment securities, net	2	4	(1)	2	—	(2)	(3)	(1)
Total revenue	2,530	2,620	2,573	2,484	2,538	2,614	2,608	2,600
Provision for loan losses	2	—	4	4	1	5	2	4
Total expenses	2,183	1,984	1,860	2,050	1,857	1,962	2,134	2,097
Income before income tax expense	345	636	709	430	680	647	472	499
Income tax expense	(248)	72	92	62	103	67	54	94
Net income (loss) from minority interest	—	(1)	2	—	(1)	1	—	—
Net income	\$593	\$563	\$619	\$368	\$576	\$581	\$418	\$405
Net income available to common shareholders	\$557	\$507	\$585	\$319	\$547	\$539	\$389	\$373
Earnings per common share <sup>(1)</sup> :								
Basic	\$1.45	\$1.31	\$1.48	\$.80	\$1.36	\$1.33	\$.95	\$.90
Diluted	1.43	1.29	1.47	.79	1.34	1.31	.93	.89
Average common shares outstanding:								
Basic	384,115	388,358	394,160	399,421	402,041	406,612	410,674	412,225
Diluted	389,046	393,212	398,847	403,615	407,012	412,167	416,712	418,750
Dividends per common share	\$.38	\$.38	\$.34	\$.34	\$.34	\$.34	\$.34	\$.30
Common stock price:								
High	\$81.91	\$71.62	\$64.69	\$65.65	\$75.40	\$81.26	\$81.20	\$79.31
Low	68.16	51.22	50.60	50.73	63.97	65.76	72.56	70.50
Closing	77.72	69.63	53.92	58.52	66.36	67.21	77.00	73.53

<sup>(1)</sup> Basic and diluted earnings per common share for full-year 2016 and basic earnings per common share for full-year 2015 do not equal the sum of the four quarters for the year.

## ACRONYMS

ABS	Asset-backed securities	FX	Foreign exchange
AFS	Available-for-sale	GAAP	Generally accepted accounting principles
AIRB <sup>(1)</sup>	Advanced Internal Ratings-Based Approach	GCR	Global credit review
AIFMD	Alternative Investment Fund Managers Directive	GDPR	General Data Protection Regulation
ALCO	Asset-Liability Committee	GEAM	General Electric Asset Management
ALLL	Allowance for loan and lease losses	G-SIB	Global systemically important bank
AML	Anti-money laundering	HQLA <sup>(1)</sup>	High-quality liquid assets
AOCI	Accumulated other comprehensive income (loss)	HTM	Held-to-maturity
ASU	Accounting Standards Update	IDI	Insured depository institution
AUCA	Assets under custody and administration	ISDA	International Swaps and Derivatives Association
AUM	Assets under management	LCR <sup>(1)</sup>	Liquidity coverage ratio
BCBS	Basel Committee on Banking Supervision	LDA model	Loss distribution approach model
Board	Board of Directors	LEDR	Loss Event Data Repository
BOC	Basel Oversight Committee	LTD	Long term debt
BCRC	Business Conduct Risk Committee	MiFID	Markets in Financial Instruments Directive
BRRD	Bank Recovery and Resolution Directive	MiFID II	Markets in Financial Instruments Directive II
CAP	Capital adequacy process	MiFIR	Markets in Financial Instruments Regulation
CCAR	Comprehensive Capital Analysis and Review	MRAC	Management Risk and Capital Committee
CD	Certificates of deposit	MRC	Model Risk Committee
CEO	Chief Executive Officer	MVG	Model Validation Group
CET1 <sup>(1)</sup>	Common equity tier 1	NIR	Net interest revenue
CFO	Chief Financial Officer	NSFR <sup>(1)</sup>	Net stable funding ratio
CFP	Contingency funding plan	NYSE	New York Stock Exchange
CFTC	Commodity Futures Trading Commission	OCC	Office of the Comptroller of the Currency
CIS	Corporate Information Security	OFAC	Office of Foreign Assets Control
CLO	Collateralized loan obligations	ORM	Operational risk management
COSO	Committee of Sponsoring Organizations of the Treadway Commission	OCI	Other comprehensive income (loss)
CRE	Commercial real estate	OCIO	Outsourced Chief Investment Officer
CRO	Chief Risk Officer	OFAC	Office of Foreign Assets Control
CRPC	Credit Risk & Policy Committee	OTC	Over-the-counter
CVA	Credit valuation adjustment	OTTI	Other-than-temporary-impairment
DIF	Deposit Insurance Fund	Parent Company	State Street Corporation
Dodd-Frank Act	Dodd-Frank Wall Street Reform and Consumer Protection Act	PCA	Prompt corrective action
DOJ	Department of Justice	PD <sup>(1)</sup>	Probability-of-default
DPD	Data Protection Directive	PUA	Purchase undertaking agreement
E&A Committee	Examining and Audit Committee	P&L	Profit-and-loss
EAD <sup>(1)</sup>	Exposure-at-default	RC	Risk Committee
ECB	European Central Bank	RCSA	Risk and control self-assessment

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ECC	Executive Compensation Committee	RWA <sup>(1)</sup>	Risk-weighted assets
EMIR	European Market Infrastructure Resolution	SEC	Securities and Exchange Commission
EPS	Earnings per share	SERP	Supplemental executive retirement plans
ERISA	Employee Retirement Income Security Act	SIFI	Systemically important financial institutions
ERM	Enterprise Risk Management	SLR <sup>(1)</sup>	Supplementary leverage ratio
ETF	Exchange-Traded Fund	SOX	Sarbanes-Oxley Act of 2002
EVE	Economic value of equity	SSGA	State Street Global Advisors
FASB	Financial Accounting Standards Board	SSGA FM	State Street Global Advisors Funds Management, Inc.
FCA	Financial Conduct Authority	SSGA Ltd.	State Street Global Advisors Limited
FDIC	Federal Deposit Insurance Corporation	State Street Bank	State Street Bank and Trust Company
Federal Reserve	Board of Governors of the Federal Reserve System	TLAC <sup>(1)</sup>	Total loss-absorbing capacity
FFELP	Federal Family Education Loan Program	TMRC	Trading and Markets Risk Committee
FFIEC	Federal Financial Institution Examination Council	TORC	Technology and Operational Risk Committee
FHLB	Federal Home Loan Bank of Boston	UCITS	Undertakings for Collective Investments in Transferable Securities
FRBB	Federal Reserve Bank of Boston	UOM	Unit of measure
FSB	Financial Stability Board	VaR	Value-at-risk
FSOC	Financial Stability Oversight Council	VIE	Variable interest entity

<sup>(1)</sup> As defined by the applicable U.S. regulations.



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.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

DISCLOSURE CONTROLS AND PROCEDURES; CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

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 quarter ended December 31, 2016, 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, 2016.

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 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, 2016, 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.

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INTERNAL CONTROL OVER FINANCIAL REPORTING

Management's Report on Internal Control Over Financial Reporting

The management of State Street is responsible for the preparation and fair presentation of the financial statements and other financial information contained in this Form 10-K. Management is also responsible for establishing and maintaining adequate internal control over financial reporting. Management has designed business processes and internal controls and has also established and is responsible for maintaining a business culture that fosters financial integrity and accurate reporting. To these ends, management maintains a comprehensive system of internal controls intended to provide reasonable assurances regarding the reliability of financial reporting and the preparation of the consolidated financial statements of State Street in conformity with GAAP. State Street's accounting policies and internal control over financial reporting, established and maintained by management, are under the general oversight of State Street's Board of Directors, including the Board's Examining and Audit Committee.

Management has made a comprehensive review, evaluation and assessment of State Street's internal control over financial reporting as of December 31, 2016. The standard measures adopted by management in making its evaluation are the measures in the Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the "COSO criteria").

Based on its review and evaluation, management concluded that State Street's internal control over financial reporting was effective as of December 31, 2016, and that State Street's internal control over financial reporting as of that date had no material weaknesses.

Ernst & Young LLP, an independent registered public accounting firm, which has audited and reported on the consolidated financial statements contained in this Form 10-K, has issued its written attestation report on its assessment of State Street's internal control over financial reporting, which follows this report.

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Report of Independent Registered Public Accounting Firm

The Shareholders and Board of Directors of  
State Street Corporation

We have audited State Street Corporation's (the "Corporation") internal control over financial reporting as of December 31, 2016, 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"). State Street Corporation 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 conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). 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.

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.

In our opinion, State Street Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated statements of condition of State Street Corporation as of December 31, 2016 and 2015, and 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, 2016 and our report dated February 16, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts  
February 16, 2017

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ITEM 9B. OTHER INFORMATION

On February 16, 2017 Thomas J. Wilson informed the parent company that he has decided not to stand for re-election as a director of the parent company at the 2017 annual meeting of shareholders.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information concerning our directors will appear in our Proxy Statement for the 2017 Annual Meeting of Shareholders, to be filed pursuant to Regulation 14A on or before May 1, 2017, referred to as the 2017 Proxy Statement, under the caption "Election of Directors." Information concerning compliance with Section 16(a) of the Exchange Act will appear in our 2017 Proxy Statement under the caption "Section 16(a) Beneficial Ownership Reporting Compliance." Information concerning our Code of Ethics for Senior Financial Officers and our Examining and Audit Committee will appear in our 2017 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 2017 Proxy Statement under the caption "Executive Compensation." Such information is incorporated herein by reference.

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## 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 2017 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, 2016. 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 <sup>(1)</sup>	(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	10,016	(2) \$ 77.52	18,491
Equity compensation plans not approved by shareholders	24	(3)	—
Total	10,040		18,491

<sup>(1)</sup> Excludes deferred stock awards and performance awards for which there is no exercise price.

<sup>(2)</sup> Consists of 7,814 thousand shares subject to deferred stock awards, zero shares subject to stock options, 955 thousand stock appreciation rights and 1,247 thousand shares subject to performance awards (assuming payout at 100% for all awards, including awards for which performance is uncertain).

<sup>(3)</sup> 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. Directors may elect to defer 50% or 100% of cash or stock awards until a date that they specify, usually after termination of service on the Board. The deferral may also be paid in either a lump sum or in installments over a two- to ten-year period. Stock awards totaling 230,915 shares of common stock were outstanding as of December 31, 2016; awards made through June 30, 2003, totaling 23,606 shares outstanding as of December 31, 2016, 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 or 2006 Equity Incentive Plan, both of 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 2017 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 2017 Proxy Statement under the caption “Examining and Audit Committee Matters.” Such information is incorporated herein by reference.

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PART IV. OTHER INFORMATION

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, 2016, 2015 and 2014

Consolidated Statement of Comprehensive Income - Years ended December 31, 2016, 2015 and 2014

Consolidated Statement of Condition - As of December 31, 2016 and 2015

Consolidated Statement of Changes in Shareholders' Equity - Years ended December 31, 2016, 2015 and 2014

Consolidated Statement of Cash Flows - Years ended December 31, 2016, 2015 and 2014

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 following the signature page of 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.

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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, hereunto duly authorized.

STATE STREET CORPORATION

By/s/ SEAN P. NEWTH

SEAN P. NEWTH

March 27, 2017 Senior Vice President, Chief Accounting Officer and Controller



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EXHIBIT INDEX

- 3.1\* Restated Articles of Organization, as amended
- 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 on October 20, 2015 and incorporated herein by reference)
- 4.1 The description of State Street's Common Stock is included in State Street's Registration Statement on Form 8-A (File No. 001-07511), as filed on January 18, 1995 and March 7, 1995 (filed with the SEC on January 18, 1995 and March 7, 1995 and incorporated herein by reference)
- 4.2 Deposit Agreement, dated August 21, 2012, 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) filed with the SEC on August 21, 2012 and incorporated herein by reference)
- 4.3 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)
- 4.4 Deposit Agreement, dated November 25, 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 November 25, 2014 filed with the SEC on November 25, 2014 and incorporated herein by reference)
- 4.5 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)
- 4.6 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)  
(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 10.1 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2012 filed with the SEC on February 22, 2013 and incorporated herein by reference)
- 10.2†\* State Street's Executive Supplemental Retirement Plan (formerly "State Street Supplemental Defined Benefit Pension Plan for Executive Officers") Amended and Restated, as amended

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10.3† Supplemental Cash Incentive Plan, as amended, and form of award and agreement thereunder (filed as Exhibit 10.3 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2014 filed with the SEC on February 21, 2015 and incorporated herein by reference)

10.4† Form of Amended and Restated Employment Agreement entered into with each of Joseph L. Hooley, James S. Phalen and Michael Rogers (filed as Exhibit 10.3 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2009 filed with the SEC on February 22, 2010 and incorporated herein by reference) and Form of Amendment dated March 26, 2014 to Employment Agreement (filed as Exhibit 99.1 to State Street's Current Report on Form 8-K (File No. 001-07511) dated March 26, 2014 filed with the SEC on March 31, 2014 and incorporated herein by reference)

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- 10.5† Employment Agreement entered into with Michael W. Bell dated June 17, 2013 (filed as Exhibit 10.5 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) and Form of Amendment dated March 26, 2014 to Employment Agreement (filed as Exhibit 99.1 to State Street's Current Report on Form 8-K (File No. 001-07511) dated March 26, 2014 filed with the SEC on March 31, 2014 and incorporated herein by reference)
- 10.6† State Street's Executive Compensation Trust Agreement dated December 6, 1996 (Rabbi Trust) (filed as Exhibit 10.5 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2008 filed with the SEC on February 27, 2009 and incorporated herein by reference)
- 10.7† State Street's 1997 Equity Incentive Plan, as amended, and forms of award agreements thereunder (filed as Exhibit 10.6 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2008 filed with the SEC on February 27, 2009 and incorporated herein by reference)
- 10.8† 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)
- 10.9† Terms of Employment for Jeffrey N. Carp dated November 11, 2005, as amended (filed as Exhibit 10.9 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2015 and filed with the SEC on February 19, 2016 and incorporated herein by reference)
- 10.10†\* State Street's Management Supplemental Savings Plan, Amended and Restated, as amended
- 10.11† Deferred Compensation Plan for Directors of State Street Corporation, Restated January 1, 2008, as amended (filed as Exhibit 10.11 to State Street's Annual Report on Form 10-K (File No. 001-07511) for the year ended December 31, 2012 filed with the SEC on February 22, 2013 and incorporated herein by reference)
- 10.12† 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)
- 10.13†\* Description of compensation arrangements for non-employee directors
- 10.14\* 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
- 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† Letter Agreement with Michael W. Bell dated May 23, 2013 (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, 2013 filed with the SEC on August 6, 2013 and incorporated herein by reference)

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Form of Indemnification Agreement between State Street Corporation and each of its directors (filed as 10.17A†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)

Form of Indemnification Agreement between State Street Corporation and each of its executive officers 10.17B†(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)

Form of Indemnification Agreement between State Street Bank and Trust Company and each of its directors 10.17C†(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)

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10.17D†	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)
10.18†	2011 Senior Executive Annual Incentive Plan (filed as Exhibit 99.2 to State Street's Current Report on Form 8-K (File No. 001-07511) filed with the SEC on May 24, 2011 and incorporated herein by reference)
10.19†*	2016 State Street Corporation Senior Executive Annual Incentive Plan
10.20†	Transition Agreement dated April 15, 2016 between State Street Bank and Trust Company and Michael W. Bell (filed as Exhibit 10.1 State Street's Form 10-Q (File No. 001-07511) for the quarter ended March 31, 2016 filed with the SEC on May 6, 2016 and incorporated herein by reference)
12*	Statement of Ratios of Earnings to Fixed Charges
21*	Subsidiaries of State Street Corporation
23.1*	Consent of Independent Registered Public Accounting Firm
23.2**	Consent of Independent Registered Public Accounting Firm
31.1*	Rule 13a-14(a)/15d-14(a) Certification of Chairman and Chief Executive Officer
31.2*	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer
31.3**	Rule 13a-14(a)/15d-14(a) Certification of Chairman and Chief Executive Officer
31.4**	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer
32.1*	Section 1350 Certifications
32.2**	Section 1350 Certifications
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Label Linkbase Document
101.PRE*	XBRL Taxonomy Presentation Linkbase Document

† Denotes management contract or compensatory plan or arrangement

\* Previously filed with our Annual Report on Form 10-K filed on February 16, 2017

\*\* Submitted electronically herewith

Exhibit 101 to this report contains the following formatted in XBRL (Extensible Business Reporting Language):

(i) consolidated statement of income for the years ended December 31, 2016, 2015 and 2014, (ii) consolidated statement of comprehensive income for the years ended December 31, 2016, 2015 and 2014, (iii) consolidated statement of condition as of December 31, 2016 and December 31, 2015, (iv) consolidated statement of changes in shareholders' equity for the years ended December 31, 2016, 2015 and 2014, (v) consolidated statement of cash flows for the years ended December 31, 2016, 2015 and 2014, and (vi) notes to consolidated financial statements.

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