GOLDMAN SACHS GROUP INC
Form 10-K
February 26, 2018
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF

THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2017 Commission File Number: 001-14965

The Goldman Sachs Group, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	13-4019460 (I.R.S. Employer Identification No.)
200 West Street New York, N.Y. (Address of principal executive offices)	10282 (Zip Code)

(212) 902-1000

(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, par value $.01 per share	**New York Stock Exchange**
Depositary Shares, Each Representing 1/1,000th Interest in a Share of Floating Rate Non-Cumulative Preferred Stock, Series A	**New York Stock Exchange**
Depositary Shares, Each Representing 1/1,000th Interest in a Share of 6.20% Non-Cumulative Preferred Stock, Series B	**New York Stock Exchange**
Depositary Shares, Each Representing 1/1,000th Interest in a Share of Floating Rate Non-Cumulative Preferred Stock, Series C	**New York Stock Exchange**
Depositary Shares, Each Representing 1/1,000th Interest in a Share of Floating Rate Non-Cumulative Preferred Stock, Series D	**New York Stock Exchange**
Depositary Shares, Each Representing 1/1,000th Interest in a Share of 5.50% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series J	**New York Stock Exchange**
Depositary Shares, Each Representing 1/1,000th Interest in a Share of 6.375% Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series K	**New York Stock Exchange**
Depository Shares, Each Representing 1/1,000th Interest in a Share of 6.30% Non-Cumulative Preferred Stock, Series N	**New York Stock Exchange**
See Exhibit 99.2 for debt and trust securities registered under Section 12(b) of the Act	

Securities registered pursuant to Section 12(g) of the Act: None

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

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

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

Indicate by check mark whether the registrant has submitted electronically 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 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 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 the Annual Report on Form 10-K or any amendment to the Annual Report on Form 10-K.

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

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

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

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

As of June 30, 2017, the aggregate market value of the common stock of the registrant held by non-affiliates of the registrant was approximately $84.9 billion.

As of February 9, 2018, there were 379,887,039 shares of the registrant s common stock outstanding.

Documents incorporated by reference: Portions of The Goldman Sachs Group, Inc. s Proxy Statement for its 2018 Annual Meeting of Shareholders are incorporated by reference in the Annual Report on Form 10-K in response to Part III, Items 10, 11, 12, 13 and 14.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

PART I

Item 1. Business

Introduction

Goldman Sachs is a leading global investment banking, securities and investment management firm that provides a wide range of financial services to a substantial and diversified client base that includes corporations, financial institutions, governments and individuals.

When we use the terms Goldman Sachs, the firm, we, us and our, we mean The Goldman Sachs Group, Inc. (Inc. or parent company), a Delaware corporation, and its consolidated subsidiaries.

References to this Form 10-K are to our Annual Report on Form 10-K for the year ended December 31, 2017. All references to 2017, 2016 and 2015 refer to our years ended, or the dates, as the context requires, December 31, 2017, December 31, 2016 and December 31, 2015, respectively.

Group Inc. is a bank holding company (BHC) and a financial holding company (FHC) regulated by the Board of Governors of the Federal Reserve System (Federal Reserve Board or FRB). Our U.S. depository institution subsidiary, Goldman Sachs Bank USA (GS Bank USA), is a New York State-chartered bank.

As of December 2017, we had offices in over 30 countries and 48% of our total staff was based outside the Americas. Our clients are located worldwide and we are an active participant in financial markets around the world. In 2017, we generated 39% of our net revenues outside the Americas. For further information about our geographic results, see Note 25 to the consolidated financial statements in Part II, Item 8 of this Form 10-K.

Our Business Segments and Segment Operating Results

We report our activities in four business segments: Investment Banking, Institutional Client Services, Investing & Lending and Investment Management.

The chart below presents our four business segments.

The table below presents our segment operating results.

	Year Ended December			**% of 2017**
$ in millions	**2017**	2016	2015	**Net**

				Revenues
Investment Banking				
Net revenues	**$ 7,371**	$ 6,273	$ 7,027	**23%**
Operating expenses	**3,526**	3,437	3,713	
Pre-tax earnings	**$ 3,845**	$ 2,836	$ 3,314	
Institutional Client Services				
Net revenues	**$11,902**	$14,467	$15,151	**37%**
Operating expenses	**9,692**	9,713	13,938	
Pre-tax earnings	**$ 2,210**	$ 4,754	$ 1,213	
Investing & Lending				
Net revenues	**$ 6,581**	$ 4,080	$ 5,436	**21%**
Operating expenses	**2,796**	2,386	2,402	
Pre-tax earnings	**$ 3,785**	$ 1,694	$ 3,034	
Investment Management				
Net revenues	**$ 6,219**	$ 5,788	$ 6,206	**19%**
Operating expenses	**4,800**	4,654	4,841	
Pre-tax earnings	**$ 1,419**	$ 1,134	$ 1,365	
Total net revenues	**$32,073**	$30,608	$33,820	
Total operating expenses	**20,941**	20,304	25,042	
Total pre-tax earnings	**$11,132**	$10,304	$ 8,778	

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In the table above:

Financial information related to our business segments for 2017, 2016 and 2015 is included in Management s Discussion and Analysis of Financial Condition and Results of Operations and Financial Statements and Supplementary Data, which are in Part II, Items 7 and 8, respectively, of this Form 10-K. See Note 25 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for a summary of our total net revenues, pre-tax earnings and net earnings by geographic region.

Operating expenses included $3.37 billion recorded in Institutional Client Services in 2015 related to the settlement agreement with the Residential Mortgage-Backed Securities Working Group of the U.S. Financial Fraud Enforcement Task Force. See Note 27 to the consolidated financial statements in Part II, Item 8 of our Annual Report on Form 10-K for the year ended December 31, 2015 for further information.

All operating expenses have been allocated to our segments except for charitable contributions of $127 million for 2017, $114 million for 2016 and $148 million for 2015.

Investment Banking

Investment Banking serves public and private sector clients around the world. We provide financial advisory services and help companies raise capital to strengthen and grow their businesses. We seek to develop and maintain long-term relationships with a diverse global group of institutional clients, including governments, states and municipalities. Our goal is to deliver to our institutional clients the entire resources of the firm in a seamless fashion, with investment banking serving as the main initial point of contact with Goldman Sachs.

Financial Advisory. Financial Advisory includes strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings, spin-offs and risk management. In particular, we help clients execute large, complex transactions for which we provide multiple services, including cross-border structuring expertise. Financial Advisory also includes revenues from derivative transactions directly related to these client advisory assignments. We also assist our clients in managing their asset and liability exposures and their capital.

Underwriting. The other core activity of Investment Banking is helping companies raise capital to fund their businesses. As a financial intermediary, our job is to match the capital of our investing clients, who aim to grow the savings of millions of people, with the needs of our public and private sector clients, who need financing to generate growth, create jobs and deliver products and services. Our underwriting activities include public offerings and private placements, including local and cross-border transactions and acquisition financing, of a wide range of securities and other financial instruments, including loans. Underwriting also includes revenues from derivative transactions entered into with public and private sector clients in connection with our underwriting activities.

Equity Underwriting. We underwrite common and preferred stock and convertible and exchangeable securities. We regularly receive mandates for large, complex transactions and have held a leading position in worldwide public common stock offerings and worldwide initial public offerings for many years.

***Debt Underwriting*.** We underwrite and originate various types of debt instruments, including investment-grade and high-yield debt, bank loans and bridge loans, including in connection with acquisition financing, and emerging- and growth-market debt, which may be issued by, among others, corporate, sovereign, municipal and agency issuers. In addition, we underwrite and originate structured securities, which include mortgage-related securities and other asset-backed securities.

Institutional Client Services

Institutional Client Services serves our clients who come to us to buy and sell financial products, raise funding and manage risk. We do this by acting as a market maker and offering market expertise on a global basis. Institutional Client Services makes markets and facilitates client transactions in fixed income, equity, currency and commodity products. In addition, we make markets in and clear client transactions on major stock, options and futures exchanges worldwide.

As a market maker, we provide prices to clients globally across thousands of products in all major asset classes and markets. At times we take the other side of transactions ourselves if a buyer or seller is not readily available and at other times we connect our clients to other parties who want to transact. Our willingness to make markets, commit capital and take risk in a broad range of products is crucial to our client relationships. Market makers provide liquidity and play a critical role in price discovery, which contributes to the overall efficiency of the capital markets.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Our clients are primarily institutions that are professional market participants, including investment entities whose ultimate clients include individual investors investing for their retirement, buying insurance or putting aside surplus cash in a deposit account.

Through our global sales force, we maintain relationships with our clients, receiving orders and distributing investment research, trading ideas, market information and analysis. Much of this connectivity between us and our clients is maintained on technology platforms and operates globally wherever and whenever markets are open for trading.

Institutional Client Services and our other businesses are supported by our Global Investment Research division, which, as of December 2017, provided fundamental research on approximately 3,000 companies worldwide and more than 40 national economies, as well as on industries, currencies and commodities.

Institutional Client Services generates revenues in the following ways:

In large, highly liquid markets (such as markets for U.S. Treasury bills, large capitalization S&P 500 stocks or certain mortgage pass-through securities), we execute a high volume of transactions for our clients;

In less liquid markets (such as mid-cap corporate bonds, growth market currencies or certain non-agency mortgage-backed securities), we execute transactions for our clients for spreads and fees that are generally somewhat larger than those charged in more liquid markets;

We also structure and execute transactions involving customized or tailor-made products that address our clients risk exposures, investment objectives or other complex needs (such as a jet fuel hedge for an airline);

We provide financing to our clients for their securities trading activities, as well as securities lending and other prime brokerage services; and

In connection with our market-making activities, we maintain inventory, typically for a short period of time, in response to, or in anticipation of, client demand. We also hold inventory to actively manage our risk exposures that arise from these market-making activities. We carry our inventory at fair value with changes in valuation reflected in net revenues.

Institutional Client Services activities are organized by asset class and include both cash and derivative instruments. Cash refers to trading the underlying instrument (such as a stock, bond or barrel of oil). Derivative refers to instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors (such as an option, which is the right or obligation to buy or sell a certain bond or stock index on a specified date in the future at a certain price, or an interest rate swap, which is the agreement to convert a fixed rate of interest into a floating rate or vice versa).

Fixed Income, Currency and Commodities Client Execution. Includes client execution activities related to making markets in both cash and derivative instruments for interest rate products, credit products, mortgages, currencies and commodities.

Interest Rate Products. Government bonds (including inflation-linked securities) across maturities, other government-backed securities, repurchase agreements, and interest rate swaps, options and other derivatives.

Credit Products. Investment-grade corporate securities, high-yield securities, credit derivatives, exchange-traded funds, bank and bridge loans, municipal securities, emerging market and distressed debt, and trade claims.

Mortgages. Commercial mortgage-related securities, loans and derivatives, residential mortgage-related securities, loans and derivatives (including U.S. government agency-issued collateralized mortgage obligations and other securities and loans), and other asset-backed securities, loans and derivatives.

Currencies. Currency options, spot/forwards and other derivatives on G-10 currencies and emerging-market products.

Commodities. Commodity derivatives and, to a lesser extent, physical commodities, involving crude oil and petroleum products, natural gas, base, precious and other metals, electricity, coal, agricultural and other commodity products.

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Equities. Includes equities client execution, commissions and fees, and securities services.

Equities Client Execution. We make markets in equity securities and equity-related products, including exchange-traded funds, convertible securities, options, futures and over-the-counter (OTC) derivative instruments, on a global basis. As a principal, we facilitate client transactions by providing liquidity to our clients, including with large blocks of stocks or derivatives, requiring the commitment of our capital.

We also structure and make markets in derivatives on indices, industry groups, financial measures and individual company stocks. We develop strategies and provide information about portfolio hedging and restructuring and asset allocation transactions for our clients. We also work with our clients to create specially tailored instruments to enable sophisticated investors to establish or liquidate investment positions or undertake hedging strategies. We are one of the leading participants in the trading and development of equity derivative instruments.

Our exchange-based market-making activities include making markets in stocks and exchange-traded funds, futures and options on major exchanges worldwide.

Commissions and Fees. We generate commissions and fees from executing and clearing institutional client transactions on major stock, options and futures exchanges worldwide, as well as OTC transactions. We provide our clients with access to a broad spectrum of equity execution services, including electronic low-touch access and more complex high-touch execution through both traditional and electronic platforms.

Securities Services. Includes financing, securities lending and other prime brokerage services.

Financing Services. We provide financing to our clients for their securities trading activities through margin loans that are collateralized by securities, cash or other acceptable collateral. We earn a spread equal to the difference between the amount we pay for funds and the amount we receive from our client.

Securities Lending Services. We provide services that principally involve borrowing and lending securities to cover institutional clients short sales and borrowing securities to cover our short sales and otherwise to make deliveries into the market. In addition, we are an active participant in broker-to-broker securities lending and third-party agency lending activities.

Other Prime Brokerage Services. We earn fees by providing clearing, settlement and custody services globally. In addition, we provide our hedge fund and other clients with a technology platform and reporting which enables them to monitor their security portfolios and manage risk exposures.

Investing & Lending

Our investing and lending activities, which are typically longer-term, include our investing and relationship lending activities across various asset classes, primarily debt securities and loans, public and private equity securities, infrastructure and real estate. These activities include making investments, some of which are consolidated, through our merchant banking business and our special situations group. Some of these investments are made indirectly through funds that we manage. We also provide financing to corporate clients and individuals, including bank loans, personal loans and mortgages.

Equity Securities. We make corporate, real estate, infrastructure and other equity-related investments.

Debt Securities and Loans. We make corporate, real estate, infrastructure and other debt investments. In addition, we provide credit to clients through loan facilities and through secured loans, including secured loans to retail clients through our digital platform, *Goldman Sachs Private Bank Select* (GS Select). We also make unsecured loans to and accept deposits from retail clients through our digital platform, *Marcus: by Goldman Sachs* (Marcus).

Investment Management

Investment Management provides investment and wealth advisory services to help clients preserve and grow their financial assets. Our clients include institutions and high-net-worth individuals, as well as retail investors who primarily access our products through a network of third-party distributors around the world.

We manage client assets across a broad range of asset classes and investment strategies, including equity, fixed income and alternative investments. Alternative investments primarily includes hedge funds, credit funds, private equity, real estate, currencies, commodities, and asset allocation strategies. Our investment offerings include those managed on a fiduciary basis by our portfolio managers as well as strategies managed by third-party managers. We offer our investments in a variety of structures, including separately managed accounts, mutual funds, private partnerships, and other commingled vehicles.

We also provide customized investment advisory solutions designed to address our clients investment needs. These solutions begin with identifying clients objectives and continue through portfolio construction, ongoing asset allocation and risk management and investment realization. We draw from a variety of third-party managers as well as our proprietary offerings to implement solutions for clients.

We supplement our investment advisory solutions for high-net-worth clients with wealth advisory services that include income and liability management, trust and estate planning, philanthropic giving and tax planning. We also use our global securities and derivatives market-making capabilities to address clients specific investment needs.

Management and Other Fees. The majority of revenues in management and other fees is comprised of asset-based fees on client assets. The fees that we charge vary by asset class and distribution channel and are affected by investment performance as well as asset inflows and redemptions. Other fees we receive primarily include financial planning and counseling fees generated through our wealth advisory services provided by our subsidiary, The Ayco Company, L.P.

Assets under supervision include client assets where we earn a fee for managing assets on a discretionary basis. This includes net assets in our mutual funds, hedge funds, credit funds and private equity funds (including real estate funds), and separately managed accounts for institutional and individual investors. Assets under supervision also include client assets invested with third-party managers, bank deposits and advisory relationships where we earn a fee for advisory and other services, but do not have investment discretion. Assets under supervision do not include the self-directed brokerage assets of our clients. Long-term assets under supervision represent assets under supervision excluding liquidity products. Liquidity products represent money market and bank deposit assets.

Incentive Fees. In certain circumstances, we are also entitled to receive incentive fees based on a percentage of a fund s or a separately managed account s return, or when the return exceeds a specified benchmark or other performance targets. Such fees include overrides, which consist of the increased share of the income and gains derived primarily from our private equity and credit funds when the return on a fund s investments over the life of the fund exceeds certain threshold returns.

Transaction Revenues. We receive commissions and net spreads for facilitating transactional activity in high-net-worth client accounts. In addition, we earn net interest income primarily associated with client deposits and margin lending activity undertaken by such clients.

Business Continuity and Information Security

Business continuity and information security, including cyber security, are high priorities for Goldman Sachs. Their importance has been highlighted by numerous highly publicized events in recent years, including (i) cyber attacks against financial institutions, governmental agencies, large consumer-based companies and other organizations that resulted in the unauthorized disclosure of personal information of clients and customers and other sensitive or confidential information, the theft and destruction of corporate information and requests for ransom payments, and (ii) extreme weather events.

Our Business Continuity & Technology Resilience Program has been developed to provide reasonable assurance of business continuity in the event of disruptions at our critical facilities or systems and to comply with regulatory requirements, including those of FINRA. Because we are a BHC, our Business Continuity & Technology Resilience Program is also subject to review by the FRB. The key elements of the program are crisis management, business continuity, technology resilience, business recovery, assurance and verification, and process improvement. In the area of information security, we have developed and implemented a framework of principles, policies and technology designed to protect the information provided to us by our clients and our own information from cyber attacks and other misappropriation, corruption or loss. Safeguards are designed to maintain the confidentiality, integrity and availability of information.

Employees

Management believes that a major strength and principal reason for the success of Goldman Sachs is the quality and dedication of our people and the shared sense of being part of a team. We strive to maintain a work environment that fosters professionalism, excellence, diversity, cooperation among our employees worldwide and high standards of business ethics.

Instilling the Goldman Sachs culture in all employees is a continuous process, in which training plays an important part. All employees are offered the opportunity to participate in education and periodic seminars that we sponsor at various locations throughout the world. Another important part of instilling the Goldman Sachs culture is our employee review process. Employees are reviewed by supervisors, co-workers and employees they supervise in a 360-degree review process that is integral to our team approach, and includes an evaluation of an employee s performance with respect to risk management, compliance and diversity. As of December 2017, we had 36,600 total staff.

Competition

The financial services industry and all of our businesses are intensely competitive, and we expect them to remain so. Our competitors are other entities that provide investment banking, securities and investment management services and retail lending and deposit-taking products, as well as those entities that make investments in securities, commodities, derivatives, real estate, loans and other financial assets. These entities include brokers and dealers, investment banking firms, commercial banks, insurance companies, investment advisers, mutual funds, hedge funds, private equity funds, merchant banks, consumer finance companies and financial technology and other internet-based companies. We compete with some entities globally and with others on a regional, product or niche basis. Our competition is based on a number of factors, including transaction execution, products and services, innovation, reputation and price.

There has been substantial consolidation and convergence among companies in the financial services industry. Moreover, we have faced, and expect to continue to face, pressure to retain market share by committing capital to businesses or transactions on terms that offer returns that may not be commensurate with their risks. In particular, corporate clients seek such commitments (such as agreements to participate in their loan facilities) from financial services firms in connection with investment banking and other assignments.

Consolidation and convergence have significantly increased the capital base and geographic reach of some of our competitors, and have also hastened the globalization of the securities and other financial services markets. As a result, we have had to commit capital to support our international operations and to execute large global transactions. To take advantage of some of our most significant opportunities, we will have to compete successfully with financial institutions that are larger and have more capital and that may have a stronger local presence and longer operating history outside the U.S.

We also compete with smaller institutions that offer more targeted services, such as independent advisory firms. Some clients may perceive these firms to be less susceptible to potential conflicts of interest than we are, and, as described below, our ability to effectively compete with them could be affected by regulations and limitations on activities that apply to us but may not apply to them.

A number of our businesses are subject to intense price competition. Efforts by our competitors to gain market share have resulted in pricing pressure in our investment banking and client execution businesses and could result in pricing pressure in other of our businesses. For example, the increasing volume of trades executed electronically, through the internet and through alternative trading systems, has increased the pressure on trading commissions, in that commissions for electronic trading are generally lower than for non-electronic trading. It appears that this trend toward low-commission trading will continue. Price competition has also led to compression in the difference between the price at which a market participant is willing to sell an instrument and the price at which another market participant is willing to buy it (i.e., bid/offer spread), which has affected our market-making businesses. In addition, we believe that we will continue to experience competitive pressures in these and other areas in the future as some of our competitors seek to obtain market share by further reducing prices, and as we enter into or expand our presence in markets that may rely more heavily on electronic trading and execution.

We also compete on the basis of the types of financial products that we and our competitors offer. In some circumstances, our competitors may offer financial products that we do not offer and our clients may prefer.

The provisions of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), the requirements promulgated by the Basel Committee on Banking Supervision (Basel Committee) and other financial regulation could affect our competitive position to the extent that limitations on activities, increased fees and compliance costs or other regulatory requirements do not apply, or do not apply equally, to all of our competitors or are not implemented uniformly across different jurisdictions. For example, the provisions of the Dodd-Frank Act that prohibit proprietary trading and restrict investments in certain hedge and private equity funds differentiate between U.S.-based and non-U.S.-based banking organizations and give non-U.S.-based banking organizations greater flexibility to trade outside of the U.S. and to form and invest in funds outside the U.S.

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Likewise, the obligations with respect to derivative transactions under Title VII of the Dodd-Frank Act depend, in part, on the location of the counterparties to the transaction. The impact of the Dodd-Frank Act and other regulatory developments on our competitive position will depend to a large extent on the manner in which the required rulemaking and regulatory guidance evolve, the extent of international convergence, and the development of market practice and structures under the new regulatory regimes as described further in Regulation below.

We also face intense competition in attracting and retaining qualified employees. Our ability to continue to compete effectively will depend upon our ability to attract new employees, retain and motivate our existing employees and to continue to compensate employees competitively amid intense public and regulatory scrutiny on the compensation practices of large financial institutions. Our pay practices and those of certain of our competitors are subject to review by, and the standards of, the FRB and other regulators inside and outside the U.S., including the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA) in the U.K. We also compete for employees with institutions whose pay practices are not subject to regulatory oversight. See Regulation Compensation Practices below and Risk Factors Our businesses may be adversely affected if we are unable to hire and retain qualified employees in Part I, Item 1A of this Form 10-K for further information about the regulation of our compensation practices.

Regulation

As a participant in the global financial services industry, we are subject to extensive regulation and supervision worldwide. The Dodd-Frank Act, and the rules thereunder, significantly altered the U.S. financial regulatory regime within which we operate and the new Markets in Financial Instruments Regulation and Markets in Financial Instruments Directive (collectively, MiFID II) have significantly revised the regulatory regime for our European operations. The capital, liquidity and leverage ratios based on the Basel Committee s final capital framework for strengthening international capital standards (Basel III), as implemented by the FRB, the PRA and FCA and other national regulators, have also had a significant impact on our businesses. The Basel Committee is the primary global standard setter for prudential bank regulation, and its member jurisdictions implement regulations based on its standards and guidelines.

The Basel Committee s standards are not effective in any jurisdiction until rules implementing such standards have been implemented by the relevant regulators in such jurisdiction.

The implications of such regulations for our businesses continue to depend to a large extent on their implementation by the relevant regulators globally, as well as the development of market practices and structures under the regime established by such regulations.

Other reforms have been adopted or are being considered by regulators and policy makers worldwide, as described further throughout this section. Recent developments have added additional uncertainty to the implementation, scope and timing of regulatory reforms. Such developments also include potential deregulation in some areas. In February 2017, the President of the U.S. issued an executive order identifying core principles for the administration s financial services regulatory policy and directing the Secretary of the Treasury, in consultation with the heads of other financial regulatory agencies, to evaluate how the current regulatory framework promotes or inhibits the principles and what actions have been, and are being, taken to promote the principles. In response to the executive order, the U.S. Department of the Treasury issued during 2017 the first three of four reports recommending a number of comprehensive changes in the current regulatory system for U.S. depository institutions, the U.S. capital markets and the U.S. asset management and insurance industries. In addition, in February 2018, the U.S. Department of the Treasury issued a report that recommends reforming the orderly liquidation authority (OLA) under the Dodd-Frank Act and amending the U.S. Bankruptcy Code to make a bankruptcy proceeding a more effective resolution method for large financial institutions.

Goldman Sachs International (GSI) and Goldman Sachs International Bank (GSIB), our principal E.U. operating subsidiaries, are incorporated and headquartered in the U.K. and, as such, are subject to E.U. legal and regulatory requirements, based on directly binding regulations of the E.U. and the implementation of E.U. directives by the U.K. Both currently benefit from non-discriminatory access to E.U. clients and infrastructure based on E.U. treaties and E.U. legislation, including cross-border passporting arrangements and specific arrangements for the establishment of E.U. branches. As a result of the U.K. s notification to the European Council of its decision to leave the E.U. (Brexit), there is considerable uncertainty as to the regulatory regime that will be applicable in the U.K. and the regulatory framework that will govern transactions and business undertaken by our U.K. subsidiaries in the remaining E.U. countries.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Banking Supervision and Regulation

Group Inc. is a BHC under the U.S. Bank Holding Company Act of 1956 (BHC Act) and an FHC under amendments to the BHC Act effected by the U.S. Gramm-Leach-Bliley Act of 1999 (GLB Act), and is subject to supervision and examination by the FRB, as our primary regulator. In August 2017, the FRB proposed a new rating system for large financial institutions, such as us, which is intended to align with the FRB s existing supervisory program for large financial institutions and which would include component ratings for capital planning, liquidity risk management, and governance and controls. In August 2017 and January 2018, the FRB proposed related guidance for the governance and controls component. These proposals reflect the FRB s focus on compliance with laws and regulations related to consumer protection in its evaluations of large financial institutions.

Certain of our subsidiaries are regulated by the banking and securities regulatory authorities of the countries in which they operate.

Under the system of functional regulation established under the BHC Act, the primary regulators of our U.S. non-bank subsidiaries directly regulate the activities of those subsidiaries, with the FRB exercising a supervisory role. Such functionally regulated U.S. non-bank subsidiaries include broker-dealers registered with the SEC, such as our principal U.S. broker-dealer, Goldman Sachs & Co. LLC (GS&Co.), entities registered with or regulated by the CFTC with respect to futures-related and swaps-related activities and investment advisers registered with the SEC with respect to their investment advisory activities.

Our principal U.S. bank subsidiary, GS Bank USA, is supervised and regulated by the FRB, the FDIC, the New York State Department of Financial Services (NYDFS) and the U.S. Consumer Financial Protection Bureau. A number of our activities are conducted partially or entirely through GS Bank USA and its subsidiaries, including: origination of bank loans; personal loans and mortgages; interest rate, credit, currency and other derivatives; leveraged finance; deposit-taking; and agency lending. Our retail-oriented activities are subject to extensive regulation and supervision by federal and state regulators with regard to consumer protection laws, including laws relating to fair lending and other practices in connection with marketing and providing retail financial products.

GSI, our regulated U.K. broker-dealer subsidiary, which is a designated investment firm, and GSIB, our regulated U.K. bank and principal non-U.S. bank subsidiary, are regulated by the PRA and the FCA. GSI provides broker-dealer services in and from the U.K., and GSIB acts as a primary dealer for European government bonds and is involved in market making in European government bonds, lending (including securities lending) and deposit-taking activities.

Capital, Leverage and Liquidity Requirements. The firm and GS Bank USA are subject to consolidated regulatory capital and leverage requirements set forth by the FRB. GSI and GSIB are subject to capital requirements prescribed in the E.U. Capital Requirements Regulation (CRR) and the E.U. Fourth Capital Requirements Directive (CRD IV).

Under the FRB s capital adequacy requirements, the firm and GS Bank USA must meet specific regulatory capital requirements that involve quantitative measures of assets, liabilities and certain off-balance-sheet items. The sufficiency of our capital levels is also subject to qualitative judgments by regulators. The firm and GS Bank USA are also subject to liquidity requirements established by the U.S. federal bank regulatory agencies, and GSI and GSIB are subject to similar requirements established by U.K. regulatory authorities.

Capital Ratios. We are subject to the FRB s risk-based capital and leverage regulations, subject to certain transitional provisions (Capital Framework). The Capital Framework is largely based on Basel III and also implements certain provisions of the Dodd-Frank Act. Under the Capital Framework, we are an Advanced approach banking organization and have been designated as a global systemically important bank (G-SIB).

The Capital Framework provides for an additional capital ratio requirement that phases in over time and consists of three components: (i) for capital conservation (capital conservation buffer), (ii) as a consequence of our designation as a G-SIB (G-SIB buffer) and (iii) for countercyclicality (countercyclical capital buffer). The additional capital ratio requirement must be satisfied entirely with capital that qualifies as Common Equity Tier 1 (CET1).

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The capital conservation buffer began to phase in on January 1, 2016 and will continue to do so in increments of 0.625% per year until it reaches 2.5% of risk-weighted assets (RWAs) on January 1, 2019. The G-SIB buffer also began to phase in on January 1, 2016 and will continue to do so through January 1, 2019.

The countercyclical capital buffer, of up to 2.5%, is designed to counteract systemic vulnerabilities and applies only to Advanced approach banking organizations. The countercyclical capital buffer is currently set at zero percent. Several other national supervisors have also started to require countercyclical capital buffers. The G-SIB and countercyclical capital buffers applicable to us could change in the future and, as a result, the minimum capital ratios to which we are subject could change.

GS Bank USA also computes its capital ratios in accordance with the Capital Framework as an Advanced approach banking organization.

The Basel Committee has published final guidelines for calculating incremental capital ratio requirements for banking institutions that are systemically significant from a domestic but not global perspective (D-SIBs). If these guidelines are implemented by national regulators, they will apply to, among others, certain subsidiaries of G-SIBs. These guidelines are in addition to the framework for G-SIBs, but are more principles-based. CRD IV and the CRR provide that institutions that are systemically important at the E.U. or member state level, known as other systemically important institutions (O-SIIs), may be subject to additional capital ratio requirements of up to 2% of CET1, according to their degree of systemic importance (O-SII buffers). O-SIIs are identified annually, along with their applicable buffers. The PRA has identified Goldman Sachs Group UK Limited (GSG UK), the parent company of GSI and GSIB, as an O-SII. GSG UK s O-SII buffer is currently set at zero percent.

In January 2016, the Basel Committee finalized a revised framework for calculating minimum capital requirements for market risk, which is expected to increase market risk capital requirements for most banking organizations. In December 2017, the Basel Committee extended the implementation date for the revised market risk framework until January 1, 2022, noting that the extension would allow for a review of the calibration of the framework.

In December 2017, the Basel Committee also published standards that it described as the finalization of the Basel III post-crisis regulatory reforms. These standards introduce an aggregate output floor comparing capital requirements under the Basel Committee s standardized and internally modeled approaches, and they also revise the Basel Committee s standardized and model-based approaches for credit risk, provide a new standardized approach for operational risk capital and revise the frameworks for credit valuation adjustment risk and the leverage ratio. The Basel Committee has proposed that national regulators implement these standards effective on January 1, 2022, with the output floor being phased in through January 1, 2027.

The U.S. federal bank regulatory agencies have not proposed rules implementing the December 2017 standards or the revisions to the Basel Committee s market risk framework for U.S. banking organizations. In November 2016, the European Commission proposed amendments to the CRR to implement the revisions to the market risk framework for certain E.U. financial institutions, which would be effective two years after the amendments are incorporated into the CRR.

The Basel Committee has also:

Finalized a revised standard approach for calculating RWAs for counterparty credit risk on derivatives exposures (Standardized Approach for measuring Counterparty Credit Risk exposures, known as SA-CCR);

Published an updated framework for the regulatory capital treatment of securitization exposures (Securitization Framework);

Published guidelines for measuring and controlling large exposures (Supervisory Framework for measuring and controlling Large Exposures); and

Issued consultation papers on, among other matters, changes to the G-SIB assessment methodology.

See Management s Discussion and Analysis of Financial Condition and Results of Operations Equity Capital Management and Regulatory Capital in Part II, Item 7 of this Form 10-K and Note 20 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about our, GS Bank USA s and GSI s capital ratios and minimum required ratios.

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As described in Other Restrictions below, in September 2016, the FRB issued a proposed rule that would, among other things, require FHCs to hold additional capital in connection with covered physical commodity activities.

Leverage Ratios. Under the Capital Framework, the firm and GS Bank USA are subject to Tier 1 leverage requirements established by the FRB. The Capital Framework also introduced a supplementary leverage ratio for Advanced approach banking organizations which became effective January 1, 2018 and implements the Basel III leverage ratio framework.

In November 2016, the European Commission proposed amendments to the CRR to implement a 3% minimum leverage ratio requirement for certain E.U. financial institutions, including GSI and GSIB, which would implement the Basel III leverage ratio framework.

See Management s Discussion and Analysis of Financial Condition and Results of Operations Equity Capital Management and Regulatory Capital in Part II, Item 7 of this Form 10-K and Note 20 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about the firm s and GS Bank USA s Tier 1 leverage ratios and supplementary leverage ratios, and GSI s leverage ratio.

Liquidity Ratios. The Basel Committee s international framework for liquidity risk measurement, standards and monitoring requires banking organizations to measure their liquidity against two specific liquidity tests.

The Liquidity Coverage Ratio (LCR) issued by the U.S. federal bank regulatory agencies and applicable to both the firm and GS Bank USA is generally consistent with the Basel Committee s framework and is designed to ensure that a banking organization maintains an adequate level of unencumbered high-quality liquid assets equal to or greater than the expected net cash outflows under an acute short-term liquidity stress scenario. We disclose, on a quarterly basis, our average daily LCR over the quarter. See Available Information below.

The LCR rule issued by the European Commission and applicable to GSI and GSIB became effective in the U.K. on October 1, 2015, and fully phased in on January 1, 2018.

The Basel Committee s net stable funding ratio (NSFR) is designed to promote medium- and long-term stable funding of the assets and off-balance-sheet activities of banking organizations over a one-year time horizon. The NSFR framework requires banking organizations to maintain a minimum NSFR of 100%.

In May 2016, the U.S. federal bank regulatory agencies issued a proposed rule that would implement an NSFR for large U.S. banking organizations, including the firm and GS Bank USA. The proposal would require banking organizations to ensure they have stable funding over a one-year time horizon. In November 2016, the European Commission proposed amendments to the CRR to implement the NSFR for certain E.U. financial institutions, which would be effective two years after it is incorporated into the CRR. Neither the U.S. federal bank regulatory agencies nor the European Commission have released a final rule.

The enhanced prudential standards implemented by the FRB under the Dodd-Frank Act require BHCs, including Group Inc., with $50 billion or more in total consolidated assets (covered BHCs) to comply with enhanced liquidity and overall risk management standards, including a level of highly liquid assets based on projected funding needs for 30 days, and increased involvement by boards of directors in liquidity and overall risk management. Although the liquidity requirement under these rules has some similarities to the LCR, it is a separate requirement.

See Management s Discussion and Analysis of Financial Condition and Results of Operations Risk Management Overview and Structure of Risk Management and Liquidity Risk Management in Part II, Item 7 of this Form 10-K for information about the LCR and NSFR, as well as our risk management practices and liquidity.

Stress Tests. As a covered BHC, we are subject to the Dodd-Frank Act annual supervisory stress tests conducted by the FRB and semi-annual company-run stress tests.

We publish summaries of our annual and mid-cycle stress tests results on our website as described in Available Information below.

Our annual stress test submission is incorporated into the annual capital plans that we submit to the FRB as part of the Comprehensive Capital Analysis and Review (CCAR) of large BHCs, which is designed to ensure that capital planning processes will permit continued operations by such institutions during times of economic and financial stress. As part of CCAR, the FRB evaluates an institution s plan to make capital distributions, such as repurchasing or redeeming stock or increasing dividend payments, across a range of macroeconomic and firm-specific assumptions based on the institution s and the FRB s stress tests. If the FRB objects to an institution s capital plan, the institution is generally prohibited from making capital distributions other than distributions to which the FRB has not objected. In addition, an institution faces limitations on capital distributions to the extent that actual capital issuances are less than the amounts indicated in its capital plan.

GS Bank USA is also required to conduct stress tests on an annual basis, to submit the results to the FRB, and to publicly disclose a summary of those results. GSI and GSIB also have their own capital planning and stress testing process, which incorporates internally designed stress tests and those required under the PRA s Internal Capital Adequacy Assessment Process.

Dividends and Stock Repurchases. Dividend payments by Group Inc. to its shareholders and stock repurchases by Group Inc. are subject to the oversight of the FRB.

U.S. federal and state laws impose limitations on the payment of dividends by U.S. depository institutions, such as GS Bank USA. In general, the amount of dividends that may be paid by GS Bank USA is limited to the lesser of the amounts calculated under a recent earnings test and an undivided profits test. Under the recent earnings test, a dividend may not be paid if the total of all dividends declared by the entity in any calendar year is in excess of the current year s net income combined with the retained net income of the two preceding years, unless the entity obtains prior regulatory approval. Under the undivided profits test, a dividend may not be paid in excess of the entity s undivided profits (generally, accumulated net profits that have not been paid out as dividends or transferred to surplus).

The applicable U.S. banking regulators have authority to prohibit or limit the payment of dividends if, in the banking regulator s opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization. The BHC Act prohibits the FRB from requiring a payment by a BHC subsidiary to a depository institution if the functional regulator of that subsidiary objects to such payment. In such a case, the FRB could instead require the divestiture of the depository institution and impose operating restrictions pending the divestiture.

Source of Strength. The Dodd-Frank Act requires BHCs to act as a source of strength to their bank subsidiaries and to commit capital and financial resources to support those subsidiaries. This support may be required by the FRB at times when we might otherwise determine not to provide it. Capital loans by a BHC to a subsidiary bank are subordinate in right of payment to deposits and to certain other indebtedness of the subsidiary bank. In addition, if a BHC commits to a U.S. federal banking agency that it will maintain the capital of its bank subsidiary, whether in response to the FRB s invoking its source-of-strength authority or in response to other regulatory measures, that commitment will be assumed by the bankruptcy trustee for the BHC and the bank will be entitled to priority payment in respect of that commitment, ahead of other creditors of the BHC.

Transactions between Affiliates. Transactions between GS Bank USA or its subsidiaries, on the one hand, and Group Inc. or its other subsidiaries and affiliates, on the other hand, are regulated by the FRB. These regulations generally limit the types and amounts of transactions (including credit extensions from GS Bank USA or its subsidiaries to Group Inc. or its other subsidiaries and affiliates) that may take place and generally require those transactions to be on market terms or better to GS Bank USA or its subsidiaries. These regulations generally do not apply to transactions between GS Bank USA and its subsidiaries. The Dodd-Frank Act expanded the coverage and scope of these regulations, including by applying them to the credit exposure arising under derivative transactions, repurchase and reverse repurchase agreements, and securities borrowing and lending transactions.

Resolution and Recovery. Group Inc. is required by the FRB and the FDIC to submit a periodic plan for its rapid and orderly resolution in the event of material financial distress or failure (resolution plan). Our resolution plan must, among other things, demonstrate that GS Bank USA is adequately protected from risks arising from our other entities. If the regulators jointly determine that an institution has failed to remediate identified shortcomings in its resolution plan and that its resolution plan, after any permitted resubmission, is not credible or would not facilitate an orderly resolution under the U.S. Bankruptcy Code, the regulators may jointly impose more stringent capital, leverage or liquidity requirements or restrictions on growth, activities or operations or may jointly order the institutions to divest assets or operations in order to facilitate orderly resolution in the event of failure. See Risk Factors The application of Group Inc. s proposed resolution strategy could result in greater losses for Group Inc. s security holders, and failure to address shortcomings in our resolution plan could subject us to increased regulatory requirements in Part I, Item 1A of this Form 10-K and Management s Discussion and Analysis of Financial Condition and Results of Operations Regulatory Matters and Developments Resolution and Recovery Plans in Part II, Item 7 of this Form 10-K for further information about our resolution plan.

We are also required by the FRB to submit, on a periodic basis, a global recovery plan that outlines the steps that management could take to reduce risk, maintain sufficient liquidity, and conserve capital in times of prolonged stress.

The FDIC has issued a rule requiring each insured depository institution with $50 billion or more in assets, such as GS Bank USA, to provide a resolution plan. Our resolution plan for GS Bank USA must, among other things, demonstrate that it is adequately protected from risks arising from our other entities.

In September 2017, the FRB issued a final rule imposing restrictions on qualified financial contracts (QFCs) entered into by G-SIBs. The rule will begin to phase in on January 1, 2019 and will be fully effective on January 1, 2020. This rule is intended to facilitate the orderly resolution of a failed G-SIB by limiting the ability of the G-SIB to enter into a QFC unless (i) the counterparty waives certain termination rights in such contracts arising upon the entry of the G-SIB or one of its affiliates into resolution, (ii) the contracts do not prohibit transfers of credit enhancement that satisfy certain standards, and (iii) the counterparty agrees that the QFCs will be subject to the special resolution regimes set forth in the Dodd-Frank Act OLA and the Federal Deposit Insurance Act of 1950 (FDIA), described below. Compliance can be achieved by adhering to the ISDA Protocol described below.

We, along with a number of other major global banking organizations, adhere to the International Swaps and Derivatives Association Resolution Stay Protocol (ISDA Protocol), which was developed and updated in coordination with the Financial Stability Board (FSB), an international body that sets standards and coordinates the work of national financial authorities and international standard-setting bodies. The ISDA Protocol imposes a stay on certain cross-default and early termination rights within standard ISDA derivative contracts and securities financing transactions between adhering parties in the event that one of them is subject to resolution in its home jurisdiction, including a resolution under the OLA or the FDIA in the U.S. The ISDA Protocol is expected to be adopted more broadly in the future, following the phase-in of QFC regulations adopted by banking regulators (including the FRB s final rule on QFCs) that impose additional requirements in order for G-SIBs, such as us, to enter into QFCs with counterparties that do not adhere to the ISDA Protocol.

The E.U. Bank Recovery and Resolution Directive (BRRD) establishes a framework for the recovery and resolution of financial institutions in the E.U., such as GSI and GSIB. The BRRD provides national supervisory authorities with tools and powers to pre-emptively address potential financial crises in order to promote financial stability and minimize taxpayers exposure to losses. The BRRD requires E.U. member states to grant bail-in powers to E.U. resolution authorities to recapitalize a failing entity by writing down its unsecured debt or converting its unsecured debt into equity. Financial institutions in the E.U. must provide that new contracts enable such actions and also amend pre-existing contracts governed by non-E.U. law to enable such actions, if the financial institutions could incur liabilities under such pre-existing contracts.

The BRRD also subjects financial institutions to a minimum requirement for own funds and eligible liabilities (MREL) so that they can be resolved without causing financial instability and without recourse to public funds in the event of a failure. The Bank of England s rules on MREL are described below in Total Loss-Absorbing Capacity.

Total Loss-Absorbing Capacity. In December 2016, the FRB adopted a final rule establishing loss-absorbency and related requirements for parent companies of U.S. G-SIBs, such as Group Inc. The rule will be effective in January 2019 with no phase-in period. The rule addresses U.S. implementation of the FSB s total loss-absorbing capacity (TLAC) principles and term sheet on minimum TLAC requirements for G-SIBs. The rule (i) establishes minimum TLAC requirements, (ii) establishes minimum eligible long-term debt (i.e., debt that is unsecured, has a maturity greater than one year from issuance and satisfies certain additional criteria) requirements, (iii) prohibits certain BHC transactions and (iv) caps the amount of G-SIB liabilities that are not eligible long-term debt.

The rule also prohibits a U.S. G-SIB from (i) guaranteeing liabilities of subsidiaries that are subject to early termination provisions if the parent company of a U.S. G-SIB enters into an insolvency or receivership proceeding, subject to an exception for guarantees permitted by rules of the U.S. federal banking agencies imposing restrictions on QFCs; (ii) incurring liabilities guaranteed by subsidiaries; (iii) issuing short-term debt; or (iv) entering into derivatives and certain other financial contracts with external counterparties.

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Additionally, the rule caps, at 5% of the value of the U.S. G-SIB s eligible TLAC, the amount of unsecured non-contingent third-party liabilities that are not eligible long-term debt that could rank equally with or junior to eligible long-term debt.

In October 2016, the Basel Committee issued a final standard to implement capital deductions for banking organizations relating to TLAC holdings of other G-SIBs.

The FSB issued a final TLAC standard requiring certain material subsidiaries of a G-SIB organized outside of the G-SIB s home country, such as GSI and GSIB, to maintain amounts of TLAC directly or indirectly from the parent company. In July 2017, the FSB issued a final set of guiding principles on the implementation of the TLAC requirements applicable to material subsidiaries.

The BRRD subjects institutions to MREL, which is generally consistent with the FSB s TLAC standard. In October 2017, the Bank of England published a consultation paper on internal MREL, which would require a material U.K. subsidiary of an overseas banking group, such as GSI, to meet a minimum internal MREL requirement to facilitate the transfer of losses to its resolution entity, which for GSI is Group Inc. The transitional minimum internal MREL requirement would phase in from January 1, 2019, becoming fully effective from January 1, 2022.

In November 2016, the European Commission proposed amendments to the CRR and BRRD that are designed to implement the FSB s minimum TLAC requirement for G-SIBs commencing January 1, 2019. The proposal would require subsidiaries of a non-E.U. G-SIB that account for more than 5% of its RWAs, operating income or leverage exposure, such as GSI, to meet 90% of the requirement applicable to E.U. G-SIBs.

In November 2016, the European Commission also proposed an amendment to CRD IV that would require a non-E.U. G-SIB, such as us, to establish an E.U. intermediate holding company (E.U. IHC) if the firm has two or more of certain types of E.U. financial institution subsidiaries, including broker-dealers and banks, such as GSI and GSIB. The European Commission also proposed amendments to the CRR that would require E.U. IHCs to satisfy MREL requirements and certain other prudential requirements. These proposals are subject to adoption at the E.U. level and, for the directives, implementing rulemakings by E.U. member states, which have not yet occurred.

Insolvency of an Insured Depository Institution or a Bank Holding Company. Under the FDIA, if the FDIC is appointed as conservator or receiver for an insured depository institution such as GS Bank USA, upon its insolvency or in certain other events, the FDIC has broad powers, including the power:

- To transfer any of the depository institution s assets and liabilities to a new obligor, including a newly formed bridge bank, without the approval of the depository institution s creditors;

- To enforce the depository institution s contracts pursuant to their terms without regard to any provisions triggered by the appointment of the FDIC in that capacity; or

To repudiate or disaffirm any contract or lease to which the depository institution is a party, the performance of which is determined by the FDIC to be burdensome and the disaffirmance or repudiation of which is determined by the FDIC to promote the orderly administration of the depository institution.

In addition, the claims of holders of domestic deposit liabilities and certain claims for administrative expenses against an insured depository institution would be afforded a priority over other general unsecured claims, including deposits at non-U.S. branches and claims of debtholders of the institution, in the liquidation or other resolution of such an institution by any receiver. As a result, whether or not the FDIC ever sought to repudiate any debt obligations of GS Bank USA, the debtholders (other than depositors) would be treated differently from, and could receive, if anything, substantially less than, the depositors of GS Bank USA.

The Dodd-Frank Act created a new resolution regime (known as OLA) for BHCs and their affiliates that are systemically important and certain non-bank financial companies. Under OLA, the FDIC may be appointed as receiver for the systemically important institution and its failed non-bank subsidiaries if, upon the recommendation of applicable regulators, the U.S. Secretary of the Treasury determines, among other things, that the institution is in default or in danger of default, that the institution s failure would have serious adverse effects on the U.S. financial system and that resolution under OLA would avoid or mitigate those effects.

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If the FDIC is appointed as receiver under OLA, then the powers of the receiver, and the rights and obligations of creditors and other parties who have dealt with the institution, would be determined under OLA, and not under the bankruptcy or insolvency law that would otherwise apply. The powers of the receiver under OLA were generally based on the powers of the FDIC as receiver for depository institutions under the FDIA.

Substantial differences in the rights of creditors exist between OLA and the U.S. Bankruptcy Code, including the right of the FDIC under OLA to disregard the strict priority of creditor claims in some circumstances, the use of an administrative claims procedure to determine creditors claims (as opposed to the judicial procedure utilized in bankruptcy proceedings), and the right of the FDIC to transfer claims to a bridge entity. In addition, OLA limits the ability of creditors to enforce certain contractual cross-defaults against affiliates of the institution in receivership. The FDIC has issued a notice that it would resolve a failed FHC by transferring its assets to a bridge holding company under its single point of entry or SPOE strategy pursuant to OLA.

FDIC Insurance. Deposits at GS Bank USA have the benefit of FDIC insurance up to the applicable limits. The FDIC s Deposit Insurance Fund is funded by assessments on insured depository institutions. GS Bank USA s assessment (subject to adjustment by the FDIC) is currently based on its average total consolidated assets less its average tangible equity during the assessment period, its supervisory ratings and specified forward-looking financial measures used to calculate the assessment rate.

The reserve ratio for the Deposit Insurance Fund is 1.35% of total insured deposits. A surcharge on the assessments of larger depository institutions (including GS Bank USA) applies through the earlier of the quarter that the reserve ratio first reaches or exceeds 1.35% and December 31, 2018. If the reserve ratio does not reach 1.35% by December 31, 2018, the FDIC will impose a shortfall assessment on larger depository institutions (including GS Bank USA).

Prompt Corrective Action. The U.S. Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) requires the U.S. federal bank regulatory agencies to take prompt corrective action in respect of depository institutions that do not meet specified capital requirements. FDICIA establishes five capital categories for FDIC-insured banks: well-capitalized, adequately capitalized, undercapitalized, significantly undercapitalized and critically undercapitalized.

An institution may be downgraded to, or deemed to be in, a capital category that is lower than is indicated by its capital ratios if it is determined to be in an unsafe or unsound condition or if it receives an unsatisfactory examination rating with respect to certain matters. FDICIA imposes progressively more restrictive constraints on operations, management and capital distributions, as the capital category of an institution declines. Failure to meet the capital requirements could also require a depository institution to raise capital. Ultimately, critically undercapitalized institutions are subject to the appointment of a receiver or conservator, as described in Insolvency of an Insured Depository Institution or a Bank Holding Company above.

The prompt corrective action regulations do not apply to BHCs. However, the FRB is authorized to take appropriate action at the BHC level, based upon the undercapitalized status of the BHC s depository institution subsidiaries. In certain instances relating to an undercapitalized depository institution subsidiary, the BHC would be required to guarantee the performance of the undercapitalized subsidiary s capital restoration plan and might be liable for civil money damages for failure to fulfill its commitments on that guarantee. Furthermore, in the event of the bankruptcy of the BHC, the guarantee would take priority over the BHC s general unsecured creditors, as described in Source of Strength above.

Activities. The Dodd-Frank Act and the BHC Act generally restrict BHCs from engaging in business activities other than the business of banking and certain closely related activities.

Volcker Rule. The provisions of the Dodd-Frank Act referred to as the Volcker Rule became effective in July 2015. The Volcker Rule prohibits proprietary trading, but permits activities such as underwriting, market making and risk-mitigation hedging, requires an extensive compliance program and includes additional reporting and record-keeping requirements. The reporting requirements include calculating daily quantitative metrics on covered trading activities (as defined in the rule) and providing these metrics to regulators on a monthly basis.

In addition, the Volcker Rule limits the sponsorship of, and investment in, covered funds (as defined in the rule) by banking entities, including us. It also limits certain types of transactions between us and our sponsored funds, similar to the limitations on transactions between depository institutions and their affiliates. Covered funds include our private equity funds, certain of our credit and real estate funds, our hedge funds and certain other investment structures. The limitation on investments in covered funds requires us to reduce our investment in each such fund to 3% or less of the fund s net asset value, and to reduce our aggregate investment in all such funds to 3% or less of our Tier 1 capital.

The FRB has extended the conformance period to July 2022 for our investments in, and relationships with, certain legacy illiquid funds (as defined in the Volcker Rule) that were in place prior to December 2013. See Note 6 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for further information about our investments in such funds.

Other Restrictions. FHCs generally can engage in a broader range of financial and related activities than are otherwise permissible for BHCs as long as they continue to meet the eligibility requirements for FHCs. The broader range of permissible activities for FHCs includes underwriting, dealing and making markets in securities and making investments in non-FHCs (merchant banking activities). In addition, certain FHCs are permitted under the GLB Act to engage in certain commodities activities in the U.S. that may otherwise be impermissible for BHCs, so long as the assets held pursuant to these activities do not equal 5% or more of their consolidated assets.

The FRB, however, has the authority to limit an FHC s ability to conduct activities that would otherwise be permissible, and will likely do so if the FHC does not satisfactorily meet certain requirements of the FRB. For example, if an FHC or any of its U.S. depository institution subsidiaries ceases to maintain its status as well-capitalized or well-managed, the FRB may impose corrective capital and/or managerial requirements, as well as additional limitations or conditions. If the deficiencies persist, the FHC may be required to divest its U.S. depository institution subsidiaries or to cease engaging in activities other than the business of banking and certain closely related activities.

If any insured depository institution subsidiary of an FHC fails to maintain at least a satisfactory rating under the Community Reinvestment Act, the FHC would be subject to restrictions on certain new activities and acquisitions.

In addition, we are required to obtain prior FRB approval before engaging in certain banking and other financial activities both within and outside the U.S.

In September 2016, the FRB issued a proposed rule which, if adopted, would impose new requirements on the physical commodity activities and certain merchant banking activities of FHCs. The proposed rule would, among other things, (i) require FHCs to hold additional capital in connection with covered physical commodity activities, including merchant banking investments in companies engaged in physical commodity activities; (ii) tighten the quantitative limits on permissible physical trading activity; and (iii) establish new public reporting requirements on the nature and extent of FHC s physical commodity holdings and activities. In addition, in a September 2016 report, the FRB recommended that Congress repeal (i) the authority of FHCs to engage in merchant banking activities; and (ii) the authority described above for certain FHCs to engage in certain otherwise permissible commodities activities.

In March 2016, the FRB issued a revised proposal regarding single counterparty credit limits, which would impose more stringent requirements for credit exposures among major financial institutions. Such limits (together with other provisions incorporated into the Basel III capital rules) may affect our ability to transact or hedge with other financial institutions. In addition, the FRB has proposed early remediation requirements, which are modeled on the prompt corrective action regime, described in Prompt Corrective Action above, but are designed to require action to begin in earlier stages of a company s financial distress, based on a range of triggers, including capital and leverage, stress test results, liquidity and risk management.

In addition, New York State banking law imposes lending limits (which take into account credit exposure from derivative transactions) and other requirements that could impact the manner and scope of GS Bank USA s activities.

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The U.S. federal bank regulatory agencies have issued guidance that focuses on transaction structures and risk management frameworks and that outlines high-level principles for safe-and-sound leveraged lending, including underwriting standards, valuation and stress testing. This guidance has, among other things, limited the percentage amount of debt that can be included in certain transactions. The status of this guidance is uncertain as the U.S. Government Accountability Office has determined that it is a rule subject to review under the Congressional Review Act.

Broker-Dealer and Securities Regulation

Our broker-dealer subsidiaries are subject to regulations that cover all aspects of the securities business, including sales methods, trade practices, use and safekeeping of clients funds and securities, capital structure, record-keeping, the financing of clients purchases, and the conduct of directors, officers and employees. In the U.S., the SEC is the federal agency responsible for the administration of the federal securities laws. GS&Co. is registered as a broker-dealer, a municipal advisor and an investment adviser with the SEC and as a broker-dealer in all 50 states and the District of Columbia. U.S. self-regulatory organizations, such as FINRA and the NYSE, adopt rules that apply to, and examine, broker-dealers such as GS&Co.

In addition, U.S. state securities and other U.S. regulators also have regulatory or oversight authority over GS&Co. Similarly, our businesses are also subject to regulation by various non-U.S. governmental and regulatory bodies and self-regulatory authorities in virtually all countries where we have offices, as described further below, as well as in Other Regulation. For a description of net capital requirements applicable to GS&Co., see Note 20 to the consolidated financial statements in Part II, Item 8 of this Form 10-K.

In Europe, we provide broker-dealer services that are subject to oversight by national regulators. These services are regulated in accordance with national laws, many of which implement E.U. directives, and, increasingly, by directly applicable E.U. regulations. These national and E.U. laws require, among other things, compliance with certain capital adequacy standards, customer protection requirements and market conduct and trade reporting rules.

Goldman Sachs Japan Co., Ltd. (GSJCL), our regulated Japanese broker-dealer, is subject to capital requirements imposed by Japan s Financial Services Agency. GSJCL is also regulated by the Tokyo Stock Exchange, the Osaka Exchange, the Tokyo Financial Exchange, the Japan Securities Dealers Association, the Tokyo Commodity Exchange, Securities and Exchange Surveillance Commission, Bank of Japan, the Ministry of Finance and the Ministry of Economy, Trade and Industry, among others.

Also, the Securities and Futures Commission in Hong Kong, the Monetary Authority of Singapore, the China Securities Regulatory Commission, the Korean Financial Supervisory Service, the Reserve Bank of India, the Securities and Exchange Board of India, the Australian Securities and Investments Commission and the Australian Securities Exchange, among others, regulate various of our subsidiaries and also have capital standards and other requirements comparable to the rules of the SEC. Various of our other subsidiaries are regulated by the banking and regulatory authorities in jurisdictions in which we operate, including, among others, Brazil and Dubai.

Our exchange-based market-making activities are subject to extensive regulation by a number of securities exchanges. As a market maker on exchanges, we are required to maintain orderly markets in the securities to which we are assigned.

The Dodd-Frank Act will result in additional regulation by the SEC, the CFTC and other regulators of our broker-dealer and regulated subsidiaries in a number of respects. The law calls for the imposition of expanded standards of care by market participants in dealing with clients and customers, including by providing the SEC with authority to adopt rules establishing fiduciary duties for broker-dealers and directing the SEC to examine and improve sales practices and disclosure by broker-dealers and investment advisers.

In addition, in June 2017, the U.S. Department of Labor s conflict of interest rule under the Employee Retirement Income Security Act of 1974 (ERISA) went into effect. The rule broadens the circumstances under which a firm and/or a financial advisor is considered a fiduciary when providing certain recommendations to retirement clients and requires that such recommendations be in the best interest of clients. As a result, we have made changes to some of our services and offerings for retirement clients.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Our U.S. broker-dealer and other U.S. subsidiaries are also subject to rules adopted by U.S. federal agencies pursuant to the Dodd-Frank Act that require any person who organizes or initiates certain asset-backed securities transactions to retain a portion (generally, at least five percent) of any credit risk that the person conveys to a third party. For certain securitization transactions, retention by third-party purchasers may satisfy this requirement. Securitizations would also be affected by rules proposed by the SEC to implement the Dodd-Frank Act s prohibition against securitization participants engaging in any transaction that would involve or result in any material conflict of interest with an investor in a securitization transaction. The proposed rules would exempt bona fide market-making activities and risk-mitigating hedging activities in connection with securitization activities from the general prohibition.

The SEC, FINRA and regulators in various non-U.S. jurisdictions have imposed both conduct-based and disclosure-based requirements with respect to research reports and research analysts and may impose additional regulations.

Swaps, Derivatives and Commodities Regulation

The commodity futures, commodity options and swaps industry in the U.S. is subject to regulation under the U.S. Commodity Exchange Act (CEA). The CFTC is the U.S. federal agency charged with the administration of the CEA. In addition, the SEC is the U.S. federal agency charged with the regulation of security-based swaps. The rules and regulations of various self-regulatory organizations, such as the Chicago Mercantile Exchange, other futures exchanges and the National Futures Association, also govern commodity futures, commodity options and swaps activities.

The terms swaps and security-based swaps include a wide variety of derivative instruments in addition to those conventionally referred to as swaps (including certain forward contracts and options), and relate to a wide variety of underlying assets or obligations, including currencies, commodities, interest or other monetary rates, yields, indices, securities, credit events, loans and other financial obligations.

CFTC rules require registration of swap dealers, mandatory clearing and execution of interest rate and credit default swaps and real-time public reporting and adherence to business conduct standards for all in-scope swaps. In December 2016, the CFTC proposed revised capital regulations for swap dealers that are not subject to the capital rules of a prudential regulator, such as the FRB, as well as a liquidity requirement for those swap dealers.

SEC rules govern the registration and regulation of security-based swap dealers but compliance with such rules is not currently required. The SEC has proposed rules that would govern the design of new trading venues for security-based swaps and establish the process for determining which products must be traded on these venues.

GS&Co. is registered with the CFTC as a futures commission merchant, and several of our subsidiaries, including GS&Co., are registered with the CFTC and act as commodity pool operators and commodity trading advisors. GS&Co. and other subsidiaries, including GS Bank USA, GSI and J. Aron & Company (J. Aron), are registered with the CFTC as swap dealers. In addition, Goldman Sachs Financial Markets, L.P. is registered with the SEC as an OTC derivatives dealer.

Our affiliates registered as swap dealers are subject to the margin rules issued by the CFTC (in the case of our non-bank swap dealers) and the FRB (in the case of GS Bank USA). The rules for variation margin have become effective, and those for initial margin will phase in through September 2020 depending on certain activity levels of the swap dealer and the relevant counterparty. In contrast to the FRB margin rules, inter-affiliate transactions under the CFTC margin rules are generally exempt from initial margin requirements.

The CFTC has proposed position limit rules that will limit the size of positions that can be held by any entity, or any group of affiliates or other parties trading under common control, subject to certain exemptions, such as for bona fide hedging positions. These proposed rules would apply to positions in swaps as well as futures and options on futures.

Similar types of swap regulation have been proposed or adopted in jurisdictions outside the U.S., including in the E.U. and Japan. For example, the E.U. has established regulatory requirements relating to portfolio reconciliation and reporting, clearing certain OTC derivatives and margining for uncleared derivatives activities under the European Market Infrastructure Regulation.

The CFTC has adopted rules relating to cross-border regulation of swaps, and has proposed cross-border business conduct and registration rules. The CFTC has entered into agreements with certain non-U.S. regulators, including in the E.U., regarding the cross-border regulation of derivatives and the mutual recognition of cross-border clearing houses, and has approved substituted compliance with certain non-U.S. regulations, including E.U. regulations, related to certain business conduct requirements and margin rules. The U.S. prudential regulators have not yet made a determination with respect to substituted compliance for transactions subject to non-U.S. margin rules. The full application of new derivatives rules across different regulatory jurisdictions has not yet occurred and the full impact will not be known until the rules are implemented and market practices and structures develop under such rules.

J. Aron is authorized by the U.S. Federal Energy Regulatory Commission (FERC) to sell wholesale physical power at market-based rates. As a FERC-authorized power marketer, J. Aron is subject to regulation under the U.S. Federal Power Act and FERC regulations and to the oversight of FERC. As a result of our investing activities, Group Inc. is also an exempt holding company under the U.S. Public Utility Holding Company Act of 2005 and applicable FERC rules.

In addition, as a result of our power-related and commodities activities, we are subject to energy, environmental and other governmental laws and regulations, as described in Risk Factors Our commodities activities, particularly our physical commodities activities, subject us to extensive regulation and involve certain potential risks, including environmental, reputational and other risks that may expose us to significant liabilities and costs in Part I, Item 1A of this Form 10-K.

Investment Management Regulation

Our investment management business is subject to significant regulation in numerous jurisdictions around the world relating to, among other things, the safeguarding of client assets, offerings of funds, marketing activities, transactions among affiliates and our management of client funds.

The SEC has adopted rules currently anticipated to become effective in December 2018 relating to liquidity risk management that will require registered open-end funds to classify and review the liquidity of their portfolio assets. In addition, the rules require funds to make disclosures relating to their liquidity risk management program and report to the SEC instances when a fund s percentage of illiquid investments exceeds certain thresholds or when certain funds experience shortfalls in their highly liquid investments.

Certain of our European subsidiaries, including Goldman Sachs Asset Management International, are subject to the Alternative Investment Fund Managers Directive and related regulations, which govern the approval, organizational, marketing and reporting requirements of E.U.-based alternative investment managers and the ability of alternative investment fund managers located outside the E.U. to access the E.U. market.

The E.U. legislative institutions have reached provisional agreement on an E.U. regulation relating to money market funds, including provisions prescribing minimum levels of daily and weekly liquidity, clear labeling of money market funds and internal credit risk assessments. The regulation was published on June 30, 2017 and will be effective on July 21, 2018.

Compensation Practices

Our compensation practices are subject to oversight by the FRB and, with respect to some of our subsidiaries and employees, by other regulatory bodies worldwide. The scope and content of compensation regulation in the financial industry are continuing to develop, and we expect that these regulations and resulting market practices will evolve over a number of years.

The U.S. federal bank regulatory agencies have provided guidance designed to ensure that incentive compensation arrangements at banking organizations take into account risk and are consistent with safe and sound practices. The guidance sets forth the following three key principles with respect to incentive compensation arrangements: (i) the arrangements should provide employees with incentives that appropriately balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risk; (ii) the arrangements should be compatible with effective controls and risk management; and (iii) the arrangements should be supported by strong corporate governance. The guidance provides that supervisory findings with respect to incentive compensation will be incorporated, as appropriate, into the organization s supervisory ratings, which can affect its ability to make acquisitions or perform other actions. The guidance also provides that enforcement actions may be taken against a banking organization if its incentive compensation arrangements or related risk management, control or governance processes pose a risk to the organization s safety and soundness.

The FSB has released standards for local regulators to implement certain compensation principles for banks and other financial companies designed to encourage sound compensation practices. In the E.U., the CRR and CRD IV include compensation provisions designed to implement the FSB s compensation standards. These rules have been implemented by E.U. member states and, among other things, limit the ratio of variable to fixed compensation of certain employees, including those identified as having a material impact on the risk profile of E.U.-regulated entities, including GSI.

The E.U. has also introduced rules regulating compensation for certain persons providing services to certain investment funds. These requirements are in addition to the guidance issued by U.S. financial regulators described above and the Dodd-Frank Act provision described below.

The Dodd-Frank Act requires the U.S. financial regulators, including the FRB and SEC, to adopt rules on incentive-based payment arrangements at specified regulated entities having at least $1 billion in total assets (including Group Inc. and some of its depository institution, broker-dealer and investment adviser subsidiaries). The U.S. financial regulators proposed revised rules in 2016, which have not been finalized.

In October 2016, the NYDFS issued guidance emphasizing that its regulated banking institutions, including GS Bank USA, must ensure that any incentive compensation arrangements tied to employee performance indicators are subject to effective risk management, oversight and control.

Anti-Money Laundering and Anti-Bribery Rules and Regulations

The U.S. Bank Secrecy Act (BSA), as amended by the USA PATRIOT Act of 2001 (PATRIOT Act), contains anti-money laundering and financial transparency laws and mandated the implementation of various regulations applicable to all financial institutions, including standards for verifying client identification at account opening, and obligations to monitor client transactions and report suspicious activities. Through these and other provisions, the BSA and the PATRIOT Act seek to promote the identification of parties that may be involved in terrorism, money laundering or other suspicious activities. Anti-money laundering laws outside the U.S. contain some similar provisions.

In addition, we are subject to laws and regulations worldwide, including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act, relating to corrupt and illegal payments to, and hiring practices with regard to, government officials and others. The scope of the types of payments or other benefits covered by these laws is very broad and regulators are frequently using enforcement proceedings to define the scope of these laws. The obligation of financial institutions, including Goldman Sachs, to identify their clients, to monitor for and report suspicious transactions, to monitor direct and indirect payments to government officials, to respond to requests for information by regulatory authorities and law enforcement agencies, and to share information with other financial institutions, has required the implementation and maintenance of internal practices, procedures and controls.

Privacy and Cyber Security Regulation

Certain of our businesses are subject to laws and regulations enacted by U.S. federal and state governments, the E.U. or other non-U.S. jurisdictions and/or enacted by various regulatory organizations or exchanges relating to the privacy of the information of clients, employees or others, including the GLB Act, the E.U. Data Protection Directive, the Japanese Personal Information Protection Act, the Hong Kong Personal Data (Privacy) Ordinance, the Australian Privacy Act and the Brazilian Bank Secrecy Law. Effective May 25, 2018, the E.U. Data Protection Directive will be replaced by a more extensive General Data Protection Regulation (GDPR). Compared to the current directive, the GDPR will, among other things, increase compliance obligations, have a significant impact on our businesses collection, processing and retention of personal data and reporting of data breaches, and provide for significantly increased penalties for non-compliance.

The NYDFS also requires financial institutions regulated by the NYDFS, including GS Bank USA, to, among other things, (i) establish and maintain a cyber security program designed to ensure the confidentiality, integrity and availability of their information systems; (ii) implement and maintain a written cyber security policy setting forth policies and procedures for the protection of their information systems and nonpublic information; and (iii) designate a Chief Information Security Officer. In addition, in October 2016, the U.S. federal bank regulatory agencies issued an advance notice of proposed rulemaking on potential enhanced cyber risk management standards for large financial institutions.

Other Regulation

U.S. and non-U.S. government agencies, regulatory bodies and self-regulatory organizations, as well as state securities commissions and other state regulators in the U.S., are empowered to conduct administrative proceedings that can result in censure, fine, the issuance of cease-and-desist orders, or the suspension or expulsion of a regulated entity or its directors, officers or employees. In particular, state attorneys general have become much more active in seeking fines and penalties in enforcement led by the federal regulators. In addition, a number of our other activities require us to obtain licenses, adhere to applicable regulations and be subject to the oversight of various regulators in the jurisdictions in which we conduct these activities.

MiFID II, which became effective on January 3, 2018, includes extensive market structure reforms, such as the establishment of new trading venue categories for the purposes of discharging the obligation to trade OTC derivatives on a trading platform and enhanced pre- and post-trade transparency covering a wider range of financial instruments. In equities, MiFID II introduced volume caps on non-transparent liquidity trading for trading venues, limited the use of broker-dealer crossing networks and created a new regime for systematic internalizers, which are investment firms that execute client transactions outside a trading venue.

Additional controls were introduced for algorithmic trading, high frequency trading and direct electronic access. Commodities trading firms are required to calculate their positions and adhere to specific limits. Other reforms introduced enhanced transaction reporting, the publication of best execution data by investment firms and trading venues, transparency on costs and charges of service to investors, changes to the way investment managers can pay for the receipt of investment research and mandatory unbundling for broker-dealers between execution and other major services.

On October 26, 2017, the SEC staff issued guidance permitting U.S. broker-dealers to comply with MiFID II without being subject to conflicting U.S. regulation or other adverse U.S. regulatory effects.

The E.U. and national financial legislators and regulators in the E.U. have proposed or adopted numerous further market reforms that may impact our businesses, including heightened corporate governance standards for financial institutions, rules on key information documents for packaged retail and insurance-based investment products and rules on indices that are used as benchmarks for financial instruments or funds. In addition, the European Commission, ESMA and the European Banking Authority have announced or are formulating regulatory standards and other measures which will impact our European operations. Certain of our European subsidiaries are also regulated by the securities, derivatives and commodities exchanges of which they are members.

As described above, many of our subsidiaries are subject to regulatory capital requirements in jurisdictions throughout the world. Subsidiaries not subject to separate regulation may hold capital to satisfy local tax guidelines, rating agency requirements or internal policies, including policies concerning the minimum amount of capital a subsidiary should hold based upon its underlying risk.

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Available Information

Our internet address is www.gs.com and the investor relations section of our website is located at www.gs.com/shareholders. We make available free of charge through the investor relations section of our website, annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the U.S. Securities Exchange Act of 1934 (Exchange Act), as well as proxy statements, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

Also posted on our website, and available in print upon request of any shareholder to our Investor Relations Department, are our certificate of incorporation and by-laws, charters for our Audit Committee, Risk Committee, Compensation Committee, Corporate Governance and Nominating Committee, and Public Responsibilities Committee, our Policy Regarding Director Independence Determinations, our Policy on Reporting of Concerns Regarding Accounting and Other Matters, our Corporate Governance Guidelines and our Code of Business Conduct and Ethics governing our directors, officers and employees. Within the time period required by the SEC, we will post on our website any amendment to the Code of Business Conduct and Ethics and any waiver applicable to any executive officer, director or senior financial officer.

In addition, our website includes information concerning:

- Purchases and sales of our equity securities by our executive officers and directors;
- Disclosure relating to certain non-GAAP financial measures (as defined in the SEC s Regulation G) that we may make public orally, telephonically, by webcast, by broadcast or by other means from time to time;
- Dodd-Frank Act stress test results;
- The public portion of our resolution plan submission;
- Our risk management practices and regulatory capital ratios, as required under the disclosure-related provisions of the Capital Framework, which are based on the third pillar of Basel III; and
- Our quarterly average LCR.

Our Investor Relations Department can be contacted at The Goldman Sachs Group, Inc., 200 West Street, 29th Floor, New York, New York 10282, Attn: Investor Relations, telephone: 212-902-0300, e-mail:

gs-investor-relations@gs.com.

From time to time, we use our website, our Twitter account (twitter.com/GoldmanSachs) and other social media channels as additional means of disclosing public information to investors, the media and others interested in Goldman Sachs. It is possible that certain information we post on our website and on social media could be deemed to be material information, and we encourage investors, the media and others interested in Goldman Sachs to review the business and financial information we post on our website and on the social media channels identified above. The information on our website and our social media channels is not incorporated by reference into this Form 10-K.

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Cautionary Statement Pursuant to the U.S. Private Securities Litigation Reform Act of 1995

We have included or incorporated by reference in this Form 10-K, and from time to time our management may make, statements that may constitute forward-looking statements within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are not historical facts, but instead represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside our control.

These statements include statements other than historical information or statements of current conditions and may relate to our future plans and objectives and results, among other things, and may also include statements about the effect of changes to the capital, leverage, liquidity, long-term debt and total loss-absorbing capacity rules applicable to banks and BHCs, the impact of the Dodd-Frank Act on our businesses and operations, and various legal proceedings, governmental investigations or mortgage-related contingencies as set forth in Notes 27 and 18, respectively, to the consolidated financial statements in Part II, Item 8 of this Form 10-K, as well as statements about the results of our Dodd-Frank Act and firm stress tests, statements about the objectives and effectiveness of our business continuity plan, information security program, risk management and liquidity policies, statements about our resolution plan and resolution strategy and their implications for our debtholders and other stakeholders, statements about the design and effectiveness of our resolution capital and liquidity models and our triggers and alerts framework, statements about trends in or growth opportunities for our businesses, statements about our future status, activities or reporting under U.S. or non-U.S. banking and financial regulation, statements about our investment banking transaction backlog, statements about the estimated effects of the Tax Cuts and Jobs Act (Tax Legislation), statements about our average LCR and statements about our strategic growth initiatives.

By identifying these statements for you in this manner, we are alerting you to the possibility that our actual results and financial condition may differ, possibly materially, from the anticipated results and financial condition indicated in these forward-looking statements. Important factors that could cause our actual results and financial condition to differ from those indicated in these forward-looking statements include, among others, those described below and in Risk Factors in Part I, Item 1A of this Form 10-K.

Statements about our investment banking transaction backlog are subject to the risk that the terms of these transactions may be modified or that they may not be completed at all; therefore, the net revenues, if any, that we actually earn from these transactions may differ, possibly materially, from those currently expected. Important factors that could result in a modification of the terms of a transaction or a transaction not being completed include, in the case of underwriting transactions, a decline or continued weakness in general economic conditions, outbreak of hostilities, volatility in the securities markets generally or an adverse development with respect to the issuer of the securities and, in the case of financial advisory transactions, a decline in the securities markets, an inability to obtain adequate financing, an adverse development with respect to a party to the transaction or a failure to obtain a required regulatory approval. For information about other important factors that could adversely affect our investment banking transactions, see Risk Factors in Part I, Item 1A of this Form 10-K.

Statements about the estimated effects of Tax Legislation are based on our current calculations, as well as our current interpretations, assumptions and expectations relating to Tax Legislation, which are subject to further guidance and change. The impact of Tax Legislation may differ from our estimates, possibly materially, due to, among other things, (i) refinement of our calculations based on updated information, (ii) changes in interpretations and assumptions, (iii) guidance that may be issued and (iv) actions we may take as a result of Tax Legislation.

Statements about our strategic growth initiatives are subject to the risk that our businesses may be unable to generate incremental revenues or pre-tax earnings or take advantage of growth opportunities. It is possible that our actual results, including the incremental revenues and pre-tax earnings, if any, from such initiatives, and financial condition, may differ, possibly materially, from the anticipated results, financial condition and incremental revenues and pre-tax earnings indicated in these forward-looking statements.

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We have provided in this filing information regarding our capital, liquidity and leverage ratios, including our NSFR. The statements with respect to these ratios are forward-looking statements, based on our current interpretation, expectations and understandings of the relevant regulatory rules, guidance and proposals, and reflect significant assumptions concerning the treatment of various assets and liabilities and the manner in which the ratios are calculated. As a result, the methods used to calculate these ratios may differ, possibly materially, from those used in calculating our and, where applicable, GS Bank USA s capital, liquidity and leverage ratios for any future disclosures. The ultimate methods of calculating the ratios will depend on, among other things, implementation guidance or further rulemaking from the U.S. federal bank regulatory agencies and the development of market practices and standards.

Item 1A. Risk Factors

We face a variety of risks that are substantial and inherent in our businesses, including market, liquidity, credit, operational, legal, regulatory and reputational risks. The following are some of the more important factors that could affect our businesses.

Our businesses have been and may continue to be adversely affected by conditions in the global financial markets and economic conditions generally.

Our businesses, by their nature, do not produce predictable earnings, and all of our businesses are materially affected by conditions in the global financial markets and economic conditions generally, both directly and through their impact on client activity levels. These conditions can change suddenly and negatively.

Our financial performance is highly dependent on the environment in which our businesses operate. A favorable business environment is generally characterized by, among other factors, high global gross domestic product growth, regulatory and market conditions which result in transparent, liquid and efficient capital markets, low inflation, high business and investor confidence, stable geopolitical conditions, clear regulations and strong business earnings.

Unfavorable or uncertain economic and market conditions can be caused by: concerns about sovereign defaults; uncertainty concerning fiscal or monetary policy, government debt ceilings or funding; the extent of and uncertainty about tax and other regulatory changes; declines in economic growth, business activity or investor or business confidence; limitations on the availability or increases in the cost of credit and capital; illiquid markets; increases in inflation, interest rates, exchange rate or basic commodity price volatility or default rates; outbreaks of domestic or international tensions or hostilities, terrorism, nuclear proliferation, cybersecurity threats or attacks and other forms of disruption to or curtailment of global communication, energy transmission or transportation networks or other geopolitical instability or uncertainty, such as Brexit; corporate, political or other scandals that reduce investor confidence in capital markets; extreme weather events or other natural disasters or pandemics; or a combination of these or other factors.

The financial services industry and the securities markets have been materially and adversely affected in the past by significant declines in the values of nearly all asset classes and by a serious lack of liquidity. In addition, concerns about European sovereign debt risk and its impact on the European banking system, about the impact of Brexit, and about changes in interest rates and other market conditions or actual changes in interest rates and other market conditions, including market conditions in China, have resulted, at times, in significant volatility while negatively impacting the levels of client activity.

General uncertainty about economic, political and market activities, and the scope, timing and impact of regulatory reform, as well as weak consumer, investor and CEO confidence resulting in large part from such uncertainty, continues to negatively impact client activity, which adversely affects many of our businesses. Periods of low volatility and periods of high volatility combined with a lack of liquidity, have at times had an unfavorable impact on our market-making businesses.

Our revenues and profitability and those of our competitors have been and will continue to be impacted by requirements relating to capital, additional loss-absorbing capacity, leverage, minimum liquidity and long-term funding levels, requirements related to resolution and recovery planning, derivatives clearing and margin rules and levels of regulatory oversight, as well as limitations on which and, if permitted, how certain business activities may be carried out by financial institutions.

Although interest rates are still near historically low levels, financial institution returns in many countries have also been negatively impacted by increased funding costs due in part to the withdrawal of perceived government support of such institutions in the event of future financial crises. In addition, liquidity in the financial markets has also been negatively impacted as market participants and market practices and structures continue to adjust to new regulations.

The degree to which these and other changes resulting from the financial crisis will have a long-term impact on the profitability of financial institutions will depend on the implementation of recently adopted and new regulations, the manner in which markets, market participants and financial institutions adapt to these regulations, and the prevailing economic and financial market conditions. However, there is a significant risk that such changes will, at least in the near term, continue to negatively impact the absolute level of revenues, profitability and return on equity at our firm and at other financial institutions.

Our businesses and those of our clients are subject to extensive and pervasive regulation around the world.

As a participant in the financial services industry and a systemically important financial institution, we are subject to extensive regulation in jurisdictions around the world. We face the risk of significant intervention by law enforcement, regulatory and taxing authorities, as well as private litigation, in all jurisdictions in which we conduct our businesses. In many cases, our activities may be subject to overlapping and divergent regulation in different jurisdictions. Among other things, as a result of law enforcement authorities, regulators or private parties challenging our compliance with existing laws and regulations, we or our employees could be fined or criminally sanctioned, prohibited from engaging in some of our business activities, subject to limitations or conditions on our business activities, including higher capital requirements, or subjected to new or substantially higher taxes or other governmental charges in connection with the conduct of our businesses or with respect to our employees. Such limitations or conditions may limit our business activities and negatively impact our profitability.

In addition to the impact on the scope and profitability of our business activities, day-to-day compliance with existing laws and regulations, in particular those adopted since 2008, has involved and will, except to the extent that some of such regulations are eventually modified or otherwise repealed, continue to involve significant amounts of time, including that of our senior leaders and that of a large number of dedicated compliance and other reporting and operational personnel, all of which may negatively impact our profitability.

If there are new laws or regulations or changes in the enforcement of existing laws or regulations applicable to our businesses or those of our clients, including capital, liquidity, leverage, long-term debt, total loss-absorbing capacity and margin requirements, restrictions on leveraged lending or other business practices, reporting requirements, requirements relating to recovery and resolution planning, tax burdens and compensation restrictions, that are imposed on a limited subset of financial institutions (either based on size, activities, geography or other criteria), compliance with these new laws or regulations, or changes in the enforcement of existing laws or regulations, could adversely affect our ability to compete effectively with other institutions that are not affected in the same way. In addition, regulation imposed on financial institutions or market participants generally, such as taxes on financial transactions, could adversely impact levels of market activity more broadly, and thus impact our businesses.

These developments could impact our profitability in the affected jurisdictions, or even make it uneconomic for us to continue to conduct all or certain of our businesses in such jurisdictions, or could cause us to incur significant costs associated with changing our business practices, restructuring our businesses, moving all or certain of our businesses and our employees to other locations or complying with applicable capital requirements, including liquidating assets or raising capital in a manner that adversely increases our funding costs or otherwise adversely affects our shareholders and creditors.

U.S. and non-U.S. regulatory developments, in particular the Dodd-Frank Act and Basel III, have significantly altered the regulatory framework within which we operate and have adversely affected and may in the future affect our profitability.

Among the aspects of the Dodd-Frank Act that have affected or may in the future affect our businesses are: increased capital, liquidity and reporting requirements; limitations on activities in which we may engage; increased regulation of and restrictions on OTC derivatives markets and transactions; limitations on incentive compensation; limitations on affiliate transactions; requirements to reorganize or limit activities in connection with recovery and resolution planning; increased deposit insurance assessments; and increased standards of care for broker-dealers and investment advisers in dealing with clients. The implementation of higher capital requirements, the LCR, the NSFR, requirements relating to long-term debt and total loss-absorbing capacity and the prohibition on proprietary trading and the sponsorship of, or investment in, covered funds by the Volcker Rule may continue to adversely affect our profitability and competitive position, particularly if these requirements do not apply equally to our competitors or are not implemented uniformly across jurisdictions.

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As described in Business Regulation Banking Supervision and Regulation in Part I, Item 1 of this Form 10-K, Group Inc. s proposed capital actions and capital plan are reviewed by the FRB as part of the CCAR process. If the FRB objects to our proposed capital actions in our capital plan, Group Inc. could be prohibited from taking some or all of the proposed capital actions, including increasing or paying dividends on common or preferred stock or repurchasing common stock or other capital securities. Our inability to carry out our proposed capital actions could, among other things, prevent us from returning capital to our shareholders and impact our return on equity.

We are also subject to laws and regulations relating to the privacy of the information of clients, employees or others, and any failure to comply with these laws and regulations could expose us to liability and/or reputational damage. As new privacy-related laws and regulations, such as the GDPR, are implemented, the time and resources needed for us to comply with such laws and regulations, as well as our potential liability for non-compliance and reporting obligations in the case of data breaches, may significantly increase.

In addition, our businesses are increasingly subject to laws and regulations relating to surveillance, encryption and data on-shoring in the jurisdictions in which we operate. Compliance with these laws and regulations may require us to change our policies, procedures and technology for information security, which could, among other things, make us more vulnerable to cyber attacks and misappropriation, corruption or loss of information or technology.

We have recently entered new retail-oriented deposit-taking and lending businesses, and we currently expect to expand the product and geographic scope of our offerings. Entering into such new businesses, as with any new business, subjects us to numerous additional regulations in the jurisdictions in which these businesses operate. Not only are these regulations extensive, but they involve types of regulations and supervision, as well as regulatory compliance risks, that we have not previously encountered. The level of regulatory scrutiny and the scope of regulations affecting financial interactions with retail clients is often much greater than that associated with doing business with institutions and high-net-worth clients. Complying with such new regulations is time-consuming, costly and presents new and increased risks.

Increasingly, regulators and courts have sought to hold financial institutions liable for the misconduct of their clients where such regulators and courts have determined that the financial institution should have detected that the client was engaged in wrongdoing, even though the financial institution had no direct knowledge of the activities engaged in by its client. Regulators and courts have also increasingly found liability as a control person for activities of entities in which financial institutions or funds controlled by financial institutions have an investment, but which they do not actively manage. In addition, regulators and courts continue to seek to establish fiduciary obligations to counterparties to which no such duty had been assumed to exist. To the extent that such efforts are successful, the cost of, and liabilities associated with, engaging in brokerage, clearing, market-making, prime brokerage, investing and other similar activities could increase significantly. To the extent that we have fiduciary obligations in connection with acting as a financial adviser, investment adviser or in other roles for individual, institutional, sovereign or investment fund clients, any breach, or even an alleged breach, of such obligations could have materially negative legal, regulatory and reputational consequences.

For information about the extensive regulation to which our businesses are subject, see Business Regulation in Part I, Item 1 of this Form 10-K.

Our businesses have been and may be adversely affected by declining asset values. This is particularly true for those businesses in which we have net long positions, receive fees based on the value of assets managed, or receive or post collateral.

Many of our businesses have net long positions in debt securities, loans, derivatives, mortgages, equities (including private equity and real estate) and most other asset classes. These include positions we take when we act as a principal to facilitate our clients activities, including our exchange-based market-making activities, or commit large amounts of capital to maintain positions in interest rate and credit products, as well as through our currencies, commodities, equities and mortgage-related activities. In addition, we invest in similar asset classes. Substantially all of our investing and market-making positions and a portion of our loans are marked-to-market on a daily basis and declines in asset values directly and immediately impact our earnings, unless we have effectively hedged our exposures to such declines.

In certain circumstances (particularly in the case of credit products, including leveraged loans, and private equities or other securities that are not freely tradable or lack established and liquid trading markets), it may not be possible or economic to hedge such exposures and to the extent that we do so the hedge may be ineffective or may greatly reduce our ability to profit from increases in the values of the assets. Sudden declines and significant volatility in the prices of assets may substantially curtail or eliminate the trading markets for certain assets, which may make it difficult to sell, hedge or value such assets. The inability to sell or effectively hedge assets reduces our ability to limit losses in such positions and the difficulty in valuing assets may negatively affect our capital, liquidity or leverage ratios, increase our funding costs and generally require us to maintain additional capital.

In our exchange-based market-making activities, we are obligated by stock exchange rules to maintain an orderly market, including by purchasing securities in a declining market. In markets where asset values are declining and in volatile markets, this results in losses and an increased need for liquidity.

We receive asset-based management fees based on the value of our clients portfolios or investment in funds managed by us and, in some cases, we also receive incentive fees based on increases in the value of such investments. Declines in asset values reduce the value of our clients portfolios or fund assets, which in turn reduce the fees we earn for managing such assets.

We post collateral to support our obligations and receive collateral to support the obligations of our clients and counterparties in connection with our client execution businesses. When the value of the assets posted as collateral or the credit ratings of the party posting collateral decline, the party posting the collateral may need to provide additional collateral or, if possible, reduce its trading position. An example of such a situation is a margin call in connection with a brokerage account. Therefore, declines in the value of asset classes used as collateral mean that either the cost of funding positions is increased or the size of positions is decreased.

If we are the party providing collateral, this can increase our costs and reduce our profitability and if we are the party receiving collateral, this can also reduce our profitability by reducing the level of business done with our clients and counterparties. In addition, volatile or less liquid markets increase the difficulty of valuing assets, which can lead to costly and time-consuming disputes over asset values and the level of required collateral, as well as increased credit risk to the recipient of the collateral due to delays in receiving adequate collateral. In cases where we foreclose on collateral, sudden declines in the value or liquidity of such collateral may, despite credit monitoring, over-collateralization, the ability to call for additional collateral or the ability to force repayment of the underlying obligation, result in significant losses to us, especially where there is a single type of collateral supporting the obligation. In addition, we have been, and may in the future be, subject to claims that the foreclosure was not permitted under the legal documents, was conducted in an improper manner or caused a client or counterparty to go out of business.

Our businesses have been and may be adversely affected by disruptions in the credit markets, including reduced access to credit and higher costs of obtaining credit.

Widening credit spreads, as well as significant declines in the availability of credit, have in the past adversely affected our ability to borrow on a secured and unsecured basis and may do so in the future. We fund ourselves on an unsecured basis by issuing long-term debt, by accepting deposits at our bank subsidiaries, by issuing hybrid financial instruments or by obtaining loans or lines of credit from commercial or other banking entities. We seek to finance many of our assets on a secured basis. Any disruptions in the credit markets may make it harder and more expensive to obtain funding for our businesses. If our available funding is limited or we are forced to fund our operations at a higher cost, these conditions may require us to curtail our business activities and increase our cost of funding, both of which could reduce our profitability, particularly in our businesses that involve investing, lending and market making.

Our clients engaging in mergers, acquisitions and other types of strategic transactions often rely on access to the secured and unsecured credit markets to finance their transactions. A lack of available credit or an increased cost of credit can adversely affect the size, volume and timing of our clients merger and acquisition transactions, particularly large transactions, and adversely affect our financial advisory and underwriting businesses.

Our credit businesses have been and may in the future be negatively affected by a lack of liquidity in credit markets. A lack of liquidity reduces price transparency, increases price volatility and decreases transaction volumes and size, all of which can increase transaction risk or decrease the profitability of such businesses.

Our market-making activities have been and may be affected by changes in the levels of market volatility.

Certain of our market-making activities depend on market volatility to provide trading and arbitrage opportunities to our clients, and decreases in volatility have reduced and may continue to reduce these opportunities and the level of client activity associated with them and adversely affect the results of these activities. On the other hand, increased volatility, while it can increase trading volumes and spreads, also increases risk as measured by Value-at-Risk (VaR) and may expose us to increased risks in connection with our market-making activities or cause us to reduce our market-making inventory in order to avoid increasing our VaR. Limiting the size of our market-making positions can adversely affect our profitability. In periods when volatility is increasing, but asset values are declining significantly, it may not be possible to sell assets at all or it may only be possible to do so at steep discounts. In such circumstances we may be forced to either take on additional risk or to realize losses in order to decrease our VaR. In addition, increases in volatility increase the level of our RWAs, which increases our capital requirements.

Our investment banking, client execution and investment management businesses have been adversely affected and may in the future be adversely affected by market uncertainty or lack of confidence among investors and CEOs due to general declines in economic activity and other unfavorable economic, geopolitical or market conditions.

Our investment banking business has been, and may in the future be, adversely affected by market conditions. Poor economic conditions and other adverse geopolitical conditions can adversely affect and have in the past adversely affected investor and CEO confidence, resulting in significant industry-wide declines in the size and number of underwritings and of financial advisory transactions, which could have an adverse effect on our revenues and our profit margins. In particular, because a significant portion of our investment banking revenues is derived from our participation in large transactions, a decline in the number of large transactions would adversely affect our investment banking business.

In certain circumstances, market uncertainty or general declines in market or economic activity may affect our client execution businesses by decreasing levels of overall activity or by decreasing volatility, but at other times market uncertainty and even declining economic activity may result in higher trading volumes or higher spreads or both.

Market uncertainty, volatility and adverse economic conditions, as well as declines in asset values, may cause our clients to transfer their assets out of our funds or other products or their brokerage accounts and result in reduced net revenues, principally in our investment management business. To the extent that clients do not withdraw their funds, they may invest them in products that generate less fee income.

Our investment management business may be affected by the poor investment performance of our investment products or a client preference for products other than those which we offer or for products that generate lower fees.

Poor investment returns in our investment management business, due to either general market conditions or underperformance (relative to our competitors or to benchmarks) by funds or accounts that we manage or investment products that we design or sell, affects our ability to retain existing assets and to attract new clients or additional assets from existing clients. This could affect the management and incentive fees that we earn on assets under supervision or the commissions and net spreads that we earn for selling other investment products, such as structured notes or derivatives. To the extent that our clients choose to invest in products that we do not currently offer, we will suffer outflows and a loss of management fees. Further, if, due to changes in investor sentiment or the relative performance of certain asset classes or otherwise, clients invest in products that generate lower fees, our investment management business could be adversely affected.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

We may incur losses as a result of ineffective risk management processes and strategies.

We seek to monitor and control our risk exposure through a risk and control framework encompassing a variety of separate but complementary financial, credit, operational, compliance and legal reporting systems, internal controls, management review processes and other mechanisms. Our risk management process seeks to balance our ability to profit from market-making, investing or lending positions, and underwriting activities, with our exposure to potential losses. While we employ a broad and diversified set of risk monitoring and risk mitigation techniques, those techniques and the judgments that accompany their application cannot anticipate every economic and financial outcome or the specifics and timing of such outcomes. Thus, we may, in the course of our activities, incur losses. Market conditions in recent years have involved unprecedented dislocations and highlight the limitations inherent in using historical data to manage risk.

The models that we use to assess and control our risk exposures reflect assumptions about the degrees of correlation or lack thereof among prices of various asset classes or other market indicators. In times of market stress or other unforeseen circumstances, such as those that occurred during 2008 and early 2009, and to some extent since 2011, previously uncorrelated indicators may become correlated, or conversely previously correlated indicators may move in different directions. These types of market movements have at times limited the effectiveness of our hedging strategies and have caused us to incur significant losses, and they may do so in the future. These changes in correlation can be exacerbated where other market participants are using risk or trading models with assumptions or algorithms that are similar to ours. In these and other cases, it may be difficult to reduce our risk positions due to the activity of other market participants or widespread market dislocations, including circumstances where asset values are declining significantly or no market exists for certain assets.

In addition, the use of models in connection with risk management and numerous other critical activities presents risks that such models may be ineffective, either because of poor design or ineffective testing, improper or flawed inputs, as well as unpermitted access to such models resulting in unapproved or malicious changes to the model or its inputs.

To the extent that we have positions through our market-making or origination activities or we make investments directly through our investing activities, including private equity, that do not have an established liquid trading market or are otherwise subject to restrictions on sale or hedging, we may not be able to reduce our positions and therefore reduce our risk associated with such positions. In addition, to the extent permitted by applicable law and regulation, we invest our own capital in private equity, credit, real estate and hedge funds that we manage and limitations on our ability to withdraw some or all of our investments in these funds, whether for legal, reputational or other reasons, may make it more difficult for us to control the risk exposures relating to these investments.

Prudent risk management, as well as regulatory restrictions, may cause us to limit our exposure to counterparties, geographic areas or markets, which may limit our business opportunities and increase the cost of our funding or hedging activities.

As we have recently expanded and intend to continue to expand the product and geographic scope of our offerings of credit products to retail clients, we are presented with different credit risks and must expand and adapt our credit risk monitoring and mitigation activities to account for these new business activities. A failure to adequately assess and control such risk exposures could result in losses to us.

For further information about our risk management policies and procedures, see Management s Discussion and Analysis of Financial Condition and Results of Operations Risk Management in Part II, Item 7 of this Form 10-K.

Our liquidity, profitability and businesses may be adversely affected by an inability to access the debt capital markets or to sell assets or by a reduction in our credit ratings or by an increase in our credit spreads.

Liquidity is essential to our businesses. Our liquidity may be impaired by an inability to access secured and/or unsecured debt markets, an inability to access funds from our subsidiaries or otherwise allocate liquidity optimally across our firm, an inability to sell assets or redeem our investments, or unforeseen outflows of cash or collateral. This situation may arise due to circumstances that we may be unable to control, such as a general market disruption or an operational problem that affects third parties or us, or even by the perception among market participants that we, or other market participants, are experiencing greater liquidity risk.

We employ structured products to benefit our clients and hedge our own risks. The financial instruments that we hold and the contracts to which we are a party are often complex, and these complex structured products often do not have readily available markets to access in times of liquidity stress. Our investing and lending activities may lead to situations where the holdings from these activities represent a significant portion of specific markets, which could restrict liquidity for our positions.

Further, our ability to sell assets may be impaired if there is not generally a liquid market for such assets, as well as in circumstances where other market participants are seeking to sell similar otherwise generally liquid assets at the same time, as is likely to occur in a liquidity or other market crisis or in response to changes to rules or regulations. In addition, financial institutions with which we interact may exercise set-off rights or the right to require additional collateral, including in difficult market conditions, which could further impair our liquidity.

Our credit ratings are important to our liquidity. A reduction in our credit ratings could adversely affect our liquidity and competitive position, increase our borrowing costs, limit our access to the capital markets or trigger our obligations under certain provisions in some of our trading and collateralized financing contracts. Under these provisions, counterparties could be permitted to terminate contracts with us or require us to post additional collateral. Termination of our trading and collateralized financing contracts could cause us to sustain losses and impair our liquidity by requiring us to find other sources of financing or to make significant cash payments or securities movements.

As of December 2017, in the event of a one-notch and two-notch downgrade of our credit ratings our counterparties could have called for additional collateral or termination payments related to our net derivative liabilities under bilateral agreements in an aggregate amount of $358 million and $1.86 billion, respectively. A downgrade by any one rating agency, depending on the agency s relative ratings of us at the time of the downgrade, may have an impact which is comparable to the impact of a downgrade by all rating agencies. For further information about our credit ratings, see Management s Discussion and Analysis of Financial Condition and Results of Operations Risk Management Liquidity Risk Management Credit Ratings in Part II, Item 7 of this Form 10-K.

Our cost of obtaining long-term unsecured funding is directly related to our credit spreads (the amount in excess of the interest rate of U.S. Treasury securities (or other benchmark securities) of the same maturity that we need to pay to our debt investors). Increases in our credit spreads can significantly increase our cost of this funding. Changes in credit spreads are continuous, market-driven, and subject at times to unpredictable and highly volatile movements. Our credit spreads are also influenced by market perceptions of our creditworthiness. In addition, our credit spreads may be influenced by movements in the costs to purchasers of credit default swaps referenced to our long-term debt. The market for credit default swaps has proven to be extremely volatile and at times has lacked a high degree of transparency or liquidity.

Regulatory changes relating to liquidity may also negatively impact our results of operations and competitive position. Recently, numerous regulations have been adopted or proposed to introduce more stringent liquidity requirements for large financial institutions. These regulations address, among other matters, liquidity stress testing, minimum liquidity requirements, wholesale funding, limitations on the issuance of short-term debt and structured notes and prohibitions on parent guarantees that are subject to certain cross-defaults. New and prospective liquidity-related regulations may overlap with, and be impacted by, other regulatory changes, including new rules relating to minimum long-term debt requirements and TLAC, guidance on the treatment of brokered deposits and the capital, leverage and resolution and recovery frameworks applicable to large financial institutions. Given the overlap and complex interactions among these new and prospective regulations, they may have unintended cumulative effects, and their full impact will remain uncertain until implementation of post-financial crisis regulatory reform is complete.

A failure to appropriately identify and address potential conflicts of interest could adversely affect our businesses.

Due to the broad scope of our businesses and our client base, we regularly address potential conflicts of interest, including situations where our services to a particular client or our own investments or other interests conflict, or are perceived to conflict, with the interests of another client, as well as situations where one or more of our businesses have access to material non-public information that may not be shared with our other businesses and situations where we may be a creditor of an entity with which we also have an advisory or other relationship.

In addition, our status as a BHC subjects us to heightened regulation and increased regulatory scrutiny by the FRB with respect to transactions between GS Bank USA and entities that are or could be viewed as affiliates of ours and, under the Volcker Rule, transactions between Goldman Sachs and certain covered funds.

We have extensive procedures and controls that are designed to identify and address conflicts of interest, including those designed to prevent the improper sharing of information among our businesses. However, appropriately identifying and dealing with conflicts of interest is complex and difficult, and our reputation, which is one of our most important assets, could be damaged and the willingness of clients to enter into transactions with us may be affected if we fail, or appear to fail, to identify, disclose and deal appropriately with conflicts of interest. In addition, potential or perceived conflicts could give rise to litigation or regulatory enforcement actions.

A failure in our operational systems or infrastructure, or those of third parties, as well as human error, could impair our liquidity, disrupt our businesses, result in the disclosure of confidential information, damage our reputation and cause losses.

Our businesses are highly dependent on our ability to process and monitor, on a daily basis, a very large number of transactions, many of which are highly complex and occur at high volumes and frequencies, across numerous and diverse markets in many currencies. These transactions, as well as the information technology services we provide to clients, often must adhere to client-specific guidelines, as well as legal and regulatory standards.

Many rules and regulations worldwide govern our obligations to report transactions and other information to regulators, exchanges and investors. Compliance with these legal and reporting requirements can be challenging, and we have been, and may in the future be, subject to regulatory fines and penalties for failing to report timely, accurate and complete information. As reporting requirements expand, compliance with these rules and regulations has become more challenging.

As our client base and our geographical reach expand and the volume, speed, frequency and complexity of transactions, especially electronic transactions (as well as the requirements to report such transactions on a real-time basis to clients, regulators and exchanges) increase, developing and maintaining our operational systems and infrastructure becomes more challenging, and the risk of systems or human error in connection with such transactions increases, as well as the potential consequences of such errors due to the speed and volume of transactions involved and the potential difficulty associated with discovering such errors quickly enough to limit the resulting consequences.

Our financial, accounting, data processing or other operational systems and facilities may fail to operate properly or become disabled as a result of events that are wholly or partially beyond our control, such as a spike in transaction volume, adversely affecting our ability to process these transactions or provide these services. We must continuously update these systems to support our operations and growth and to respond to changes in regulations and markets, and invest heavily in systemic controls and training to ensure that such transactions do not violate applicable rules and regulations or, due to errors in processing such transactions, adversely affect markets, our clients and counterparties or us.

Enhancements and updates to systems, as well as the requisite training, including in connection with the integration of new businesses, entail significant costs and create risks associated with implementing new systems and integrating them with existing ones.

The use of computing devices and phones is critical to the work done by our employees and the operation of our systems and businesses and those of our clients and our third-party service providers and vendors. It has been reported that there are some fundamental security flaws in computer chips found in many types of these computing devices and phones. Addressing this issue could be costly and affect the performance of these businesses and systems, and operational risks may be incurred in applying fixes and there may still be residual security risks.

Additionally, although the prevalence and scope of applications of distributed ledger technology and similar technologies is growing, the technology is also nascent and may be vulnerable to cyber attacks or have other inherent weaknesses. We may be, or may become, exposed to risks related to distributed ledger technology through our facilitation of clients activities involving financial products linked to distributed ledger technology, such as blockchain or cryptocurrencies, our investments in companies that seek to develop platforms based on distributed ledger technology, and the use of distributed ledger technology by third-party vendors, clients, counterparties, clearing houses and other financial intermediaries.

Notwithstanding the proliferation of technology and technology-based risk and control systems, our businesses ultimately rely on people as our greatest resource, and, from time-to-time, they make mistakes that are not always caught immediately by our technological processes or by our other procedures which are intended to prevent and detect such errors. These can include calculation errors, mistakes in addressing emails, errors in software or model development or implementation, or simple errors in judgment. We strive to eliminate such human errors through training, supervision, technology and by redundant processes and controls. Human errors, even if promptly discovered and remediated, can result in material losses and liabilities for us.

In addition, we face the risk of operational failure, termination or capacity constraints of any of the clearing agents, exchanges, clearing houses or other financial intermediaries we use to facilitate our securities and derivatives transactions, and as our interconnectivity with our clients grows, we increasingly face the risk of operational failure with respect to our clients systems.

In recent years, there has been significant consolidation among clearing agents, exchanges and clearing houses and an increasing number of derivative transactions are now or in the near future will be cleared on exchanges, which has increased our exposure to operational failure, termination or capacity constraints of the particular financial intermediaries that we use and could affect our ability to find adequate and cost-effective alternatives in the event of any such failure, termination or constraint. Industry consolidation, whether among market participants or financial intermediaries, increases the risk of operational failure as disparate complex systems need to be integrated, often on an accelerated basis.

Furthermore, the interconnectivity of multiple financial institutions with central agents, exchanges and clearing houses, and the increased centrality of these entities, increases the risk that an operational failure at one institution or entity may cause an industry-wide operational failure that could materially impact our ability to conduct business. Any such failure, termination or constraint could adversely affect our ability to effect transactions, service our clients, manage our exposure to risk or expand our businesses or result in financial loss or liability to our clients, impairment of our liquidity, disruption of our businesses, regulatory intervention or reputational damage.

Despite the resiliency plans and facilities we have in place, our ability to conduct business may be adversely impacted by a disruption in the infrastructure that supports our businesses and the communities in which we are located. This may include a disruption involving electrical, satellite, undersea cable or other communications, internet, transportation or other services facilities used by us, our employees or third parties with which we conduct business, including cloud service providers. These disruptions may occur as a result of events that affect only our buildings or systems or those of such third parties, or as a result of events with a broader impact globally, regionally or in the cities where those buildings or systems are located, including, but not limited to, natural disasters, war, civil unrest, terrorism, economic or political developments, pandemics and weather events.

In addition, although we seek to diversify our third-party vendors to increase our resiliency, we are also exposed to the risk that a disruption or other information technology event at a common service provider to our vendors could impede their ability to provide products or services to us. We may not be able to effectively monitor or mitigate operational risks relating to our vendors use of common service providers.

Nearly all of our employees in our primary locations, including the New York metropolitan area, London, Bengaluru, Hong Kong, Tokyo and Salt Lake City, work in close proximity to one another, in one or more buildings.

Notwithstanding our efforts to maintain business continuity, given that our headquarters and the largest concentration of our employees are in the New York metropolitan area, and our two principal office buildings in the New York area both are located on the waterfront of the Hudson River, depending on the intensity and longevity of the event, a catastrophic event impacting our New York metropolitan area offices, including a terrorist attack, extreme weather event or other hostile or catastrophic event, could negatively affect our business. If a disruption occurs in one location and our employees in that location are unable to occupy our offices or communicate with or travel to other locations, our ability to service and interact with our clients may suffer, and we may not be able to successfully implement contingency plans that depend on communication or travel.

A failure to protect our computer systems, networks and information, and our clients information, against cyber attacks and similar threats could impair our ability to conduct our businesses, result in the disclosure, theft or destruction of confidential information, damage our reputation and cause losses.

Our operations rely on the secure processing, storage and transmission of confidential and other information in our computer systems and networks. There have been a number of highly publicized cases involving financial services companies, consumer-based companies, governmental agencies and other organizations reporting the unauthorized disclosure of client, customer or other confidential information in recent years, as well as cyber attacks involving the dissemination, theft and destruction of corporate information or other assets, as a result of failure to follow procedures by employees or contractors or as a result of actions by third parties, including actions by foreign governments. There have also been several highly publicized cases where hackers have requested ransom payments in exchange for not disclosing customer information or for restoring access to information or systems.

We are regularly the target of attempted cyber attacks, including denial-of-service attacks, and must continuously monitor and develop our systems to protect our technology infrastructure and data from misappropriation or corruption. We may face an increasing number of attempted cyber attacks as we expand our mobile- and other internet-based products and services, as well as our usage of mobile and cloud technologies and as we provide more of these services to a greater number of individual retail customers. The increasing migration of firm communication and other platforms from firm-provided devices to employee-owned devices presents additional risks of cyber attacks. In addition, due to our interconnectivity with third-party vendors (and their respective service providers), central agents, exchanges, clearing houses and other financial institutions, we could be adversely impacted if any of them is subject to a successful cyber attack or other information security event. These effects could include the loss of access to information or services from the third party subject to the cyber attack or other information security event, which could, in turn, interrupt certain of our businesses.

Despite our efforts to ensure the integrity of our systems and information, we may not be able to anticipate, detect or implement effective preventive measures against all cyber threats, especially because the techniques used are increasingly sophisticated, change frequently and are often not recognized until launched. Cyber attacks can originate from a variety of sources, including third parties who are affiliated with foreign governments or are involved with organized crime or terrorist organizations. Third parties may also attempt to place individuals within the firm or induce employees, clients or other users of our systems to disclose sensitive information or provide access to our data or that of our clients, and these types of risks may be difficult to detect or prevent.

Although we take protective measures and endeavor to modify them as circumstances warrant, our computer systems, software and networks may be vulnerable to unauthorized access, misuse, computer viruses or other malicious code and other events that could have a security impact. Due to the complexity and interconnectedness of our systems, the process of enhancing our protective measures can itself create a risk of systems disruptions and security issues.

If one or more of such events occur, this potentially could jeopardize our or our clients or counterparties confidential and other information processed and stored in, and transmitted through, our computer systems and networks, or otherwise cause interruptions or malfunctions in our, our clients , our counterparties or third parties operations, which could impact their ability to transact with us or otherwise result in legal or regulatory action, significant losses or reputational damage.

The increased use of mobile and cloud technologies can heighten these and other operational risks. We expect to expend significant additional resources on an ongoing basis to modify our protective measures and to investigate and remediate vulnerabilities or other exposures, but these measures may be ineffective and we may be subject to legal or regulatory action, and financial losses that are either not insured against or not fully covered through any insurance maintained by us. Certain aspects of the security of such technologies are unpredictable or beyond our control, and the failure by mobile technology and cloud service providers to adequately safeguard their systems and prevent cyber attacks could disrupt our operations and result in misappropriation, corruption or loss of confidential and other information. In addition, there is a risk that encryption and other protective measures, despite their sophistication, may be defeated, particularly to the extent that new computing technologies vastly increase the speed and computing power available.

We routinely transmit and receive personal, confidential and proprietary information by email and other electronic means. We have discussed and worked with clients, vendors, service providers, counterparties and other third parties to develop secure transmission capabilities and protect against cyber attacks, but we do not have, and may be unable to put in place, secure capabilities with all of our clients, vendors, service providers, counterparties and other third parties and we may not be able to ensure that these third parties have appropriate controls in place to protect the confidentiality of the information. An interception, misuse or mishandling of personal, confidential or proprietary information being sent to or received from a client, vendor, service provider, counterparty or other third party could result in legal liability, regulatory action and reputational harm.

Group Inc. is a holding company and is dependent for liquidity on payments from its subsidiaries, many of which are subject to restrictions.

Group Inc. is a holding company and, therefore, depends on dividends, distributions and other payments from its subsidiaries to fund dividend payments and to fund all payments on its obligations, including debt obligations. Many of our subsidiaries, including our broker-dealer and bank subsidiaries, are subject to laws that restrict dividend payments or authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to Group Inc.

In addition, our broker-dealer and bank subsidiaries are subject to restrictions on their ability to lend or transact with affiliates and to minimum regulatory capital and other requirements, as well as restrictions on their ability to use funds deposited with them in brokerage or bank accounts to fund their businesses. Additional restrictions on related-party transactions, increased capital and liquidity requirements and additional limitations on the use of funds on deposit in bank or brokerage accounts, as well as lower earnings, can reduce the amount of funds available to meet the obligations of Group Inc., including under the FRB s source of strength requirement, and even require Group Inc. to provide additional funding to such subsidiaries. Restrictions or regulatory action of that kind could impede access to funds that Group Inc. needs to make payments on its obligations, including debt obligations, or dividend payments. In addition, Group Inc. s right to participate in a distribution of assets upon a subsidiary s liquidation or reorganization is subject to the prior claims of the subsidiary s creditors.

There has been a trend towards increased regulation and supervision of our subsidiaries by the governments and regulators in the countries in which those subsidiaries are located or do business. Concerns about protecting clients and creditors of financial institutions that are controlled by persons or entities located outside of the country in which such entities are located or do business have caused or may cause a number of governments and regulators to take additional steps to ring fence or require internal total loss-absorbing capacity at such entities in order to protect clients and creditors of such entities in the event of financial difficulties involving such entities. The result has been and may continue to be additional limitations on our ability to efficiently move capital and liquidity among our affiliated entities, thereby increasing the overall level of capital and liquidity required by us on a consolidated basis.

Furthermore, Group Inc. has guaranteed the payment obligations of certain of its subsidiaries, including GS&Co. and GS Bank USA, subject to certain exceptions. In addition, Group Inc. guarantees many of the obligations of its other consolidated subsidiaries on a transaction-by-transaction basis, as negotiated with counterparties. These guarantees may require Group Inc. to provide substantial funds or assets to its subsidiaries or their creditors or counterparties at a time when Group Inc. is in need of liquidity to fund its own obligations.

The requirements for Group Inc. and GS Bank USA to develop and submit recovery and resolution plans to regulators, and the incorporation of feedback received from regulators, may require us to increase capital or liquidity levels or issue additional long-term debt at Group Inc. or particular subsidiaries or otherwise incur additional or duplicative operational or other costs at multiple entities, and may reduce our ability to provide Group Inc. guarantees of the obligations of our subsidiaries or raise debt at Group Inc. Resolution planning may also impair our ability to structure our intercompany and external activities in a manner that we may otherwise deem most operationally efficient. Furthermore, arrangements to facilitate our resolution planning may cause us to be subject to additional taxes. Any such limitations or requirements would be in addition to the legal and regulatory restrictions described above on our ability to engage in capital actions or make intercompany dividends or payments.

See Business Regulation in Part I, Item 1 of this Form 10-K for further information about regulatory restrictions.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

The application of regulatory strategies and requirements in the U.S. and non-U.S. jurisdictions to facilitate the orderly resolution of large financial institutions could create greater risk of loss for Group Inc. s security holders.

As described in Business Regulation Banking Supervision and Regulation Insolvency of an Insured Depository Institution or a Bank Holding Company, if the FDIC is appointed as receiver under OLA, the rights of Group Inc. s creditors would be determined under OLA, and substantial differences exist in the rights of creditors between OLA and the U.S. Bankruptcy Code, including the right of the FDIC under OLA to disregard the strict priority of creditor claims in some circumstances, which could have a material adverse effect on debtholders.

The FDIC has announced that a single point of entry strategy may be a desirable strategy under OLA to resolve a large financial institution such as Group Inc. in a manner that would, among other things, impose losses on shareholders, debtholders and other creditors of the top-tier BHC (in our case, Group Inc.), while the BHC s subsidiaries may continue to operate. It is possible that the application of the single point of entry strategy under OLA, in which Group Inc. would be the only entity to enter resolution proceedings (and its material broker-dealer, bank and other operating entities would not enter resolution proceedings), would result in greater losses to Group Inc. s security holders (including holders of our fixed rate, floating rate and indexed debt securities), than the losses that would result from the application of a bankruptcy proceeding or a different resolution strategy, such as a multiple point of entry resolution strategy for Group Inc. and certain of its material subsidiaries.

Assuming Group Inc. entered resolution proceedings and that support from Group Inc. to its subsidiaries was sufficient to enable the subsidiaries to remain solvent, losses at the subsidiary level would be transferred to Group Inc. and ultimately borne by Group Inc. s security holders, third-party creditors of Group Inc. s subsidiaries would receive full recoveries on their claims, and Group Inc. s security holders (including our shareholders, debtholders and other unsecured creditors) could face significant and possibly complete losses. In that case, Group Inc. s security holders would face losses while the third-party creditors of Group Inc. s subsidiaries would incur no losses because the subsidiaries would continue to operate and would not enter resolution or bankruptcy proceedings. In addition, holders of Group Inc. s eligible long-term debt and holders of Group Inc. s other debt securities could face losses ahead of its other similarly situated creditors in a resolution under OLA if the FDIC exercised its right, described above, to disregard the priority of creditor claims.

OLA also provides the FDIC with authority to cause creditors and shareholders of the financial company such as Group Inc. in receivership to bear losses before taxpayers are exposed to such losses, and amounts owed to the U.S. government would generally receive a statutory payment priority over the claims of private creditors, including senior creditors.

In addition, under OLA, claims of creditors (including debtholders) could be satisfied through the issuance of equity or other securities in a bridge entity to which Group Inc. s assets are transferred. If such a securities-for-claims exchange were implemented, there can be no assurance that the value of the securities of the bridge entity would be sufficient to repay or satisfy all or any part of the creditor claims for which the securities were exchanged. While the FDIC has issued regulations to implement OLA, not all aspects of how the FDIC might exercise this authority are known and additional rulemaking is likely.

In addition, certain jurisdictions, including the U.K. and the E.U., have implemented, or are considering, changes to resolution regimes to provide resolution authorities with the ability to recapitalize a failing entity by writing down its unsecured debt or converting its unsecured debt into equity. Such bail-in powers are intended to enable the recapitalization of a failing institution by allocating losses to its shareholders and unsecured debtholders. U.S. regulators are considering and non-U.S. authorities have proposed requirements that certain subsidiaries of large financial institutions maintain minimum amounts of total loss-absorbing capacity that would pass losses up from the subsidiaries to the top-tier BHC and, ultimately, to security holders of the top-tier BHC in the event of failure.

The application of Group Inc. s proposed resolution strategy could result in greater losses for Group Inc. s security holders, and failure to address shortcomings in our resolution plan could subject us to increased regulatory requirements.

In our resolution plan, Group Inc. would be resolved under the U.S. Bankruptcy Code. The strategy described in our resolution plan is a variant of the single point of entry strategy: Group Inc. and Goldman Sachs Funding LLC (Funding IHC), a wholly-owned, direct subsidiary of Group Inc., would recapitalize and provide liquidity to certain major subsidiaries, including through the forgiveness of intercompany indebtedness, the extension of the maturities of intercompany indebtedness and the extension of additional intercompany loans. If this strategy were successful, creditors of some or all of Group Inc. s major subsidiaries would receive full recoveries on their claims, while Group Inc. s security holders could face significant and possibly complete losses.

To facilitate the execution of our resolution plan, we formed Funding IHC, a wholly-owned, direct subsidiary of Group Inc. In exchange for an unsecured subordinated funding note and equity interest, Group Inc. has transferred certain intercompany receivables and substantially all of its global core liquid assets (GCLA) to Funding IHC, and has agreed to transfer additional GCLA above prescribed thresholds.

We also put in place a Capital and Liquidity Support Agreement (CLSA) among Group Inc., Funding IHC and our major subsidiaries. Under the CLSA, Funding IHC has provided Group Inc. with a committed line of credit that allows Group Inc. to draw sufficient funds to meet its cash needs during the ordinary course of business. In addition, if our financial resources deteriorate so severely that resolution may be imminent, (i) the committed line of credit will automatically terminate and the unsecured subordinated funding note will automatically be forgiven, (ii) all intercompany receivables owed by the major subsidiaries to Group Inc. will be transferred to Funding IHC or their maturities will be extended to five years, (iii) Group Inc. will be obligated to transfer substantially all of its remaining intercompany receivables and GCLA (other than an amount to fund anticipated bankruptcy expenses) to Funding IHC, and (iv) Funding IHC will be obligated to provide capital and liquidity support to the major subsidiaries. Group Inc. s and Funding IHC s obligations under the CLSA are secured pursuant to a related security agreement. Such actions would materially and adversely affect Group Inc. s liquidity. As a result, during a period of severe stress, Group Inc. might commence bankruptcy proceedings at an earlier time than it otherwise would if the CLSA and related security agreement had not been implemented.

If Group Inc. s proposed resolution strategy were successful, Group Inc. s security holders could face losses while the third-party creditors of Group Inc. s major subsidiaries would incur no losses because those subsidiaries would continue to operate and not enter resolution or bankruptcy proceedings. As part of the strategy, Group Inc. could also seek to elevate the priority of its guarantee obligations relating to its major subsidiaries derivative contracts or transfer them to another entity so that cross-default and early termination rights would be stayed under the ISDA Protocol, which would result in holders of Group Inc. s eligible long-term debt and holders of Group Inc. s other debt securities incurring losses ahead of the beneficiaries of those guarantee obligations. It is also possible that holders of Group Inc. s eligible long-term debt and other debt securities could incur losses ahead of other similarly situated creditors.

If Group Inc. s proposed resolution strategy were not successful, Group Inc. s financial condition would be adversely impacted and Group Inc. s security holders, including debtholders, may as a consequence be in a worse position than if the strategy had not been implemented. In all cases, any payments to debtholders are dependent on our ability to make such payments and are therefore subject to our credit risk.

As a result of our recovery and resolution planning processes, including incorporating feedback from our regulators, we may incur increased operational, funding or other costs and face limitations on our ability to structure our internal organization or engage in internal or external activities in a manner that we may otherwise deem most operationally efficient.

Our businesses, profitability and liquidity may be adversely affected by deterioration in the credit quality of, or defaults by, third parties who owe us money, securities or other assets or whose securities or obligations we hold.

We are exposed to the risk that third parties that owe us money, securities or other assets will not perform their obligations. These parties may default on their obligations to us due to bankruptcy, lack of liquidity, operational failure or other reasons. A failure of a significant market participant, or even concerns about a default by such an institution, could lead to significant liquidity problems, losses or defaults by other institutions, which in turn could adversely affect us.

We are also subject to the risk that our rights against third parties may not be enforceable in all circumstances. In addition, deterioration in the credit quality of third parties whose securities or obligations we hold, including a deterioration in the value of collateral posted by third parties to secure their obligations to us under derivative contracts and loan agreements, could result in losses and/or adversely affect our ability to rehypothecate or otherwise use those securities or obligations for liquidity purposes.

A significant downgrade in the credit ratings of our counterparties could also have a negative impact on our results. While in many cases we are permitted to require additional collateral from counterparties that experience financial difficulty, disputes may arise as to the amount of collateral we are entitled to receive and the value of pledged assets. The termination of contracts and the foreclosure on collateral may subject us to claims for the improper exercise of our rights. Default rates, downgrades and disputes with counterparties as to the valuation of collateral increase significantly in times of market stress and illiquidity.

As part of our clearing and prime brokerage activities, we finance our clients positions, and we could be held responsible for the defaults or misconduct of our clients. Although we regularly review credit exposures to specific clients and counterparties and to specific industries, countries and regions that we believe may present credit concerns, default risk may arise from events or circumstances that are difficult to detect or foresee.

Concentration of risk increases the potential for significant losses in our market-making, underwriting, investing and lending activities.

Concentration of risk increases the potential for significant losses in our market-making, underwriting, investing and lending activities. The number and size of such transactions may affect our results of operations in a given period. Moreover, because of concentration of risk, we may suffer losses even when economic and market conditions are generally favorable for our competitors. Disruptions in the credit markets can make it difficult to hedge these credit exposures effectively or economically. In addition, we extend large commitments as part of our credit origination activities.

Rules adopted under the Dodd-Frank Act, and similar rules adopted in other jurisdictions, require issuers of certain asset-backed securities and any person who organizes and initiates certain asset-backed securities transactions to retain economic exposure to the asset, which has affected the cost of and structures used in connection with these securitization activities. Our inability to reduce our credit risk by selling, syndicating or securitizing these positions, including during periods of market stress, could negatively affect our results of operations due to a decrease in the fair value of the positions, including due to the insolvency or bankruptcy of the borrower, as well as the loss of revenues associated with selling such securities or loans.

In the ordinary course of business, we may be subject to a concentration of credit risk to a particular counterparty, borrower, issuer, including sovereign issuers, or geographic area or group of related countries, such as the E.U., and a failure or downgrade of, or default by, such entity could negatively impact our businesses, perhaps materially, and the systems by which we set limits and monitor the level of our credit exposure to individual entities, industries and countries may not function as we have anticipated. Regulatory reform, including the Dodd-Frank Act, has led to increased centralization of trading activity through particular clearing houses, central agents or exchanges, which has significantly increased our concentration of risk with respect to these entities. While our activities expose us to many different industries, counterparties and countries, we routinely execute a high volume of transactions with counterparties engaged in financial services activities, including brokers and dealers, commercial banks, clearing houses, exchanges and investment funds. This has resulted in significant credit concentration with respect to these counterparties.

The financial services industry is both highly competitive and interrelated.

The financial services industry and all of our businesses are intensely competitive, and we expect them to remain so. We compete on the basis of a number of factors, including transaction execution, our products and services, innovation, reputation, creditworthiness and price. There has been substantial consolidation and convergence among companies in the financial services industry. This consolidation and convergence has hastened the globalization of the securities and other financial services markets. As a result, we have had to commit capital to support our international operations and to execute large global transactions. To the extent we expand into new business areas and new geographic regions, we will face competitors with more experience and more established relationships with clients, regulators and industry participants in the relevant market, which could adversely affect our ability to expand.

Governments and regulators have recently adopted regulations, imposed taxes, adopted compensation restrictions or otherwise put forward various proposals that have or may impact our ability to conduct certain of our businesses in a cost-effective manner or at all in certain or all jurisdictions, including proposals relating to restrictions on the type of activities in which financial institutions are permitted to engage. These or other similar rules, many of which do not apply to all our U.S. or non-U.S. competitors, could impact our ability to compete effectively.

Pricing and other competitive pressures in our businesses have continued to increase, particularly in situations where some of our competitors may seek to increase market share by reducing prices. For example, in connection with investment banking and other assignments, we have experienced pressure to extend and price credit at levels that may not always fully compensate us for the risks we take.

The financial services industry is highly interrelated in that a significant volume of transactions occur among a limited number of members of that industry. Many transactions are syndicated to other financial institutions and financial institutions are often counterparties in transactions. This has led to claims by other market participants and regulators that such institutions have colluded in order to manipulate markets or market prices, including allegations that antitrust laws have been violated. While we have extensive procedures and controls that are designed to identify and prevent such activities, allegations of such activities, particularly by regulators, can have a negative reputational impact and can subject us to large fines and settlements, and potentially significant penalties, including treble damages.

We face enhanced risks as new business initiatives lead us to transact with a broader array of clients and counterparties and expose us to new asset classes and new markets.

A number of our recent and planned business initiatives and expansions of existing businesses may bring us into contact, directly or indirectly, with individuals and entities that are not within our traditional client and counterparty base and expose us to new asset classes and new markets. For example, we continue to transact business and invest in new regions, including a wide range of emerging and growth markets. Furthermore, in a number of our businesses, including where we make markets, invest and lend, we directly or indirectly own interests in, or otherwise become affiliated with the ownership and operation of public services, such as airports, toll roads and shipping ports, as well as physical commodities and commodities infrastructure components, both within and outside the U.S.

We have recently increased and intend to further increase our retail-oriented deposit-taking and lending activities. To the extent we engage in such activities or similar retail-oriented activities, we could face additional compliance, legal and regulatory risk, increased reputational risk and increased operational risk due to, among other things, higher transaction volumes and significantly increased retention and transmission of customer and client information. As a result of a recent information security event involving a credit reporting agency, identity fraud may increase and industry practices may change in a manner that makes it more difficult for financial institutions, such as us, to evaluate the creditworthiness of retail customers.

New business initiatives expose us to new and enhanced risks, including risks associated with dealing with governmental entities, reputational concerns arising from dealing with less sophisticated clients, counterparties and investors, greater regulatory scrutiny of these activities, increased credit-related, market, sovereign and operational risks, risks arising from accidents or acts of terrorism, and reputational concerns with the manner in which these assets are being operated or held or in which we interact with these counterparties.

Our results may be adversely affected by the composition of our client base.

Our client base is not the same as that of our major competitors. Our businesses may have a higher or lower percentage of clients in certain industries or markets than some or all of our competitors. Therefore, unfavorable industry developments or market conditions affecting certain industries or markets may result in our businesses underperforming relative to similar businesses of a competitor if our businesses have a higher concentration of clients in such industries or markets. For example, our market-making businesses have a higher percentage of clients with actively managed assets than our competitors and such clients have been disproportionately affected by the low levels of volatility.

Correspondingly, favorable or simply less adverse developments or market conditions involving industries or markets in a business where we have a lower concentration of clients in such industry or market may also result in our underperforming relative to a similar business of a competitor that has a higher concentration of clients in such industry or market. For example, we have a smaller corporate client base in our market-making businesses than many of our peers and therefore such competitors may benefit more from increased activity by corporate clients.

Derivative transactions and delayed settlements may expose us to unexpected risk and potential losses.

We are party to a large number of derivative transactions, including credit derivatives. Many of these derivative instruments are individually negotiated and non-standardized, which can make exiting, transferring or settling positions difficult. Many credit derivatives require that we deliver to the counterparty the underlying security, loan or other obligation in order to receive payment. In a number of cases, we do not hold the underlying security, loan or other obligation and may not be able to obtain the underlying security, loan or other obligation. This could cause us to forfeit the payments due to us under these contracts or result in settlement delays with the attendant credit and operational risk as well as increased costs to us.

Derivative transactions may also involve the risk that documentation has not been properly executed, that executed agreements may not be enforceable against the counterparty, or that obligations under such agreements may not be able to be netted against other obligations with such counterparty. In addition, counterparties may claim that such transactions were not appropriate or authorized.

As a signatory to the ISDA Protocol and being subject to the FRB s and FDIC s rules on QFCs and similar rules in other jurisdictions, we may not be able to exercise remedies against counterparties and, as this new regime has not yet been tested, we may suffer risks or losses that we would not have expected to suffer if we could immediately close out transactions upon a termination event. Various non-U.S. regulators have also proposed regulations contemplated by the ISDA Protocol, and those implementing regulations may result in additional limitations on our ability to exercise remedies against counterparties. The impact of the ISDA Protocol and these rules and regulations will depend on the development of market practices and structures.

Derivative contracts and other transactions, including secondary bank loan purchases and sales, entered into with third parties are not always confirmed by the counterparties or settled on a timely basis. While the transaction remains unconfirmed or during any delay in settlement, we are subject to heightened credit and operational risk and in the event of a default may find it more difficult to enforce our rights.

In addition, as new complex derivative products are created, covering a wider array of underlying credit and other instruments, disputes about the terms of the underlying contracts could arise, which could impair our ability to effectively manage our risk exposures from these products and subject us to increased costs. The provisions of the Dodd-Frank Act requiring central clearing of credit derivatives and other OTC derivatives, or a market shift toward standardized derivatives, could reduce the risk associated with such transactions, but under certain circumstances could also limit our ability to develop derivatives that best suit the needs of our clients and to hedge our own risks, and could adversely affect our profitability and increase our credit exposure to such platform.

Certain of our businesses and our funding may be adversely affected by changes in the reference rates, currencies, indexes, baskets or ETFs to which products we offer or funding that we raise are linked.

All of our floating rate funding pays interest by reference to a rate, such as LIBOR or Federal Funds. In addition, many of the products that we own or that we offer, such as structured notes, warrants, swaps or security-based swaps, pay interest or determine the principal amount to be paid at maturity or in the event of default by reference to similar rates or by reference to an index, currency, basket, ETF or other financial metric (the underlier). In the event that the composition of the underlier is significantly changed, by reference to rules governing such underlier or otherwise, or the underlier ceases to exist (for example, in the event that LIBOR is discontinued, a country withdraws from the Euro or links its currency to or delinks its currency from another currency or benchmark, or an index or ETF sponsor materially alters the composition of an index or ETF), there may be uncertainty as to the calculation of the amounts to be paid to the lender, investor or counterparty, depending on the terms of the governing instrument.

Such changes in an underlier or underliers could result in our hedges being ineffective or otherwise result in losses on a product or having to pay more or receive less on securities that we own or have issued. In addition, such uncertainty could result in lengthy and costly litigation.

Our businesses may be adversely affected if we are unable to hire and retain qualified employees.

Our performance is largely dependent on the talents and efforts of highly skilled people; therefore, our continued ability to compete effectively in our businesses, to manage our businesses effectively and to expand into new businesses and geographic areas depends on our ability to attract new talented and diverse employees and to retain and motivate our existing employees. Factors that affect our ability to attract and retain such employees include our compensation and benefits, and our reputation as a successful business with a culture of fairly hiring, training and promoting qualified employees. As a significant portion of the compensation that we pay to our employees is in the form of year-end discretionary compensation, a significant portion of which is in the form of deferred equity-related awards, declines in our profitability, or in the outlook for our future profitability, as well as regulatory limitations on compensation levels and terms, can negatively impact our ability to hire and retain highly qualified employees.

Competition from within the financial services industry and from businesses outside the financial services industry, including the technology industry, for qualified employees has often been intense. Recently, we have experienced increased competition in hiring and retaining employees to address the demands of new regulatory requirements, expanding retail-oriented businesses and our technology initiatives. This is also the case in emerging and growth markets, where we are often competing for qualified employees with entities that have a significantly greater presence or more extensive experience in the region.

Changes in law or regulation in jurisdictions in which our operations are located that affect taxes on our employees income, or the amount or composition of compensation, may also adversely affect our ability to hire and retain qualified employees in those jurisdictions.

As described further in Business Regulation Compensation Practices in Part I, Item 1 of this Form 10-K, our compensation practices are subject to review by, and the standards of, the FRB. As a large global financial and banking institution, we are subject to limitations on compensation practices (which may or may not affect our competitors) by the FRB, the PRA, the FCA, the FDIC and other regulators worldwide. These limitations, including any imposed by or as a result of future legislation or regulation, may require us to alter our compensation practices in ways that could adversely affect our ability to attract and retain talented employees.

We may be adversely affected by increased governmental and regulatory scrutiny or negative publicity.

Governmental scrutiny from regulators, legislative bodies and law enforcement agencies with respect to matters relating to compensation, our business practices, our past actions and other matters has increased dramatically in the past several years. The financial crisis and the current political and public sentiment regarding financial institutions has resulted in a significant amount of adverse press coverage, as well as adverse statements or charges by regulators or other government officials. Press coverage and other public statements that assert some form of wrongdoing (including, in some cases, press coverage and public statements that do not directly involve us) often result in some type of investigation by regulators, legislators and law enforcement officials or in lawsuits.

Responding to these investigations and lawsuits, regardless of the ultimate outcome of the proceeding, is time-consuming and expensive and can divert the time and effort of our senior management from our business. Penalties and fines sought by regulatory authorities have increased substantially over the last several years, and certain regulators have been more likely in recent years to commence enforcement actions or to advance or support legislation targeted at the financial services industry. Adverse publicity, governmental scrutiny and legal and enforcement proceedings can also have a negative impact on our reputation and on the morale and performance of our employees, which could adversely affect our businesses and results of operations.

Substantial legal liability or significant regulatory action against us could have material adverse financial effects or cause us significant reputational harm, which in turn could seriously harm our business prospects.

We face significant legal risks in our businesses, and the volume of claims and amount of damages and penalties claimed in litigation and regulatory proceedings against financial institutions remain high. See Notes 18 and 27 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about certain legal and regulatory proceedings and investigations in which we are involved. Our experience has been that legal claims by customers and clients increase in a market downturn and that employment-related claims increase following periods in which we have reduced our staff. Additionally, governmental entities have been and are plaintiffs in certain of the legal proceedings in which we are involved, and we may face future actions or claims by the same or other governmental entities, as well as follow-on civil litigation that is often commenced after regulatory settlements.

Significant settlements by several large financial institutions, including, in some cases, us, with governmental entities have been publicly announced. The trend of large settlements with governmental entities may adversely affect the outcomes for other financial institutions in similar actions, especially where governmental officials have announced that the large settlements will be used as the basis or a template for other settlements. The uncertain regulatory enforcement environment makes it difficult to estimate probable losses, which can lead to substantial disparities between legal reserves and subsequent actual settlements or penalties.

Recently, claims of collusion or anti-competitive conduct have become more common. Civil cases have been brought against financial institutions (including us) alleging bid rigging, group boycotts or other anti-competitive practices. Antitrust laws generally provide for joint and several liability and treble damages. These claims have in the past, and may in the future, result in significant settlements.

We are subject to laws and regulations worldwide, including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act, relating to corrupt and illegal payments to, and hiring practices with regard to, government officials and others. Violation of such laws and regulations could result in significant monetary penalties, severe restrictions on our activities and damage to our reputation.

Certain law enforcement authorities have recently required admissions of wrongdoing, and, in some cases, criminal pleas, as part of the resolutions of matters brought by them against financial institutions. Any such resolution of a matter involving us could lead to increased exposure to civil litigation, could adversely affect our reputation, could result in penalties or limitations on our ability to do business in certain jurisdictions and could have other negative effects.

In addition, the U.S. Department of Justice has announced a policy of requiring companies to provide investigators with all relevant facts relating to the individuals responsible for the alleged misconduct in order to qualify for any cooperation credit in civil and criminal investigations of corporate wrongdoing, which may result in our incurring increased fines and penalties if the Department of Justice determines that we have not provided sufficient information about applicable individuals in connection with an investigation, as well as increased costs in responding to Department of Justice investigations. It is possible that other governmental authorities will adopt similar policies.

The growth of electronic trading and the introduction of new trading technology may adversely affect our business and may increase competition.

Technology is fundamental to our business and our industry. The growth of electronic trading and the introduction of new technologies is changing our businesses and presenting us with new challenges. Securities, futures and options transactions are increasingly occurring electronically, both on our own systems and through other alternative trading systems, and it appears that the trend toward alternative trading systems will continue. Some of these alternative trading systems compete with us, particularly our exchange-based market-making activities, and we may experience continued competitive pressures in these and other areas. In addition, the increased use by our clients of low-cost electronic trading systems and direct electronic access to trading markets could cause a reduction in commissions and spreads. As our clients increasingly use our systems to trade directly in the markets, we may incur liabilities as a result of their use of our order routing and execution infrastructure. We have invested significant resources into the development of electronic trading systems and expect to continue to do so, but there is no assurance that the revenues generated by these systems will yield an adequate return on our investment, particularly given the generally lower commissions arising from electronic trades.

Our commodities activities, particularly our physical commodities activities, subject us to extensive regulation and involve certain potential risks, including environmental, reputational and other risks that may expose us to significant liabilities and costs.

As part of our commodities business, we purchase and sell certain physical commodities, arrange for their storage and transport, and engage in market making of commodities. The commodities involved in these activities may include crude oil, refined oil products, natural gas, liquefied natural gas, electric power, agricultural products, metals (base and precious), minerals (including unenriched uranium), emission credits, coal, freight and related products and indices.

In our investing and lending businesses, we make investments in and finance entities that engage in the production, storage and transportation of numerous commodities, including many of the commodities referenced above.

These activities subject us and/or the entities in which we invest to extensive and evolving federal, state and local energy, environmental, antitrust and other governmental laws and regulations worldwide, including environmental laws and regulations relating to, among others, air quality, water quality, waste management, transportation of hazardous substances, natural resources, site remediation and health and safety. Additionally, rising climate change concerns may lead to additional regulation that could increase the operating costs and profitability of our investments.

There may be substantial costs in complying with current or future laws and regulations relating to our commodities-related activities and investments. Compliance with these laws and regulations could require significant commitments of capital toward environmental monitoring, renovation of storage facilities or transport vessels, payment of emission fees and carbon or other taxes, and application for, and holding of, permits and licenses.

Commodities involved in our intermediation activities and investments are also subject to the risk of unforeseen or catastrophic events, which are likely to be outside of our control, including those arising from the breakdown or failure of transport vessels, storage facilities or other equipment or processes or other mechanical malfunctions, fires, leaks, spills or release of hazardous substances, performance below expected levels of output or efficiency, terrorist attacks, extreme weather events or other natural disasters or other hostile or catastrophic events. In addition, we rely on third-party suppliers or service providers to perform their contractual obligations and any failure on their part, including the failure to obtain raw materials at reasonable prices or to safely transport or store commodities, could expose us to costs or losses. Also, while we seek to insure against potential risks, we may not be able to obtain insurance to cover some of these risks and the insurance that we have may be inadequate to cover our losses.

The occurrence of any of such events may prevent us from performing under our agreements with clients, may impair our operations or financial results and may result in litigation, regulatory action, negative publicity or other reputational harm.

We may also be required to divest or discontinue certain of these activities for regulatory or legal reasons. For example, the FRB has proposed regulations that could impose significant additional capital requirements on certain commodity-related activities. If that occurs, we may receive a value that is less than the then carrying value, as we may be unable to exit these activities in an orderly transaction.

In conducting our businesses around the world, we are subject to political, economic, legal, operational and other risks that are inherent in operating in many countries.

In conducting our businesses and maintaining and supporting our global operations, we are subject to risks of possible nationalization, expropriation, price controls, capital controls, exchange controls and other restrictive governmental actions, as well as the outbreak of hostilities or acts of terrorism. For example, sanctions have been imposed by the U.S. and the E.U. on certain individuals and companies in Russia. In many countries, the laws and regulations applicable to the securities and financial services industries and many of the transactions in which we are involved are uncertain and evolving, and it may be difficult for us to determine the exact requirements of local laws in every market. Any determination by local regulators that we have not acted in compliance with the application of local laws in a particular market or our failure to develop effective working relationships with local regulators could have a significant and negative effect not only on our businesses in that market, but also on our reputation generally. Further, in some jurisdictions a failure to comply with laws and regulations may subject us and our personnel not only to civil actions, but also criminal actions. We are also subject to the enhanced risk that transactions we structure might not be legally enforceable in all cases.

In March 2017, the U.K. notified the European Council of its decision to leave the E.U. (Brexit). The exit of the U.K. from the E.U. will likely change the arrangements by which U.K. firms are able to provide services into the E.U., which may materially adversely affect the manner in which we operate certain of our businesses in Europe and could require us to restructure certain of our operations. The outcome of the negotiations between the U.K. and the E.U. in connection with Brexit is highly uncertain. Such uncertainty may result in market volatility and may negatively impact the confidence of investors and clients. Additionally, depending on the outcome, Brexit could have a disproportionate effect on our operations in the E.U. compared to some of our competitors who have more extensive pre-existing operations in the E.U. outside of the U.K.

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Our businesses and operations are increasingly expanding throughout the world, including in emerging and growth markets, and we expect this trend to continue. Various emerging and growth market countries have experienced severe economic and financial disruptions, including significant devaluations of their currencies, defaults or threatened defaults on sovereign debt, capital and currency exchange controls, and low or negative growth rates in their economies, as well as military activity, civil unrest or acts of terrorism. The possible effects of any of these conditions include an adverse impact on our businesses and increased volatility in financial markets generally.

While business and other practices throughout the world differ, our principal entities are subject in their operations worldwide to rules and regulations relating to corrupt and illegal payments, hiring practices and money laundering, as well as laws relating to doing business with certain individuals, groups and countries, such as the U.S. Foreign Corrupt Practices Act, the USA PATRIOT Act and U.K. Bribery Act. While we have invested and continue to invest significant resources in training and in compliance monitoring, the geographical diversity of our operations, employees, clients and customers, as well as the vendors and other third parties that we deal with, greatly increases the risk that we may be found in violation of such rules or regulations and any such violation could subject us to significant penalties or adversely affect our reputation.

In addition, there have been a number of highly publicized cases around the world, involving actual or alleged fraud or other misconduct by employees in the financial services industry in recent years, and we run the risk that employee misconduct could occur. This misconduct has included and may include in the future the theft of proprietary information, including proprietary software. It is not always possible to deter or prevent employee misconduct and the precautions we take to prevent and detect this activity have not been and may not be effective in all cases.

We may incur losses as a result of unforeseen or catastrophic events, including the emergence of a pandemic, terrorist attacks, extreme weather events or other natural disasters.

The occurrence of unforeseen or catastrophic events, including the emergence of a pandemic, such as the Ebola or Zika viruses, or other widespread health emergency (or concerns over the possibility of such an emergency), terrorist attacks, extreme terrestrial or solar weather events or other natural disasters, could create economic and financial disruptions, and could lead to operational difficulties (including travel limitations) that could impair our ability to manage our businesses.

Item 1B. Unresolved Staff Comments

There are no material unresolved written comments that were received from the SEC staff 180 days or more before the end of our fiscal year relating to our periodic or current reports under the Exchange Act.

Item 2. Properties

Our principal executive offices are located at 200 West Street, New York, New York and comprise approximately 2.1 million square feet. The building is located on a parcel leased from Battery Park City Authority pursuant to a ground lease. Under the lease, Battery Park City Authority holds title to all improvements, including the office building, subject to Goldman Sachs right of exclusive possession and use until June 2069, the expiration date of the lease. Under the terms of the ground lease, we made a lump sum ground rent payment in June 2007 of $161 million for rent through the term of the lease.

We have offices at 30 Hudson Street in Jersey City, New Jersey, which we own and which include approximately 1.6 million square feet of office space.

We have additional offices and commercial space in the U.S. and elsewhere in the Americas, which together comprise approximately 2.9 million square feet of leased and owned space.

In Europe, the Middle East and Africa, we have offices that total approximately 1.6 million square feet of leased and owned space. Our European headquarters is located in London at Peterborough Court, pursuant to a lease that we can terminate in 2021. In total, we have offices with approximately 1.2 million square feet in London, relating to various properties. We are currently constructing a 1.1 million square foot office in London. We expect initial occupancy during 2019.

In Asia, Australia and New Zealand, we have offices with approximately 1.9 million square feet. Our headquarters in this region are in Tokyo, at the Roppongi Hills Mori Tower, and in Hong Kong, at the Cheung Kong Center. In Japan, we currently have offices with approximately 219,000 square feet, the majority of which have leases that will expire in 2023. In Hong Kong, we currently have offices with approximately 308,000 square feet, the majority of which will also expire in 2023.

In the preceding paragraphs, square footage figures are provided only for properties that are used in the operation of our businesses.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Our occupancy expenses include costs associated with office space held in excess of our current requirements. This excess space, the cost of which is charged to earnings as incurred, is being held for potential growth or to replace currently occupied space that we may exit in the future. We regularly evaluate our space capacity in relation to current and projected staffing levels. We may incur exit costs in the future if we (i) reduce our space capacity or (ii) commit to, or occupy, new properties in locations in which we operate and dispose of existing space that had been held for potential growth. These exit costs may be material to our operating results in a given period.

Item 3. Legal Proceedings

We are involved in a number of judicial, regulatory and arbitration proceedings concerning matters arising in connection with the conduct of our businesses. Many of these proceedings are in early stages, and many of these cases seek an indeterminate amount of damages. However, we believe, based on currently available information, that the results of such proceedings, in the aggregate, will not have a material adverse effect on our financial condition, but may be material to our operating results in a given period. Given the range of litigation and investigations presently under way, our litigation expenses can be expected to remain high. See Management s Discussion and Analysis of Financial Condition and Results of Operations Use of Estimates in Part II, Item 7 of this Form 10-K. See Notes 18 and 27 to the consolidated financial statements in Part II, Item 8 of this Form 10-K for information about certain judicial, regulatory and legal proceedings.

Item 4. Mine Safety Disclosures

Not applicable.

Executive Officers of The Goldman Sachs Group, Inc.

Set forth below are the name, age, present title, principal occupation and certain biographical information for our executive officers. Our executive officers have been appointed by and serve at the pleasure of our board of directors.

Lloyd C. Blankfein, 63

Mr. Blankfein has been Chairman and Chief Executive Officer since June 2006, and a director since April 2003.

R. Martin Chavez, 53

Mr. Chavez has been an Executive Vice President and Chief Financial Officer since May 2017. He had previously served as Chief Information Officer since 2014. From 2012 to 2014, he was Global co-Chief Operating Officer of the Equities business.

Richard J. Gnodde, 57

Mr. Gnodde has been a Vice Chairman since January 2017, and Chief Executive Officer or co-Chief Executive Officer of Goldman Sachs International since 2006. He previously served as co-head of the Investment Banking Division from 2011 to May 2017.

Dane E. Holmes, 47

Mr. Holmes has been an Executive Vice President and Global Head of Human Capital Management since January 2018 and Global Head of Pine Street, our leadership development program, since 2016. He had previously served as Global Head of Investor Relations since 2007.

Gregory K. Palm, 69

Mr. Palm has been General Counsel and Head or Co-Head of the Legal Department since 1992, and an Executive Vice President and Secretary since 1999.

John F.W. Rogers, 61

Mr. Rogers has been an Executive Vice President since April 2011 and Chief of Staff and Secretary to the Board of Directors of Goldman Sachs since December 2001.

Pablo J. Salame, 52

Mr. Salame has been a Vice Chairman since January 2017 and global co-head of the Securities Division since 2008.

Harvey M. Schwartz, 53

Mr. Schwartz has been President and co-Chief Operating Officer since January 2017. He also served as Chief Financial Officer from January 2013 through April 2017. From February 2008 to January 2013, he was global co-head of the Securities Division.

Karen P. Seymour, 56

Ms. Seymour has been an Executive Vice President, General Counsel and Secretary, and Co-Head of the Legal Department since January 2018. From 2000 through January 2002 and 2005 through 2017, she was a partner at Sullivan & Cromwell LLP, a global law firm, including serving as a member of its management committee from April 2015 to December 2017 and as the co-managing partner of its litigation group from December 2012 to April 2015.

Sarah E. Smith, 58

Ms. Smith has been an Executive Vice President and Global Head of Compliance since March 2017. She had previously served as Controller and Chief Accounting Officer since 2002.

David M. Solomon, 56

Mr. Solomon has been President and co-Chief Operating Officer since January 2017. He had previously served as co-head of the Investment Banking Division since July 2006.

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PART II

Item 5. Market for Registrant s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The principal market on which our common stock is traded is the NYSE. Information relating to the high and low sales prices per share of our common stock, as reported by the Consolidated Tape Association, for each full quarterly period during 2015, 2016 and 2017 is set forth in Supplemental Financial Information Common Stock Price Range in Part II, Item 8 of this Form 10-K. As of February 9, 2018, there were 7,652 holders of record of our common stock.

The table below presents dividends declared by Group Inc. during 2017 and 2016.

	Date of Declaration	Dividend Declared Per Common Share
2017		
First Quarter	**January 17, 2017**	**$0.65**
Second Quarter	**April 17, 2017**	**$0.75**
Third Quarter	**July 17, 2017**	**$0.75**
Fourth Quarter	**October 16, 2017**	**$0.75**
2016		
First Quarter	January 19, 2016	$0.65
Second Quarter	April 18, 2016	$0.65
Third Quarter	July 18, 2016	$0.65
Fourth Quarter	October 17, 2016	$0.65

The declaration of dividends by Group Inc. is subject to the discretion of the Board of Directors of Group Inc. (Board). Our Board will take into account such matters as general business conditions, our financial results, capital requirements, contractual, legal and regulatory restrictions on the payment of dividends by us to our shareholders or by our subsidiaries to us, the effect on our debt ratings and such other factors as our Board may deem relevant. The holders of our common stock share proportionately on a per share basis in all dividends and other distributions on common stock declared by our Board. See Business Regulation in Part I, Item 1 of this Form 10-K for information about potential regulatory limitations on our receipt of funds from our regulated subsidiaries and our payment of dividends to shareholders of Group Inc. Prior to the payment of dividends, we must receive confirmation that the FRB does not object to such payment.

The table below presents purchases made by or on behalf of Group Inc. or any affiliated purchaser (as defined in Rule 10b-18(a)(3) under the Exchange Act) of our common stock during the fourth quarter of 2017. Information relating to compensation plans under which our equity securities are authorized for issuance is presented in Part III, Item 12 of this Form 10-K.

	Total Shares Purchased	Average Price Paid Per Share	Total Shares Purchased as Part of a Publicly Announced Program	Maximum Shares That May Yet Be Purchased Under the Program
October 2017	**3,021,930**	**$241.88**	**3,021,930**	**51,180,272**
November 2017	**3,424,899**	**$240.23**	**3,424,899**	**47,755,373**
December 2017	**128,943**	**$247.68**	**128,943**	**47,626,430**
Total	**6,575,772**		**6,575,772**	

Since March 2000, our Board has approved a repurchase program authorizing repurchases of up to 555 million shares of our common stock. The repurchase program is effected primarily through regular open-market purchases (which may include repurchase plans designed to comply with Rule 10b5-1), the amounts and timing of which are determined primarily by our current and projected capital position, but which may also be influenced by general market conditions and the prevailing price and trading volumes of our common stock. The repurchase program has no set expiration or termination date. Prior to repurchasing common stock, we must receive confirmation that the FRB does not object to such capital action.

Item 6. Selected Financial Data

The Selected Financial Data table is set forth in Part II, Item 8 of this Form 10-K.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

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

Introduction

The Goldman Sachs Group, Inc. (Group Inc. or parent company), a Delaware corporation, together with its consolidated subsidiaries, is a leading global investment banking, securities and investment management firm that provides a wide range of financial services to a substantial and diversified client base that includes corporations, financial institutions, governments and individuals. Founded in 1869, we are headquartered in New York and maintain offices in all major financial centers around the world.

When we use the terms the firm, we, us and our, we mean Group Inc. and its consolidated subsidiaries. We report activities in four business segments: Investment Banking, Institutional Client Services, Investing & Lending and Investment Management. See Results of Operations below for further information about our business segments.

References to this Form 10-K are to our Annual Report on Form 10-K for the year ended December 31, 2017. All references to the consolidated financial statements or Supplemental Financial Information are to Part II, Item 8 of this Form 10-K. All references to 2017, 2016 and 2015 refer to our years ended, or the dates, as the context requires, December 31, 2017, December 31, 2016 and December 31, 2015, respectively. Any reference to a future year refers to a year ending on December 31 of that year. Certain reclassifications have been made to previously reported amounts to conform to the current presentation.

In this discussion and analysis of our financial condition and results of operations, we have included information that may constitute forward-looking statements within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are not historical facts, but instead represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside our control.

These statements include statements other than historical information or statements of current conditions and may relate to our future plans and objectives and results, among other things, and may also include statements about the effect of changes to the capital, leverage, liquidity, long-term debt and total loss-absorbing capacity rules applicable to banks and bank holding companies (BHCs), the impact of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) on our businesses and operations, and various legal proceedings, governmental investigations or mortgage-related contingencies as set forth in Notes 27 and 18, respectively, to the consolidated financial statements, as well as statements about the results of our Dodd-Frank Act and firm stress tests, statements about the objectives and effectiveness of our business continuity plan, information security program, risk management and liquidity policies, statements about our resolution plan and resolution strategy and their implications for our debtholders and other stakeholders, statements about the design and effectiveness of our resolution capital and liquidity models and our triggers and alerts framework, statements about trends in or growth opportunities for our businesses, statements about our future status, activities or reporting under U.S. or non-U.S. banking and financial regulation, statements about our investment banking transaction backlog, statements about the estimated effects of the Tax Cuts and Jobs Act (Tax Legislation), statements about our average Liquidity Coverage Ratio (LCR) and statements about our strategic growth initiatives.

By identifying these statements for you in this manner, we are alerting you to the possibility that our actual results and financial condition may differ, possibly materially, from the anticipated results and financial condition indicated in these forward-looking statements. Important factors that could cause our actual results and financial condition to differ from those indicated in these forward-looking statements include, among others, those described in Risk Factors in Part I, Item 1A of this Form 10-K and Cautionary Statement Pursuant to the U.S. Private Securities Litigation Reform Act of 1995 in Part I, Item 1 of this Form 10-K.

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Management s Discussion and Analysis

Executive Overview

2017 versus 2016. We generated net earnings of $4.29 billion and diluted earnings per common share of $9.01 for 2017, a decrease of 42% and 45%, respectively, compared with $7.40 billion and $16.29 per share for 2016. Return on average common shareholders equity was 4.9% for 2017, compared with 9.4% for 2016. Book value per common share was $181.00 as of December 2017, 0.8% lower compared with December 2016.

In the fourth quarter of 2017, we recorded $4.40 billion of estimated income tax expense related to Tax Legislation. Excluding this expense, diluted earnings per common share were $19.76 and return on average common shareholders equity was 10.8% for 2017. See Results of Operations Financial Overview below for further information about these non-GAAP measures, including the calculation of diluted earnings per common share and return on average common shareholders equity, excluding the estimated impact of Tax Legislation. See Results of Operations Provision for Taxes below for further information about Tax Legislation.

Net revenues were $32.07 billion for 2017, 5% higher than 2016, due to significantly higher net revenues in Investing & Lending and higher net revenues in both Investment Banking and Investment Management. These increases were partially offset by lower net revenues in Institutional Client Services, primarily reflecting significantly lower net revenues in Fixed Income, Currency and Commodities Client Execution (FICC Client Execution).

Operating expenses were $20.94 billion for 2017, 3% higher than 2016, due to slightly higher non-compensation expenses and compensation and benefits expenses.

We returned $7.90 billion of capital to common shareholders during 2017, including $6.72 billion of common share repurchases and $1.18 billion in common stock dividends. Our Common Equity Tier 1 (CET1) ratio as calculated in accordance with the Standardized approach and the Basel III Advanced approach, in each case reflecting the applicable transitional provisions, was 12.1% and 10.9%, respectively, as of December 2017. See Note 20 to the consolidated financial statements for further information about our capital ratios.

In 2017, we announced strategic growth initiatives with an emphasis on growing earnings and returns. To accomplish these initiatives, we will continue to make investments in our businesses, including in technology and talent, while exploring new opportunities. We estimate these initiatives could generate $5 billion of incremental net revenues and $2.5 billion of incremental pre-tax earnings in 2020.

2016 versus 2015. We generated net earnings of $7.40 billion and diluted earnings per common share of $16.29 for 2016, an increase of 22% and 34%, respectively, compared with $6.08 billion and $12.14 per share for 2015. Return on average common shareholders equity was 9.4% for 2016, compared with 7.4% for 2015. Book value per common share was $182.47 as of December 2016, 6.7% higher compared with December 2015.

Net revenues were $30.61 billion for 2016, 9% lower than 2015, due to significantly lower net revenues in Investing & Lending and lower net revenues in Investment Banking, Institutional Client Services and Investment

Management. These results reflected the impact of a challenging operating environment during the first half of 2016, particularly during the first quarter, although the environment improved during the second half of the year.

Operating expenses were $20.30 billion for 2016, 19% lower than 2015, primarily due to significantly lower non-compensation expenses, primarily reflecting significantly lower net provisions for mortgage-related litigation and regulatory matters, as 2015 included provisions related to the settlement agreement with the Residential Mortgage-Backed Securities Working Group of the U.S. Financial Fraud Enforcement Task Force (RMBS Working Group), as well as lower market development expenses and professional fees, reflecting expense savings initiatives. Compensation and benefits expenses were also lower, reflecting a decrease in net revenues and the impact of expense savings initiatives.

We returned $7.20 billion of capital to common shareholders during 2016, including $6.07 billion of common share repurchases and $1.13 billion in common stock dividends. Our CET1 ratio as calculated in accordance with the Standardized approach and the Basel III Advanced approach, in each case reflecting the applicable transitional provisions, was 14.5% and 13.1%, respectively, as of December 2016. See Note 20 to the consolidated financial statements for further information about our capital ratios.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Management s Discussion and Analysis

Business Environment

Global

During 2017, real gross domestic product (GDP) growth appeared to generally increase compared to 2016 in both advanced and emerging market economies. In advanced economies, real GDP growth was higher in the U.S., the Euro area and Japan, but decreased slightly in the U.K. In emerging markets, real GDP growth increased slightly in China and appeared to decrease in India. Real GDP appeared to grow in Russia and Brazil compared with contractions in 2016. Broadly, global macroeconomic data remained strong throughout 2017, and volatility in equity, fixed income, currency and commodity markets was low. Major elections were held in France, the U.K., Germany and China, but none of these events resulted in significant volatility across markets. Major central banks continued to gradually tighten their stance on monetary policy, as the U.S. Federal Reserve increased its target interest rate three times and began the process of balance sheet normalization. In investment banking, industry-wide announced and completed mergers and acquisitions transactions remained solid during 2017, although volumes declined compared with 2016. Industry-wide offerings in equity underwriting increased significantly compared with 2016, and industry-wide debt underwriting offerings remained strong, particularly in leveraged finance activity.

United States

In the U.S., real GDP increased by 2.3% in 2017, compared with an increase of 1.5% in 2016, as growth in business fixed investment increased. Measures of consumer confidence were stronger on average compared with the prior year, and the unemployment rate declined to 4.1% as of December 2017. Housing starts, sales and prices increased compared with 2016, while measures of inflation were mixed. The U.S. Federal Reserve increased its target rate for the federal funds rate by 25 basis points at each of the March, June and December meetings to end the year at a target range of 1.25% to 1.50%. In September, the U.S. Federal Reserve formally announced the process of balance sheet normalization. Previously, the U.S. Federal Reserve reinvested all proceeds from the maturity of bonds on its balance sheet, but since October 2017, $6 billion of U.S. Treasury securities and $4 billion of agency debt and mortgage-backed securities matured each month without reinvestment of the proceeds. These monthly allowances are expected to rise gradually over time to peak levels of $30 billion and $20 billion, respectively. The yield on the 10-year U.S. Treasury note decreased by 5 basis points during 2017 to 2.40%. The price of natural gas decreased by 21% compared to the end of 2016 to $2.95 per million British thermal units and the price of crude oil (WTI) increased by 12% to approximately $60 per barrel. In equity markets, the NASDAQ Composite Index, the Dow Jones Industrial Average and the S&P 500 Index increased by 28%, 25% and 19%, respectively, during 2017.

Europe

In the Euro area, real GDP increased by 2.5% in 2017, compared with an increase of 1.7% in 2016. Net exports improved, while growth in consumer spending and fixed investment slowed slightly. Measures of inflation remained subdued, prompting the European Central Bank (ECB) to announce an extension of its asset purchase program in the fourth quarter of 2017, although the pace of its monthly asset purchases decreased from 60 billion to 30 billion beginning in January 2018. The ECB maintained its main refinancing operations rate at 0.00% and its deposit rate at (0.40%). The Euro appreciated by 14% against the U.S. dollar. Yields on 10-year government bonds in the Euro area generally increased during the year. In equity markets, the DAX Index, CAC 40 Index and Euro Stoxx 50 Index increased by 13%, 9% and 6%, respectively, during 2017. During 2017, the process of negotiating an arrangement for the withdrawal of the U.K. from the E.U. began, resulting in an agreement on certain issues in December as negotiations shifted to transitional arrangements. In the U.K., real GDP increased by 1.7% in 2017, compared with an increase of 1.9% in 2016. Inflation increased materially in 2017 prompting the Bank of England to raise the official bank rate by 25 basis points in November. The British pound appreciated by 10% against the U.S. dollar during 2017. Yields on 10-year government bonds in the U.K. decreased slightly during the year and, in equity markets, the FTSE 100 Index increased by 8% during 2017.

Asia

In Japan, real GDP increased by 1.6% in 2017, compared with an increase of 0.9% in 2016. The Bank of Japan maintained its negative interest rate policy and continued to target a yield on 10-year Japanese government bonds of approximately 0%. The yield on 10-year Japanese government bonds was essentially unchanged, the U.S. dollar depreciated by 4% against the Japanese yen and the Nikkei 225 Index increased by 19% in 2017. In China, real GDP increased by 6.9% in 2017, compared with an increase of 6.7% in 2016. The People s Bank of China slightly tightened its stance on monetary policy in early 2017. Measures of inflation decreased and the U.S. dollar depreciated by 6% against the Chinese yuan. In equity markets, the Hang Seng Index and the Shanghai Composite Index increased by 36% and 7%, respectively, during 2017. In India, real GDP appeared to increase by 6.2% in 2017, compared with an increase of 7.9% in 2016, and the rate of inflation decreased compared with 2016. The U.S. dollar depreciated by 6% against the Indian rupee and the BSE Sensex Index increased by 28% during 2017.

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Other Markets

In Brazil, real GDP appeared to increase by 1.1% in 2017, compared with a contraction of 3.5% in 2016. The U.S. dollar appreciated by 2% against the Brazilian real and the Bovespa Index increased by 27%. In Russia, real GDP appeared to increase by 1.5% in 2017, compared with a contraction of 0.2% in 2016. The U.S. dollar depreciated by 6% against the Russian ruble and the MICEX Index decreased by 6% during 2017.

Critical Accounting Policies

Fair Value

Fair Value Hierarchy. Financial instruments owned and financial instruments sold, but not yet purchased (i.e., inventory), as well as certain other financial assets and financial liabilities, are included in our consolidated statements of financial condition at fair value (i.e., marked-to-market), with related gains or losses generally recognized in our consolidated statements of earnings. The use of fair value to measure financial instruments is fundamental to our risk management practices and is our most critical accounting policy.

The fair value of a financial instrument is the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. We measure certain financial assets and financial liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks). In determining fair value, the hierarchy under U.S. generally accepted accounting principles (U.S. GAAP) gives (i) the highest priority to unadjusted quoted prices in active markets for identical, unrestricted assets or liabilities (level 1 inputs), (ii) the next priority to inputs other than level 1 inputs that are observable, either directly or indirectly (level 2 inputs), and (iii) the lowest priority to inputs that cannot be observed in market activity (level 3 inputs). In evaluating the significance of a valuation input, we consider, among other factors, a portfolio s net risk exposure to that input. Assets and liabilities are classified in their entirety based on the lowest level of input that is significant to their fair value measurement.

The fair values for substantially all of our financial assets and financial liabilities are based on observable prices and inputs and are classified in levels 1 and 2 of the fair value hierarchy. Certain level 2 and level 3 financial assets and financial liabilities may require appropriate valuation adjustments that a market participant would require to arrive at fair value for factors such as counterparty and our credit quality, funding risk, transfer restrictions, liquidity and bid/offer spreads.

Instruments classified in level 3 of the fair value hierarchy are those which require one or more significant inputs that are not observable. As of December 2017 and December 2016, level 3 financial assets represented 2.1% and 2.7%, respectively, of our total assets. See Notes 5 through 8 to the consolidated financial statements for further information about level 3 financial assets, including changes in level 3 financial assets and related fair value measurements. Absent evidence to the contrary, instruments classified in level 3 of the fair value hierarchy are initially valued at transaction price, which is considered to be the best initial estimate of fair value. Subsequent to the transaction date, we use other methodologies to determine fair value, which vary based on the type of instrument. Estimating the fair value of level 3 financial instruments requires judgments to be made. These judgments include:

Determining the appropriate valuation methodology and/or model for each type of level 3 financial instrument;

Determining model inputs based on an evaluation of all relevant empirical market data, including prices evidenced by market transactions, interest rates, credit spreads, volatilities and correlations; and

Determining appropriate valuation adjustments, including those related to illiquidity or counterparty credit quality.

Regardless of the methodology, valuation inputs and assumptions are only changed when corroborated by substantive evidence.

Controls Over Valuation of Financial Instruments. Market makers and investment professionals in our revenue-producing units are responsible for pricing our financial instruments. Our control infrastructure is independent of the revenue-producing units and is fundamental to ensuring that all of our financial instruments are appropriately valued at market-clearing levels. In the event that there is a difference of opinion in situations where estimating the fair value of financial instruments requires judgment (e.g., calibration to market comparables or trade comparison, as described below), the final valuation decision is made by senior managers in control and support functions. This independent price verification is critical to ensuring that our financial instruments are properly valued.

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Price Verification. All financial instruments at fair value classified in levels 1, 2 and 3 of the fair value hierarchy are subject to our independent price verification process. The objective of price verification is to have an informed and independent opinion with regard to the valuation of financial instruments under review. Instruments that have one or more significant inputs which cannot be corroborated by external market data are classified in level 3 of the fair value hierarchy. Price verification strategies utilized by our independent control and support functions include:

Trade Comparison. Analysis of trade data (both internal and external, where available) is used to determine the most relevant pricing inputs and valuations.

External Price Comparison. Valuations and prices are compared to pricing data obtained from third parties (e.g., brokers or dealers, Markit, Bloomberg, IDC, TRACE). Data obtained from various sources is compared to ensure consistency and validity. When broker or dealer quotations or third-party pricing vendors are used for valuation or price verification, greater priority is generally given to executable quotations.

Calibration to Market Comparables. Market-based transactions are used to corroborate the valuation of positions with similar characteristics, risks and components.

Relative Value Analyses. Market-based transactions are analyzed to determine the similarity, measured in terms of risk, liquidity and return, of one instrument relative to another or, for a given instrument, of one maturity relative to another.

Collateral Analyses. Margin calls on derivatives are analyzed to determine implied values, which are used to corroborate our valuations.

Execution of Trades. Where appropriate, trading desks are instructed to execute trades in order to provide evidence of market-clearing levels.

Backtesting. Valuations are corroborated by comparison to values realized upon sales.

See Notes 5 through 8 to the consolidated financial statements for further information about fair value measurements.

Review of Net Revenues. Independent control and support functions ensure adherence to our pricing policy through a combination of daily procedures, including the explanation and attribution of net revenues based on the underlying factors. Through this process, we independently validate net revenues, identify and resolve potential fair value or trade booking issues on a timely basis and seek to ensure that risks are being properly categorized and quantified.

Review of Valuation Models. Our independent model risk management group (Model Risk Management), consisting of quantitative professionals who are separate from model developers, performs an independent model review and validation process of our valuation models. New or changed models are reviewed and approved prior to being put into use. Models are evaluated and re-approved annually to assess the impact of any changes in the product or market and any market developments in pricing theories. See Risk Management Model Risk Management for further information about the review and validation of our valuation models.

Goodwill and Identifiable Intangible Assets

Goodwill. Goodwill is the cost of acquired companies in excess of the fair value of net assets, including identifiable intangible assets, at the acquisition date.

Goodwill is assessed for impairment annually in the fourth quarter or more frequently if events occur or circumstances change that indicate an impairment may exist. When assessing goodwill for impairment, first, qualitative factors are assessed to determine whether it is more likely than not that the estimated fair value of a reporting unit is less than its estimated carrying value. If the results of the qualitative assessment are not conclusive, a quantitative goodwill test is performed by comparing the estimated fair value of each reporting unit with its estimated carrying value.

In the fourth quarter of 2017, we assessed goodwill for impairment for each of our reporting units by performing a qualitative assessment. The qualitative assessment required management to make judgments and to evaluate several factors, which included, but were not limited to, performance indicators, firm and industry events, macroeconomic indicators and fair value indicators. Based on our evaluation of these factors, we determined that it was more likely than not that the estimated fair value of each of the reporting units exceeded its respective estimated carrying value. Therefore, we determined that goodwill for each reporting unit was not impaired and that a quantitative goodwill test was not required.

See Note 13 to the consolidated financial statements for further information about our goodwill.

Estimating the fair value of our reporting units requires management to make judgments. Critical inputs to the fair value estimates include projected earnings and attributed equity. There is inherent uncertainty in the projected earnings. The estimated net book value of each reporting unit reflects an allocation of total shareholders equity and represents the estimated amount of total shareholders equity required to support the activities of the reporting unit under currently applicable regulatory capital requirements. See Equity Capital Management and Regulatory Capital for further information about our capital requirements.

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Management s Discussion and Analysis

If we experience a prolonged or severe period of weakness in the business environment, financial markets or our performance, or additional increases in capital requirements, our goodwill could be impaired in the future. In addition, significant changes to other inputs of the quantitative goodwill test could cause the estimated fair value of our reporting units to decline, which could result in an impairment of goodwill in the future.

Identifiable Intangible Assets. We amortize our identifiable intangible assets over their estimated useful lives generally using the straight-line method. Identifiable intangible assets are tested for impairment whenever events or changes in circumstances suggest that an asset s or asset group s carrying value may not be fully recoverable.

A prolonged or severe period of market weakness, or significant changes in regulation, could adversely impact our businesses and impair the value of our identifiable intangible assets. In addition, certain events could indicate a potential impairment of our identifiable intangible assets, including weaker business performance resulting in a decrease in our customer base and decreases in revenues from customer contracts and relationships. Management judgment is required to evaluate whether indications of potential impairment have occurred, and to test intangible assets for impairment, if required.

An impairment, generally calculated as the difference between the estimated fair value and the carrying value of an asset or asset group, is recognized if the total of the estimated undiscounted cash flows relating to the asset or asset group is less than the corresponding carrying value.

See Note 13 to the consolidated financial statements for further information about our identifiable intangible assets.

Recent Accounting Developments

See Note 3 to the consolidated financial statements for information about Recent Accounting Developments.

Use of Estimates

U.S. GAAP requires management to make certain estimates and assumptions. In addition to the estimates we make in connection with fair value measurements and the accounting for goodwill and identifiable intangible assets, the use of estimates and assumptions is also important in determining income tax expense related to Tax Legislation, provisions for losses that may arise from litigation and regulatory proceedings (including governmental investigations), the allowance for losses on loans receivable and lending commitments held for investment, and provisions for losses that may arise from tax audits.

We estimate and provide for potential losses that may arise out of litigation and regulatory proceedings to the extent that such losses are probable and can be reasonably estimated. In addition, we estimate the upper end of the range of reasonably possible aggregate loss in excess of the related reserves for litigation and regulatory proceedings where we believe the risk of loss is more than slight. See Notes 18 and 27 to the consolidated financial statements for information about certain judicial, litigation and regulatory proceedings.

Significant judgment is required in making these estimates and our final liabilities may ultimately be materially different. Our total estimated liability in respect of litigation and regulatory proceedings is determined on a case-by-case basis and represents an estimate of probable losses after considering, among other factors, the progress of each case, proceeding or investigation, our experience and the experience of others in similar cases, proceedings or investigations, and the opinions and views of legal counsel.

In accounting for income taxes, we recorded an estimated impact of Tax Legislation. We have made assumptions and judgments regarding interpretations of Tax Legislation. In addition, in accounting for income taxes, we recognize tax positions in the financial statements only when it is more likely than not that the position will be sustained on examination by the relevant taxing authority based on the technical merits of the position. See Note 24 to the consolidated financial statements for further information about income taxes.

We also estimate and record an allowance for losses related to our loans receivable and lending commitments held for investment. Management s estimate of loan losses entails judgment about loan collectability at the reporting dates, and there are uncertainties inherent in those judgments. See Note 9 to the consolidated financial statements for further information about the allowance for losses on loans receivable and lending commitments held for investment.

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Results of Operations

The composition of our net revenues has varied over time as financial markets and the scope of our operations have changed. The composition of net revenues can also vary over the shorter term due to fluctuations in U.S. and global economic and market conditions. See Risk Factors in Part I, Item 1A of this Form 10-K for further information about the impact of economic and market conditions on our results of operations.

Financial Overview

The table below presents an overview of our financial results and selected financial ratios.

	Year Ended December		
$ in millions, except per share amounts	**2017**	2016	2015
Net revenues	**$32,073**	$30,608	$33,820
Pre-tax earnings	**$11,132**	$10,304	$ 8,778
Net earnings	**$ 4,286**	$ 7,398	$ 6,083
Net earnings applicable to common shareholders	**$ 3,685**	$ 7,087	$ 5,568
Diluted earnings per common share	**$ 9.01**	$ 16.29	$ 12.14
Return on average common shareholders equity	**4.9%**	9.4%	7.4%
Net earnings to average total assets	**0.5%**	0.8%	0.7%
Return on average total shareholders equity	**5.0%**	8.5%	7.0%
Total average shareholders equity to average total assets	**9.5%**	9.8%	9.9%
Dividend payout ratio	**32.2%**	16.0%	21.0%

In the table above:

Dividend payout ratio is calculated by dividing dividends declared per common share by diluted earnings per common share.

Net earnings applicable to common shareholders for 2016 included a benefit of $266 million, reflected in preferred stock dividends, related to the exchange of APEX for shares of Series E and Series F Preferred Stock. See Note 19 to the consolidated financial statements for further information.

Return on average common shareholders equity is calculated by dividing net earnings applicable to common shareholders by average monthly common shareholders equity. Return on average total shareholders equity is calculated by dividing net earnings by average monthly total shareholders equity. The table below presents our average common and total shareholders equity.

	Average for the Year Ended December		
$ in millions	**2017**	2016	2015
Total shareholders equity	**$ 85,959**	$ 86,658	$ 86,314
Preferred stock	**(11,238)**	(11,304)	(10,585)
Common shareholders equity	**$ 74,721**	$ 75,354	$ 75,729

In 2017, we recorded $4.40 billion of estimated income tax expense related to Tax Legislation. Excluding this expense, diluted earnings per common share were $19.76 and return on average common shareholders equity was 10.8% for 2017. We believe that presenting our results excluding Tax Legislation is meaningful as excluding this item increases the comparability of period-to-period results. See Results of Operations Provision for Taxes below for further information about Tax Legislation. Diluted earnings per common share and return on average common shareholders equity, excluding the estimated impact of Tax Legislation, are non-GAAP measures and may not be comparable to similar non-GAAP measures used by other companies. The tables below present the calculation of net earnings applicable to common shareholders, diluted earnings per common share and average common shareholders equity, excluding the estimated impact of Tax Legislation.

in millions, except per share amounts	**Year Ended December 2017**
Net earnings applicable to common shareholders, as reported	**$ 3,685**
Estimated impact of Tax Legislation	**4,400**
Net earnings applicable to common shareholders, excluding the estimated impact of Tax Legislation	**$ 8,085**
Divided by average diluted common shares	**409.1**
Diluted earnings per common share, excluding the estimated impact of Tax Legislation	**$ 19.76**

$ in millions	**Average for the Year Ended December 2017**
Common shareholders equity, as reported	**$74,721**
Estimated impact of Tax Legislation	**338**
Common shareholders equity, excluding the estimated impact of Tax Legislation	**$75,059**

In 2017, as required, we adopted ASU No. 2016-09, Compensation Stock Compensation (Topic 718) Improvements to Employee Share-Based Payment Accounting. The impact of adoption was a reduction to our provision for taxes of $719 million for 2017, which increased diluted earnings per common share by approximately $1.75 and return on average common shareholders equity by approximately 1.0 percentage points. See Note 3 to the consolidated financial statements for further information about this ASU.

In 2015, we recorded provisions of $3.37 billion related to the settlement agreement with the RMBS Working Group, which reduced diluted earnings per common share by $6.53 and return on average common shareholders equity by 3.8 percentage points for 2015. See Note 27 to the consolidated financial statements in Part II, Item 8 of our Annual Report on Form 10-K for the year ended December 31, 2015 for further information.

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Net Revenues

The table below presents our net revenues by line item in the consolidated statements of earnings.

	Year Ended December		
$ in millions	**2017**	2016	2015
Investment banking	**$ 7,371**	$ 6,273	$ 7,027
Investment management	**5,803**	5,407	5,868
Commissions and fees	**3,051**	3,208	3,320
Market making	**7,660**	9,933	9,523
Other principal transactions	**5,256**	3,200	5,018
Total non-interest revenues	**29,141**	28,021	30,756
Interest income	**13,113**	9,691	8,452
Interest expense	**10,181**	7,104	5,388
Net interest income	**2,932**	2,587	3,064
Total net revenues	**$32,073**	$30,608	$33,820

In the table above:

Investment banking consists of revenues (excluding net interest) from financial advisory and underwriting assignments, as well as derivative transactions directly related to these assignments. These activities are included in our Investment Banking segment.

Investment management consists of revenues (excluding net interest) from providing investment management services to a diverse set of clients, as well as wealth advisory services and certain transaction services to high-net-worth individuals and families. These activities are included in our Investment Management segment.

Commissions and fees consists of revenues from executing and clearing client transactions on major stock, options and futures exchanges worldwide, as well as over-the-counter (OTC) transactions. These activities are included in our Institutional Client Services and Investment Management segments.

Market making consists of revenues (excluding net interest) from client execution activities related to making markets in interest rate products, credit products, mortgages, currencies, commodities and equity products. These activities are included in our Institutional Client Services segment.

Other principal transactions consists of revenues (excluding net interest) from our investing activities and the origination of loans to provide financing to clients. In addition, other principal transactions includes revenues related to our consolidated investments. These activities are included in our Investing & Lending segment.

Operating Environment. During 2017, generally higher asset prices and tighter credit spreads were supportive of industry-wide underwriting activities, investment management performance and other principal transactions. However, low levels of volatility in equity, fixed income, currency and commodity markets continued to negatively affect our market-making activities, particularly in fixed income, currency and commodity products. The price of natural gas decreased significantly during 2017, while the price of oil increased compared with the end of 2016.

If the trend of low volatility continues over the long term and market-making activity levels remain low, or if investment banking activity levels, asset prices or assets under supervision decline, net revenues would likely be negatively impacted. See Segment Operating Results below for further information about the operating environment and material trends and uncertainties that may impact our results of operations.

The first half of 2016 included challenging trends in the operating environment for our business activities including concerns and uncertainties about global economic growth, central bank activity and the political uncertainty and economic implications surrounding the potential exit of the U.K. from the E.U. During the second half of 2016, the operating environment improved, as global equity markets steadily increased and investment grade and high-yield credit spreads tightened. These trends provided a more favorable backdrop for our business activities.

2017 versus 2016

Net revenues in the consolidated statements of earnings were $32.07 billion for 2017, 5% higher than 2016, due to significantly higher other principal transactions revenues, and higher investment banking revenues, investment management revenues and net interest income. These increases were partially offset by significantly lower market making revenues and lower commissions and fees.

Non-Interest Revenues. Investment banking revenues in the consolidated statements of earnings were $7.37 billion for 2017, 18% higher than 2016. Revenues in financial advisory were higher compared with 2016, reflecting an increase in completed mergers and acquisitions transactions. Revenues in underwriting were significantly higher compared with 2016, due to significantly higher revenues in both debt underwriting, primarily reflecting an increase in industry-wide leveraged finance activity, and equity underwriting, reflecting an increase in industry-wide secondary offerings.

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Investment management revenues in the consolidated statements of earnings were $5.80 billion for 2017, 7% higher than 2016, due to higher management and other fees, reflecting higher average assets under supervision, and higher transaction revenues.

Commissions and fees in the consolidated statements of earnings were $3.05 billion for 2017, 5% lower than 2016, reflecting a decline in our listed cash equity volumes in the U.S. Market volumes in the U.S. also declined.

Market making revenues in the consolidated statements of earnings were $7.66 billion for 2017, 23% lower than 2016, due to significantly lower revenues in commodities, currencies, credit products, interest rate products and equity derivative products. These results were partially offset by significantly higher revenues in equity cash products and significantly improved results in mortgages.

Other principal transactions revenues in the consolidated statements of earnings were $5.26 billion for 2017, 64% higher than 2016, primarily reflecting a significant increase in net gains from private equities, which were positively impacted by company-specific events and corporate performance. In addition, net gains from public equities were significantly higher, as global equity prices increased during the year.

Net Interest Income. Net interest income in the consolidated statements of earnings was $2.93 billion for 2017, 13% higher than 2016, reflecting an increase in interest income primarily due to the impact of higher interest rates on collateralized agreements, higher interest income from loans receivable due to higher yields and an increase in total average loans receivable, an increase in total average financial instruments owned, and the impact of higher interest rates on other interest-earning assets and deposits with banks. The increase in interest income was partially offset by higher interest expense primarily due to the impact of higher interest rates on other interest-bearing liabilities, an increase in total average long-term borrowings, and the impact of higher interest rates on interest-bearing deposits, short-term borrowings and collateralized financings. See Statistical Disclosures Distribution of Assets, Liabilities and Shareholders Equity for further information about our sources of net interest income.

2016 versus 2015

Net revenues in the consolidated statements of earnings were $30.61 billion for 2016, 9% lower than 2015, reflecting the impact of a challenging operating environment during the first half of 2016, particularly during the first quarter, although the environment improved during the second half of the year. The decrease in net revenues was primarily due to significantly lower other principal transactions revenues and lower investment banking revenues, net interest income and investment management revenues. In addition, commissions and fees were slightly lower. These results were partially offset by slightly higher market making revenues.

Non-Interest Revenues. Investment banking revenues in the consolidated statements of earnings were $6.27 billion for 2016, 11% lower compared with a strong 2015. Revenues in financial advisory were lower compared with a strong 2015, reflecting a decrease in industry-wide transactions. Revenues in underwriting were lower compared with a strong 2015, due to significantly lower revenues in equity underwriting, reflecting a decrease in industry-wide volumes. Revenues in debt underwriting were significantly higher, reflecting significantly higher revenues from asset-backed activity and higher revenues from leveraged finance activity.

Investment management revenues in the consolidated statements of earnings were $5.41 billion for 2016, 8% lower than 2015, primarily reflecting significantly lower incentive fees compared with a strong 2015. In addition, management and other fees were slightly lower, reflecting shifts in the mix of client assets and strategies, partially offset by the impact of higher average assets under supervision.

Commissions and fees in the consolidated statements of earnings were $3.21 billion for 2016, 3% lower than 2015, reflecting lower listed cash equity volumes in Asia and Europe, consistent with market volumes in these regions.

Market making revenues in the consolidated statements of earnings were $9.93 billion for 2016, 4% higher than 2015, due to significantly higher revenues in interest rate products and credit products. These results were partially offset by significantly lower revenues in equity cash products and lower revenues in currencies, mortgages, equity derivative products and commodities.

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Other principal transactions revenues in the consolidated statements of earnings were $3.20 billion for 2016, 36% lower than 2015, primarily due to significantly lower revenues from investments in equities, primarily reflecting a significant decrease in net gains from private equities, driven by company-specific events and corporate performance. In addition, revenues in debt securities and loans were significantly lower compared with 2015, reflecting significantly lower revenues related to relationship lending activities, due to the impact of changes in credit spreads on economic hedges. Losses related to these hedges were $596 million in 2016, compared with gains of $329 million in 2015. This decrease was partially offset by higher net gains from investments in debt instruments. See Note 9 to the consolidated financial statements for further information about economic hedges related to our relationship lending activities.

Net Interest Income. Net interest income in the consolidated statements of earnings was $2.59 billion for 2016, 16% lower than 2015, reflecting an increase in interest expense primarily due to the impact of higher interest rates on other interest-bearing liabilities, interest-bearing deposits and collateralized financings, and increases in total average long-term borrowings and total average interest-bearing deposits. The increase in interest expense was partially offset by higher interest income related to collateralized agreements, reflecting the impact of higher interest rates, and loans receivable, reflecting an increase in total average balances and the impact of higher interest rates. See Statistical Disclosures Distribution of Assets, Liabilities and Shareholders Equity for further information about our sources of net interest income.

Operating Expenses

Our operating expenses are primarily influenced by compensation, headcount and levels of business activity. Compensation and benefits includes salaries, discretionary compensation, amortization of equity awards and other items such as benefits. Discretionary compensation is significantly impacted by, among other factors, the level of net revenues, overall financial performance, prevailing labor markets, business mix, the structure of our share-based compensation programs and the external environment. In addition, see Use of Estimates for further information about expenses that may arise from litigation and regulatory proceedings.

In the context of the challenging environment, we completed an initiative during 2016 that identified areas where we can operate more efficiently, resulting in a reduction of approximately $900 million in annual run rate compensation. For 2016, net savings from this initiative, after severance and other related costs, were approximately $500 million.

The table below presents our operating expenses and total staff (including employees, consultants and temporary staff).

	Year Ended December		
$ in millions	**2017**	2016	2015
Compensation and benefits	**$11,853**	$11,647	$12,678
Brokerage, clearing, exchange and distribution fees	**2,540**	2,555	2,576

Market development	**588**	457	557
Communications and technology	**897**	809	806
Depreciation and amortization	**1,152**	998	991
Occupancy	**733**	788	772
Professional fees	**965**	882	963
Other expenses	**2,213**	2,168	5,699
Total non-compensation expenses	**9,088**	8,657	12,364
Total operating expenses	**$20,941**	$20,304	$25,042
Total staff at period-end	**36,600**	34,400	36,800

In the table above, other expenses for 2015 included $3.37 billion recorded for the settlement agreement with the RMBS Working Group. See Note 27 to the consolidated financial statements in Part II, Item 8 of our Annual Report on Form 10-K for the year ended December 31, 2015 for further information.

2017 versus 2016. Operating expenses in the consolidated statements of earnings were $20.94 billion for 2017, 3% higher than 2016. Compensation and benefits expenses in the consolidated statements of earnings were $11.85 billion for 2017, 2% higher than 2016. The ratio of compensation and benefits to net revenues for 2017 was 37.0% compared with 38.1% for 2016.

Non-compensation expenses in the consolidated statements of earnings were $9.09 billion for 2017, 5% higher than 2016, primarily driven by our investments to fund growth. The increase compared with 2016 reflected higher expenses related to consolidated investments and our digital lending and deposit platform, *Marcus: by Goldman Sachs* (Marcus). These increases were primarily included in depreciation and amortization expenses, market development expenses and other expenses. In addition, technology expenses increased, reflecting higher expenses related to cloud-based services and software depreciation, and professional fees increased, primarily related to consulting costs. These increases were partially offset by lower net provisions for litigation and regulatory proceedings, and lower occupancy expenses (primarily related to exit costs in 2016).

Net provisions for litigation and regulatory proceedings for 2017 were $188 million compared with $396 million for 2016. 2017 included a $127 million charitable contribution to Goldman Sachs Gives, our donor-advised fund. Compensation was reduced to fund this charitable contribution to Goldman Sachs Gives. We ask our participating managing directors to make recommendations regarding potential charitable recipients for this contribution.

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As of December 2017, total staff increased 6% compared with December 2016, reflecting investments in technology and Marcus, and support of our regulatory efforts.

2016 versus 2015. Operating expenses in the consolidated statements of earnings were $20.30 billion for 2016, 19% lower than 2015. Compensation and benefits expenses in the consolidated statements of earnings were $11.65 billion for 2016, 8% lower than 2015, reflecting a decrease in net revenues and the impact of expense savings initiatives. The ratio of compensation and benefits to net revenues for 2016 was 38.1% compared with 37.5% for 2015.

Non-compensation expenses in the consolidated statements of earnings were $8.66 billion for 2016, 30% lower than 2015, primarily due to significantly lower net provisions for mortgage-related litigation and regulatory matters, which are included in other expenses. In addition, market development expenses and professional fees were lower compared with 2015, reflecting expense savings initiatives. Net provisions for litigation and regulatory proceedings for 2016 were $396 million compared with $4.01 billion for 2015 (2015 primarily related to net provisions for mortgage-related matters). 2016 included a $114 million charitable contribution to Goldman Sachs Gives. Compensation was reduced to fund this charitable contribution to Goldman Sachs Gives. We ask our participating managing directors to make recommendations regarding potential charitable recipients for this contribution.

As of December 2016, total staff decreased 7% compared with December 2015, due to expense savings initiatives.

Provision for Taxes

The effective income tax rate for 2017 was 61.5%, up from 28.2% for 2016. The increase compared with 2016 reflected the estimated impact of Tax Legislation, which was enacted on December 22, 2017 and, among other things, lowers U.S. corporate income tax rates as of January 1, 2018, implements a territorial tax system and imposes a repatriation tax on deemed repatriated earnings of foreign subsidiaries. The estimated impact of Tax Legislation was an increase in income tax expense of $4.40 billion, of which $3.32 billion was due to the repatriation tax and $1.08 billion was due to the effects of the implementation of the territorial tax system and the remeasurement of U.S. deferred tax assets at lower enacted corporate tax rates.

The impact of Tax Legislation may differ from this estimate, possibly materially, due to, among other things, (i) refinement of our calculations based on updated information, (ii) changes in interpretations and assumptions, (iii) guidance that may be issued and (iv) actions we may take as a result of Tax Legislation.

Excluding the estimated impact of Tax Legislation, the effective income tax rate for 2017 was 22.0%, down from 28.2% for 2016. This decrease was primarily due to tax benefits on the settlement of employee share-based awards in accordance with ASU No. 2016-09. The impact of these settlements in 2017 was a reduction to our provision for taxes of $719 million and a reduction in our effective income tax rate of 6.4 percentage points. See Note 3 to the consolidated financial statements for further information about this ASU.

The effective income tax rate, excluding the estimated impact of Tax Legislation, is a non-GAAP measure and may not be comparable to similar non-GAAP measures used by other companies. We believe that presenting our effective income tax rate, excluding the estimated impact of Tax Legislation is meaningful, as excluding this item increases the comparability of period-to-period results.

The table below presents the calculation of the effective income tax rate, excluding the estimated impact of Tax Legislation.

	Year Ended December 2017		
$ in millions	**Pre-tax earnings**	**Provision for taxes**	**Effective income tax rate**
As reported	**$11,132**	**$6,846**	**61.5%**
Estimated impact of Tax Legislation		**4,400**	
Excluding the estimated impact of Tax Legislation	**$11,132**	**$2,446**	**22.0%**

The effective income tax rate for 2016 was 28.2%, down from 30.7% for 2015. The decline compared with 2015 was primarily due to the impact of non-deductible provisions for mortgage-related litigation and regulatory matters in 2015, partially offset by the impact of changes in tax law on deferred tax assets, the mix of earnings and an increase related to higher enacted tax rates impacting certain of our U.K. subsidiaries in 2016.

Effective January 1, 2018, Tax Legislation reduced the U.S. corporate tax rate to 21 percent, eliminated tax deductions for certain expenses and enacted two new taxes, Base Erosion and Anti-Abuse Tax (BEAT) and Global Intangible Low Taxed Income (GILTI). BEAT is an alternative minimum tax that applies to banks that pay more than 2 percent of total deductible expenses to certain foreign subsidiaries. GILTI is a 10.5 percent tax, before allowable credits for foreign taxes paid, on the annual earnings and profits of certain foreign subsidiaries. Based on our current understanding of these rules, the impact of BEAT and GILTI is not expected to be material to our effective income tax rate.

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Segment Operating Results

The table below presents the net revenues, operating expenses and pre-tax earnings of our segments.

	Year Ended December		
$ in millions	**2017**	2016	2015
Investment Banking			
Net revenues	**$ 7,371**	$ 6,273	$ 7,027
Operating expenses	**3,526**	3,437	3,713
Pre-tax earnings	**$ 3,845**	$ 2,836	$ 3,314
Institutional Client Services			
Net revenues	**$11,902**	$14,467	$15,151
Operating expenses	**9,692**	9,713	13,938
Pre-tax earnings	**$ 2,210**	$ 4,754	$ 1,213
Investing & Lending			
Net revenues	**$ 6,581**	$ 4,080	$ 5,436
Operating expenses	**2,796**	2,386	2,402
Pre-tax earnings	**$ 3,785**	$ 1,694	$ 3,034
Investment Management			
Net revenues	**$ 6,219**	$ 5,788	$ 6,206
Operating expenses	**4,800**	4,654	4,841
Pre-tax earnings	**$ 1,419**	$ 1,134	$ 1,365
Total net revenues	**$32,073**	$30,608	$33,820
Total operating expenses	**20,941**	20,304	25,042
Total pre-tax earnings	**$11,132**	$10,304	$ 8,778

In the table above:

Operating expenses included $3.37 billion recorded in Institutional Client Services in 2015 related to the settlement agreement with the RMBS Working Group. See Note 27 to the consolidated financial statements in Part II, Item 8 of our Annual Report on Form 10-K for the year ended December 31, 2015 for further information.

All operating expenses have been allocated to our segments except for charitable contributions of $127 million for 2017, $114 million for 2016 and $148 million for 2015.

Net revenues in our segments include allocations of interest income and interest expense to specific securities, commodities and other positions in relation to the cash generated by, or funding requirements of, such underlying positions. See Note 25 to the consolidated financial statements for further information about our business segments.

Our cost drivers taken as a whole, compensation, headcount and levels of business activity, are broadly similar in each of our business segments. Compensation and benefits expenses within our segments reflect, among other factors, our overall performance, as well as the performance of individual businesses. Consequently, pre-tax margins in one segment of our business may be significantly affected by the performance of our other business segments. A description of segment operating results follows.

Investment Banking

Our Investment Banking segment consists of:

Financial Advisory. Includes strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings, spin-offs, risk management and derivative transactions directly related to these client advisory assignments.

Underwriting. Includes public offerings and private placements, including local and cross-border transactions and acquisition financing, of a wide range of securities and other financial instruments, including loans, and derivative transactions directly related to these client underwriting activities.

The table below presents the operating results of our Investment Banking segment.

	Year Ended December		
$ in millions	**2017**	2016	2015
Financial Advisory	**$3,188**	$2,932	$3,470
Equity underwriting	**1,243**	891	1,546
Debt underwriting	**2,940**	2,450	2,011
Total Underwriting	**4,183**	3,341	3,557
Total net revenues	**7,371**	6,273	7,027
Operating expenses	**3,526**	3,437	3,713
Pre-tax earnings	**$3,845**	$2,836	$3,314

The table below presents our financial advisory and underwriting transaction volumes.

	Year Ended December		
$ in billions	**2017**	2016	2015
Announced mergers and acquisitions	**$1,016**	$ 969	$1,530
Completed mergers and acquisitions	**$ 933**	$1,215	$1,241
Equity and equity-related offerings	**$ 68**	$ 49	$ 73
Debt offerings	**$ 279**	$ 266	$ 244

In the table above:

Volumes are per Dealogic. Prior periods have been conformed to reflect volumes per Dealogic.

Announced and completed mergers and acquisitions volumes are based on full credit to each of the advisors in a transaction. Equity and equity-related offerings and debt offerings are based on full credit for single book managers and equal credit for joint book managers. Transaction volumes may not be indicative of net revenues in a given period. In addition, transaction volumes for prior periods may vary from amounts previously reported due to the subsequent withdrawal or a change in the value of a transaction.

Equity and equity-related offerings includes Rule 144A and public common stock offerings, convertible offerings and rights offerings.

Debt offerings includes non-convertible preferred stock, mortgage-backed securities, asset-backed securities and taxable municipal debt. Includes publicly registered and Rule 144A issues. Excludes leveraged loans.

Operating Environment. During 2017, industry-wide announced and completed mergers and acquisitions transactions remained solid, increasing slightly compared with 2016, although volumes declined compared with the prior year.

In underwriting, generally higher equity prices and tighter credit spreads during 2017 continued to contribute to a relatively favorable financing environment. Industry-wide debt underwriting offerings remained strong, particularly in leveraged finance activity. Industry-wide equity underwriting offerings increased significantly during 2017 compared with the weak backdrop for new issuances during 2016.

In the future, if industry-wide mergers and acquisitions transactions decline or volumes continue to decline, or if industry-wide activity levels in debt underwriting or equity underwriting decline, net revenues in Investment Banking would likely be negatively impacted.

During 2016, Investment Banking operated in an environment characterized by robust industry-wide mergers and acquisitions activity. Industry-wide equity underwriting volumes decreased significantly compared with strong levels in 2015, while industry-wide debt underwriting volumes increased compared with 2015.

2017 versus 2016. Net revenues in Investment Banking were $7.37 billion for 2017, 18% higher than 2016.

Net revenues in Financial Advisory were $3.19 billion, 9% higher than 2016, reflecting an increase in completed mergers and acquisitions transactions. Net revenues in Underwriting were $4.18 billion, 25% higher than 2016, due to significantly higher net revenues in both debt underwriting, primarily reflecting an increase in industry-wide leveraged finance activity, and equity underwriting, reflecting an increase in industry-wide secondary offerings.

Operating expenses were $3.53 billion for 2017, 3% higher than 2016, due to increased compensation and benefits expenses, reflecting higher net revenues. Pre-tax earnings were $3.85 billion in 2017, 36% higher than 2016.

As of December 2017, our investment banking transaction backlog increased compared with the end of 2016, due to significantly higher estimated net revenues from potential debt underwriting transactions and significantly higher estimated net revenues from potential equity underwriting transactions, primarily in initial public offerings. These increases were partially offset by lower estimated net revenues from potential advisory transactions, principally related to mergers and acquisitions.

Our investment banking transaction backlog represents an estimate of our future net revenues from investment banking transactions where we believe that future revenue realization is more likely than not. We believe changes in our investment banking transaction backlog may be a useful indicator of client activity levels which, over the long term, impact our net revenues. However, the time frame for completion and corresponding revenue recognition of transactions in our backlog varies based on the nature of the assignment, as certain transactions may remain in our backlog for longer periods of time and others may enter and leave within the same reporting period. In addition, our transaction backlog is subject to certain limitations, such as assumptions about the likelihood that individual client transactions will occur in the future. Transactions may be cancelled or modified, and transactions not included in the estimate may also occur.

2016 versus 2015. Net revenues in Investment Banking were $6.27 billion for 2016, 11% lower compared with a strong 2015.

Net revenues in Financial Advisory were $2.93 billion, 16% lower compared with a strong 2015, reflecting a decrease in industry-wide transactions. Net revenues in Underwriting were $3.34 billion, 6% lower compared with a strong 2015, due to significantly lower net revenues in equity underwriting, reflecting a decrease in industry-wide volumes. Net revenues in debt underwriting were significantly higher, reflecting significantly higher net revenues from asset-backed activity and higher net revenues from leveraged finance activity.

Operating expenses were $3.44 billion for 2016, 7% lower than 2015, due to decreased compensation and benefits expenses, reflecting lower net revenues. Pre-tax earnings were $2.84 billion in 2016, 14% lower than 2015.

As of December 2016, our investment banking transaction backlog was lower compared with a strong level of backlog at the end of 2015, primarily due to lower estimated net revenues from potential advisory transactions and significantly lower estimated net revenues from potential debt underwriting transactions, principally reflecting decreases in mergers and acquisitions activity and acquisition-related financing, respectively. Estimated net revenues from potential equity underwriting transactions were slightly lower compared with the end of 2015.

Institutional Client Services

Our Institutional Client Services segment consists of:

Fixed Income, Currency and Commodities Client Execution. Includes client execution activities related to making markets in both cash and derivative instruments for interest rate products, credit products, mortgages, currencies and commodities.

- **Interest Rate Products.** Government bonds (including inflation-linked securities) across maturities, other government-backed securities, repurchase agreements, and interest rate swaps, options and other derivatives.

- **Credit Products.** Investment-grade corporate securities, high-yield securities, credit derivatives, exchange-traded funds, bank and bridge loans, municipal securities, emerging market and distressed debt, and trade claims.

- **Mortgages.** Commercial mortgage-related securities, loans and derivatives, residential mortgage-related securities, loans and derivatives (including U.S. government agency-issued collateralized mortgage obligations and other securities and loans), and other asset-backed securities, loans and derivatives.

- **Currencies.** Currency options, spot/forwards and other derivatives on G-10 currencies and emerging-market products.

- **Commodities.** Commodity derivatives and, to a lesser extent, physical commodities, involving crude oil and petroleum products, natural gas, base, precious and other metals, electricity, coal, agricultural and other commodity products.

Equities. Includes client execution activities related to making markets in equity products and commissions and fees from executing and clearing institutional client transactions on major stock, options and futures exchanges worldwide, as well as OTC transactions. Equities also includes our securities services business, which provides financing, securities lending and other prime brokerage services to institutional clients, including hedge funds, mutual funds, pension funds and foundations, and generates revenues primarily in the form of interest rate spreads or fees.

Market-Making Activities

As a market maker, we facilitate transactions in both liquid and less liquid markets, primarily for institutional clients, such as corporations, financial institutions, investment funds and governments, to assist clients in meeting their investment objectives and in managing their risks. In this role, we seek to earn the difference between the price at which a market participant is willing to sell an instrument to us and the price at which another market participant is willing to buy it from us, and vice versa (i.e., bid/offer spread). In addition, we maintain inventory, typically for a short period of time, in response to, or in anticipation of, client demand. We also hold inventory to actively manage our risk exposures that arise from these market-making activities. Our market-making inventory is recorded in financial instruments owned (long positions) or financial instruments sold, but not yet purchased (short positions) in our consolidated statements of financial condition.

Our results are influenced by a combination of interconnected drivers, including (i) client activity levels and transactional bid/offer spreads (collectively, client activity), and (ii) changes in the fair value of our inventory and interest income and interest expense related to the holding, hedging and funding of our inventory (collectively, market-making inventory changes). Due to the integrated nature of our market-making activities, disaggregation of net revenues into client activity and market-making inventory changes is judgmental and has inherent complexities and limitations.

The amount and composition of our net revenues vary over time as these drivers are impacted by multiple interrelated factors affecting economic and market conditions, including volatility and liquidity in the market, changes in interest rates, currency exchange rates, credit spreads, equity prices and commodity prices, investor confidence, and other macroeconomic concerns and uncertainties.

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In general, assuming all other market-making conditions remain constant, increases in client activity levels or bid/offer spreads tend to result in increases in net revenues, and decreases tend to have the opposite effect. However, changes in market-making conditions can materially impact client activity levels and bid/offer spreads, as well as the fair value of our inventory. For example, a decrease in liquidity in the market could have the impact of (i) increasing our bid/offer spread, (ii) decreasing investor confidence and thereby decreasing client activity levels, and (iii) wider credit spreads on our inventory positions.

The table below presents the operating results of our Institutional Client Services segment.

	Year Ended December		
$ in millions	**2017**	2016	2015
FICC Client Execution	**$ 5,299**	$ 7,556	$ 7,322
Equities client execution	**2,046**	2,194	3,028
Commissions and fees	**2,920**	3,078	3,156
Securities services	**1,637**	1,639	1,645
Total Equities	**6,603**	6,911	7,829
Total net revenues	**11,902**	14,467	15,151
Operating expenses	**9,692**	9,713	13,938
Pre-tax earnings	**$ 2,210**	$ 4,754	$ 1,213

The table below presents net revenues of our Institutional Client Services segment by line item in the consolidated statements of earnings. See Net Revenues above for further information about market making revenues, commissions and fees, and net interest income.

$ in millions	FICC Client Execution	Total Equities	Institutional Client Services
Year Ended December 2017			
Market making	**$ 4,403**	**$ 3,257**	**$ 7,660**
Commissions and fees		**2,920**	**2,920**
Net interest income	**896**	**426**	**1,322**
Total net revenues	**$ 5,299**	**$ 6,603**	**$11,902**
Year Ended December 2016			
Market making	$ 6,803	$ 3,130	$ 9,933
Commissions and fees		3,078	3,078

Net interest income	753	703	1,456
Total net revenues	$ 7,556	$ 6,911	$14,467
Year Ended December 2015			
Market making	$ 5,893	$ 3,630	$ 9,523
Commissions and fees		3,156	3,156
Net interest income	1,429	1,043	2,472
Total net revenues	$ 7,322	$ 7,829	$15,151

In the table above:

The difference between commissions and fees and those in the consolidated statements of earnings represents commissions and fees included in our Investment Management segment.

See Note 25 to the consolidated financial statements for net interest income by business segment.

The primary driver of net revenues for FICC Client Execution, for the periods in the table above, was client activity.

Operating Environment. Low volatility levels in equity, fixed income, currency and commodity markets were a consistent theme during 2017, impacting the operating environment for Institutional Client Services throughout the year. During 2017, average VIX declined to 11.10 compared with 15.84 in 2016, U.S. and European interest rates experienced historically low volatility levels, and volatility in G-10 currencies were near 10-year lows. This continued to negatively affect client activity across businesses, particularly in FICC Client Execution for 2017.

Although market-making conditions remained challenging, including the price of natural gas decreasing by 21% compared to the end of 2016 to $2.95 per million British thermal units, there were some positives in the financial markets. Global equity markets continued to increase, with the MSCI World Index up 22% during 2017, and credit spreads continued to generally tighten in 2017. In addition, the price of oil increased by 12% compared to the end of 2016 to approximately $60 per barrel (WTI).

If the trend of low volatility continues over the long term and activity levels remain low, net revenues in Institutional Client Services would likely continue to be negatively impacted. See Business Environment above for further information about economic and market conditions in the global operating environment during the year.

The first half of 2016 included challenging trends in the operating environment for Institutional Client Services including concerns and uncertainties about global economic growth, central bank activity and the political uncertainty and economic implications surrounding the potential exit of the U.K. from the E.U. During the second half of 2016, the operating environment improved, as global equity markets steadily increased and investment grade and high-yield credit spreads tightened. These trends drove improved client sentiment and market-making conditions during the second half of 2016.

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2017 versus 2016. Net revenues in Institutional Client Services were $11.90 billion for 2017, 18% lower than 2016.

Net revenues in FICC Client Execution were $5.30 billion for 2017, 30% lower than 2016, reflecting significantly lower client activity. Approximately one-third of the decline in FICC Client Execution net revenues was due to significantly lower results in commodities.

The following provides details of our FICC Client Execution net revenues by business, compared with 2016 results:

Net revenues in commodities were significantly lower, reflecting the impact of challenging market-making conditions on our inventory.

Net revenues in interest rate products were significantly lower, reflecting lower client activity.

Net revenues in currencies were significantly lower, reflecting lower client activity and the impact of challenging market-making conditions on our inventory.

Net revenues in credit products were significantly lower, reflecting lower client activity.

Net revenues in mortgages were significantly higher, reflecting the impact of favorable market-making conditions on our inventory, including generally tighter spreads, compared with a challenging 2016.

Net revenues in Equities were $6.60 billion, 4% lower than 2016, primarily due to lower commissions and fees, reflecting a decline in our listed cash equity volumes in the U.S. Market volumes in the U.S. also declined. In addition, net revenues in equities client execution were lower, reflecting lower net revenues in derivatives, partially offset by higher net revenues in cash products. Net revenues in securities services were essentially unchanged.

Operating expenses were $9.69 billion for 2017, essentially unchanged compared with 2016, due to decreased compensation and benefits expenses, reflecting lower net revenues, largely offset by increased technology expenses, reflecting higher expenses related to cloud-based services and software depreciation, and increased consulting costs. Pre-tax earnings were $2.21 billion in 2017, 54% lower than 2016.

2016 versus 2015. Net revenues in Institutional Client Services were $14.47 billion for 2016, 5% lower than 2015.

Net revenues in FICC Client Execution were $7.56 billion for 2016, 3% higher than 2015. This increase was primarily driven by the impact of changes in market- making conditions on our inventory.

The following provides details of our FICC Client Execution net revenues by business, compared with 2015 results:

Net revenues in credit products were significantly higher, reflecting improved market-making conditions, including generally tighter spreads, and higher client activity levels compared with low activity in 2015.

Net revenues in interest rate products were higher, reflecting higher client activity levels.

Net revenues in mortgages were significantly lower, reflecting less favorable market-making conditions, including generally wider spreads.

Net revenues in currencies were lower, reflecting less favorable market-making conditions in emerging markets products compared with 2015, which included a strong first quarter of 2015.

Net revenues in commodities were lower, reflecting significantly lower client activity.

Net revenues in Equities were $6.91 billion, 12% lower than 2015, primarily due to significantly lower net revenues in equities client execution, reflecting significantly lower net revenues in cash products, primarily in Asia, as well as lower net revenues in derivatives. Commissions and fees were slightly lower, reflecting lower listed cash equity volumes in Asia and Europe, consistent with market volumes in these regions, and net revenues in securities services were essentially unchanged compared with 2015.

We elect the fair value option for certain unsecured borrowings. For 2015, the fair value net gain attributable to the impact of changes in our credit spreads on these borrowings was $255 million ($214 million and $41 million related to FICC Client Execution and equities client execution, respectively). For 2016, we adopted the requirement in ASU No. 2016-01 to present separately such gains and losses in other comprehensive income. The amount included in accumulated other comprehensive loss for 2016 was a loss of $844 million ($544 million, net of tax). See Note 3 to the consolidated financial statements for further information about ASU No. 2016-01.

Operating expenses were $9.71 billion for 2016, 30% lower than 2015, primarily due to significantly lower net provisions for mortgage-related litigation and regulatory matters, and decreased compensation and benefits expenses, reflecting lower net revenues. Pre-tax earnings were $4.75 billion in 2016 compared with $1.21 billion in 2015.

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Investing & Lending

Investing & Lending includes our investing activities and the origination of loans, including our relationship lending activities, to provide financing to clients. These investments and loans are typically longer-term in nature. We make investments, some of which are consolidated, including through our merchant banking business and our special situations group, in debt securities and loans, public and private equity securities, infrastructure and real estate entities. Some of these investments are made indirectly through funds that we manage. We also make unsecured and secured loans to retail clients through our digital platforms, Marcus and *Goldman Sachs Private Bank Select* (GS Select), respectively.

The table below presents the operating results of our Investing & Lending segment.

	Year Ended December		
$ in millions	**2017**	2016	2015
Equity securities	**$4,578**	$2,573	$3,781
Debt securities and loans	**2,003**	1,507	1,655
Total net revenues	**6,581**	4,080	5,436
Operating expenses	**2,796**	2,386	2,402
Pre-tax earnings	**$3,785**	$1,694	$3,034

Operating Environment. During 2017, generally higher global equity prices and tighter credit spreads contributed to a favorable environment for our equity and debt investments. Results also reflected net gains from company-specific events, including sales, and corporate performance. This environment contrasts with 2016, where, in the first quarter of 2016, market conditions were difficult and corporate performance, particularly in the energy sector, was impacted by a challenging macroeconomic environment. However, market conditions improved during the rest of 2016 as macroeconomic concerns moderated. If macroeconomic concerns negatively affect company-specific events or corporate performance, or if global equity markets decline or credit spreads widen, net revenues in Investing & Lending would likely be negatively impacted.

2017 versus 2016. Net revenues in Investing & Lending were $6.58 billion for 2017, 61% higher than 2016. Net revenues in equity securities were $4.58 billion, including $3.82 billion of net gains from private equities and $762 million in net gains from public equities. Net revenues in equity securities were 78% higher than 2016, primarily reflecting a significant increase in net gains from private equities, which were positively impacted by company-specific events and corporate performance. In addition, net gains from public equities were significantly higher, as global equity prices increased during the year. Of the $4.58 billion of net revenues in equity securities, approximately 60% was driven by net gains from company-specific events, such as sales, and public equities. Net revenues in debt securities and loans were $2.00 billion, 33% higher than 2016, reflecting significantly higher net interest income (2017 included approximately $1.80 billion of net interest income). Net revenues in debt securities and loans for 2017 also included an impairment of approximately $130 million on a secured loan.

Operating expenses were $2.80 billion for 2017, 17% higher than 2016, due to increased compensation and benefits expenses, reflecting higher net revenues, increased expenses related to consolidated investments, and increased expenses related to Marcus. Pre-tax earnings were $3.79 billion in 2017 compared with $1.69 billion in 2016.

2016 versus 2015. Net revenues in Investing & Lending were $4.08 billion for 2016, 25% lower than 2015. Net revenues in equity securities were $2.57 billion, including $2.17 billion of net gains from private equities and $402 million in net gains from public equities. Net revenues in equity securities were 32% lower than 2015, primarily reflecting a significant decrease in net gains from private equities, driven by company-specific events and corporate performance. Net revenues in debt securities and loans were $1.51 billion, 9% lower than 2015, reflecting significantly lower net revenues related to relationship lending activities, due to the impact of changes in credit spreads on economic hedges. Losses related to these hedges were $596 million in 2016, compared with gains of $329 million in 2015. This decrease was partially offset by higher net gains from investments in debt instruments and higher net interest income. See Note 9 to the consolidated financial statements for further information about economic hedges related to our relationship lending activities.

Operating expenses were $2.39 billion for 2016, essentially unchanged compared with 2015. Pre-tax earnings were $1.69 billion in 2016, 44% lower than 2015.

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Investment Management

Investment Management provides investment management services and offers investment products (primarily through separately managed accounts and commingled vehicles, such as mutual funds and private investment funds) across all major asset classes to a diverse set of institutional and individual clients. Investment Management also offers wealth advisory services provided by our subsidiary, The Ayco Company, L.P., including portfolio management and financial planning and counseling, and brokerage and other transaction services to high-net-worth individuals and families.

Assets under supervision (AUS) include client assets where we earn a fee for managing assets on a discretionary basis. This includes net assets in our mutual funds, hedge funds, credit funds and private equity funds (including real estate funds), and separately managed accounts for institutional and individual investors. Assets under supervision also include client assets invested with third-party managers, bank deposits and advisory relationships where we earn a fee for advisory and other services, but do not have investment discretion. Assets under supervision do not include the self-directed brokerage assets of our clients. Long-term assets under supervision represent assets under supervision excluding liquidity products. Liquidity products represent money market and bank deposit assets.

Assets under supervision typically generate fees as a percentage of net asset value, which vary by asset class and distribution channel and are affected by investment performance as well as asset inflows and redemptions. Asset classes such as alternative investment and equity assets typically generate higher fees relative to fixed income and liquidity product assets. The average effective management fee (which excludes non-asset-based fees) we earned on our assets under supervision was 35 basis points for both 2017 and 2016, and 39 basis points for 2015.

In certain circumstances, we are also entitled to receive incentive fees based on a percentage of a fund s or a separately managed account s return, or when the return exceeds a specified benchmark or other performance targets.

The table below presents the operating results of our Investment Management segment.

	Year Ended December		
$ in millions	**2017**	2016	2015
Management and other fees	**$5,144**	$4,798	$4,887
Incentive fees	**417**	421	780
Transaction revenues	**658**	569	539
Total net revenues	**6,219**	5,788	6,206
Operating expenses	**4,800**	4,654	4,841
Pre-tax earnings	**$1,419**	$1,134	$1,365

The table below presents our period-end assets under supervision by asset class.

As of December

$ in billions	**2017**	2016	2015
Alternative investments	**$ 168**	$ 154	$ 148
Equity	**321**	266	252
Fixed income	**660**	601	546
Total long-term AUS	**1,149**	1,021	946
Liquidity products	**345**	358	306
Total AUS	**$1,494**	$1,379	$1,252

In the table above, alternative investments primarily includes hedge funds, credit funds, private equity, real estate, currencies, commodities and asset allocation strategies.

The table below presents our period-end assets under supervision by distribution channel.

	As of December		
$ in billions	**2017**	2016	2015
Institutional	**$ 576**	$ 511	$ 471
High-net-worth individuals	**458**	413	369
Third-party distributed	**460**	455	412
Total	**$1,494**	$1,379	$1,252

The table below presents a summary of the changes in our assets under supervision.

	Year Ended December		
$ in billions	**2017**	2016	2015
Beginning balance	**$1,379**	$1,252	$1,178
Net inflows/(outflows):			
Alternative investments	**15**	5	7
Equity	**2**	(3)	23
Fixed income	**25**	40	41
Total long-term AUS net inflows/(outflows)	**42**	42	71
Liquidity products	**(13)**	52	23
Total AUS net inflows/(outflows)	**29**	94	94
Net market appreciation/(depreciation)	**86**	33	(20)
Ending balance	**$1,494**	$1,379	$1,252

In the table above:

Total AUS net inflows/(outflows) for 2017 included $23 billion of inflows ($20 billion in total long-term AUS and $3 billion in liquidity products) in connection with the acquisition of a portion of Verus Investors outsourced chief investment officer business (Verus acquisition) and $5 billion of equity asset outflows in connection with the divestiture of our local Australian-focused investment capabilities and fund platform (Australian divestiture).

Total long-term AUS net inflows/(outflows) for 2015 included $18 billion of fixed income, equity and alternative investments asset inflows in connection with our acquisition of Pacific Global Advisors solutions business.

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The table below presents our average monthly assets under supervision by asset class.

	Average for the Year Ended December		
$ in billions	**2017**	2016	2015
Alternative investments	**$ 162**	$ 149	$ 145
Equity	**292**	256	247
Fixed income	**633**	578	530
Total long-term AUS	**1,087**	983	922
Liquidity products	**330**	326	272
Total AUS	**$1,417**	$1,309	$1,194

Operating Environment. During 2017, Investment Management operated in an environment characterized by generally higher asset prices, resulting in appreciation in both equity and fixed income assets. In addition, our long-term assets under supervision increased from net inflows primarily in fixed income and alternative investment assets. These increases were partially offset by net outflows in liquidity products. As a result, the mix of average assets under supervision during 2017 shifted slightly from liquidity products to long-term assets under supervision as compared to the mix at the end of 2016. In the future, if asset prices decline, or investors favor assets that typically generate lower fees or investors withdraw their assets, net revenues in Investment Management would likely be negatively impacted.

Following a challenging first quarter of 2016, market conditions improved during the remainder of 2016 with higher asset prices resulting in full year appreciation in both equity and fixed income assets. Also, our assets under supervision increased during 2016 from net inflows, primarily in fixed income assets, and liquidity products. The mix of our average assets under supervision shifted slightly compared with 2015 from long-term assets under supervision to liquidity products. Management fees were impacted by many factors, including inflows to advisory services and outflows from actively-managed mutual funds.

2017 versus 2016. Net revenues in Investment Management were $6.22 billion for 2017, 7% higher than 2016, due to higher management and other fees, reflecting higher average assets under supervision, and higher transaction revenues. During the year, total assets under supervision increased $115 billion to $1.49 trillion. Long-term assets under supervision increased $128 billion, including net market appreciation of $86 billion, primarily in equity and fixed income assets, and net inflows of $42 billion (which includes $20 billion of inflows in connection with the Verus acquisition and $5 billion of equity asset outflows in connection with the Australian divestiture), primarily in fixed income and alternative investment assets. Liquidity products decreased $13 billion (which includes $3 billion of inflows in connection with the Verus acquisition).

Operating expenses were $4.80 billion for 2017, 3% higher than 2016, primarily due to increased compensation and benefits expenses, reflecting higher net revenues. Pre-tax earnings were $1.42 billion in 2017, 25% higher than 2016.

2016 versus 2015. Net revenues in Investment Management were $5.79 billion for 2016, 7% lower than 2015. This decrease primarily reflected significantly lower incentive fees compared with a strong 2015. In addition, management and other fees were slightly lower, reflecting shifts in the mix of client assets and strategies, partially offset by the impact of higher average assets under supervision. During 2016, total assets under supervision increased $127 billion to $1.38 trillion. Long-term assets under supervision increased $75 billion, including net inflows of $42 billion, primarily in fixed income assets, and net market appreciation of $33 billion, primarily in equity and fixed income assets. In addition, liquidity products increased $52 billion.

Operating expenses were $4.65 billion for 2016, 4% lower than 2015, due to decreased compensation and benefits expenses, reflecting lower net revenues. Pre-tax earnings were $1.13 billion in 2016, 17% lower than 2015.

Geographic Data

See Note 25 to the consolidated financial statements for a summary of our total net revenues, pre-tax earnings and net earnings by geographic region.

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Balance Sheet and Funding Sources

Balance Sheet Management

One of our risk management disciplines is our ability to manage the size and composition of our balance sheet. While our asset base changes due to client activity, market fluctuations and business opportunities, the size and composition of our balance sheet also reflects factors including (i) our overall risk tolerance, (ii) the amount of equity capital we hold and (iii) our funding profile, among other factors. See Equity Capital Management and Regulatory Capital Equity Capital Management for information about our equity capital management process.

Although our balance sheet fluctuates on a day-to-day basis, our total assets at quarter-end and year-end dates are generally not materially different from those occurring within our reporting periods.

In order to ensure appropriate risk management, we seek to maintain a sufficiently liquid balance sheet and have processes in place to dynamically manage our assets and liabilities which include (i) balance sheet planning, (ii) balance sheet limits, (iii) monitoring of key metrics and (iv) scenario analyses.

Balance Sheet Planning. We prepare a balance sheet plan that combines our projected total assets and composition of assets with our expected funding sources over a three-year time horizon. This plan is reviewed quarterly and may be adjusted in response to changing business needs or market conditions. The objectives of this planning process are:

- To develop our balance sheet projections, taking into account the general state of the financial markets and expected business activity levels, as well as regulatory requirements;

- To allow business risk managers and managers from our independent control and support functions to objectively evaluate balance sheet limit requests from business managers in the context of our overall balance sheet constraints, including our liability profile and equity capital levels, and key metrics; and

- To inform the target amount, tenor and type of funding to raise, based on our projected assets and contractual maturities.

Business risk managers and managers from our independent control and support functions along with business managers review current and prior period information and expectations for the year to prepare our balance sheet plan. The specific information reviewed includes asset and liability size and composition, limit utilization, risk and performance measures, and capital usage.

Our consolidated balance sheet plan, including our balance sheets by business, funding projections, and projected key metrics, is reviewed and approved by the Firmwide Finance Committee. See Risk Management Overview and Structure of Risk Management for an overview of our risk management structure.

Balance Sheet Limits. The Firmwide Finance Committee has the responsibility of reviewing and approving balance sheet limits. These limits are set at levels which are close to actual operating levels, rather than at levels which reflect our maximum risk appetite, in order to ensure prompt escalation and discussion among business managers and managers in our independent control and support functions on a routine basis. The Firmwide Finance Committee reviews and approves balance sheet limits on a quarterly basis and may also approve changes in limits on a more frequent basis in response to changing business needs or market conditions. In addition, the Risk Governance Committee sets aged inventory limits for certain financial instruments as a disincentive to hold inventory over longer periods of time. Requests for changes in limits are evaluated after giving consideration to their impact on our key metrics. Compliance with limits is monitored on a daily basis by business risk managers, as well as managers in our independent control and support functions.

Monitoring of Key Metrics. We monitor key balance sheet metrics daily both by business and on a consolidated basis, including asset and liability size and composition, limit utilization and risk measures. We allocate assets to businesses and review and analyze movements resulting from new business activity, as well as market fluctuations.

Scenario Analyses. We conduct various scenario analyses including as part of the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Tests (DFAST), as well as our resolution and recovery planning. See Equity Capital Management and Regulatory Capital Equity Capital Management below for further information about these scenario analyses. These scenarios cover short-term and long-term time horizons using various macroeconomic and firm-specific assumptions, based on a range of economic scenarios. We use these analyses to assist us in developing our longer-term balance sheet management strategy, including the level and composition of assets, funding and equity capital. Additionally, these analyses help us develop approaches for maintaining appropriate funding, liquidity and capital across a variety of situations, including a severely stressed environment.

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Balance Sheet Allocation

In addition to preparing our consolidated statements of financial condition in accordance with U.S. GAAP, we prepare a balance sheet that generally allocates assets to our businesses, which is a non-GAAP presentation and may not be comparable to similar non-GAAP presentations used by other companies. We believe that presenting our assets on this basis is meaningful because it is consistent with the way management views and manages risks associated with our assets and better enables investors to assess the liquidity of our assets.

The table below presents our balance sheet allocation.

	As of December	
$ in millions	**2017**	2016
GCLA, segregated assets and other	**$285,270**	$280,563
Secured client financing	**164,123**	153,978
Inventory	**216,883**	206,988
Secured financing agreements	**64,991**	65,606
Receivables	**36,750**	29,592
Institutional Client Services	**318,624**	302,186
Public equity	**2,072**	3,224
Private equity	**20,253**	18,224
Total equity	**22,325**	21,448
Loans receivable	**65,933**	49,672
Loans, at fair value	**14,877**	14,230
Total loans	**80,810**	63,902
Debt securities	**8,797**	7,445
Other	**8,481**	5,162
Investing & Lending	**120,413**	97,957
Total inventory and related assets	**439,037**	400,143
Other assets	**28,346**	25,481
Total assets	**$916,776**	$860,165

In 2017, we aggregated global core liquid assets (GCLA) and other with cash and securities segregated for regulatory and other purposes related to client activity (previously included in secured client financing). Previously reported amounts have been conformed to the current presentation.

The following is a description of the captions in the table above:

GCLA, Segregated Assets and Other. We maintain liquidity to meet a broad range of potential cash outflows and collateral needs in a stressed environment. See Risk Management Liquidity Risk Management below for details on the composition and sizing of our GCLA. We also segregate cash and securities for regulatory and other purposes related to client activity. Securities are segregated from our own inventory, as well as from collateral obtained through securities borrowed or resale agreements. In addition, we maintain other unrestricted operating cash balances, primarily for use in specific currencies, entities, or jurisdictions where we do not have immediate access to parent company liquidity.

Secured Client Financing. We provide collateralized financing for client positions, including margin loans secured by client collateral, securities borrowed, and resale agreements primarily collateralized by government obligations. Our secured client financing arrangements, which are generally short-term, are accounted for at fair value or at amounts that approximate fair value, and include daily margin requirements to mitigate counterparty credit risk.

Institutional Client Services. In Institutional Client Services, we maintain inventory positions to facilitate market making in fixed income, equity, currency and commodity products. Additionally, as part of market-making activities, we enter into resale or securities borrowing arrangements to obtain securities or use our own inventory to cover transactions in which we or our clients have sold securities that have not yet been purchased. The receivables in Institutional Client Services primarily relate to securities transactions.

Investing & Lending. In Investing & Lending, we make investments and originate loans to provide financing to clients. We also make unsecured and secured loans to retail clients. These investments and loans are typically longer-term in nature. In addition, we make investments, directly and indirectly through funds that we manage, in debt securities, loans, public and private equity securities, infrastructure, real estate entities and other investments. As of December 2017, total equity included $2.07 billion of private equity securities that were acquired during 2017. The regional composition of total equity was approximately 54% and 55% in the Americas, 18% and 18% in Europe, Middle East and Africa (EMEA), and 28% and 27% in Asia as of December 2017 and December 2016, respectively. Other Investing & Lending primarily includes receivables from customers and counterparties.

The table below presents details about loans.

	As of December 2017		
$ in millions	**Loans Receivable**	**Loans, at Fair Value**	**Total**
Corporate loans	**$30,749**	**$ 3,924**	**$34,673**
Loans to Private Wealth Management clients	**16,591**	**7,102**	**23,693**
Loans backed by:			
Commercial real estate	**7,987**	**1,825**	**9,812**
Residential real estate	**6,234**	**1,043**	**7,277**
Marcus loans	**1,912**		**1,912**

Other loans	**3,263**	**983**	**4,246**
Allowance for loan losses	**(803)**		**(803)**
Total	**$65,933**	**$14,877**	**$80,810**

Loans receivable consists of loans held for investment that are accounted for at amortized cost net of allowance for loan losses. See Note 9 to the consolidated financial statements for further information about loans receivable.

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Other Assets. Other assets are generally less liquid, nonfinancial assets, including property, leasehold improvements and equipment, goodwill and identifiable intangible assets, income tax-related receivables and miscellaneous receivables.

The table below presents the reconciliation of this balance sheet allocation to our U.S. GAAP balance sheet.

$ in millions	GCLA, Segregated Assets and Other	Secured Client Financing	Institutional Client Services	Investing & Lending	Total
As of December 2017					
Cash and cash equivalents	**$110,051**	**$**	**$**	**$**	**$110,051**
Securities purchased under agreements to resell	**73,277**	**26,202**	**20,931**	**412**	**120,822**
Securities borrowed	**49,242**	**97,546**	**44,060**		**190,848**
Receivables from brokers, dealers and clearing organizations		**7,712**	**16,945**	**19**	**24,676**
Receivables from customers and counterparties		**32,663**	**19,805**	**7,644**	**60,112**
Loans receivable				**65,933**	**65,933**
Financial instruments owned	**52,700**		**216,883**	**46,405**	**315,988**
Subtotal	**$285,270**	**$164,123**	**$318,624**	**$120,413**	**$888,430**
Other assets					**28,346**
Total assets					**$916,776**
As of December 2016					
Cash and cash equivalents	$121,711	$	$	$	$121,711
Securities purchased under agreements to resell	71,561	25,458	18,844	1,062	116,925
Securities borrowed	42,144	95,694	46,762		184,600
Receivables from brokers, dealers and clearing organizations		6,540	11,504		18,044
Receivables from customers and counterparties		26,286	18,088	3,406	47,780
Loans receivable				49,672	49,672
Financial instruments owned	45,147		206,988	43,817	295,952
Subtotal	$280,563	$153,978	$302,186	$ 97,957	$834,684
Other assets					25,481
Total assets					$860,165

In the table above:

Total assets for Institutional Client Services and Investing & Lending represent inventory and related assets. These amounts differ from total assets by business segment disclosed in Note 25 to the consolidated financial statements because total assets disclosed in Note 25 include allocations of our GCLA, segregated assets and other, secured client financing and other assets.

See Balance Sheet Analysis and Metrics for explanations on the changes in our balance sheet from December 2016 to December 2017.

Balance Sheet Analysis and Metrics

As of December 2017, total assets in our consolidated statements of financial condition were $916.78 billion, an increase of $56.61 billion from December 2016, primarily reflecting increases in financial instruments owned of $20.04 billion, loans receivable of $16.26 billion and receivables from customers and counterparties of $12.33 billion. The increase in financial instruments owned primarily reflected higher client activity and an increase in available-for-sale securities in U.S. government and agency obligations and corporate loans and debt securities, partially offset by the impact of currency movements on derivative valuations. The increase in loans receivable primarily reflected an increase in loans to corporate borrowers and loans backed by real estate. The increase in receivables from customers and counterparties reflected client activity.

As of December 2017, total liabilities in our consolidated statements of financial condition were $834.53 billion, an increase of $61.26 billion from December 2016, primarily reflecting increases in unsecured long-term borrowings of $28.60 billion, collateralized financings of $23.44 billion and deposits of $14.51 billion, partially offset by a decrease in payables to customers and counterparties of $12.57 billion. The increase in unsecured long-term borrowings was primarily due to net new issuances. The increase in collateralized financings reflected the impact of client and firm activity. The increase in deposits reflected increases in institutional deposits and Marcus deposits. The decrease in payables to customers and counterparties reflected client activity.

As of December 2017 and December 2016, our total securities sold under agreements to repurchase, accounted for as collateralized financings, were $84.72 billion and $71.82 billion, respectively, which were 2% lower and 5% lower than the daily average amount of repurchase agreements during the quarters ended December 2017 and December 2016, respectively, and 1% lower and 9% lower than the daily average amount of repurchase agreements during the years ended December 2017 and December 2016, respectively. The decrease in our repurchase agreements relative to the daily averages during 2017 and 2016 resulted from the impact of firm and client activity at the end of both years.

The table below presents information about our balance sheet and our leverage ratios.

	As of December	
$ in millions	**2017**	2016
Total assets	**$916,776**	$860,165
Unsecured long-term borrowings	**$217,687**	$189,086
Total shareholders equity	**$ 82,243**	$ 86,893
Leverage ratio	**11.1x**	9.9x
Debt to equity ratio	**2.6x**	2.2x

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In the table above:

The leverage ratio equals total assets divided by total shareholders equity and measures the proportion of equity and debt we use to finance assets. This ratio is different from the Tier 1 leverage ratio included in Note 20 to the consolidated financial statements.

The debt to equity ratio equals unsecured long-term borrowings divided by total shareholders equity.

The table below presents information about our shareholders equity and book value per common share, including the reconciliation of total shareholders equity to tangible common shareholders equity.

	As of December	
$ in millions, except per share amounts	**2017**	2016
Total shareholders equity	**$ 82,243**	$ 86,893
Preferred stock	**(11,853)**	(11,203)
Common shareholders equity	**70,390**	75,690
Goodwill and identifiable intangible assets	**(4,038)**	(4,095)
Tangible common shareholders equity	**$ 66,352**	$ 71,595
Book value per common share	**$ 181.00**	$ 182.47
Tangible book value per common share	**$ 170.61**	$ 172.60

In the table above:

Tangible common shareholders equity equals total shareholders equity less preferred stock, goodwill and identifiable intangible assets. We believe that tangible common shareholders equity is meaningful because it is a measure that we and investors use to assess capital adequacy. Tangible common shareholders equity is a non-GAAP measure and may not be comparable to similar non-GAAP measures used by other companies.

Book value per common share and tangible book value per common share as of December 2017 were both reduced by $11.31 due to the estimated impact of Tax Legislation. See Results of Operations Financial Overview and Provision for Taxes above for further information about the enactment of Tax Legislation.

Book value per common share and tangible book value per common share are based on common shares outstanding and restricted stock units granted to employees with no future service requirements (collectively, basic shares) of 388.9 million and 414.8 million as of December 2017 and December 2016, respectively. We believe that tangible book value per common share (tangible common shareholders equity divided by basic shares) is meaningful because it is a measure that we and investors use to assess capital adequacy. Tangible book value per common share is a non-GAAP measure and may not be comparable to similar non-GAAP measures used by other companies.

Funding Sources

Our primary sources of funding are secured financings, unsecured long-term and short-term borrowings, and deposits. We seek to maintain broad and diversified funding sources globally across products, programs, markets, currencies and creditors to avoid funding concentrations.

We raise funding through a number of different products, including:

- Collateralized financings, such as repurchase agreements, securities loaned and other secured financings;

- Long-term unsecured debt (including structured notes) through syndicated U.S. registered offerings, U.S. registered and Rule 144A medium-term note programs, offshore medium-term note offerings and other debt offerings;

- Savings, demand and time deposits through internal and third-party broker-dealers, as well as from retail and institutional clients; and

- Short-term unsecured debt at the subsidiary level through U.S. and non-U.S. hybrid financial instruments and other methods.

Our funding is primarily raised in U.S. dollar, Euro, British pound and Japanese yen. We generally distribute our funding products through our own sales force and third-party distributors to a large, diverse creditor base in a variety of markets in the Americas, Europe and Asia. We believe that our relationships with our creditors are critical to our liquidity. Our creditors include banks, governments, securities lenders, corporations, pension funds, insurance companies, mutual funds and individuals. We have imposed various internal guidelines to monitor creditor concentration across our funding programs.

Secured Funding. We fund a significant amount of inventory on a secured basis, including repurchase agreements, securities loaned and other secured financings. As of December 2017 and December 2016, secured funding included in collateralized financings in the consolidated statements of financial condition was $124.30 billion and $100.86 billion, respectively. We may also pledge our inventory as collateral for securities borrowed under a securities lending agreement or as collateral for derivative transactions. We also use our own inventory to cover transactions in which we or our clients have sold securities that have not yet been purchased. Secured funding is less sensitive to changes in our credit quality than unsecured funding, due to our posting of collateral to our lenders. Nonetheless, we continually analyze the refinancing risk of our secured funding activities, taking into account trade tenors, maturity profiles, counterparty concentrations, collateral eligibility and counterparty rollover probabilities. We seek to mitigate our refinancing risk by executing term trades with staggered maturities, diversifying counterparties, raising excess secured funding, and pre-funding residual risk through our GCLA.

We seek to raise secured funding with a term appropriate for the liquidity of the assets that are being financed, and we seek longer maturities for secured funding collateralized by asset classes that may be harder to fund on a secured basis, especially during times of market stress. Our secured funding, excluding funding collateralized by liquid government and agency obligations, is primarily executed for tenors of one month or greater and is primarily executed through term repurchase agreements and securities loaned contracts.

The weighted average maturity of our secured funding included in collateralized financings in the consolidated statements of financial condition, excluding funding that was collateralized by liquid government and agency obligations, exceeded 120 days as of December 2017.

Assets that may be harder to fund on a secured basis during times of market stress include certain financial instruments in the following categories: mortgage and other asset-backed loans and securities, non-investment-grade corporate debt securities, equity securities and emerging market securities. Assets that are classified in level 3 of the fair value hierarchy are generally funded on an unsecured basis. See Notes 5 and 6 to the consolidated financial statements for further information about the classification of financial instruments in the fair value hierarchy and Unsecured Long-Term Borrowings below for further information about the use of unsecured long-term borrowings as a source of funding.

We also raise financing through other types of collateralized financings, such as secured loans and notes. Goldman Sachs Bank USA (GS Bank USA) has access to funding from the Federal Home Loan Bank. As of December 2017 and December 2016, our outstanding borrowings against the Federal Home Loan Bank were $3.40 billion and $2.43 billion, respectively.

GS Bank USA also has access to funding through the Federal Reserve Bank discount window. While we do not rely on this funding in our liquidity planning and stress testing, we maintain policies and procedures necessary to access this funding and test discount window borrowing procedures.

Unsecured Long-Term Borrowings. We issue unsecured long-term borrowings as a source of funding for inventory and other assets and to finance a portion of our GCLA. We issue in different tenors, currencies and products to maximize the diversification of our investor base.

The table below presents our quarterly unsecured long-term borrowings maturity profile as of December 2017.

$ in millions	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
2019	**$8,354**	**$6,927**	**$3,806**	**$11,418**	**$ 30,505**
2020	**$5,264**	**$8,071**	**$6,039**	**$ 3,746**	**23,120**
2021	**$2,772**	**$3,651**	**$7,757**	**$ 7,601**	**21,781**
2022	**$5,998**	**$5,991**	**$4,869**	**$ 5,744**	**22,602**
2023 - thereafter					**119,679**
Total					**$217,687**

The weighted average maturity of our unsecured long-term borrowings as of December 2017 was approximately eight years. To mitigate refinancing risk, we seek to limit the principal amount of debt maturing on any one day or during any week or year. We enter into interest rate swaps to convert a portion of our unsecured long-term borrowings into floating-rate obligations to manage our exposure to interest rates. See Note 16 to the consolidated financial statements for further information about our unsecured long-term borrowings.

Deposits. Our deposits provide us with a diversified source of funding and reduce our reliance on wholesale funding. A growing source of our deposit base consists of retail deposits. Deposits are primarily used to finance lending activity, other inventory and a portion of our GCLA. We raise deposits primarily through GS Bank USA and Goldman Sachs International Bank (GSIB). As of December 2017 and December 2016, our deposits were $138.60 billion and $124.10 billion, respectively. See Note 14 to the consolidated financial statements for further information about our deposits.

Unsecured Short-Term Borrowings. A significant portion of our unsecured short-term borrowings was originally long-term debt that is scheduled to mature within one year of the reporting date. We use unsecured short-term borrowings, including hybrid financial instruments, to finance liquid assets and for other cash management purposes. In light of regulatory developments, Group Inc. no longer issues debt with an original maturity of less than one year, other than to its subsidiaries.

As of December 2017 and December 2016, our unsecured short-term borrowings, including the current portion of unsecured long-term borrowings, were $46.92 billion and $39.27 billion, respectively. See Note 15 to the consolidated financial statements for further information about our unsecured short-term borrowings.

Equity Capital Management and Regulatory Capital

Capital adequacy is of critical importance to us. We have in place a comprehensive capital management policy that provides a framework, defines objectives and establishes guidelines to assist us in maintaining the appropriate level and composition of capital in both business-as-usual and stressed conditions.

Equity Capital Management

We determine the appropriate level and composition of our equity capital by considering multiple factors including our current and future consolidated regulatory capital requirements, the results of our capital planning and stress testing process, resolution capital models and other factors, such as rating agency guidelines, subsidiary capital requirements, the business environment and conditions in the financial markets. We manage our capital requirements and the levels of our capital usage principally by setting limits on balance sheet assets and/or limits on risk, in each case at both the consolidated and business levels.

We principally manage the level and composition of our equity capital through issuances and repurchases of our common stock. We may also, from time to time, issue or repurchase our preferred stock, junior subordinated debt issued to trusts, and other subordinated debt or other forms of capital as business conditions warrant. Prior to any repurchases, we must receive confirmation that the Board of Governors of the Federal Reserve System (Federal Reserve Board or FRB) does not object to such capital action. See Notes 16 and 19 to the consolidated financial statements for further information about our preferred stock, junior subordinated debt issued to trusts and other subordinated debt.

Capital Planning and Stress Testing Process. As part of capital planning, we project sources and uses of capital given a range of business environments, including stressed conditions. Our stress testing process is designed to identify and measure material risks associated with our business activities including market risk, credit risk and operational risk, as well as our ability to generate revenues.

The following is a description of our capital planning and stress testing process:

Capital Planning. Our capital planning process incorporates an internal capital adequacy assessment with the objective of ensuring that we are appropriately capitalized relative to the risks in our businesses. We incorporate stress scenarios into our capital planning process with a goal of holding sufficient capital to ensure we remain adequately capitalized after experiencing a severe stress event. Our assessment of capital adequacy is viewed in tandem with our assessment of liquidity adequacy and is integrated into our overall risk management structure, governance and policy framework.

Our capital planning process also includes an internal risk-based capital assessment. This assessment incorporates market risk, credit risk and operational risk. Market risk is calculated by using Value-at-Risk (VaR) calculations supplemented by risk-based add-ons which include risks related to rare events (tail risks). Credit risk utilizes assumptions about our counterparties probability of default and the size of our losses in the event of a default. Operational risk is calculated based on scenarios incorporating multiple types of operational failures, as well as considering internal and external actual loss experience. Backtesting for market risk and credit risk is used to gauge the effectiveness of models at capturing and measuring relevant risks.

Stress Testing. Our stress tests incorporate our internally designed stress scenarios, including our internally developed severely adverse scenario, and those required under CCAR and DFAST, and are designed to capture our specific vulnerabilities and risks. We provide further information about our stress test processes and a summary of the results on our website as described in Business Available Information in Part I, Item 1 of this Form 10-K.
As required by the FRB s annual CCAR rules, we submit a capital plan for review by the FRB. The purpose of the FRB s review is to ensure that we have a robust, forward-looking capital planning process that accounts for our unique risks and that permits continued operation during times of economic and financial stress.

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The FRB evaluates us based, in part, on whether we have the capital necessary to continue operating under the baseline and stress scenarios provided by the FRB and those developed internally. This evaluation also takes into account our process for identifying risk, our controls and governance for capital planning, and our guidelines for making capital planning decisions. In addition, the FRB evaluates our plan to make capital distributions (i.e., dividend payments and repurchases or redemptions of stock, subordinated debt or other capital securities) and issue capital, across a range of macroeconomic scenarios and firm-specific assumptions.

In addition, the DFAST rules require us to conduct stress tests on a semi-annual basis and publish a summary of certain results. The FRB also conducts its own annual stress tests and publishes a summary of certain results.

With respect to our 2017 CCAR submission, the FRB informed us that it did not object to our capital actions. These capital actions included the potential to repurchase outstanding common stock of up to $8.70 billion, and the potential to issue and redeem other capital securities over the twelve-month period beginning July 2017, and the potential to increase our common stock dividend by up to $0.05 per share in the second quarter of 2018. However, we do not expect that we will utilize our entire share repurchase authorization by June 2018. The amount and timing of our capital actions will be based on, among other things, our current and projected capital position, and capital deployment opportunities. We published a summary of our annual DFAST results in June 2017. See Business Available Information in Part I, Item 1 of this Form 10-K.

In October 2017, we submitted our semi-annual DFAST results to the FRB and published a summary of the results of our internally developed severely adverse scenario. See Business Available Information in Part I, Item 1 of this Form 10-K.

We are required to submit our 2018 CCAR results to the FRB by April 5, 2018.

In addition, the rules adopted by the FRB under the Dodd-Frank Act require GS Bank USA to conduct stress tests on an annual basis and publish a summary of certain results. GS Bank USA submitted its 2017 annual DFAST results to the FRB in April 2017 and published a summary of its annual DFAST results in June 2017. See Business Available Information in Part I, Item 1 of this Form 10-K.

Goldman Sachs International (GSI) and GSIB also have their own capital planning and stress testing process, which incorporates internally designed stress tests and those required under the Prudential Regulation Authority s (PRA) Internal Capital Adequacy Assessment Process.

Contingency Capital Plan. As part of our comprehensive capital management policy, we maintain a contingency capital plan. Our contingency capital plan provides a framework for analyzing and responding to a perceived or actual capital deficiency, including, but not limited to, identification of drivers of a capital deficiency, as well as mitigants and potential actions. It outlines the appropriate communication procedures to follow during a crisis period, including internal dissemination of information, as well as timely communication with external stakeholders.

Capital Attribution. We assess each of our businesses capital usage based upon our internal assessment of risks, which incorporates an attribution of all of our relevant regulatory capital requirements. These regulatory capital requirements are allocated using our attributed equity framework, which takes into consideration our binding capital constraints. We also attribute risk-weighted assets (RWAs) to our business segments. As of December 2017, approximately 60% and 55% of RWAs calculated in accordance with the Standardized Capital Rules and the Basel III Advanced Rules, respectively, subject to transitional provisions, were attributed to our Institutional Client Services segment and substantially all of the remaining RWAs were attributed to our Investing & Lending segment. We manage the levels of our capital usage based upon balance sheet and risk limits, as well as capital return analyses of our businesses based on our capital attribution.

Share Repurchase Program. We use our share repurchase program to help maintain the appropriate level of common equity. The repurchase program is effected primarily through regular open-market purchases (which may include repurchase plans designed to comply with Rule 10b5-1), the amounts and timing of which are determined primarily by our current and projected capital position and our capital plan submitted to the FRB as part of CCAR. The amounts and timing of the repurchases may also be influenced by general market conditions and the prevailing price and trading volumes of our common stock.

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As of December 2017, the remaining share authorization under our existing repurchase program was 47.6 million shares; however, we are only permitted to make repurchases to the extent that such repurchases have not been objected to by the FRB. See Market for Registrant s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities in Part II, Item 5 of this Form 10-K and Note 19 to the consolidated financial statements for further information about our share repurchase program, and see above for information about our capital planning and stress testing process.

Resolution Capital Models. In connection with our resolution planning efforts, we have established a Resolution Capital Adequacy and Positioning (RCAP) framework, which is designed to ensure that our major subsidiaries (GS Bank USA, Goldman Sachs & Co. LLC (GS&Co.), GSI, GSIB, Goldman Sachs Japan Co., Ltd. (GSJCL), Goldman Sachs Asset Management, L.P. and Goldman Sachs Asset Management International) have access to sufficient loss-absorbing capacity (in the form of equity, subordinated debt and unsecured senior debt) so that they are able to wind-down following a Group Inc. bankruptcy filing in accordance with our preferred resolution strategy.

In addition, we have established a triggers and alerts framework which is designed to provide the Board of Directors of Group Inc. (Board) with information needed to make an informed decision on whether and when to commence bankruptcy proceedings for Group Inc.

Rating Agency Guidelines

The credit rating agencies assign credit ratings to the obligations of Group Inc., which directly issues or guarantees substantially all of our senior unsecured debt obligations. GS&Co. and GSI have been assigned long- and short-term issuer ratings by certain credit rating agencies. GS Bank USA and GSIB have also been assigned long- and short-term issuer ratings, as well as ratings on their long-term and short-term bank deposits. In addition, credit rating agencies have assigned ratings to debt obligations of certain other subsidiaries of Group Inc.

The level and composition of our equity capital are among the many factors considered in determining our credit ratings. Each agency has its own definition of eligible capital and methodology for evaluating capital adequacy, and assessments are generally based on a combination of factors rather than a single calculation. See Risk Management Liquidity Risk Management Credit Ratings for further information about credit ratings of Group Inc., GS Bank USA, GSIB, GS&Co. and GSI.

Consolidated Regulatory Capital

We are subject to the FRB s risk-based capital and leverage regulations, subject to certain transitional provisions (Capital Framework). These regulations are largely based on the Basel Committee on Banking Supervision s (Basel Committee) capital framework for strengthening international capital standards (Basel III) and also implement certain provisions of the Dodd-Frank Act. Under the Capital Framework, we are an Advanced approach banking organization and have been designated as a global systemically important bank (G-SIB).

We calculate our CET1, Tier 1 capital and Total capital ratios in accordance with (i) the Standardized approach and market risk rules set out in the Capital Framework (together, the Standardized Capital Rules) and (ii) the Advanced approach and market risk rules set out in the Capital Framework (together, the Basel III Advanced Rules) as described in Note 20 to the consolidated financial statements.

The lower of each capital ratio calculated in (i) and (ii) is the ratio against which our compliance with minimum ratio requirements is assessed. Each of the capital ratios calculated in accordance with the Basel III Advanced Rules was lower than that calculated in accordance with the Standardized Capital Rules and therefore the Basel III Advanced ratios were the ratios that applied to us as of both December 2017 and December 2016.

See Note 20 to the consolidated financial statements for further information about our capital ratios as of both December 2017 and December 2016, and for further information about the Capital Framework.

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Minimum Capital Ratios and Capital Buffers

The table below presents our minimum required ratios.

	December 2017 Minimum Ratio
CET1 ratio	**7.000%**
Tier 1 capital ratio	**8.500%**
Total capital ratio	**10.500%**
Tier 1 leverage ratio	**4.000%**

In the table above:

- The minimum capital ratios as of December 2017 reflect (i) the 50% phase-in of the capital conservation buffer of 2.5%, (ii) the 50% phase-in of the G-SIB buffer of 2.5% (based on 2015 financial data) and (iii) the countercyclical capital buffer of zero percent.

- Tier 1 leverage ratio is defined as Tier 1 capital divided by quarterly average adjusted total assets (which includes adjustments for goodwill and identifiable intangible assets, and certain investments in nonconsolidated financial institutions).

The minimum capital ratios applicable to us as of January 2019 will reflect the fully phased-in capital conservation buffer, the countercyclical capital buffer, if any, determined by the FRB and the fully phased-in G-SIB buffer. The G-SIB buffer applicable to us as of January 2019 is 2.5% based on financial data as of or for the year ended December 2017. The G-SIB and countercyclical buffers in the future may differ due to additional guidance from our regulators and/or positional changes.

Our minimum required supplementary leverage ratio is 5.0% as of January 1, 2018. See Supplementary Leverage Ratio below for further information.

See Note 20 to the consolidated financial statements for information about our capital buffers.

Fully Phased-in Capital Ratios

The table below presents our capital ratios calculated in accordance with the Standardized Capital Rules and the Basel III Advanced Rules on a fully phased-in basis.

$ in millions	As of December **2017**	2016
Common shareholders equity	**$ 70,390**	$ 75,690
Deduction for goodwill and identifiable intangible assets, net of deferred tax liabilities	**(3,334)**	(3,015)
Deduction for investments in nonconsolidated financial institutions		(765)
Other adjustments	**(63)**	(799)
Common Equity Tier 1	**66,993**	71,111
Preferred stock	**11,853**	11,203
Deduction for investments in covered funds	**(590)**	(445)
Other adjustments	**(29)**	(61)
Tier 1 capital	**$ 78,227**	$ 81,808
Standardized Tier 2 and Total capital		
Tier 1 capital	**$ 78,227**	$ 81,808
Qualifying subordinated debt	**13,360**	14,566
Allowance for losses on loans and lending commitments	**1,078**	722
Other adjustments	**(28)**	(6)
Standardized Tier 2 capital	**14,410**	15,282
Standardized Total capital	**$ 92,637**	$ 97,090
Basel III Advanced Tier 2 and Total capital		
Tier 1 capital	**$ 78,227**	$ 81,808
Standardized Tier 2 capital	**14,410**	15,282
Allowance for losses on loans and lending commitments	**(1,078)**	(722)
Basel III Advanced Tier 2 capital	**13,332**	14,560
Basel III Advanced Total capital	**$ 91,559**	$ 96,368
RWAs		
Credit RWAs	**$476,594**	$422,544
Market RWAs	**87,381**	85,263
Standardized RWAs	**$563,975**	$507,807
Credit RWAs	**$421,763**	$361,223
Market RWAs	**86,854**	84,475
Operational RWAs	**117,475**	115,088
Basel III Advanced RWAs	**$626,092**	$560,786
CET1 ratio		
Standardized	**11.9%**	14.0%
Basel III Advanced	**10.7%**	12.7%
Tier 1 capital ratio		
Standardized	**13.9%**	16.1%
Basel III Advanced	**12.5%**	14.6%

Total capital ratio		
Standardized	**16.4%**	19.1%
Basel III Advanced	**14.6%**	17.2%

Although the deductions from and adjustments to regulatory capital in the table above were not fully phased-in until January 2018, we believe that the fully phased-in capital ratios are meaningful because they are measures that we, our regulators and investors use to assess our ability to meet future regulatory capital requirements. These fully phased-in capital ratios are non-GAAP measures and may not be comparable to similar non-GAAP measures used by other companies.

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Deduction for goodwill and identifiable intangible assets, net of deferred tax liabilities, included goodwill of $3.67 billion as of both December 2017 and December 2016, and identifiable intangible assets of $373 million and $429 million as of December 2017 and December 2016, respectively, net of associated deferred tax liabilities of $704 million and $1.08 billion as of December 2017 and December 2016, respectively.

Deduction for investments in nonconsolidated financial institutions represents the amount by which our investments in the capital of nonconsolidated financial institutions exceed certain prescribed thresholds. The decrease from December 2016 to December 2017 primarily reflects reductions in our fund investments.

Deduction for investments in covered funds represents our aggregate investments in applicable covered funds, excluding investments that are subject to an extended conformance period. This deduction was not subject to a transition period. See Business Regulation in Part I, Item 1 of this Form 10-K for further information about the Volcker Rule.

Other adjustments within CET1 primarily include the overfunded portion of our defined benefit pension plan obligation net of associated deferred tax liabilities, disallowed deferred tax assets, credit valuation adjustments on derivative liabilities, debt valuation adjustments and other required credit risk-based deductions.

Qualifying subordinated debt is subordinated debt issued by Group Inc. with an original maturity of five years or greater. The outstanding amount of subordinated debt qualifying for Tier 2 capital is reduced upon reaching a remaining maturity of five years. See Note 16 to the consolidated financial statements for further information about our subordinated debt.

See Note 20 to the consolidated financial statements for information about our transitional capital ratios, which represent the ratios that are applicable to us as of both December 2017 and December 2016.

Supplementary Leverage Ratio

The Capital Framework includes a supplementary leverage ratio requirement for Advanced approach banking organizations. Under amendments to the Capital Framework, the U.S. federal bank regulatory agencies approved a final rule that implements the supplementary leverage ratio aligned with the definition of leverage established by the Basel Committee. The supplementary leverage ratio compares Tier 1 capital to a measure of leverage exposure, which consists of daily average total assets for the quarter and certain off-balance-sheet exposures, less certain balance sheet deductions. The Capital Framework requires a minimum supplementary leverage ratio of 5.0% (consisting of the minimum requirement of 3.0% and a 2.0% buffer) for U.S. BHCs deemed to be G-SIBs, effective on January 1, 2018.

The table below presents our supplementary leverage ratio, calculated on a fully phased-in basis.

	For the Three Months Ended or as of December	
$ in millions	**2017**	2016
Tier 1 capital	**$ 78,227**	$ 81,808
Average total assets	**$ 937,424**	$ 883,515
Deductions from Tier 1 capital	**(4,572)**	(4,897)
Average adjusted total assets	**932,852**	878,618
Off-balance-sheet exposures	**408,164**	391,555
Total supplementary leverage exposure	**$1,341,016**	$1,270,173
Supplementary leverage ratio	**5.8%**	6.4%

In the table above, the off-balance-sheet exposures consists of derivatives, securities financing transactions, commitments and guarantees.

Subsidiary Capital Requirements

Many of our subsidiaries, including GS Bank USA and our broker-dealer subsidiaries, are subject to separate regulation and capital requirements of the jurisdictions in which they operate.

GS Bank USA. GS Bank USA is subject to regulatory capital requirements that are calculated in substantially the same manner as those applicable to BHCs and calculates its capital ratios in accordance with the risk-based capital and leverage requirements applicable to state member banks, which are based on the Capital Framework. See Note 20 to the consolidated financial statements for further information about the Capital Framework as it relates to GS Bank USA, including GS Bank USA s capital ratios and required minimum ratios.

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In addition, under FRB rules, commencing on January 1, 2018, in order to be considered a well-capitalized depository institution, GS Bank USA must have a supplementary leverage ratio of 6.0% or greater. The supplementary leverage ratio compares Tier 1 capital to a measure of leverage exposure, defined as daily average total assets for the quarter and certain off-balance-sheet exposures, less certain balance sheet deductions.

The table below presents GS Bank USA s supplementary leverage ratio, calculated on a fully phased-in basis.

	For the Three Months Ended or as of December	
$ in millions	**2017**	2016
Tier 1 capital	**$ 25,341**	$ 24,479
Average total assets	**$168,854**	$169,721
Deductions from Tier 1 capital	**(14)**	(20)
Average adjusted total assets	**168,840**	169,701
Off-balance-sheet exposures	**176,892**	163,464
Total supplementary leverage exposure	**$345,732**	$333,165
Supplementary leverage ratio	**7.3%**	7.3%

In the table above, the off-balance-sheet exposures consists of derivatives, securities financing transactions, commitments and guarantees.

GSI. Our regulated U.K. broker-dealer, GSI, is one of our principal non-U.S. regulated subsidiaries and is regulated by the PRA and the Financial Conduct Authority. GSI is subject to the capital framework for E.U.-regulated financial institutions prescribed in the E.U. Fourth Capital Requirements Directive (CRD IV) and the E.U. Capital Requirements Regulation (CRR). These capital regulations are largely based on Basel III.

The table below presents GSI s minimum required capital ratios.

	December 2017 Minimum Ratio	December 2016 Minimum Ratio
CET1 ratio	**7.165%**	6.549%
Tier 1 capital ratio	**9.143%**	8.530%
Total capital ratio	**11.771%**	11.163%

The minimum capital ratios in the table above incorporate capital guidance received from the PRA and could change in the future. GSI s future capital requirements may also be impacted by developments such as the introduction of capital buffers as described above in Minimum Capital Ratios and Capital Buffers.

As of December 2017, GSI had a CET1 ratio of 11.0%, a Tier 1 capital ratio of 13.6% and a Total capital ratio of 16.0%. Each of these ratios included approximately 67 basis points attributable to amounts which will be finalized upon the issuance of GSI s 2017 annual audited financial statements. As of December 2016, GSI had a CET1 ratio of 12.9%, a Tier 1 capital ratio of 12.9% and a Total capital ratio of 17.2%.

In November 2016, the European Commission proposed amendments to the CRR to implement a 3% minimum leverage ratio requirement for certain E.U. financial institutions. This leverage ratio compares the CRR s definition of Tier 1 capital to a measure of leverage exposure, defined as the sum of certain assets plus certain off-balance-sheet exposures (which include a measure of derivatives, securities financing transactions, commitments and guarantees), less Tier 1 capital deductions. Any required minimum leverage ratio is expected to become effective for GSI no earlier than January 1, 2021. As of December 2017 and December 2016, GSI had a leverage ratio of 4.1% and 3.8%, respectively. The ratio as of December 2017 included approximately 20 basis points attributable to amounts which will be finalized upon the issuance of GSI s 2017 annual audited financial statements. This leverage ratio is based on our current interpretation and understanding of this rule and may evolve as we discuss the interpretation and application of this rule with GSI s regulators.

Other Subsidiaries. The capital requirements of several of our subsidiaries may increase in the future due to the various developments arising from the Basel Committee, the Dodd-Frank Act, and other governmental entities and regulators. See Note 20 to the consolidated financial statements for information about the capital requirements of our other regulated subsidiaries.

Subsidiaries not subject to separate regulatory capital requirements may hold capital to satisfy local tax and legal guidelines, rating agency requirements (for entities with assigned credit ratings) or internal policies, including policies concerning the minimum amount of capital a subsidiary should hold based on its underlying level of risk. In certain instances, Group Inc. may be limited in its ability to access capital held at certain subsidiaries as a result of regulatory, tax or other constraints. As of December 2017 and December 2016, Group Inc. s equity investment in subsidiaries was \$93.88 billion and \$92.77 billion, respectively, compared with its total shareholders equity of \$82.24 billion and \$86.89 billion, respectively.

Our capital invested in non-U.S. subsidiaries is generally exposed to foreign exchange risk, substantially all of which is managed through a combination of derivatives and non-U.S. denominated debt. See Note 7 to the consolidated financial statements for information about our net investment hedges, which are used to hedge this risk.

Guarantees of Subsidiaries. Group Inc. has guaranteed the payment obligations of GS&Co. and GS Bank USA, in each case subject to certain exceptions.

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Regulatory Matters and Developments

Our businesses are subject to significant and evolving regulation. The Dodd-Frank Act, enacted in July 2010, significantly altered the financial regulatory regime within which we operate. In addition, other reforms have been adopted or are being considered by regulators and policy makers worldwide. Given that many of the new and proposed rules are highly complex, the full impact of regulatory reform will not be known until the rules are implemented and market practices develop under the final regulations. See Business Regulation in Part I, Item 1 of this Form 10-K for further information about the laws, rules and regulations and proposed laws, rules and regulations that apply to us and our operations. In addition, see Note 20 to the consolidated financial statements for information about regulatory developments as they relate to our regulatory capital and leverage ratios.

Resolution and Recovery Plans

We are required by the FRB and the FDIC to submit a periodic plan that describes our strategy for a rapid and orderly resolution in the event of material financial distress or failure (resolution plan). We are also required by the FRB to submit a periodic recovery plan that outlines the steps that management could take to reduce risk, maintain sufficient liquidity, and conserve capital in times of prolonged stress.

In December 2017, the FRB and the FDIC provided feedback on our 2017 resolution plan and determined that it satisfactorily addressed the shortcomings identified in our prior submissions. The FRB and the FDIC did not identify deficiencies in our 2017 resolution plan, but the FRB and the FDIC did note one shortcoming that must be addressed in our next resolution plan submission. The FRB and the FDIC have extended the next resolution plan filing deadline by one year to July 1, 2019. See Business Available Information in Part I, Item 1 of this Form 10-K.

As part of our resolution planning efforts, we put in place a Capital and Liquidity Support Agreement (CLSA) among Group Inc., Goldman Sachs Funding LLC (Funding IHC) and our major subsidiaries. See Risk Factors in Part I, Item 1A of this Form 10-K for further information about the CLSA. Additionally, as part of our preferred resolution strategy, we have established RCAP, Resolution Liquidity Adequacy and Positioning (RLAP), Resolution Liquidity Execution Need (RLEN), and triggers and alerts frameworks. See Equity Capital Management and Regulatory Capital Equity Capital Management for further information about RCAP, and triggers and alerts frameworks, and see Liquidity Risk Management Liquidity Stress Tests for further information about RLAP, RLEN, and triggers and alerts frameworks.

In addition, GS Bank USA is required to submit periodic resolution plans to the FDIC. GS Bank USA s next resolution plan is due on July 1, 2018.

Off-Balance-Sheet Arrangements and Contractual Obligations

Off-Balance-Sheet Arrangements

We have various types of off-balance-sheet arrangements that we enter into in the ordinary course of business. Our involvement in these arrangements can take many different forms, including:

Purchasing or retaining residual and other interests in special purpose entities such as mortgage-backed and other asset-backed securitization vehicles;

Holding senior and subordinated debt, interests in limited and general partnerships, and preferred and common stock in other nonconsolidated vehicles;

Entering into interest rate, foreign currency, equity, commodity and credit derivatives, including total return swaps;

Entering into operating leases; and

Providing guarantees, indemnifications, commitments, letters of credit and representations and warranties.

We enter into these arrangements for a variety of business purposes, including securitizations. The securitization vehicles that purchase mortgages, corporate bonds, and other types of financial assets are critical to the functioning of several significant investor markets, including the mortgage-backed and other asset-backed securities markets, since they offer investors access to specific cash flows and risks created through the securitization process.

We also enter into these arrangements to underwrite client securitization transactions; provide secondary market liquidity; make investments in performing and nonperforming debt, distressed loans, power-related assets, equity securities, real estate and other assets; provide investors with credit-linked and asset-repackaged notes; and receive or provide letters of credit to satisfy margin requirements and to facilitate the clearance and settlement process.

Our financial interests in, and derivative transactions with, such nonconsolidated entities are generally accounted for at fair value, in the same manner as our other financial instruments, except in cases where we apply the equity method of accounting.

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The table below presents where information about our various off-balance-sheet arrangements may be found in this Form 10-K. In addition, see Note 3 to the consolidated financial statements for information about our consolidation policies.

Type of Off-Balance-Sheet Arrangement	Disclosure in Form 10-K
Variable interests and other obligations, including contingent obligations, arising from variable interests in nonconsolidated variable interest entities (VIEs)	See Note 12 to the consolidated financial statements.
Leases	See Contractual Obligations below and Note 18 to the consolidated financial statements.
Guarantees, letters of credit, and lending and other commitments	See Note 18 to the consolidated financial statements.
Derivatives	See Risk Management Credit Risk Management Credit Exposures OTC Derivatives below and Notes 4, 5, 7 and 18 to the consolidated financial statements.

Contractual Obligations

We have certain contractual obligations which require us to make future cash payments. These contractual obligations include our time deposits, secured long-term financings, unsecured long-term borrowings, contractual interest payments, subordinated liabilities of consolidated VIEs and minimum rental payments under noncancelable leases.

Our obligations to make future cash payments also include our commitments and guarantees related to off-balance-sheet arrangements, which are excluded from the table below. See Note 18 to the consolidated financial statements for further information about such commitments and guarantees.

Due to the uncertainty of the timing and amounts that will ultimately be paid, our liability for unrecognized tax benefits has been excluded from the table below. See Note 24 to the consolidated financial statements for further information about our unrecognized tax benefits.

The table below presents our contractual obligations by type.

	As of December	
$ in millions	**2017**	2016
Time deposits	**$ 30,075**	$ 27,394
Secured long-term financings	**$ 9,892**	$ 8,405
Unsecured long-term borrowings	**$217,687**	$189,086
Contractual interest payments	**$ 54,489**	$ 54,552
Subordinated liabilities of consolidated VIEs	**$ 19**	$ 584
Minimum rental payments	**$ 1,964**	$ 1,941

The table below presents our contractual obligations by period of expiration.

	As of December 2017			
$ in millions	**2018**	**2019 - 2020**	**2021 - 2022**	**2023 - Thereafter**
Time deposits	**$**	**$15,630**	**$ 8,610**	**$ 5,835**
Secured long-term financings	**$**	**$ 4,994**	**$ 3,019**	**$ 1,879**
Unsecured long-term borrowings	**$**	**$53,625**	**$44,383**	**$119,679**
Contractual interest payments	**$6,497**	**$11,562**	**$ 8,515**	**$ 27,915**
Subordinated liabilities of consolidated VIEs	**$**	**$**	**$**	**$ 19**
Minimum rental payments	**$ 299**	**$ 544**	**$ 350**	**$ 771**

In the table above:

Obligations maturing within one year of our financial statement date or redeemable within one year of our financial statement date at the option of the holders are excluded as they are treated as short-term obligations. See Note 15 to the consolidated financial statements for further information about our short-term borrowings.

Obligations that are repayable prior to maturity at our option are reflected at their contractual maturity dates and obligations that are redeemable prior to maturity at the option of the holders are reflected at the earliest dates such options become exercisable.

As of December 2017, unsecured long-term borrowings had maturities extending to 2057, consisted principally of senior borrowings, and included $5.61 billion of adjustments to the carrying value of certain unsecured long-term borrowings resulting from the application of hedge accounting. See Note 16 to the consolidated financial statements for further information about our unsecured long-term borrowings.

As of December 2017, the difference between the aggregate contractual principal amount and the related fair value of long-term other secured financings for which the fair value option was elected was not material.

As of December 2017, the aggregate contractual principal amount of unsecured long-term borrowings for which the fair value option was elected exceeded the related fair value by $1.69 billion.

Contractual interest payments represents estimated future interest payments related to unsecured long-term borrowings, secured long-term financings and time deposits based on applicable interest rates as of December 2017, and includes stated coupons, if any, on structured notes.

Future minimum rental payments are net of minimum sublease rentals under noncancelable leases. These lease commitments for office space expire on various dates through 2069. Certain agreements are subject to periodic escalation provisions for increases in real estate taxes and other charges. See Note 18 to the consolidated financial statements for further information about our leases.

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Risk Management

Risks are inherent in our businesses and include liquidity, market, credit, operational, model, legal, compliance, conduct, regulatory and reputational risks. For further information about our risk management processes, see Overview and Structure of Risk Management below. Our risks include the risks across our risk categories, regions or global businesses, as well as those which have uncertain outcomes and have the potential to materially impact our financial results, our liquidity and our reputation. For further information about our areas of risk, see Liquidity Risk Management, Market Risk Management, Credit Risk Management, Operational Risk Management and Model R Management below and Risk Factors in Part I, Item 1A of this Form 10-K.

Overview and Structure of Risk Management

Overview

We believe that effective risk management is of primary importance to our success. Accordingly, we have established an Enterprise Risk Management (ERM) framework that employs a comprehensive, integrated approach to risk management, and is designed to enable comprehensive risk management processes through which we identify, assess, monitor and manage the risks we assume in conducting our activities. These risks include liquidity, market, credit, operational, model, legal, compliance, conduct, regulatory and reputational risk exposures. Our risk management structure is built around three core components: governance, processes and people.

Governance. Risk management governance starts with the Board, which both directly and through its committees, including its Risk Committee, oversees our risk management policies and practices implemented through the ERM framework. The Board is also responsible for the annual review and approval of our risk appetite statement. The risk appetite statement describes the levels and types of risk we are willing to accept or to avoid, in order to achieve our strategic business objectives, while remaining in compliance with regulatory requirements.

The Board receives regular briefings on firmwide risks, including liquidity risk, market risk, credit risk, operational risk and model risk from our independent control and support functions, including the chief risk officer, and on compliance risk and conduct risk from the head of Compliance, on legal and regulatory matters from the general counsel, and on other matters impacting our reputation from the chair of our Firmwide Client and Business Standards Committee. The chief risk officer, as part of the review of the firmwide risk portfolio, regularly advises the Risk Committee of the Board of relevant risk metrics and material exposures, including risk limits and thresholds established in our risk appetite statement.

Next, at our most senior levels, our leaders are experienced risk managers, with a sophisticated and detailed understanding of the risks we take. Our senior management, and senior managers in our revenue-producing units and independent control and support functions, lead and participate in risk-oriented committees. Independent control and support functions include Compliance, the Conflicts Resolution Group (Conflicts), Controllers, Credit Risk Management, Human Capital Management, Legal, Liquidity Risk Management and Analysis (Liquidity Risk Management), Market Risk Management and Analysis (Market Risk Management), Model Risk Management, Operations, Operational Risk Management and Analysis (Operational Risk Management), Tax, Technology and

Treasury.

Our governance structure provides the protocol and responsibility for decision-making on risk management issues and ensures implementation of those decisions. We make extensive use of risk-related committees that meet regularly and serve as an important means to facilitate and foster ongoing discussions to identify, manage and mitigate risks.

We maintain strong communication about risk and we have a culture of collaboration in decision-making among the revenue-producing units, independent control and support functions, committees and senior management. While our revenue-producing units are responsible for management of their risk, we dedicate extensive resources to independent control and support functions in order to ensure a strong oversight structure and an appropriate segregation of duties. We regularly reinforce our strong culture of escalation and accountability across all functions.

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Processes. We maintain various processes and procedures that are critical components of our risk management framework, including identifying, assessing, monitoring and limiting our risks.

To effectively assess and monitor our risks, we maintain a daily discipline of marking substantially all of our inventory to current market levels. We carry our inventory at fair value, with changes in valuation reflected immediately in our risk management systems and in net revenues. We do so because we believe this discipline is one of the most effective tools for assessing and managing risk and that it provides transparent and realistic insight into our inventory exposures.

We also apply a rigorous framework of limits and thresholds to control and monitor risk across transactions, products, businesses and markets. The Board, directly or indirectly, through its Risk Committee, approves limits and thresholds, included in our risk appetite statement, at firmwide, business and product levels. In addition, the Firmwide Risk Committee is responsible for approving our risk limits framework, subject to the overall limits approved by the Risk Committee of the Board, at a variety of levels and monitoring these limits on a daily basis. The Risk Governance Committee (through delegated authority from the Firmwide Risk Committee) is responsible for approving limits at firmwide, business and product levels. Certain limits may be set at levels that will require periodic adjustment, rather than at levels which reflect our maximum risk appetite. This fosters an ongoing dialogue on risk among revenue-producing units, independent control and support functions, committees and senior management, as well as rapid escalation of risk-related matters. See Liquidity Risk Management, Market Risk Management and Credit Risk Management for further information about our risk limits.

Active management of our positions is another important process. Proactive mitigation of our market and credit exposures minimizes the risk that we will be required to take outsized actions during periods of stress.

Effective risk reporting and risk decision-making depends on our ability to get the right information to the right people at the right time. As such, we focus on the rigor and effectiveness of our risk systems, with the objective of ensuring that our risk management technology systems are comprehensive, reliable and timely. We devote significant time and resources to our risk management technology to ensure that it consistently provides us with complete, accurate and timely information.

People. Even the best technology serves only as a tool for helping to make informed decisions in real time about the risks we are taking. Ultimately, effective risk management requires our people to interpret our risk data on an ongoing and timely basis and adjust risk positions accordingly. In both our revenue-producing units and our independent control and support functions, the experience of our professionals, and their understanding of the nuances and limitations of each risk measure, guide us in assessing exposures and maintaining them within prudent levels.

We reinforce a culture of effective risk management, consistent with our risk appetite statement, in our training and development programs, as well as the way we evaluate performance, and recognize and reward our people. Our training and development programs, including certain sessions led by our most senior leaders, are focused on the importance of risk management, client relationships and reputational excellence. As part of our annual performance review process, we assess reputational excellence including how an employee exercises good risk management and reputational judgment, and adheres to our code of conduct and compliance policies. Our review and reward processes are designed to communicate and reinforce to our professionals the link between behavior and how people are recognized, the need to focus on our clients and our reputation, and the need to always act in accordance with our highest standards.

Structure

Ultimate oversight of risk is the responsibility of our Board. The Board oversees risk both directly and through its committees, including its Risk Committee. We have a series of committees with specific risk management mandates that have oversight or decision-making responsibilities for risk management activities. Committee membership generally consists of senior managers from both our revenue-producing units and our independent control and support functions. We have established procedures for these committees to ensure that appropriate information barriers are in place. Our primary risk committees, most of which also have additional sub-committees or working groups, are described below. In addition to these committees, we have other risk-oriented committees which provide oversight for different businesses, activities, products, regions and entities. All of our committees have responsibility for considering the impact of transactions and activities, which they oversee, on our reputation.

Membership of our risk committees is reviewed regularly and updated to reflect changes in the responsibilities of the committee members. Accordingly, the length of time that members serve on the respective committees varies as determined by the committee chairs and based on the responsibilities of the members.

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In addition, independent control and support functions, which report to the chief executive officer, the presidents and co-chief operating officers, the chief financial officer or the chief risk officer, are responsible for day-to-day oversight or monitoring of risk, as illustrated in the chart below and as described in greater detail in the following sections. Internal Audit, which reports to the Audit Committee of the Board and includes professionals with a broad range of audit and industry experience, including risk management expertise, is responsible for independently assessing and validating key controls within the risk management framework.

The chart below presents an overview of our risk management governance structure, including the reporting relationships of our independent control and support functions.

Management Committee. The Management Committee oversees our global activities, including all of our independent control and support functions. It provides this oversight directly and through authority delegated to committees it has established. This committee consists of our most senior leaders, and is chaired by our chief executive officer. Most members of the Management Committee are also members of other committees. The following are the committees that are principally involved in firmwide risk management.

Firmwide Client and Business Standards Committee. The Firmwide Client and Business Standards Committee assesses and makes determinations regarding business standards and practices, reputational risk management, client relationships and client service, is chaired by one of our presidents and co-chief operating officers, who is appointed as chair by the chief executive officer, and reports to the Management Committee. This committee periodically updates and receives guidance from the Public Responsibilities Committee of the Board. This committee has also established certain committees that report to it, including divisional Client and Business Standards Committees and risk-related committees. The following are the risk-related committees that report to the Firmwide Client and Business Standards Committee:

Firmwide Reputational Risk Committee. The Firmwide Reputational Risk Committee is responsible for assessing reputational risks arising from transactions that have been identified as requiring mandatory escalation to the Firmwide Reputational Risk Committee or that otherwise have potential heightened reputational risk. This committee is chaired by one of our presidents and co-chief operating officers, who is appointed as chair by the chief executive officer, and the vice-chairs are the head of Compliance and the head of the Conflicts Resolution Group, who are appointed as vice-chairs by the chair of the Firmwide Client and Business Standards Committee.

Firmwide Suitability Committee. The Firmwide Suitability Committee is responsible for setting standards and policies for product, transaction and client suitability and providing a forum for consistency across functions, regions and products on suitability assessments. This committee also reviews suitability matters escalated from other committees. This committee is co-chaired by the deputy head of Compliance, and the co-chief operating officer of Fixed Income, Currency and Commodities, who are appointed as co-chairs by the chair of the Firmwide Client and Business Standards Committee.

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Firmwide Risk Committee. The Firmwide Risk Committee is globally responsible for the ongoing monitoring and management of our financial risks. The Firmwide Risk Committee approves our financial risk limits framework, metrics and methodologies, and reviews results of stress tests and scenario analyses. This committee is co-chaired by our chief financial officer and our chief risk officer, who are appointed as co-chairs by the chief executive officer, and reports to the Management Committee. The following are the primary committees that report to the Firmwide Risk Committee:

Firmwide Finance Committee. The Firmwide Finance Committee has oversight responsibility for liquidity risk, the size and composition of our balance sheet and capital base, and credit ratings. This committee regularly reviews our liquidity, balance sheet, funding position and capitalization, approves related policies, and makes recommendations as to any adjustments to be made in light of current events, risks, exposures and regulatory requirements. As a part of such oversight, among other things, this committee reviews and approves balance sheet limits and the size of our GCLA. This committee is co-chaired by our chief risk officer and our global treasurer, who are appointed as co-chairs by the Firmwide Risk Committee.

Firmwide Investment Policy Committee. The Firmwide Investment Policy Committee reviews, approves, sets policies, and provides oversight for certain illiquid principal investments, including review of risk management and controls for these types of investments. This committee is co-chaired by the head of our Merchant Banking Division, a co-head of our Securities Division and a deputy general counsel, who are appointed as co-chairs by our presidents and co-chief operating officers and our chief financial officer.

Firmwide Volcker Oversight Committee. The Firmwide Volcker Oversight Committee is responsible for the oversight and periodic review of the implementation of our Volcker Rule compliance program, as approved by the Board, and other Volcker Rule-related matters. This committee is co-chaired by a deputy chief risk officer and the deputy head of Compliance, who are appointed as co-chairs by the co-chairs of the Firmwide Risk Committee.

Risk Governance Committee. The Risk Governance Committee (through delegated authority from the Firmwide Risk Committee) is globally responsible for the ongoing approval and monitoring of risk frameworks, policies, parameters and limits, at firmwide, business and product levels. This committee is chaired by our chief risk officer, who is appointed as chair by the co-chairs of the Firmwide Risk Committee.

The following committees report jointly to the Firmwide Risk Committee and the Firmwide Client and Business Standards Committee:

Firmwide Capital Committee. The Firmwide Capital Committee provides approval and oversight of debt-related transactions, including principal commitments of our capital. This committee aims to ensure that business and reputational standards for underwritings and capital commitments are maintained on a global basis. This committee is co-chaired by the head of Americas Credit Risk Management, and the head of the EMEA Financing Group. The co-chairs of the Firmwide Capital Committee are appointed by the co-chairs of the Firmwide Risk Committee.

Firmwide Commitments Committee. The Firmwide Commitments Committee reviews our underwriting and distribution activities with respect to equity and equity-related product offerings, and sets and maintains policies and procedures designed to ensure that legal, reputational, regulatory and business standards are maintained on a global basis. In addition to reviewing specific transactions, this committee periodically conducts general strategic reviews of sectors and products and establishes policies in connection with transaction practices. This committee is co-chaired by the co-head of the Industrials group in our Investment Banking Division, our chief underwriting officer, and a managing director in Risk Management, who are appointed as co-chairs by the chair of the Firmwide Client and Business Standards Committee.

Firmwide Enterprise Risk Committee. The Firmwide Enterprise Risk Committee is responsible for the ongoing review, approval and monitoring of the ERM framework and for providing oversight of our aggregate financial and nonfinancial risks. This committee is co-chaired by one of our presidents and co-chief operating officers and our chief risk officer, who are appointed as co-chairs by our chief executive officer, and reports to the Management Committee. The following are the primary committees that report to the Firmwide Enterprise Risk Committee:

Firmwide New Activity Committee. The Firmwide New Activity Committee is responsible for reviewing new activities and for establishing a process to identify and review previously approved activities that are significant and that have changed in complexity and/or structure or present different reputational and suitability concerns over time to consider whether these activities remain appropriate. This committee is co-chaired by the head of regulatory control and the co-head of EMEA FICC sales, who are appointed as co-chairs by the chairs of the Firmwide Enterprise Risk Committee.

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Firmwide Model Risk Control Committee. The Firmwide Model Risk Control Committee is responsible for oversight of the development and implementation of model risk controls, which includes governance, policies and procedures related to our reliance on financial models. This committee is chaired by a deputy chief risk officer, who is appointed as chair by the chairs of the Firmwide Enterprise Risk Committee.

Firmwide Conduct and Operational Risk Committee. The Firmwide Conduct and Operational Risk Committee is globally responsible for the ongoing approval and monitoring of the frameworks, policies, parameters and limits which govern our conduct and operational risks. This committee is co-chaired by a managing director in Global Compliance and the head of Operational Risk Management, who are appointed as co-chairs by the chairs of the Firmwide Enterprise Risk Committee.

Firmwide Technology Risk Committee. The Firmwide Technology Risk Committee reviews matters related to the design, development, deployment and use of technology. This committee oversees cyber security matters, as well as technology risk management frameworks and methodologies, and monitors their effectiveness. This committee is co-chaired by our chief information officer and the head of Global Investment Research, who are appointed as co-chairs by the chairs of the Firmwide Enterprise Risk Committee.

Global Business Resilience Committee. The Global Business Resilience Committee is responsible for oversight of business resilience initiatives, promoting increased levels of security and resilience, and reviewing certain operating risks related to business resilience. This committee is chaired by our chief administrative officer, who is appointed as chair by the chairs of the Firmwide Enterprise Risk Committee.

Conflicts Management

Conflicts of interest and our approach to dealing with them are fundamental to our client relationships, our reputation and our long-term success. The term conflict of interest does not have a universally accepted meaning, and conflicts can arise in many forms within a business or between businesses. The responsibility for identifying potential conflicts, as well as complying with our policies and procedures, is shared by the entire firm.

We have a multilayered approach to resolving conflicts and addressing reputational risk. Our senior management oversees policies related to conflicts resolution, and, in conjunction with Conflicts, Legal and Compliance, the Firmwide Client and Business Standards Committee, and other internal committees, formulates policies, standards and principles, and assists in making judgments regarding the appropriate resolution of particular conflicts. Resolving potential conflicts necessarily depends on the facts and circumstances of a particular situation and the application of experienced and informed judgment.

As a general matter, Conflicts reviews financing and advisory assignments in Investment Banking and certain of our investing, lending and other activities. In addition, we have various transaction oversight committees, such as the Firmwide Capital, Commitments and Suitability Committees and other committees that also review new underwritings, loans, investments and structured products. These groups and committees work with internal and external counsel and Compliance to evaluate and address any actual or potential conflicts. Conflicts reports to one of our presidents and co-chief operating officers.

We regularly assess our policies and procedures that address conflicts of interest in an effort to conduct our business in accordance with the highest ethical standards and in compliance with all applicable laws, rules and regulations.

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Liquidity Risk Management

Overview

Liquidity risk is the risk that we will be unable to fund the firm or meet our liquidity needs in the event of firm-specific, broader industry, or market liquidity stress events. Liquidity is of critical importance to us, as most of the failures of financial institutions have occurred in large part due to insufficient liquidity. Accordingly, we have in place a comprehensive and conservative set of liquidity and funding policies. Our principal objective is to be able to fund the firm and to enable our core businesses to continue to serve clients and generate revenues, even under adverse circumstances.

Treasury has the primary responsibility for assessing, monitoring and managing our liquidity and funding strategy. Treasury is independent of the revenue-producing units and reports to our chief financial officer.

Liquidity Risk Management is an independent risk management function responsible for control and oversight of our liquidity risk management framework, including stress testing and limit governance. Liquidity Risk Management is independent of the revenue-producing units and Treasury, and reports to our chief risk officer.

Liquidity Risk Management Principles

We manage liquidity risk according to three principles (i) hold sufficient excess liquidity in the form of GCLA to cover outflows during a stressed period, (ii) maintain appropriate Asset-Liability Management and (iii) maintain a viable Contingency Funding Plan.

Global Core Liquid Assets. GCLA is liquidity that we maintain to meet a broad range of potential cash outflows and collateral needs in a stressed environment. Our most important liquidity policy is to pre-fund our estimated potential cash and collateral needs during a liquidity crisis and hold this liquidity in the form of unencumbered, highly liquid securities and cash. We believe that the securities held in our GCLA would be readily convertible to cash in a matter of days, through liquidation, by entering into repurchase agreements or from maturities of resale agreements, and that this cash would allow us to meet immediate obligations without needing to sell other assets or depend on additional funding from credit-sensitive markets.

Our GCLA reflects the following principles:

- The first days or weeks of a liquidity crisis are the most critical to a company s survival;
- Focus must be maintained on all potential cash and collateral outflows, not just disruptions to financing flows. Our businesses are diverse, and our liquidity needs are determined by many factors, including market movements, collateral requirements and client commitments, all of which can change dramatically in a difficult funding

environment;

During a liquidity crisis, credit-sensitive funding, including unsecured debt, certain deposits and some types of secured financing agreements, may be unavailable, and the terms (e.g., interest rates, collateral provisions and tenor) or availability of other types of secured financing may change and certain deposits may be withdrawn; and

As a result of our policy to pre-fund liquidity that we estimate may be needed in a crisis, we hold more unencumbered securities and have larger debt balances than our businesses would otherwise require. We believe that our liquidity is stronger with greater balances of highly liquid unencumbered securities, even though it increases our total assets and our funding costs.

We maintain our GCLA across Group Inc., Funding IHC and Group Inc. s major broker-dealer and bank subsidiaries, asset types, and clearing agents to provide us with sufficient operating liquidity to ensure timely settlement in all major markets, even in a difficult funding environment. In addition to the GCLA, we maintain cash balances and securities in several of our other entities, primarily for use in specific currencies, entities, or jurisdictions where we do not have immediate access to parent company liquidity.

We believe that our GCLA provides us with a resilient source of funds that would be available in advance of potential cash and collateral outflows and gives us significant flexibility in managing through a difficult funding environment.

Asset-Liability Management. Our liquidity risk management policies are designed to ensure we have a sufficient amount of financing, even when funding markets experience persistent stress. We manage the maturities and diversity of our funding across markets, products and counterparties, and seek to maintain a diversified funding profile with an appropriate tenor, taking into consideration the characteristics and liquidity profile of our assets.

Our approach to asset-liability management includes:

Conservatively managing the overall characteristics of our funding book, with a focus on maintaining long-term, diversified sources of funding in excess of our current requirements. See Balance Sheet and Funding Sources Funding Sources for further details;

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Actively managing and monitoring our asset base, with particular focus on the liquidity, holding period and our ability to fund assets on a secured basis. We assess our funding requirements and our ability to liquidate assets in a stressed environment while appropriately managing risk. This enables us to determine the most appropriate funding products and tenors. See Balance Sheet and Funding Sources Balance Sheet Management for further details on our balance sheet management process and Funding Sources Secured Funding for further details on asset classes that may be harder to fund on a secured basis; and

Raising secured and unsecured financing that has a long tenor relative to the liquidity profile of our assets. This reduces the risk that our liabilities will come due in advance of our ability to generate liquidity from the sale of our assets. Because we maintain a highly liquid balance sheet, the holding period of certain of our assets may be materially shorter than their contractual maturity dates.

Our goal is to ensure that we maintain sufficient liquidity to fund our assets and meet our contractual and contingent obligations in normal times, as well as during periods of market stress. Through our dynamic balance sheet management process, we use actual and projected asset balances to determine secured and unsecured funding requirements. Funding plans are reviewed and approved by the Firmwide Finance Committee on a quarterly basis. In addition, senior managers in our independent control and support functions regularly analyze, and the Firmwide Finance Committee reviews, our consolidated total capital position (unsecured long-term borrowings plus total shareholders equity) so that we maintain a level of long-term funding that is sufficient to meet our long-term financing requirements. In a liquidity crisis, we would first use our GCLA in order to avoid reliance on asset sales (other than our GCLA). However, we recognize that orderly asset sales may be prudent or necessary in a severe or persistent liquidity crisis.

Subsidiary Funding Policies

The majority of our unsecured funding is raised by Group Inc., which lends the necessary funds to Funding IHC and other subsidiaries, some of which are regulated, to meet their asset financing, liquidity and capital requirements. In addition, Group Inc. provides its regulated subsidiaries with the necessary capital to meet their regulatory requirements. The benefits of this approach to subsidiary funding are enhanced control and greater flexibility to meet the funding requirements of our subsidiaries. Funding is also raised at the subsidiary level through a variety of products, including deposits, secured funding and unsecured borrowings.

Our intercompany funding policies assume that a subsidiary s funds or securities are not freely available to its parent, Funding IHC or other subsidiaries unless (i) legally provided for and (ii) there are no additional regulatory, tax or other restrictions. In particular, many of our subsidiaries are subject to laws that authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to Group Inc. or Funding IHC. Regulatory action of that kind could impede access to funds that Group Inc. needs to make payments on its obligations. Accordingly, we assume that the capital provided to our regulated subsidiaries is not available to Group Inc. or other subsidiaries and any other financing provided to our regulated subsidiaries is not available to Group Inc. or Funding IHC until the maturity of such financing.

Group Inc. has provided substantial amounts of equity and subordinated indebtedness, directly or indirectly, to its regulated subsidiaries. For example, as of December 2017, Group Inc. had $29.60 billion of equity and subordinated indebtedness invested in GS&Co., its principal U.S. registered broker-dealer; $37.19 billion invested in GSI, a regulated U.K. broker-dealer; $2.69 billion invested in GSJCL, a regulated Japanese broker-dealer; $27.56 billion invested in GS Bank USA, a regulated New York State-chartered bank; and $3.86 billion invested in GSIB, a regulated U.K. bank. Group Inc. also provided, directly or indirectly, $114.98 billion of unsubordinated loans (including secured loans of $50.59 billion), and $13.38 billion of collateral and cash deposits to these entities, substantially all of which was to GS&Co., GSI, GSJCL and GS Bank USA, as of December 2017. In addition, as of December 2017, Group Inc. had significant amounts of capital invested in and loans to its other regulated subsidiaries.

Contingency Funding Plan. We maintain a contingency funding plan to provide a framework for analyzing and responding to a liquidity crisis situation or periods of market stress. Our contingency funding plan outlines a list of potential risk factors, key reports and metrics that are reviewed on an ongoing basis to assist in assessing the severity of, and managing through, a liquidity crisis and/or market dislocation. The contingency funding plan also describes in detail our potential responses if our assessments indicate that we have entered a liquidity crisis, which include pre-funding for what we estimate will be our potential cash and collateral needs, as well as utilizing secondary sources of liquidity. Mitigants and action items to address specific risks which may arise are also described and assigned to individuals responsible for execution.

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The contingency funding plan identifies key groups of individuals to foster effective coordination, control and distribution of information, all of which are critical in the management of a crisis or period of market stress. The contingency funding plan also details the responsibilities of these groups and individuals, which include making and disseminating key decisions, coordinating all contingency activities throughout the duration of the crisis or period of market stress, implementing liquidity maintenance activities and managing internal and external communication.

Liquidity Stress Tests

In order to determine the appropriate size of our GCLA, we use an internal liquidity model, referred to as the Modeled Liquidity Outflow, which captures and quantifies our liquidity risks. We also consider other factors including, but not limited to, an assessment of our potential intraday liquidity needs through an additional internal liquidity model, referred to as the Intraday Liquidity Model, the results of our long-term stress testing models, our resolution liquidity models and other applicable regulatory requirements and a qualitative assessment of our condition, as well as the financial markets. The results of the Modeled Liquidity Outflow, the Intraday Liquidity Model, the long-term stress testing models and the resolution liquidity models are reported to senior management on a regular basis.

Modeled Liquidity Outflow. Our Modeled Liquidity Outflow is based on conducting multiple scenarios that include combinations of market-wide and firm-specific stress. These scenarios are characterized by the following qualitative elements:

- Severely challenged market environments, including low consumer and corporate confidence, financial and political instability, adverse changes in market values, including potential declines in equity markets and widening of credit spreads; and
- A firm-specific crisis potentially triggered by material losses, reputational damage, litigation, executive departure, and/or a ratings downgrade.

The following are the critical modeling parameters of the Modeled Liquidity Outflow:

- Liquidity needs over a 30-day scenario;
- A two-notch downgrade of our long-term senior unsecured credit ratings;
- A combination of contractual outflows, such as upcoming maturities of unsecured debt, and contingent outflows (e.g., actions though not contractually required, we may deem necessary in a crisis). We assume that most contingent outflows will occur within the initial days and weeks of a crisis;

No issuance of equity or unsecured debt;

No support from additional government funding facilities. Although we have access to various central bank funding programs, we do not assume reliance on additional sources of funding in a liquidity crisis; and

No asset liquidation, other than the GCLA.

The potential contractual and contingent cash and collateral outflows covered in our Modeled Liquidity Outflow include:

Unsecured Funding

Contractual: All upcoming maturities of unsecured long-term debt, commercial paper, and other unsecured funding products. We assume that we will be unable to issue new unsecured debt or rollover any maturing debt.

Contingent: Repurchases of our outstanding long-term debt, commercial paper and hybrid financial instruments in the ordinary course of business as a market maker.

Deposits

Contractual: All upcoming maturities of term deposits. We assume that we will be unable to raise new term deposits or rollover any maturing term deposits.

Contingent: Partial withdrawals of deposits that have no contractual maturity. The withdrawal assumptions reflect, among other factors, the type of deposit, whether the deposit is insured or uninsured, and our relationship with the depositor.

Secured Funding

Contractual: A portion of upcoming contractual maturities of secured funding due to either the inability to refinance or the ability to refinance only at wider haircuts (i.e., on terms which require us to post additional collateral). Our assumptions reflect, among other factors, the quality of the underlying collateral, counterparty roll probabilities (our assessment of the counterparty s likelihood of continuing to provide funding on a secured basis at the maturity of the trade) and counterparty concentration.

Contingent: Adverse changes in the value of financial assets pledged as collateral for financing transactions, which would necessitate additional collateral postings under those transactions.

OTC Derivatives

Contingent: Collateral postings to counterparties due to adverse changes in the value of our OTC derivatives, excluding those that are cleared and settled through central counterparties (OTC-cleared).

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Contingent: Other outflows of cash or collateral related to OTC derivatives, excluding OTC-cleared, including the impact of trade terminations, collateral substitutions, collateral disputes, loss of rehypothecation rights, collateral calls or termination payments required by a two-notch downgrade in our credit ratings, and collateral that has not been called by counterparties, but is available to them.

Exchange-Traded and OTC-cleared Derivatives

Contingent: Variation margin postings required due to adverse changes in the value of our outstanding exchange-traded and OTC-cleared derivatives.

Contingent: An increase in initial margin and guaranty fund requirements by derivative clearing houses.

Customer Cash and Securities

Contingent: Liquidity outflows associated with our prime brokerage business, including withdrawals of customer credit balances, and a reduction in customer short positions, which may serve as a funding source for long positions.

Securities

Contingent: Liquidity outflows associated with a reduction or composition change in our short positions, which may serve as a funding source for long positions.

Unfunded Commitments

Contingent: Draws on our unfunded commitments. Draw assumptions reflect, among other things, the type of commitment and counterparty.

Other

Other upcoming large cash outflows, such as tax payments.

Intraday Liquidity Model. Our Intraday Liquidity Model measures our intraday liquidity needs using a scenario analysis characterized by the same qualitative elements as our Modeled Liquidity Outflow. The model assesses the risk of increased intraday liquidity requirements during a scenario where access to sources of intraday liquidity may become constrained.

The following are key modeling elements of the Intraday Liquidity Model:

- Liquidity needs over a one-day settlement period;
- Delays in receipt of counterparty cash payments;
- A reduction in the availability of intraday credit lines at our third-party clearing agents; and
- Higher settlement volumes due to an increase in activity.

Long-Term Stress Testing. We utilize longer-term stress tests to take a forward view on our liquidity position through prolonged stress periods in which we experience a severe liquidity stress and recover in an environment that continues to be challenging. We are focused on ensuring conservative asset-liability management to prepare for a prolonged period of potential stress, seeking to maintain a diversified funding profile with an appropriate tenor, taking into consideration the characteristics and liquidity profile of our assets.

We also perform stress tests on a regular basis as part of our routine risk management processes and conduct tailored stress tests on an ad hoc or product-specific basis in response to market developments.

Resolution Liquidity Models. In connection with our resolution planning efforts, we have established our RLAP framework, which estimates liquidity needs of our major subsidiaries in a stressed environment. The liquidity needs are measured using our Modeled Liquidity Outflow assumptions and include certain additional inter-affiliate exposures. We have also established our RLEN framework, which measures the liquidity needs of our major subsidiaries to stabilize and wind-down following a Group Inc. bankruptcy filing in accordance with our preferred resolution strategy.

In addition, we have established a triggers and alerts framework which is designed to provide the Board with information needed to make an informed decision on whether and when to commence bankruptcy proceedings for Group Inc.

Model Review and Validation

Treasury regularly refines our Modeled Liquidity Outflow, Intraday Liquidity Model and our other stress testing models to reflect changes in market or economic conditions and our business mix. Any changes, including model assumptions, are assessed and approved by Liquidity Risk Management.

Model Risk Management is responsible for the independent review and validation of our liquidity models. See Model Risk Management for further information about the review and validation of these models.

Limits

We use liquidity limits at various levels and across liquidity risk types to manage the size of our liquidity exposures. Limits are measured relative to acceptable levels of risk given our liquidity risk tolerance. The purpose of the firmwide limits is to assist senior management in monitoring and controlling our overall liquidity profile.

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The Risk Committee of the Board and the Firmwide Finance Committee approve liquidity risk limits at the firmwide level. Limits are reviewed frequently and amended, with required approvals, on a permanent and temporary basis, as appropriate, to reflect changing market or business conditions.

Our liquidity risk limits are monitored by Treasury and Liquidity Risk Management. Treasury is responsible for identifying and escalating, on a timely basis, instances where limits have been exceeded.

GCLA and Unencumbered Metrics

GCLA. Based on the results of our internal liquidity risk models, described above, as well as our consideration of other factors including, but not limited to, an assessment of our potential intraday liquidity needs and a qualitative assessment of our condition, as well as the financial markets, we believe our liquidity position as of both December 2017 and December 2016 was appropriate. We strictly limit our GCLA to a narrowly defined list of securities and cash because they are highly liquid, even in a difficult funding environment. We do not include other potential sources of excess liquidity in our GCLA, such as less liquid unencumbered securities or committed credit facilities.

The table below presents the average fair value of the securities and certain overnight cash deposits that are included in our GCLA.

	Average for the Year Ended December	
$ in millions	**2017**	2016
U.S. dollar-denominated	**$155,020**	$155,123
Non-U.S. dollar-denominated	**63,528**	55,980
Total	**$218,548**	$211,103

The table below presents the average fair value of our GCLA by asset class.

	Average for the Year Ended December	
$ in millions	**2017**	2016
Overnight cash deposits	**$ 93,617**	$ 92,336
U.S. government obligations	**75,108**	68,708
U.S. agency obligations	**11,813**	13,645
Non-U.S. government obligations	**38,010**	36,414
Total	**$218,548**	$211,103

In the tables above:

The U.S. dollar-denominated GCLA consists of (i) unencumbered U.S. government and agency obligations (including highly liquid U.S. agency mortgage-backed obligations), all of which are eligible as collateral in Federal Reserve open market operations and (ii) certain overnight U.S. dollar cash deposits.

The non-U.S. dollar-denominated GCLA consists of non-U.S. government obligations (only unencumbered German, French, Japanese and U.K. government obligations) and certain overnight cash deposits in highly liquid currencies.

The table below presents the average GCLA of Group Inc. and Funding IHC, and Group Inc. s major broker-dealer and bank subsidiaries.

	Average for the Year Ended December	
$ in millions	**2017**	2016
Group Inc. and Funding IHC	**$ 37,507**	$ 43,638
Major broker-dealer subsidiaries	**98,160**	86,519
Major bank subsidiaries	**82,881**	80,946
Total	**$218,548**	$211,103

We maintain our GCLA to enable us to meet current and potential liquidity requirements of our parent company, Group Inc., and its subsidiaries. Our Modeled Liquidity Outflow and Intraday Liquidity Model incorporate a consolidated requirement for Group Inc., as well as a standalone requirement for each of our major broker-dealer and bank subsidiaries. During the second quarter of 2017, in connection with our resolution plan, Group Inc. transferred substantially all of its GCLA to Funding IHC. Funding IHC is required to provide the necessary liquidity to Group Inc. during the ordinary course of business, and is also obligated to provide capital and liquidity support to major subsidiaries in the event of our material financial distress or failure. Liquidity held directly in each of our major broker-dealer and bank subsidiaries is intended for use only by that subsidiary to meet its liquidity requirements and is assumed not to be available to Group Inc. or Funding IHC unless (i) legally provided for and (ii) there are no additional regulatory, tax or other restrictions. In addition, the Modeled Liquidity Outflow and Intraday Liquidity Model also incorporate a broader assessment of standalone liquidity requirements for other subsidiaries and we hold a portion of our GCLA directly at Group Inc. or Funding IHC to support such requirements.

Other Unencumbered Assets. In addition to our GCLA, we have a significant amount of other unencumbered cash and financial instruments, including other government obligations, high-grade money market securities, corporate obligations, marginable equities, loans and cash deposits not included in our GCLA. The fair value of our unencumbered assets averaged $158.41 billion and $142.33 billion for 2017 and 2016, respectively. We do not consider these assets liquid enough to be eligible for our GCLA.

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Liquidity Regulatory Framework

As a BHC, we are subject to the U.S. federal bank regulatory agencies LCR rule. The LCR rule requires organizations to maintain an adequate ratio of eligible high-quality liquid assets (HQLA) to expected net cash outflows under an acute short-term liquidity stress scenario. Eligible HQLA excludes HQLA held by subsidiaries that is in excess of their minimum requirement and is subject to transfer restrictions. We are required to maintain a minimum LCR of 100%.

The table below presents information about our average daily LCR.

$ in millions	**Average for the Three Months Ended December 2017**
Total HQLA	**$219,108**
Eligible HQLA	**$162,829**
Net cash outflows	**$123,518**
LCR	**132%**

We expect that fluctuations in client activity, business mix and the overall market environment will impact our average LCR in the future.

In addition, the U.S. federal bank regulatory agencies have issued a proposed rule that calls for a net stable funding ratio (NSFR) for large U.S. banking organizations. The proposal would require banking organizations to ensure they have access to stable funding over a one-year time horizon. The proposed rule includes quarterly disclosure of the ratio, as well as a description of the banking organization s stable funding sources. The U.S. federal bank regulatory agencies have not released the final rule. We expect that we will be compliant with the NSFR requirement by the effective date of the final rule.

The following is information on our subsidiary liquidity regulatory requirements:

GS Bank USA. GS Bank USA is subject to minimum liquidity standards under the LCR rule approved by the U.S. federal bank regulatory agencies. As of December 2017, GS Bank USA s LCR exceeded the minimum requirement. The U.S. federal bank regulatory agencies proposed NSFR requirement described above would also apply to GS Bank USA.

GSI. The LCR rule issued by the U.K. regulatory authorities became effective in the U.K. on October 1, 2015, with a phase-in period whereby certain financial institutions, including GSI, were required to have an 80% minimum ratio initially, increasing to 90% on January 1, 2017 and 100% on January 1, 2018. GSI s average monthly LCR for the trailing twelve-month period ended December 2017 exceeded the minimum requirement.

Other Subsidiaries. We monitor the local regulatory liquidity requirements of our subsidiaries to ensure compliance. For many of our subsidiaries, these requirements either have changed or are likely to change in the future due to the implementation of the Basel Committee s framework for liquidity risk measurement, standards and monitoring, as well as other regulatory developments.

The implementation of these rules, and any amendments adopted by the applicable regulatory authorities, could impact our liquidity and funding requirements and practices in the future.

Credit Ratings

We rely on the short-term and long-term debt capital markets to fund a significant portion of our day-to-day operations and the cost and availability of debt financing is influenced by our credit ratings. Credit ratings are also important when we are competing in certain markets, such as OTC derivatives, and when we seek to engage in longer-term transactions. See Risk Factors in Part I, Item 1A of this Form 10-K for information about the risks associated with a reduction in our credit ratings.

The table below presents the unsecured credit ratings and outlook of Group Inc. by DBRS, Inc. (DBRS), Fitch, Inc. (Fitch), Moody s Investors Service (Moody s), Rating and Investment Information, Inc. (R&I), and Standard & Poor s Ratings Services (S&P).

	As of December 2017				
	DBRS	**Fitch**	**Moody s**	**R&I**	**S&P**
Short-term debt	**R-1 (middle)**	**F1**	**P-2**	**a-1**	**A-2**
Long-term debt	**A (high)**	**A**	**A3**	**A**	**BBB+**
Subordinated debt	**A**	**A-**	**Baa2**	**A-**	**BBB-**
Trust preferred	**A**	**BBB-**	**Baa3**	**N/A**	**BB**
Preferred stock	**BBB (high)**	**BB+**	**Ba1**	**N/A**	**BB**
Ratings outlook	**Stable**	**Stable**	**Stable**	**Stable**	**Stable**

In the table above:

The ratings for trust preferred relate to the guaranteed preferred beneficial interests issued by Goldman Sachs Capital I.

The DBRS, Fitch, Moody s and S&P ratings for preferred stock include the APEX issued by Goldman Sachs Capital II and Goldman Sachs Capital III.

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The table below presents the unsecured credit ratings and outlook of GS Bank USA, GSIB, GS&Co. and GSI, by Fitch, Moody s and S&P.

	As of December 2017		
	Fitch	**Moody s**	**S&P**
GS Bank USA			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A+**	**A1**	**A+**
Short-term bank deposits	**F1+**	**P-1**	**N/A**
Long-term bank deposits	**AA-**	**A1**	**N/A**
Ratings outlook	**Stable**	**Stable**	**Stable**
GSIB			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A**	**A1**	**A+**
Short-term bank deposits	**F1**	**P-1**	**N/A**
Long-term bank deposits	**A**	**A1**	**N/A**
Ratings outlook	**Stable**	**Stable**	**Stable**
GS&Co.			
Short-term debt	**F1**	**N/A**	**A-1**
Long-term debt	**A+**	**N/A**	**A+**
Ratings outlook	**Stable**	**N/A**	**Stable**
GSI			
Short-term debt	**F1**	**P-1**	**A-1**
Long-term debt	**A**	**A1**	**A+**
Ratings outlook	**Stable**	**Stable**	**Stable**

We believe our credit ratings are primarily based on the credit rating agencies assessment of:

Our liquidity, market, credit and operational risk management practices;

The level and variability of our earnings;

Our capital base;

Our franchise, reputation and management;

- Our corporate governance; and
- The external operating and economic environment, including, in some cases, the assumed level of government support or other systemic considerations, such as potential resolution.

Certain of our derivatives have been transacted under bilateral agreements with counterparties who may require us to post collateral or terminate the transactions based on changes in our credit ratings. We manage our GCLA to ensure we would, among other potential requirements, be able to make the additional collateral or termination payments that may be required in the event of a two-notch reduction in our long-term credit ratings, as well as collateral that has not been called by counterparties, but is available to them.

See Note 7 to the consolidated financial statements for further information about derivatives with credit-related contingent features and the additional collateral or termination payments related to our net derivative liabilities under bilateral agreements that could have been called by counterparties in the event of a one-notch and two-notch downgrade in our credit ratings.

Cash Flows

As a global financial institution, our cash flows are complex and bear little relation to our net earnings and net assets. Consequently, we believe that traditional cash flow analysis is less meaningful in evaluating our liquidity position than the liquidity and asset-liability management policies described above. Cash flow analysis may, however, be helpful in highlighting certain macro trends and strategic initiatives in our businesses.

Year Ended December 2017. Our cash and cash equivalents decreased by $11.66 billion to $110.05 billion at the end of 2017. We used $17.74 billion in net cash for operating activities, reflecting a decrease in the net liability for receivables and payables due to client activity. We used $29.12 billion in net cash for investing activities, primarily to fund loans receivable to corporate borrowers and loans backed by real estate and investments in U.S. government and agency obligations accounted for as available-for-sale securities. We generated $35.20 billion in net cash from financing activities, primarily from net issuances of unsecured long-term borrowings and increases in institutional deposits and Marcus deposits, partially offset by repurchases of common stock.

Year Ended December 2016. Our cash and cash equivalents increased by $28.27 billion to $121.71 billion at the end of 2016. We generated $9.27 billion in net cash from investing activities, primarily from net cash acquired in business acquisitions. We generated $19.00 billion in net cash from financing activities and operating activities, primarily from increases in deposits and from net issuances of unsecured long-term borrowings, partially offset by repurchases of common stock.

Year Ended December 2015. Our cash and cash equivalents increased by $18.41 billion to $93.44 billion at the end of 2015. We used $18.57 billion in net cash for investing activities, primarily due to funding of loans receivable. We generated $36.99 billion in net cash from financing activities and operating activities primarily from net issuances of long-term borrowings and bank deposits, partially offset by repurchases of common stock.

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Market Risk Management

Overview

Market risk is the risk of loss in the value of our inventory, as well as certain other financial assets and financial liabilities, due to changes in market conditions. We employ a variety of risk measures, each described in the respective sections below, to monitor market risk. We hold inventory primarily for market making for our clients and for our investing and lending activities. Our inventory therefore changes based on client demands and our investment opportunities. Our inventory is accounted for at fair value and therefore fluctuates on a daily basis, with the related gains and losses included in market making and other principal transactions. Categories of market risk include the following:

Interest rate risk: results from exposures to changes in the level, slope and curvature of yield curves, the volatilities of interest rates, prepayment speeds and credit spreads;

Equity price risk: results from exposures to changes in prices and volatilities of individual equities, baskets of equities and equity indices;

Currency rate risk: results from exposures to changes in spot prices, forward prices and volatilities of currency rates; and

Commodity price risk: results from exposures to changes in spot prices, forward prices and volatilities of commodities, such as crude oil, petroleum products, natural gas, electricity, and precious and base metals.

Market Risk Management, which is independent of the revenue-producing units and reports to our chief risk officer, has primary responsibility for assessing, monitoring and managing our market risk. We monitor and control risks through strong firmwide oversight and independent control and support functions across our global businesses.

Managers in revenue-producing units and Market Risk Management discuss market information, positions and estimated risk and loss scenarios on an ongoing basis. Managers in revenue-producing units are accountable for managing risk within prescribed limits. These managers have in-depth knowledge of their positions, markets and the instruments available to hedge their exposures.

Market Risk Management Process

We manage our market risk by diversifying exposures, controlling position sizes and establishing economic hedges in related securities or derivatives. This process includes:

- Accurate and timely exposure information incorporating multiple risk metrics;
- A dynamic limit setting framework; and
- Constant communication among revenue-producing units, risk managers and senior management.

Risk Measures

Market Risk Management produces risk measures and monitors them against established market risk limits. These measures reflect an extensive range of scenarios and the results are aggregated at product, business and firmwide levels.

We use a variety of risk measures to estimate the size of potential losses for both moderate and more extreme market moves over both short-term and long-term time horizons. Our primary risk measures are VaR, which is used for shorter-term periods, and stress tests. Our risk reports detail key risks, drivers and changes for each desk and business, and are distributed daily to senior management of both our revenue-producing units and our independent control and support functions.

Value-at-Risk. VaR is the potential loss in value due to adverse market movements over a defined time horizon with a specified confidence level. For assets and liabilities included in VaR, see Financial Statement Linkages to Market Risk Measures. We typically employ a one-day time horizon with a 95% confidence level. We use a single VaR model which captures risks including interest rates, equity prices, currency rates and commodity prices. As such, VaR facilitates comparison across portfolios of different risk characteristics. VaR also captures the diversification of aggregated risk at the firmwide level.

We are aware of the inherent limitations to VaR and therefore use a variety of risk measures in our market risk management process. Inherent limitations to VaR include:

- VaR does not estimate potential losses over longer time horizons where moves may be extreme;
- VaR does not take account of the relative liquidity of different risk positions; and
- Previous moves in market risk factors may not produce accurate predictions of all future market moves.

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When calculating VaR, we use historical simulations with full valuation of approximately 70,000 market factors. VaR is calculated at a position level based on simultaneously shocking the relevant market risk factors for that position. We sample from five years of historical data to generate the scenarios for our VaR calculation. The historical data is weighted so that the relative importance of the data reduces over time. This gives greater importance to more recent observations and reflects current asset volatilities, which improves the accuracy of our estimates of potential loss. As a result, even if our positions included in VaR were unchanged, our VaR would increase with increasing market volatility and vice versa.

Given its reliance on historical data, VaR is most effective in estimating risk exposures in markets in which there are no sudden fundamental changes or shifts in market conditions.

Our VaR measure does not include:

- Positions that are best measured and monitored using sensitivity measures; and
- The impact of changes in counterparty and our own credit spreads on derivatives, as well as changes in our own credit spreads on financial liabilities for which the fair value option was elected.

We perform daily backtesting of our VaR model (i.e., comparing daily net revenues for positions included in VaR to the VaR measure calculated as of the prior business day) at the firmwide level and for each of our businesses and major regulated subsidiaries.

Stress Testing. Stress testing is a method of determining the effect of various hypothetical stress scenarios. We use stress testing to examine risks of specific portfolios, as well as the potential impact of our significant risk exposures. We use a variety of stress testing techniques to calculate the potential loss from a wide range of market moves on our portfolios, including sensitivity analysis, scenario analysis and firmwide stress tests. The results of our various stress tests are analyzed together for risk management purposes.

Sensitivity analysis is used to quantify the impact of a market move in a single risk factor across all positions (e.g., equity prices or credit spreads) using a variety of defined market shocks, ranging from those that could be expected over a one-day time horizon up to those that could take many months to occur. We also use sensitivity analysis to quantify the impact of the default of any single entity, which captures the risk of large or concentrated exposures.

Scenario analysis is used to quantify the impact of a specified event, including how the event impacts multiple risk factors simultaneously. For example, for sovereign stress testing we calculate potential direct exposure associated with our sovereign inventory, as well as the corresponding debt, equity and currency exposures associated with our non-sovereign inventory that may be impacted by the sovereign distress. When conducting scenario analysis, we typically consider a number of possible outcomes for each scenario, ranging from moderate to severely adverse market impacts. In addition, these stress tests are constructed using both historical events and forward-looking hypothetical scenarios.

Firmwide stress testing combines market, credit, operational and liquidity risks into a single combined scenario. Firmwide stress tests are primarily used to assess capital adequacy as part of our capital planning and stress testing process; however, firmwide stress testing is also integrated into our risk governance framework. This includes selecting appropriate scenarios to use for our capital planning and stress testing process. See Equity Capital Management and Regulatory Capital Equity Capital Management above for further information.

Unlike VaR measures, which have an implied probability because they are calculated at a specified confidence level, there is generally no implied probability that our stress test scenarios will occur. Instead, stress tests are used to model both moderate and more extreme moves in underlying market factors. When estimating potential loss, we generally assume that our positions cannot be reduced or hedged (although experience demonstrates that we are generally able to do so).

Stress test scenarios are conducted on a regular basis as part of our routine risk management process and on an ad hoc basis in response to market events or concerns. Stress testing is an important part of our risk management process because it allows us to quantify our exposure to tail risks, highlight potential loss concentrations, undertake risk/reward analysis, and assess and mitigate our risk positions.

Limits. We use risk limits at various levels (including firmwide, business and product) to govern our risk appetite by controlling the size of our exposures to market risk. Limits are set based on VaR and on a range of stress tests relevant to our exposures. Limits are reviewed frequently and amended on a permanent or temporary basis to reflect changing market conditions, business conditions or tolerance for risk.

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The Risk Committee of the Board and the Risk Governance Committee (through delegated authority from the Firmwide Risk Committee) approve market risk limits and sub-limits at firmwide, business and product levels, consistent with our risk appetite statement. In addition, Market Risk Management (through delegated authority from the Risk Governance Committee) sets market risk limits and sub-limits at certain product and desk levels.

The purpose of the firmwide limits is to assist senior management in controlling our overall risk profile. Sub-limits are set below the approved level of risk limits. Sub-limits set the desired maximum amount of exposure that may be managed by any particular business on a day-to-day basis without additional levels of senior management approval, effectively leaving day-to-day decisions to individual desk managers and traders. Accordingly, sub-limits are a management tool designed to ensure appropriate escalation rather than to establish maximum risk tolerance. Sub-limits also distribute risk among various businesses in a manner that is consistent with their level of activity and client demand, taking into account the relative performance of each area.

Our market risk limits are monitored daily by Market Risk Management, which is responsible for identifying and escalating, on a timely basis, instances where limits have been exceeded.

When a risk limit has been exceeded (e.g., due to positional changes or changes in market conditions, such as increased volatilities or changes in correlations), it is escalated to senior managers in Market Risk Management and/or the appropriate risk committee. Such instances are remediated by an inventory reduction and/or a temporary or permanent increase to the risk limit.

Model Review and Validation

Our VaR and stress testing models are regularly reviewed by Market Risk Management and enhanced in order to incorporate changes in the composition of positions included in our market risk measures, as well as variations in market conditions. Prior to implementing significant changes to our assumptions and/or models, Model Risk Management performs model validations. Significant changes to our VaR and stress testing models are reviewed with our chief risk officer and chief financial officer, and approved by the Firmwide Risk Committee.

See Model Risk Management for further information about the review and validation of these models.

Systems

We have made a significant investment in technology to monitor market risk including:

An independent calculation of VaR and stress measures;

Risk measures calculated at individual position levels;

Attribution of risk measures to individual risk factors of each position;

The ability to report many different views of the risk measures (e.g., by desk, business, product type or entity); and

The ability to produce ad hoc analyses in a timely manner.

Metrics

We analyze VaR at the firmwide level and a variety of more detailed levels, including by risk category, business, and region. The tables below present average daily VaR and period-end VaR, as well as the high and low VaR for the period. Diversification effect in the tables below represents the difference between total VaR and the sum of the VaRs for the four risk categories. This effect arises because the four market risk categories are not perfectly correlated.

The table below presents average daily VaR by risk category.

	Year Ended December		
$ in millions	**2017**	2016	2015
Interest rates	**$ 40**	$ 45	$ 47
Equity prices	**24**	25	26
Currency rates	**12**	21	30
Commodity prices	**13**	17	20
Diversification effect	**(35)**	(45)	(47)
Total	**$ 54**	$ 63	$ 76

Our average daily VaR decreased to $54 million in 2017 from $63 million in 2016, due to reductions across all risk categories, partially offset by a decrease in the diversification effect. The overall decrease was primarily due to lower levels of volatility.

Our average daily VaR decreased to $63 million in 2016 from $76 million in 2015, due to reductions across all risk categories, partially offset by a decrease in the diversification effect. The overall decrease was primarily due to reduced exposures.

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The table below presents period-end VaR by risk category.

	As of December		
$ in millions	**2017**	2016	2015
Interest rates	**$ 48**	$ 45	$ 43
Equity prices	**31**	34	24
Currency rates	**7**	23	31
Commodity prices	**9**	19	17
Diversification effect	**(30)**	(39)	(48)
Total	**$ 65**	$ 82	$ 67

Our daily VaR decreased to $65 million as of December 2017 from $82 million as of December 2016, primarily due to reductions in the currency rates, commodity prices and equity prices categories, partially offset by a decrease in the diversification effect and an increase in the interest rates category. The overall decrease was primarily due to lower levels of volatility.

Our daily VaR increased to $82 million as of December 2016 from $67 million as of December 2015, primarily due to an increase in the equity prices category and a decrease in the diversification effect, partially offset by a decrease in the currency rates category. The overall increase was primarily due to increased exposures.

During 2017 and 2016, the firmwide VaR risk limit was not exceeded, raised or reduced. During 2015, the firmwide VaR risk limit was temporarily raised on two occasions in order to facilitate client transactions. Separately, in March 2015, the firmwide VaR risk limit was reduced, reflecting lower risk utilization over the prior year.

The table below presents high and low VaR by risk category.

	Year Ended December 2017	
$ in millions	**High**	**Low**
Interest rates	**$57**	**$29**
Equity prices	**$38**	**$17**
Currency rates	**$28**	**$ 6**
Commodity prices	**$27**	**$ 7**

The high and low total VaR was $86 million and $37 million, respectively, for the year ended December 2017.

The chart below reflects our daily VaR over the last four quarters.

The chart below presents the frequency distribution of our daily net revenues for positions included in VaR for 2017.

Daily net revenues for positions included in VaR are compared with VaR calculated as of the end of the prior business day. Net losses incurred on a single day for such positions did not exceed our 95% one-day VaR during 2017, 2016 and 2015 (i.e., a VaR exception).

During periods in which we have significantly more positive net revenue days than net revenue loss days, we expect to have fewer VaR exceptions because, under normal conditions, our business model generally produces positive net revenues. In periods in which our franchise revenues are adversely affected, we generally have more loss days, resulting in more VaR exceptions. The daily net revenues for positions included in VaR used to determine VaR exceptions reflect the impact of any intraday activity, including bid/offer net revenues, which are more likely than not to be positive by their nature.

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Sensitivity Measures

Certain portfolios and individual positions are not included in VaR because VaR is not the most appropriate risk measure. Other sensitivity measures we use to analyze market risk are described below.

10% Sensitivity Measures. The table below presents market risk for positions, accounted for at fair value, that are not included in VaR by asset category.

	As of December		
$ in millions	**2017**	2016	2015
Equity	**$2,096**	$2,085	$2,157
Debt	**1,606**	1,702	1,479
Total	**$3,702**	$3,787	$3,636

In the table above:

The market risk of these positions is determined by estimating the potential reduction in net revenues of a 10% decline in the value of these positions.

Equity positions relate to private and restricted public equity securities, including interests in funds that invest in corporate equities and real estate and interests in hedge funds.

Debt positions include interests in funds that invest in corporate mezzanine and senior debt instruments, loans backed by commercial and residential real estate, corporate bank loans and other corporate debt, including acquired portfolios of distressed loans.

Equity and debt funded positions are included in our consolidated statements of financial condition in financial instruments owned. See Note 6 to the consolidated financial statements for further information about cash instruments.

These measures do not reflect the diversification effect across asset categories or across other market risk measures.

Credit Spread Sensitivity on Derivatives and Financial Liabilities. VaR excludes the impact of changes in counterparty and our own credit spreads on derivatives, as well as changes in our own credit spreads (debt valuation adjustment) on financial liabilities for which the fair value option was elected. The estimated sensitivity to a one basis point increase in credit spreads (counterparty and our own) on derivatives was a gain of $3 million and $2 million (including hedges) as of December 2017 and December 2016, respectively. In addition, the estimated sensitivity to a one basis point increase in our own credit spreads on financial liabilities for which the fair value option was elected was a gain of $35 million and $25 million as of December 2017 and December 2016, respectively. However, the actual net impact of a change in our own credit spreads is also affected by the liquidity, duration and convexity (as the sensitivity is not linear to changes in yields) of those financial liabilities for which the fair value option was elected, as well as the relative performance of any hedges undertaken.

Interest Rate Sensitivity. Loans receivable as of December 2017 and December 2016 were $65.93 billion and $49.67 billion, respectively, substantially all of which had floating interest rates. As of December 2017 and December 2016, the estimated sensitivity to a 100 basis point increase in interest rates on such loans was $527 million and $405 million, respectively, of additional interest income over a twelve-month period, which does not take into account the potential impact of an increase in costs to fund such loans. See Note 9 to the consolidated financial statements for further information about loans receivable.

Other Market Risk Considerations

As of December 2017 and December 2016, we had commitments and held loans for which we have obtained credit loss protection from Sumitomo Mitsui Financial Group, Inc. See Note 18 to the consolidated financial statements for further information about such lending commitments.

In addition, we make investments in securities that are accounted for as available-for-sale and included in financial instruments owned in the consolidated statements of financial condition. See Note 6 to the consolidated financial statements for further information.

We also make investments accounted for under the equity method and we also make direct investments in real estate, both of which are included in other assets. Direct investments in real estate are accounted for at cost less accumulated depreciation. See Note 13 to the consolidated financial statements for further information about other assets.

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Financial Statement Linkages to Market Risk Measures

We employ a variety of risk measures, each described in the respective sections above, to monitor market risk across the consolidated statements of financial condition and consolidated statements of earnings. The related gains and losses on these positions are included in market making, other principal transactions, interest income and interest expense in the consolidated statements of earnings, and debt valuation adjustment in the consolidated statements of comprehensive income.

The table below presents certain categories in our consolidated statements of financial condition and the market risk measures used to assess those assets and liabilities. Certain categories in the consolidated statements of financial condition are incorporated in more than one risk measure.

Categories in the Consolidated Statements of Financial Condition	Market Risk Measures
Collateralized agreements	VaR
Receivables	VaR Interest Rate Sensitivity
Financial instruments owned	VaR 10% Sensitivity Measures Credit Spread Sensitivity Derivatives
Deposits, at fair value	Credit Spread Sensitivity Financial Liabilities
Collateralized financings	VaR
Financial instruments sold, but not yet	VaR

purchased	Credit Spread Sensitivity Derivatives
Unsecured short-term and long-term	VaR
borrowings, at fair value	Credit Spread Sensitivity Financial Liabilities

Credit Risk Management

Overview

Credit risk represents the potential for loss due to the default or deterioration in credit quality of a counterparty (e.g., an OTC derivatives counterparty or a borrower) or an issuer of securities or other instruments we hold. Our exposure to credit risk comes mostly from client transactions in OTC derivatives and loans and lending commitments. Credit risk also comes from cash placed with banks, securities financing transactions (i.e., resale and repurchase agreements and securities borrowing and lending activities) and receivables from brokers, dealers, clearing organizations, customers and counterparties.

Credit Risk Management, which is independent of the revenue-producing units and reports to our chief risk officer, has primary responsibility for assessing, monitoring and managing credit risk. The Firmwide Risk Committee and the Risk Governance Committee establish and review credit policies and parameters. In addition, we hold other positions that give rise to credit risk (e.g., bonds held in our inventory and secondary bank loans). These credit risks are captured as a component of market risk measures, which are monitored and managed by Market Risk Management, consistent with other inventory positions. We also enter into derivatives to manage market risk exposures. Such derivatives also give rise to credit risk, which is monitored and managed by Credit Risk Management.

Credit Risk Management Process

Effective management of credit risk requires accurate and timely information, a high level of communication and knowledge of customers, countries, industries and products. Our process for managing credit risk includes:

Approving transactions and setting and communicating credit exposure limits;

Establishing or approving underwriting standards;

Monitoring compliance with established credit exposure limits;

Assessing the likelihood that a counterparty will default on its payment obligations;

Measuring our current and potential credit exposure and losses resulting from counterparty default;

Reporting of credit exposures to senior management, the Board and regulators;

- Using credit risk mitigants, including collateral and hedging; and

- Communicating and collaborating with other independent control and support functions such as operations, legal and compliance.

As part of the risk assessment process, Credit Risk Management performs credit reviews, which include initial and ongoing analyses of our counterparties. For substantially all of our credit exposures, the core of our process is an annual counterparty credit review. A credit review is an independent analysis of the capacity and willingness of a counterparty to meet its financial obligations, resulting in an internal credit rating. The determination of internal credit ratings also incorporates assumptions with respect to the nature of and outlook for the counterparty s industry, and the economic environment. Senior personnel within Credit Risk Management, with expertise in specific industries, inspect and approve credit reviews and internal credit ratings.

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Our risk assessment process may also include, where applicable, reviewing certain key metrics, such as delinquency status, collateral values, FICO credit scores and other risk factors.

Our global credit risk management systems capture credit exposure to individual counterparties and on an aggregate basis to counterparties and their subsidiaries (economic groups). These systems also provide management with comprehensive information on our aggregate credit risk by product, internal credit rating, industry, country and region.

Risk Measures and Limits

We measure our credit risk based on the potential loss in the event of non-payment by a counterparty using current and potential exposure. For derivatives and securities financing transactions, current exposure represents the amount presently owed to us after taking into account applicable netting and collateral arrangements, while potential exposure represents our estimate of the future exposure that could arise over the life of a transaction based on market movements within a specified confidence level. Potential exposure also takes into account netting and collateral arrangements. For loans and lending commitments, the primary measure is a function of the notional amount of the position.

We use credit limits at various levels (e.g., counterparty, economic group, industry and country), as well as underwriting standards to control the size and nature of our credit exposures. Limits for counterparties and economic groups are reviewed regularly and revised to reflect changing risk appetites for a given counterparty or group of counterparties. Limits for industries and countries are based on our risk tolerance and are designed to allow for regular monitoring, review, escalation and management of credit risk concentrations.

The Risk Committee of the Board and the Risk Governance Committee (through delegated authority from the Firmwide Risk Committee) approve credit risk limits at firmwide, business and product levels, consistent with our risk appetite statement. Credit Risk Management (through delegated authority from the Risk Governance Committee) sets credit limits for individual counterparties, economic groups, industries and countries. Policies authorized by the Firmwide Risk Committee and the Risk Governance Committee prescribe the level of formal approval required for us to assume credit exposure to a counterparty across all product areas, taking into account any applicable netting provisions, collateral or other credit risk mitigants.

Stress Tests

We use regular stress tests to calculate the credit exposures, including potential concentrations that would result from applying shocks to counterparty credit ratings or credit risk factors (e.g., currency rates, interest rates, equity prices). These shocks include a wide range of moderate and more extreme market movements. Some of our stress tests include shocks to multiple risk factors, consistent with the occurrence of a severe market or economic event. In the case of sovereign default, we estimate the direct impact of the default on our sovereign credit exposures, changes to our credit exposures arising from potential market moves in response to the default, and the impact of credit market deterioration on corporate borrowers and counterparties that may result from the sovereign default. Unlike potential exposure, which is calculated within a specified confidence level, with a stress test there is generally no assumed probability of these events occurring.

We perform stress tests on a regular basis as part of our routine risk management processes and conduct tailored stress tests on an ad hoc basis in response to market developments. Stress tests are conducted jointly with our market and liquidity risk functions.

Model Review and Validation

Our potential credit exposure and stress testing models, and any changes to such models or assumptions, are reviewed by Model Risk Management. See Model Risk Management for further information about the review and validation of these models.

Risk Mitigants

To reduce our credit exposures on derivatives and securities financing transactions, we may enter into netting agreements with counterparties that permit us to offset receivables and payables with such counterparties. We may also reduce credit risk with counterparties by entering into agreements that enable us to obtain collateral from them on an upfront or contingent basis and/or to terminate transactions if the counterparty s credit rating falls below a specified level. We monitor the fair value of the collateral on a daily basis to ensure that our credit exposures are appropriately collateralized. We seek to minimize exposures where there is a significant positive correlation between the creditworthiness of our counterparties and the market value of collateral we receive.

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For loans and lending commitments, depending on the credit quality of the borrower and other characteristics of the transaction, we employ a variety of potential risk mitigants. Risk mitigants include collateral provisions, guarantees, covenants, structural seniority of the bank loan claims and, for certain lending commitments, provisions in the legal documentation that allow us to adjust loan amounts, pricing, structure and other terms as market conditions change. The type and structure of risk mitigants employed can significantly influence the degree of credit risk involved in a loan or lending commitment.

When we do not have sufficient visibility into a counterparty s financial strength or when we believe a counterparty requires support from its parent, we may obtain third-party guarantees of the counterparty s obligations. We may also mitigate our credit risk using credit derivatives or participation agreements.

Credit Exposures

As of December 2017, our aggregate credit exposure increased as compared with December 2016, primarily reflecting an increase in loans and lending commitments. The percentage of our credit exposures arising from non-investment-grade counterparties (based on our internally determined public rating agency equivalents) increased as compared with December 2016, primarily reflecting an increase in non-investment-grade loans and lending commitments. Our credit exposure to counterparties that defaulted during 2017 was higher as compared with our credit exposure to counterparties that defaulted during the prior year, and substantially all of such exposure related to loans and lending commitments. Our credit exposure to counterparties that defaulted during 2017 remained low, representing less than 0.5% of our total credit exposure, and estimated losses, while higher compared with the prior year, were still not material. Our credit exposures are described further below.

Cash and Cash Equivalents. Our credit exposure on cash and cash equivalents arises from our unrestricted cash, and includes both interest-bearing and non-interest-bearing deposits. To mitigate the risk of credit loss, we place substantially all of our deposits with highly-rated banks and central banks.

The table below presents our credit exposure related to unrestricted cash and cash equivalents by industry, region and credit quality.

	Cash as of December	
$ in millions	**2017**	2016
Credit Exposure by Industry		
Funds	**$**	$ 138
Financial Institutions	**15,609**	11,836
Sovereign	**76,000**	95,092
Total	**$91,609**	$107,066
Credit Exposure by Region		
Americas	**$58,300**	$ 80,381
EMEA	**20,625**	16,099

Asia	**12,684**	10,586
Total	**$91,609**	$107,066
Credit Exposure by Credit Quality (Credit Rating Equivalent)		
AAA	**$65,972**	$ 83,899
AA	**7,939**	8,784
A	**16,422**	13,344
BBB	**1,060**	971
BB or lower	**216**	68
Total	**$91,609**	$107,066

The table above excludes cash segregated for regulatory and other purposes of $18.44 billion and $14.65 billion as of December 2017 and December 2016, respectively.

OTC Derivatives. Our credit exposure on OTC derivatives arises primarily from our market-making activities. As a market maker, we enter into derivative transactions to provide liquidity to clients and to facilitate the transfer and hedging of their risks. We also enter into derivatives to manage market risk exposures. We manage our credit exposure on OTC derivatives using the credit risk process, measures, limits and risk mitigants described above.

Derivatives are reported on a net-by-counterparty basis (i.e., the net payable or receivable for derivative assets and liabilities for a given counterparty) when a legal right of setoff exists under an enforceable netting agreement (counterparty netting). Derivatives are accounted for at fair value, net of cash collateral received or posted under enforceable credit support agreements (cash collateral netting). We generally enter into OTC derivatives transactions under bilateral collateral arrangements that require the daily exchange of collateral. As credit risk is an essential component of fair value, we include a credit valuation adjustment (CVA) in the fair value of derivatives to reflect counterparty credit risk, as described in Note 7 to the consolidated financial statements. CVA is a function of the present value of expected exposure, the probability of counterparty default and the assumed recovery upon default.

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The table below presents our credit exposure related to OTC derivatives by industry and region.

$ in millions	OTC Derivatives as of December 2017	2016
Credit Exposure by Industry		
Funds	**$11,288**	$13,294
Financial Institutions	**10,997**	14,116
Consumer, Retail & Healthcare	**823**	773
Sovereign	**7,668**	7,019
Municipalities & Nonprofit	**2,696**	2,959
Natural Resources & Utilities	**4,344**	3,707
Real Estate	**293**	85
Technology, Media & Telecommunications	**2,074**	4,188
Diversified Industrials	**2,225**	2,529
Other (including Special Purpose Vehicles)	**2,628**	2,455
Total	**$45,036**	$51,125
Credit Exposure by Region		
Americas	**$15,101**	$19,629
EMEA	**26,447**	26,536
Asia	**3,488**	4,960
Total	**$45,036**	$51,125

The table below presents the distribution of our credit exposure to OTC derivatives by tenor, both before and after the effect of collateral and netting agreements.

$ in millions	Investment-Grade	Non-Investment-Grade / Unrated	Total
As of December 2017			
Less than 1 year	**$ 16,232**	**$ 4,854**	**$ 21,086**
1 - 5 years	**23,817**	**5,465**	**29,282**
Greater than 5 years	**62,103**	**4,441**	**66,544**
Total	**102,152**	**14,760**	**116,912**
Netting	**(65,039)**	**(6,837)**	**(71,876)**
OTC derivative assets	**$ 37,113**	**$ 7,923**	**$ 45,036**
Net credit exposure	**$ 22,366**	**$ 7,248**	**$ 29,614**

As of December 2016			
Less than 1 year	$ 24,840	$ 3,983	$ 28,823
1 - 5 years	30,801	3,676	34,477
Greater than 5 years	85,951	4,599	90,550
Total	141,592	12,258	153,850
Netting	(96,493)	(6,232)	(102,725)
OTC derivative assets	$ 45,099	$ 6,026	$ 51,125
Net credit exposure	$ 28,879	$ 4,922	$ 33,801

In the table above:

Tenor is based on expected duration for mortgage-related credit derivatives and generally on remaining contractual maturity for other derivatives.

Counterparty netting within the same tenor category is included within such tenor category. Counterparty netting across tenor categories, as well as cash collateral received under enforceable credit support agreements, is included in netting.

Net credit exposure represents OTC derivative assets, included in financial instruments owned, less cash collateral and the fair value of securities collateral, primarily U.S. government and agency obligations and non-U.S. government and agency obligations, received under credit support agreements, which management considers when determining credit risk, but such collateral is not eligible for netting under U.S. GAAP.

The tables below present the distribution of our credit exposure to OTC derivatives by tenor and our internally determined public rating agency equivalents.

	Investment-Grade				
$ in millions	AAA	AA	A	BBB	Total
As of December 2017					
Less than 1 year	**$ 663**	**$ 3,028**	**$ 7,806**	**$ 4,735**	**$ 16,232**
1 - 5 years	**1,231**	**4,770**	**11,975**	**5,841**	**23,817**
Greater than 5 years	**3,263**	**16,990**	**21,857**	**19,993**	**62,103**
Total	**5,157**	**24,788**	**41,638**	**30,569**	**102,152**
Netting	**(2,678)**	**(11,131)**	**(32,143)**	**(19,087)**	**(65,039)**
OTC derivative assets	**$ 2,479**	**$ 13,657**	**$ 9,495**	**$ 11,482**	**$ 37,113**
Net credit exposure	**$ 2,245**	**$ 8,140**	**$ 5,077**	**$ 6,904**	**$ 22,366**
As of December 2016					
Less than 1 year	$ 332	$ 4,907	$ 12,595	$ 7,006	$ 24,840
1 - 5 years	862	6,898	12,814	10,227	30,801
Greater than 5 years	3,182	42,400	19,682	20,687	85,951
Total	4,376	54,205	45,091	37,920	141,592

Netting	(1,860)	(40,095)	(31,644)	(22,894)	(96,493)
OTC derivative assets	$ 2,516	$ 14,110	$ 13,447	$ 15,026	$ 45,099
Net credit exposure	$ 2,283	$ 8,366	$ 8,401	$ 9,829	$ 28,879

	Non-Investment-Grade / Unrated		
$ in millions	BB or lower	Unrated	Total
As of December 2017			
Less than 1 year	**$ 4,603**	**$251**	**$ 4,854**
1 - 5 years	**5,458**	**7**	**5,465**
Greater than 5 years	**4,401**	**40**	**4,441**
Total	**14,462**	**298**	**14,760**
Netting	**(6,814)**	**(23)**	**(6,837)**
OTC derivative assets	**$ 7,648**	**$275**	**$ 7,923**
Net credit exposure	**$ 7,044**	**$204**	**$ 7,248**
As of December 2016			
Less than 1 year	$ 3,661	$322	$ 3,983
1 - 5 years	3,653	23	3,676
Greater than 5 years	4,437	162	4,599
Total	11,751	507	12,258
Netting	(6,207)	(25)	(6,232)
OTC derivative assets	$ 5,544	$482	$ 6,026
Net credit exposure	$ 4,569	$353	$ 4,922

Lending Activities. We manage our lending activities using the credit risk process, measures, limits and risk mitigants described above. Other lending positions, including secondary trading positions, are risk-managed as a component of market risk.

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Commercial Lending. Our commercial lending activities include lending to investment-grade and non-investment-grade corporate borrowers. Loans and lending commitments associated with these activities are principally used for operating liquidity and general corporate purposes or in connection with contingent acquisitions. Corporate loans may be secured or unsecured, depending on the loan purpose, the risk profile of the borrower and other factors. Our commercial lending activities also include extending loans to borrowers that are secured by commercial and other real estate.

The table below presents our credit exposure related to commercial loans and lending commitments by industry, region and credit quality.

	Loans and Lending Commitments as of December	
$ in millions	**2017**	2016
Credit Exposure by Industry		
Funds	**$ 5,823**	$ 3,854
Financial Institutions	**14,255**	13,630
Consumer, Retail & Healthcare	**44,558**	30,007
Sovereign	**1,020**	902
Municipalities & Nonprofit	**804**	709
Natural Resources & Utilities	**27,196**	25,694
Real Estate	**23,540**	13,034
Technology, Media & Telecommunications	**37,282**	33,232
Diversified Industrials	**25,686**	20,847
Other (including Special Purpose Vehicles)	**17,848**	12,301
Total	**$198,012**	$154,210
Credit Exposure by Region		
Americas	**$143,668**	$115,145
EMEA	**48,239**	35,044
Asia	**6,105**	4,021
Total	**$198,012**	$154,210
Credit Exposure by Credit Quality (Credit Rating Equivalent)		
AAA	**$ 3,193**	$ 3,135
AA	**8,799**	8,375
A	**33,055**	29,227
BBB	**63,225**	43,151
BB or lower	**89,243**	69,745
Unrated	**497**	577
Total	**$198,012**	$154,210

Private Wealth Management and Retail Lending. We extend loans and lending commitments to our Private Wealth Management clients that are primarily secured by residential real estate, securities or other assets. The fair value of the collateral received against such loans and lending commitments generally exceeds their carrying value. The gross exposure related to such loans and lending commitments was $24.86 billion and $22.51 billion as of December 2017 and December 2016, respectively. Our regional net credit exposure related to these activities was approximately 90% and 92% in the Americas, approximately 5% and 5% in EMEA, and approximately 5% and 3% in Asia as of December 2017 and December 2016, respectively.

In addition, we extend unsecured loans to retail clients through Marcus. The gross exposure related to such loans was $1.91 billion and $208 million as of December 2017 and December 2016, respectively. See Note 9 to the consolidated financial statements for further information about the credit quality indicators of such loans.

We also purchase and have commitments to purchase loans (including distressed loans) and securities. Such loans and securities are primarily backed by residential real estate. The gross exposure related to such loans and lending commitments was $10.24 billion and $5.38 billion as of December 2017 and December 2016, respectively. Our regional net credit exposure related to these activities was approximately 74% and 79% in the Americas and approximately 26% and 21% in EMEA as of December 2017 and December 2016, respectively.

Securities Financing Transactions. We enter into securities financing transactions in order to, among other things, facilitate client activities, invest excess cash, acquire securities to cover short positions and finance certain activities. We bear credit risk related to resale agreements and securities borrowed only to the extent that cash advanced or the value of securities pledged or delivered to the counterparty exceeds the value of the collateral received. We also have credit exposure on repurchase agreements and securities loaned to the extent that the value of securities pledged or delivered to the counterparty for these transactions exceeds the amount of cash or collateral received. Securities collateral obtained for securities financing transactions primarily includes U.S. government and agency obligations and non-U.S. government and agency obligations. We had $29.07 billion and $28.64 billion as of December 2017 and December 2016, respectively, of credit exposure related to securities financing transactions reflecting both netting agreements and collateral that management considers when determining credit risk. As of both December 2017 and December 2016, substantially all of our credit exposure related to securities financing transactions was with investment-grade financial institutions, funds, governments and municipalities and nonprofits, primarily located in the Americas and EMEA.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Management s Discussion and Analysis

Other Credit Exposures. We are exposed to credit risk from our receivables from brokers, dealers and clearing organizations and customers and counterparties. Receivables from brokers, dealers and clearing organizations primarily consist of initial margin placed with clearing organizations and receivables related to sales of securities which have traded, but not yet settled. These receivables generally have minimal credit risk due to the low probability of clearing organization default and the short-term nature of receivables related to securities settlements. Receivables from customers and counterparties generally consist of collateralized receivables related to customer securities transactions and generally have minimal credit risk due to both the value of the collateral received and the short-term nature of these receivables. Our net credit exposure related to these activities was $34.32 billion and $31.39 billion as of December 2017 and December 2016, respectively, and primarily consisted of initial margin (both cash and securities) placed with investment-grade clearing organizations. Our regional net credit exposure related to these activities was approximately 41% and 44% in the Americas, approximately 49% and 42% in EMEA, and approximately 10% and 14% in Asia as of December 2017 and December 2016, respectively.

Selected Exposures

We have credit and market exposures, as described below, that have had heightened focus due to recent events and broad market concerns. Credit exposure represents the potential for loss due to the default or deterioration in credit quality of a counterparty or borrower. Market exposure represents the potential for loss in value of our long and short inventory due to changes in market prices.

The debt crisis in Mozambique has resulted in credit rating downgrades and Venezuela has delayed payments on its sovereign debt. Our total credit and market exposure to each of Mozambique and Venezuela as of December 2017 was not material.

We have a comprehensive framework to monitor, measure and assess our country exposures and to determine our risk appetite. We determine the country of risk by the location of the counterparty, issuer or underlier s assets, where they generate revenue, the country in which they are headquartered, the jurisdiction where a claim against them could be enforced, and/or the government whose policies affect their ability to repay their obligations. We monitor our credit exposure to a specific country both at the individual counterparty level, as well as at the aggregate country level.

We use regular stress tests, described above, to calculate the credit exposures, including potential concentrations that would result from applying shocks to counterparty credit ratings or credit risk factors. To supplement these regular stress tests, we also conduct tailored stress tests on an ad hoc basis in response to specific market events that we deem significant. These stress tests are designed to estimate the direct impact of the event on our credit and market exposures resulting from shocks to risk factors including, but not limited to, currency rates, interest rates, and equity prices. We also utilize these stress tests to estimate the indirect impact of certain hypothetical events on our country exposures, such as the impact of credit market deterioration on corporate borrowers and counterparties along with the shocks to the risk factors described above. The parameters of these shocks vary based on the scenario reflected in each stress test. We review estimated losses produced by the stress tests in order to understand their magnitude, highlight potential loss concentrations, and assess and mitigate our exposures where necessary.

See Stress Tests above, Liquidity Risk Management Liquidity Stress Tests and Market Risk Management Mark
Risk Management Process Stress Testing for further information about stress tests.

Operational Risk Management

Overview

Operational risk is the risk of an adverse outcome resulting from inadequate or failed internal processes, people, systems or from external events. Our exposure to operational risk arises from routine processing errors, as well as extraordinary incidents, such as major systems failures or legal and regulatory matters.

Potential types of loss events related to internal and external operational risk include:

Clients, products and business practices;

Execution, delivery and process management;

Business disruption and system failures;

Employment practices and workplace safety;

Damage to physical assets;

Internal fraud; and

External fraud.

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Management s Discussion and Analysis

We maintain a comprehensive control framework designed to provide a well-controlled environment to minimize operational risks. The Firmwide Conduct and Operational Risk Committee is globally responsible for the ongoing approval and monitoring of the frameworks, policies, parameters and limits which govern our operational risks. Operational Risk Management is a risk management function independent of our revenue-producing units, reports to our chief risk officer, and is responsible for developing and implementing policies, methodologies and a formalized framework for operational risk management with the goal of maintaining our exposure to operational risk at levels that are within our risk appetite.

Operational Risk Management Process

Managing operational risk requires timely and accurate information, as well as a strong control culture. We seek to manage our operational risk through:

- Training, supervision and development of our people;
- Active participation of senior management in identifying and mitigating our key operational risks;
- Independent control and support functions that monitor operational risk on a daily basis, and implementation of extensive policies and procedures, and controls designed to prevent the occurrence of operational risk events;
- Proactive communication between our revenue-producing units and our independent control and support functions; and
- A network of systems to facilitate the collection of data used to analyze and assess our operational risk exposure.

We combine top-down and bottom-up approaches to manage and measure operational risk. From a top-down perspective, our senior management assesses firmwide and business-level operational risk profiles. From a bottom-up perspective, revenue-producing units and independent control and support functions are responsible for risk identification and risk management on a day-to-day basis, including escalating operational risks to senior management.

Our operational risk management framework is in part designed to comply with the operational risk measurement rules under the Capital Framework and has evolved based on the changing needs of our businesses and regulatory guidance.

Our operational risk management framework consists of the following practices:

Risk identification and assessment;

Risk measurement; and

Risk monitoring and reporting.

Risk Identification and Assessment

The core of our operational risk management framework is risk identification and assessment. We have a comprehensive data collection process, including firmwide policies and procedures, for operational risk events.

We have established policies that require our revenue-producing units and our independent control and support functions to report and escalate operational risk events. When operational risk events are identified, our policies require that the events be documented and analyzed to determine whether changes are required in our systems and/or processes to further mitigate the risk of future events.

In addition, our systems capture internal operational risk event data, key metrics such as transaction volumes, and statistical information such as performance trends. We use an internally developed operational risk management application to aggregate and organize this information. One of our key risk identification and assessment tools is an operational risk and control self-assessment process, which is performed by managers from both revenue-producing units and independent control and support functions. This process consists of the identification and rating of operational risks, on a forward-looking basis, and the related controls. The results from this process are analyzed to evaluate operational risk exposures and identify businesses, activities or products with heightened levels of operational risk.

Risk Measurement

We measure our operational risk exposure over a twelve-month time horizon using both statistical modeling and scenario analyses, which involve qualitative and quantitative assessments of internal and external operational risk event data and internal control factors for each of our businesses. Operational risk measurement also incorporates an assessment of business environment factors including but not limited to:

Evaluations of the complexity of our business activities;

The degree of automation in our processes;

New activity information;

The legal and regulatory environment; and

Changes in the markets for our products and services, including the diversity and sophistication of our customers and counterparties.

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Management s Discussion and Analysis

The results from these scenario analyses are used to monitor changes in operational risk and to determine business lines that may have heightened exposure to operational risk. These analyses ultimately are used in the determination of the appropriate level of operational risk capital to hold.

Risk Monitoring and Reporting

We evaluate changes in our operational risk profile and our businesses, including changes in business mix or jurisdictions in which we operate, by monitoring the factors noted above at a firmwide level. We have both preventive and detective internal controls, which are designed to reduce the frequency and severity of operational risk losses and the probability of operational risk events. We monitor the results of assessments and independent internal audits of these internal controls.

We have established limits and thresholds consistent with our risk appetite statement, as well as escalation protocols. We provide periodic operational risk reports, which include instances that breach escalation thresholds, to senior management, risk committees and the Risk Committee of the Board.

Model Review and Validation

The statistical models utilized by Operational Risk Management are subject to independent review and validation by Model Risk Management. See Model Risk Management for further information about the review and validation of these models.

Model Risk Management

Overview

Model risk is the potential for adverse consequences from decisions made based on model outputs that may be incorrect or used inappropriately. We rely on quantitative models across our business activities primarily to value certain financial assets and financial liabilities, to monitor and manage our risk, and to measure and monitor our regulatory capital.

Our model risk management framework is managed through a governance structure and risk management controls, which encompass standards designed to ensure we maintain a comprehensive model inventory, including risk assessment and classification, sound model development practices, independent review and model-specific usage controls. The Firmwide Model Risk Control Committee oversees our model risk management framework. Model Risk Management, which is independent of model developers, model owners and model users, reports to our chief risk officer, is responsible for identifying and reporting significant risks associated with models, and provides periodic updates to senior management, risk committees and the Risk Committee of the Board.

Model Review and Validation

Model Risk Management consists of quantitative professionals who perform an independent review, validation and approval of our models. This review includes an analysis of the model documentation, independent testing, an assessment of the appropriateness of the methodology used, and verification of compliance with model development and implementation standards. Model Risk Management reviews all existing models on an annual basis, and approves new models or significant changes to models prior to implementation.

The model validation process incorporates a review of models and trade and risk parameters across a broad range of scenarios (including extreme conditions) in order to critically evaluate and verify:

- The model s conceptual soundness, including the reasonableness of model assumptions, and suitability for intended use;
- The testing strategy utilized by the model developers to ensure that the models function as intended;
- The suitability of the calculation techniques incorporated in the model;
- The model s accuracy in reflecting the characteristics of the related product and its significant risks;
- The model s consistency with models for similar products; and
- The model s sensitivity to input parameters and assumptions.

See Critical Accounting Policies Fair Value Review of Valuation Models, Liquidity Risk Management, Market Ri Management, Credit Risk Management and Operational Risk Management for further information about our use of models within these areas.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Quantitative and qualitative disclosures about market risk are set forth in Management s Discussion and Analysis of Financial Condition and Results of Operations Risk Management in Part II, Item 7 of this Form 10-K.

THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Item 8. Financial Statements and Supplementary Data

Management s Report on Internal Control over Financial Reporting

Management of The Goldman Sachs Group, Inc., together with its consolidated subsidiaries (the firm), is responsible for establishing and maintaining adequate internal control over financial reporting. The firm s internal control over financial reporting is a process designed under the supervision of the firm s principal executive and principal financial officers to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the firm s financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles.

As of December 31, 2017, management conducted an assessment of the firm s internal control over financial reporting based on the framework established in *Internal Control Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management has determined that the firm s internal control over financial reporting as of December 31, 2017 was effective.

Our internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of management and the directors of the firm; and provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the firm s assets that could have a material effect on our financial statements.

The firm s internal control over financial reporting as of December 31, 2017 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report appearing on page 103, which expresses an unqualified opinion on the effectiveness of the firm s internal control over financial reporting as of December 31, 2017.

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and the Shareholders of The Goldman Sachs Group, Inc.:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial condition of The Goldman Sachs Group, Inc. and its subsidiaries (the Company) as of December 31, 2017 and 2016, and the related consolidated statements of earnings, comprehensive income, changes in shareholders equity and cash flows for each of the three years in the period ended December 31, 2017, including the related notes (collectively referred to as the consolidated financial statements). We also have audited the Company s internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control Integrated Framework (2013)* issued by the COSO.

Basis for Opinions

The Company s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management s Report on Internal Control over Financial Reporting appearing on page 102. Our responsibility is to express opinions on the Company s consolidated financial statements and on the Company s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

Definition and Limitations of Internal Control over Financial Reporting

A company s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company s assets that could have a material effect on the financial statements.

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

/s/ PRICEWATERHOUSECOOPERS LLP

New York, New York

February 23, 2018

We have served as the Company s auditor since 1922.

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Consolidated Statements of Earnings

	Year Ended December		
in millions, except per share amounts	**2017**	2016	2015
Revenues			
Investment banking	**$ 7,371**	$ 6,273	$ 7,027
Investment management	**5,803**	5,407	5,868
Commissions and fees	**3,051**	3,208	3,320
Market making	**7,660**	9,933	9,523
Other principal transactions	**5,256**	3,200	5,018
Total non-interest revenues	**29,141**	28,021	30,756
Interest income	**13,113**	9,691	8,452
Interest expense	**10,181**	7,104	5,388
Net interest income	**2,932**	2,587	3,064
Net revenues, including net interest income	**32,073**	30,608	33,820
Operating expenses			
Compensation and benefits	**11,853**	11,647	12,678
Brokerage, clearing, exchange and distribution fees	**2,540**	2,555	2,576
Market development	**588**	457	557
Communications and technology	**897**	809	806
Depreciation and amortization	**1,152**	998	991
Occupancy	**733**	788	772
Professional fees	**965**	882	963
Other expenses	**2,213**	2,168	5,699
Total non-compensation expenses	**9,088**	8,657	12,364
Total operating expenses	**20,941**	20,304	25,042
Pre-tax earnings	**11,132**	10,304	8,778
Provision for taxes	**6,846**	2,906	2,695
Net earnings	**4,286**	7,398	6,083
Preferred stock dividends	**601**	311	515
Net earnings applicable to common shareholders	**$ 3,685**	$ 7,087	$ 5,568
Earnings per common share			
Basic	**$ 9.12**	$ 16.53	$ 12.35
Diluted	**$ 9.01**	$ 16.29	$ 12.14

Average common shares			
Basic	**401.6**	427.4	448.9
Diluted	**409.1**	435.1	458.6

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

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income

	Year Ended December		
$ in millions	**2017**	2016	2015
Net earnings	**$4,286**	$7,398	$6,083
Other comprehensive income/(loss) adjustments, net of tax:			
Currency translation	**22**	(60)	(114)
Debt valuation adjustment	**(807)**	(544)	
Pension and postretirement liabilities	**130**	(199)	139
Available-for-sale securities	**(9)**		
Other comprehensive income/(loss)	**(664)**	(803)	25
Comprehensive income	**$3,622**	$6,595	$6,108

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

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THE GOLDMAN SACHS GROUP, INC. AND SUBSIDIARIES

Consolidated Statements of Financial Condition

$ in millions	As of December **2017**	2016
Assets		
Cash and cash equivalents	**$110,051**	$121,711
Collateralized agreements:		
Securities purchased under agreements to resell (includes **$120,420** and $116,077 at fair value)	**120,822**	116,925
Securities borrowed (includes **$78,189** and $82,398 at fair value)	**190,848**	184,600
Receivables:		
Brokers, dealers and clearing organizations	**24,676**	18,044
Customers and counterparties (includes **$3,526** and $3,266 at fair value)	**60,112**	47,780
Loans receivable	**65,933**	49,672
Financial instruments owned (at fair value and includes **$50,335** and $51,278 pledged as collateral)	**315,988**	295,952
Other assets	**28,346**	25,481
Total assets	**$916,776**	$860,165
Liabilities and shareholders equity		
Deposits (includes **$22,902** and $13,782 at fair value)	**$138,604**	$124,098
Collateralized financings:		
Securities sold under agreements to repurchase (at fair value)	**84,718**	71,816
Securities loaned (includes **$5,357** and $2,647 at fair value)	**14,793**	7,524
Other secured financings (includes **$24,345** and $21,073 at fair value)	**24,788**	21,523
Payables:		
Brokers, dealers and clearing organizations	**6,672**	4,386
Customers and counterparties	**171,497**	184,069
Financial instruments sold, but not yet purchased (at fair value)	**111,930**	117,143
Unsecured short-term borrowings (includes **$16,904** and $14,792 at fair value)	**46,922**	39,265
Unsecured long-term borrowings (includes **$38,638** and $29,410 at fair value)	**217,687**	189,086