

Goldman Sachs Bank USA and Subsidiaries

Unaudited Quarterly Report
for the period ended March 31, 2020

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PART I. Financial Statements and Supplementary Data (Unaudited)

Consolidated Statements of Earnings (Unaudited)

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Revenues		
Interest income	\$ 1,785	\$ 1,811
Interest expense	974	1,105
Net interest income	811	706
Gains and losses from financial assets and liabilities	793	532
Other revenues	12	44
Total non-interest revenues	805	576
Total net revenues	1,616	1,282
Provision for credit losses	661	213
Operating expenses		
Compensation and benefits	134	146
Service charges	117	118
Professional fees	65	35
Market development	55	47
Communications and technology	52	35
Brokerage, clearing, exchange and distribution fees	27	27
Other expenses	160	114
Total operating expenses	610	522
Pre-tax earnings	345	547
Provision for taxes	77	134
Net earnings	\$ 268	\$ 413

Consolidated Statements of Comprehensive Income (Unaudited)

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Net earnings	\$ 268	\$ 413
Other comprehensive income/(loss) adjustments, net of tax:		
Debt valuation adjustment	84	(22)
Available-for-sale securities	246	16
Other comprehensive income/(loss)	330	(6)
Comprehensive income	\$ 598	\$ 407

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

Consolidated Balance Sheets (Unaudited)

	As of	
	March 2020	December 2019
<i>\$ in millions, except par value</i>		
Assets		
Cash	\$ 36,781	\$ 52,800
Collateralized agreements:		
Securities purchased under agreements to resell (at fair value)	28,356	4,430
Customer and other receivables	14,846	8,113
Trading assets (at fair value and includes \$5,790 and \$14,474 pledged as collateral)	64,136	75,272
Investments (includes \$8,151 and \$5,977 at fair value, and \$38 and \$39 pledged as collateral)	9,661	7,477
Loans (net of allowance of \$1,891 and \$777, and includes \$9,359 and \$8,732 at fair value)	98,456	78,883
Other assets (includes \$26 and \$26 at fair value)	2,431	1,860
Total assets	\$ 254,667	\$ 228,835
Liabilities and shareholder's equity		
Deposits (includes \$6,308 and \$6,304 at fair value)	\$ 180,474	\$ 168,398
Collateralized financings:		
Securities sold under agreements to repurchase (at fair value)	2,825	9,891
Other secured financings (includes \$4,029 and \$527 at fair value)	10,151	657
Customer and other payables	8,320	3,711
Trading liabilities (at fair value)	14,200	7,957
Unsecured borrowings (includes \$32 and \$32 at fair value)	7,261	7,258
Other liabilities	1,918	1,631
Total liabilities	225,149	199,503
Commitments, contingencies and guarantees		
Shareholder's equity		
Shareholder's equity (includes common stock, \$100 par value; 80,000,000 shares authorized, issued and outstanding)	29,518	29,332
Total liabilities and shareholder's equity	\$ 254,667	\$ 228,835

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

Consolidated Statements of Changes in Shareholder's Equity (Unaudited)

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Shareholder's equity		
Beginning balance, as previously reported	\$ 29,332	\$ 27,718
Cumulative effect of change in accounting principle for current expected credit losses, net of tax	(412)	–
Beginning balance, adjusted	28,920	27,718
Net earnings	268	413
Other comprehensive income/(loss)	330	(6)
Ending balance	\$ 29,518	\$ 28,125

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

Consolidated Statements of Cash Flows (Unaudited)

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Cash flows from operating activities		
Net earnings	\$ 268	\$ 413
Adjustments to reconcile net earnings to net cash used for operating activities:		
Depreciation and amortization	16	9
Deferred income taxes	(102)	(18)
Share-based compensation	9	9
Provision for credit losses	661	213
Changes in operating assets and liabilities:		
Customer and other receivables and payables, net	(2,124)	4,094
Collateralized transactions (excluding other secured financings), net	(30,992)	547
Trading assets	11,017	(5,485)
Trading liabilities	6,243	(1,323)
Loans held for sale, net	1,710	851
Other, net	200	(93)
Net cash used for operating activities	(13,094)	(783)
Cash flows from investing activities		
Purchase of investments	(1,839)	(1,001)
Proceeds from sales and paydowns of investments	2	–
Loans, net (excluding loans held for sale)	(22,376)	(824)
Net cash used for investing activities	(24,213)	(1,825)
Cash flows from financing activities		
Deposits, net	11,743	7,315
Unsecured short-term borrowings, net	45	88
Other secured financings (short-term), net	9,500	–
Derivative contracts with a financing element, net	–	(2)
Net cash provided by financing activities	21,288	7,401
Net increase/(decrease) in cash	(16,019)	4,793
Cash, beginning balance	52,800	30,617
Cash, ending balance	\$ 36,781	\$ 35,410
Supplemental disclosures:		
Cash payments for interest	\$ 988	\$ 1,003
Cash payments for income taxes, net	\$ –	\$ 4

See Note 16 for information about non-cash activities.

Notes to Consolidated Financial Statements (Unaudited)

Note 1.

Description of Business

Goldman Sachs Bank USA, together with its consolidated subsidiaries (collectively, the Bank), is a New York State-chartered bank and a member of the Federal Reserve System. The Bank is supervised and regulated by the Board of Governors of the Federal Reserve System (FRB), the New York State Department of Financial Services (NYDFS) and the Consumer Financial Protection Bureau (CFPB), and is a member of the Federal Deposit Insurance Corporation (FDIC). The Bank's deposits are insured by the FDIC up to the maximum amount provided by law. The Bank is registered as a swap dealer with the U.S. Commodity Futures Trading Commission (CFTC). The Bank is also a government securities dealer subject to the rules and regulations of the U.S. Department of the Treasury.

The Bank is a wholly-owned subsidiary of The Goldman Sachs Group, Inc. (Group Inc. and, collectively with its consolidated subsidiaries, GS Group). Group Inc. is a bank holding company under the U.S. Bank Holding Company Act of 1956 (BHC Act), a financial holding company under amendments to the BHC Act effected by the U.S. Gramm-Leach-Bliley Act of 1999, and is subject to supervision and examination by the FRB.

The Bank's principal office is located in New York, New York. The Bank operates two domestic branches, which are located in Salt Lake City, Utah and Draper, Utah. Both branches are regulated by the Utah Department of Financial Institutions. The Bank also has a foreign branch in London, United Kingdom, which is regulated by the Financial Conduct Authority and the Prudential Regulation Authority.

The Bank is a financial services provider that engages in banking activities. The Bank is GS Group's primary lending entity, serving corporate and private bank clients, as well as U.S. consumers through the Bank's digital platform, *Marcus by Goldman Sachs* (Marcus), and by issuing credit cards. The Bank is also GS Group's primary deposit-taking entity. The Bank's depositors include private bank clients, U.S. consumers, clients of third-party broker-dealers, institutions, corporations and its affiliates. The Bank's consumer deposit-taking activities are conducted through Marcus. The Bank also provides transaction banking services, which includes deposit taking and payment services. In addition, the Bank enters into interest rate, currency, credit and other derivatives, and transacts in certain related cash products, for the purpose of market making and risk management.

Note 2.

Basis of Presentation

These consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP) and include the accounts of Goldman Sachs Bank USA and all other entities in which the Bank has a controlling financial interest. Intercompany transactions and balances have been eliminated.

These consolidated financial statements are unaudited and should be read in conjunction with the audited consolidated financial statements included in the Bank's Annual Report for the year ended December 31, 2019. References to the "2019 Annual Report" are to the Bank's Annual Report for the year ended December 31, 2019. Certain disclosures included in the annual financial statements have been condensed or omitted from these financial statements as they are not required for interim financial statements under U.S. GAAP.

These unaudited consolidated financial statements reflect all adjustments that are, in the opinion of management, necessary for a fair statement of the results for the interim periods presented. These adjustments are of a normal, recurring nature. Interim period operating results may not be indicative of the operating results for a full year.

All references to March 2020 and March 2019 refer to the Bank's periods ended, or the dates, as the context requires, March 31, 2020 and March 31, 2019, respectively. All references to December 2019 refer to the date December 31, 2019. Any reference to a future year refers to a year ending on December 31 of that year.

Beginning in the fourth quarter of 2019, the Bank changed its balance sheet presentation to better reflect the nature of the Bank's activities. See Note 2 in Part III of the 2019 Annual Report for further information. Reclassifications have been made to previously reported amounts to conform to the current presentation.

Notes to Consolidated Financial Statements (Unaudited)

Note 3.

Significant Accounting Policies

The Bank's significant accounting policies include measuring the allowance for credit losses on loans and lending commitments accounted for at amortized cost, when and how to measure the fair value of assets and liabilities, and when to consolidate an entity. See Note 9 for policies on the allowance for credit losses, Note 4 for policies on fair value measurements, and below and Note 17 for policies on consolidation accounting. All other significant accounting policies are either described below or included in the following footnotes:

Fair Value Measurements	Note 4
Trading Assets and Liabilities	Note 5
Trading Cash Instruments	Note 6
Derivatives and Hedging Activities	Note 7
Investments	Note 8
Loans	Note 9
Fair Value Option	Note 10
Collateralized Agreements and Financings	Note 11
Other Assets	Note 12
Deposits	Note 13
Unsecured Borrowings	Note 14
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Consolidation

The Bank consolidates entities in which the Bank has a controlling financial interest. The Bank determines whether it has a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity (VIE).

Voting Interest Entities. Voting interest entities are entities in which (i) the total equity investment at risk is sufficient to enable the entity to finance its activities independently and (ii) the equity holders have the power to direct the activities of the entity that most significantly impact its economic performance, the obligation to absorb the losses of the entity and the right to receive the residual returns of the entity. The usual condition for a controlling financial interest in a voting interest entity is ownership of a majority voting interest. If the Bank has a controlling majority voting interest in a voting interest entity, the entity is consolidated.

Variable Interest Entities. A VIE is an entity that lacks one or more of the characteristics of a voting interest entity. The Bank has a controlling financial interest in a VIE when the Bank has a variable interest or interests that provide it with (i) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and (ii) the obligation to absorb losses of the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. See Note 17 for further information about VIEs.

Use of Estimates

Preparation of these consolidated financial statements requires management to make certain estimates and assumptions, the most important of which relate to the allowance for credit losses on loans and lending commitments accounted for at amortized cost, fair value measurements, discretionary compensation accruals, provisions for losses that may arise from litigation and regulatory proceedings (including governmental investigations), and provisions for losses that may arise from tax audits. These estimates and assumptions are based on the best available information but actual results could be materially different.

Notes to Consolidated Financial Statements (Unaudited)

Revenue Recognition

Financial Assets and Liabilities at Fair Value. Trading assets and liabilities and certain investments are recorded at fair value either under the fair value option or in accordance with other U.S. GAAP. In addition, the Bank has elected to account for certain of its loans and other financial assets and liabilities at fair value by electing the fair value option. 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. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. Fair value gains or losses are included in gains and losses from financial assets and liabilities. See Note 4 for further information about fair value measurements. In addition, the Bank recognizes income related to the syndication of loans and lending commitments and other fees from affiliates in gains and losses from financial assets and liabilities.

Transfers of Financial Assets

Transfers of financial assets are accounted for as sales when the Bank has relinquished control over the assets transferred. For transfers of financial assets accounted for as sales, any gains or losses are recognized in gains and losses from financial assets and liabilities. Assets or liabilities that arise from the Bank's continuing involvement with transferred financial assets are initially recognized at fair value. For transfers of financial assets that are not accounted for as sales, the assets are generally included in trading assets or loans and the transfer is accounted for as a collateralized financing, with the related interest expense recognized over the life of the transaction. See Note 11 for further information about transfers of financial assets accounted for as collateralized financings and Note 16 for further information about transfers of financial assets accounted for as sales.

Cash

Cash included cash and due from banks of \$749 million as of March 2020 and \$636 million as of December 2019. Cash also included interest-bearing deposits of \$36.03 billion as of March 2020 and \$52.16 billion as of December 2019. See Note 20 for further information about cash deposited with an affiliate.

The Bank segregates cash for regulatory and other purposes related to client activity. Cash segregated for regulatory and other purposes was \$389 million as of March 2020 and \$606 million as of December 2019.

Customer and Other Receivables

Customer and other receivables included receivables from customers and counterparties of \$10.96 billion as of March 2020 and \$5.07 billion as of December 2019, and receivables from brokers, dealers and clearing organizations of \$3.94 billion as of March 2020 and \$3.04 billion as of December 2019. Such receivables primarily consist of receivables resulting from unsettled transactions and collateral posted in connection with certain derivative transactions.

Customer and other receivables are accounted for at amortized cost net of any allowance for credit losses, which generally approximates fair value. As these receivables are not accounted for at fair value, they are not included in the Bank's fair value hierarchy in Notes 4 through 10. Had these receivables been included in the Bank's fair value hierarchy, substantially all would have been classified in level 2 as of both March 2020 and December 2019. Interest on customer and other receivables is recognized over the life of the transaction and included in interest income.

Customer and Other Payables

Customer and other payables included payables to customers and counterparties of \$8.26 billion as of March 2020 and \$3.60 billion as of December 2019, and payables to brokers, dealers and clearing organizations of \$55 million as of March 2020 and \$109 million as of December 2019. Such payables primarily consist of payables resulting from unsettled transactions and collateral received in connection with certain derivative transactions. Customer and other payables are accounted for at cost plus accrued interest, which generally approximates fair value. As these payables are not accounted for at fair value, they are not included in the Bank's fair value hierarchy in Notes 4 through 10. Had these payables been included in the Bank's fair value hierarchy, substantially all would have been classified in level 2 as of both March 2020 and December 2019. Interest on customer and other payables is recognized over the life of the transaction and included in interest expense.

Notes to Consolidated Financial Statements (Unaudited)

Offsetting Assets and Liabilities

To reduce credit exposures on derivatives and securities financing transactions, the Bank may enter into master netting agreements or similar arrangements (collectively, netting agreements) with counterparties that permit it to offset receivables and payables with such counterparties. A netting agreement is a contract with a counterparty that permits net settlement of multiple transactions with that counterparty, including upon the exercise of termination rights by a non-defaulting party. Upon exercise of such termination rights, all transactions governed by the netting agreement are terminated and a net settlement amount is calculated. In addition, the Bank receives and posts cash and securities collateral with respect to its derivatives and securities financing transactions, subject to the terms of the related credit support agreements or similar arrangements (collectively, credit support agreements). An enforceable credit support agreement grants the non-defaulting party exercising termination rights the right to liquidate the collateral and apply the proceeds to any amounts owed. In order to assess enforceability of the Bank's right of setoff under netting and credit support agreements, the Bank evaluates various factors, including applicable bankruptcy laws, local statutes and regulatory provisions in the jurisdiction of the parties to the agreement.

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) in the consolidated balance sheets when a legal right of setoff exists under an enforceable netting agreement. Securities purchased under agreements to resell (resale agreements) and securities sold under agreements to repurchase (repurchase agreements) with the same term and currency are presented on a net-by-counterparty basis in the consolidated balance sheets when such transactions meet certain settlement criteria and are subject to netting agreements.

In the consolidated balance sheets, derivatives are reported net of cash collateral received and posted under enforceable credit support agreements, when transacted under an enforceable netting agreement. In the consolidated balance sheets, resale and repurchase agreements are not reported net of the related cash and securities received or posted as collateral. Certain other receivables and payables with affiliates that meet the criteria of offsetting are reported on a net basis in the consolidated balance sheets. See Note 11 for further information about collateral received and pledged, including rights to deliver or repledge collateral. See Notes 7 and 11 for further information about offsetting assets and liabilities.

Foreign Currency Translation

Assets and liabilities denominated in non-U.S. currencies are translated at rates of exchange prevailing on the date of the consolidated balance sheets and revenues and expenses are translated at average rates of exchange for the period. Foreign currency remeasurement gains or losses on transactions in nonfunctional currencies are recognized in earnings.

Recent Accounting Developments

Leases (ASC 842). In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)." This ASU requires that, for leases longer than one year, a lessee recognize in the balance sheet a right-of-use asset, representing the right to use the underlying asset for the lease term, and a lease liability, representing the liability to make lease payments. It also requires that for finance leases, a lessee recognize interest expense on the lease liability, separately from the amortization of the right-of-use asset in the statements of earnings, while for operating leases, such amounts should be recognized as a combined expense. In addition, this ASU requires expanded disclosures about the nature and terms of lease agreements.

The Bank adopted this ASU in January 2019 under a modified retrospective approach. Upon adoption, in accordance with the ASU, the Bank elected to not reassess the lease classification or initial direct costs of existing leases, and to not reassess whether existing contracts contain a lease. In addition, the Bank has elected to account for each contract's lease and non-lease components as a single lease component. Adoption of this ASU had no impact on the Bank's consolidated balance sheet.

Measurement of Credit Losses on Financial Instruments (ASC 326). In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments — Credit Losses (Topic 326) — Measurement of Credit Losses on Financial Instruments." This ASU amends several aspects of the measurement of credit losses on certain financial instruments, including replacing the existing incurred credit loss model and other models with the Current Expected Credit Losses (CECL) model and amending certain aspects of accounting for purchased financial assets with deterioration in credit quality since origination.

Notes to Consolidated Financial Statements (Unaudited)

The Bank adopted this ASU in January 2020 under a modified retrospective approach. As a result of adopting this ASU, the Bank's allowance for credit losses on financial assets and commitments that are measured at amortized cost reflects management's estimate of credit losses over the remaining expected life of such assets. Expected credit losses for newly recognized financial assets and commitments, as well as changes to expected credit losses during the period, are recognized in earnings. These expected credit losses are measured based on historical experience, current conditions and forecasts that affect the collectability of the reported amount.

The cumulative effect of measuring the allowance under CECL as a result of adopting this ASU as of January 1, 2020 was an increase in the allowance for credit losses of \$548 million. The increase in the allowance is driven by the fact that the allowance under CECL covers expected credit losses over the full expected life of the loan portfolios and also takes into account forecasts of expected future economic conditions. The cumulative effect of adopting this ASU was a decrease to retained earnings of \$412 million (net of tax).

Facilitation of the Effects of Reference Rate Reform on Financial Reporting (ASC 848). In March 2020, the FASB issued ASU No. 2020-04, "Reference Rate Reform – Facilitation of the Effects of Reference Rate Reform on Financial Reporting." This ASU provides optional exceptions for applying generally accepted accounting principles to contracts, hedging relationships and other transactions affected by reference rate reform. The Bank adopted this ASU in March 2020 and adoption did not have a material impact on the Bank's consolidated financial statements.

Note 4.

Fair Value Measurements

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. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. The Bank measures certain financial assets and liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks).

The best evidence of fair value is a quoted price in an active market. If quoted prices in active markets are not available, fair value is determined by reference to prices for similar instruments, quoted prices or recent transactions in less active markets, or internally developed models that primarily use market-based or independently sourced inputs, including, but not limited to, interest rates, volatilities, equity or debt prices, foreign exchange rates, commodity prices, credit spreads and funding spreads (i.e., the spread or difference between the interest rate at which a borrower could finance a given financial instrument relative to a benchmark interest rate).

U.S. GAAP has a three-level hierarchy for disclosure of fair value measurements. This hierarchy prioritizes inputs to the valuation techniques used to measure fair value, giving the highest priority to level 1 inputs and the lowest priority to level 3 inputs. A financial instrument's level in this hierarchy is based on the lowest level of input that is significant to its fair value measurement. In evaluating the significance of a valuation input, the Bank considers, among other factors, a portfolio's net risk exposure to that input. The fair value hierarchy is as follows:

Level 1. Inputs are unadjusted quoted prices in active markets to which the Bank had access at the measurement date for identical, unrestricted assets or liabilities.

Level 2. Inputs to valuation techniques are observable, either directly or indirectly.

Level 3. One or more inputs to valuation techniques are significant and unobservable.

The fair values for substantially all of the Bank's financial assets and the majority of the Bank's 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 liabilities may require valuation adjustments that a market participant would require to arrive at fair value for factors, such as counterparty and the Bank or its affiliates' credit quality, funding risk, transfer restrictions, liquidity and bid/offer spreads. Valuation adjustments are generally based on market evidence.

The valuation techniques and nature of significant inputs used to determine the fair value of the Bank's financial instruments are described below. See Notes 5 through 10 for further information about significant unobservable inputs used to value level 3 financial instruments.

Notes to Consolidated Financial Statements (Unaudited)

Valuation Techniques and Significant Inputs for Trading Cash Instruments, Investments and Loans

Level 1. Level 1 instruments include U.S. government obligations. These instruments are valued using quoted prices for identical unrestricted instruments in active markets. The Bank defines active markets for debt instruments based on both the average daily trading volume and the number of days with trading activity.

Level 2. Level 2 instruments include agency obligations, most loans and securities backed by real estate, most corporate debt instruments, money market instruments, other debt obligations and certain equity securities.

Valuations of level 2 instruments can be verified to quoted prices, recent trading activity for identical or similar instruments, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or firm) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Valuation adjustments are typically made to level 2 instruments (i) if the instrument is subject to transfer restrictions and/or (ii) for other premiums and liquidity discounts that a market participant would require to arrive at fair value. Valuation adjustments are generally based on market evidence.

Level 3. Level 3 instruments have one or more significant valuation inputs that are not observable. Absent evidence to the contrary, level 3 instruments are initially valued at transaction price, which is considered to be the best initial estimate of fair value. Subsequently, the Bank uses other methodologies to determine fair value, which vary based on the type of instrument. Valuation inputs and assumptions are changed when corroborated by substantive observable evidence, including values realized on sales.

Valuation techniques of level 3 instruments vary by instrument, but are generally based on discounted cash flow techniques. The valuation techniques and the nature of significant inputs used to determine the fair values of each type of level 3 instrument are described below:

Loans and Securities Backed by Commercial Real Estate

Loans and securities backed by commercial real estate are directly or indirectly collateralized by a single property or a portfolio of properties, and may include tranches of varying levels of subordination. Significant inputs are generally determined based on relative value analyses and include:

- Market yields implied by transactions of similar or related assets and/or current levels and changes in market indices, such as the CMBX (an index that tracks the performance of commercial mortgage bonds);
- Transaction prices in both the underlying collateral and instruments with the same or similar underlying collateral; and
- Timing of expected future cash flows (duration) which, in certain cases, may incorporate the impact of other unobservable inputs (e.g., prepayment speeds).

Loans and Securities Backed by Residential Real Estate

Loans and securities backed by residential real estate are directly or indirectly collateralized by portfolios of residential real estate and may include tranches of varying levels of subordination. Significant inputs are generally determined based on relative value analyses, which incorporate comparisons to instruments with similar collateral and risk profiles. Significant inputs include:

- Market yields implied by transactions of similar or related assets;
- Transaction prices in both the underlying collateral and instruments with the same or similar underlying collateral; and
- Duration, driven by underlying loan prepayment speeds and residential property liquidation timelines.

Corporate Debt Instruments

Corporate debt instruments includes corporate loans and debt securities. Significant inputs for corporate debt instruments are generally determined based on relative value analyses, which incorporate comparisons both to prices of credit default swaps that reference the same or similar underlying instrument or entity and to other debt instruments for the same or similar issuer for which observable prices or broker quotations are available. Significant inputs include:

Notes to Consolidated Financial Statements (Unaudited)

- Market yields implied by transactions of similar or related assets and/or current levels and trends of market indices, such as the CDX (an index that tracks the performance of corporate credit);
- Current performance and recovery assumptions and, where the Bank uses credit default swaps to value the related cash instrument, the cost of borrowing the underlying reference obligation; and
- Duration.

Equity Securities

Equity investments made as part of the Bank's Community Reinvestment Act (CRA) activities are included in equity securities. Recent third-party completed or pending transactions (e.g., merger proposals, debt restructurings, tender offers) are considered the best evidence for any change in fair value. When these are not available, the following valuation methodologies are used, as appropriate:

- Industry multiples and public comparables;
- Transactions in similar instruments; and
- Discounted cash flow techniques.

The Bank also considers changes in the outlook for the relevant industry and financial performance of the issuer as compared to projected performance. Significant inputs include discount rates and capitalization rates.

Valuation Techniques and Significant Inputs for Derivatives

The Bank's level 2 and level 3 derivatives are valued using derivative pricing models (e.g., discounted cash flow models, correlation models and models that incorporate option pricing methodologies, such as Monte Carlo simulations). Price transparency of derivatives can generally be characterized by product type, as described below.

- **Interest Rate.** In general, the key inputs used to value interest rate derivatives are transparent, even for most long-dated contracts. Interest rate swaps and options denominated in the currencies of leading industrialized nations are characterized by high trading volumes and tight bid/offer spreads. Interest rate derivatives that reference indices, such as an inflation index, or the shape of the yield curve (e.g., 10-year swap rate vs. 2-year swap rate) are more complex, but the key inputs are generally observable.

- **Currency.** Prices for currency derivatives based on the exchange rates of leading industrialized nations, including those with longer tenors, are generally transparent. The primary difference between the price transparency of developed and emerging market currency derivatives is that emerging markets tend to be only observable for contracts with shorter tenors.
- **Credit.** Price transparency for credit default swaps, including both single names and baskets of credits, varies by market and underlying reference entity or obligation. Credit default swaps that reference indices, large corporates and major sovereigns generally exhibit the most price transparency. For credit default swaps with other underliers, price transparency varies based on credit rating, the cost of borrowing the underlying reference obligations, and the availability of the underlying reference obligations for delivery upon the default of the issuer. Credit default swaps that reference loans, asset-backed securities and emerging market debt instruments tend to have less price transparency than those that reference corporate bonds. In addition, more complex credit derivatives, such as those sensitive to the correlation between two or more underlying reference obligations, generally have less price transparency.
- **Equity.** Price transparency for equity derivatives varies by market and underlier. Options on indices and the common stock of corporates included in major equity indices exhibit the most price transparency. Equity derivatives generally have observable market prices, except for contracts with long tenors or reference prices that differ significantly from current market prices. More complex equity derivatives, such as those sensitive to the correlation between two or more individual stocks, generally have less price transparency.

Liquidity is essential to observability of all product types. If transaction volumes decline, previously transparent prices and other inputs may become unobservable. Conversely, even highly structured products may at times have trading volumes large enough to provide observability of prices and other inputs.

Level 1. Level 1 derivatives include short-term contracts for future delivery of securities when the underlying security is a level 1 instrument, and exchange-traded derivatives if they are actively traded and are valued at their quoted market price.

Level 2. Level 2 derivatives include OTC derivatives for which all significant valuation inputs are corroborated by market evidence and exchange-traded derivatives that are not actively traded and/or that are valued using models that calibrate to market-clearing levels of OTC derivatives.

Notes to Consolidated Financial Statements (Unaudited)

The selection of a particular model to value a derivative depends on the contractual terms of and specific risks inherent in the instrument, as well as the availability of pricing information in the market. For derivatives that trade in liquid markets, model selection does not involve significant management judgment because outputs of models can be calibrated to market-clearing levels.

Valuation models require a variety of inputs, such as contractual terms, market prices, yield curves, discount rates (including those derived from interest rates on collateral received and posted as specified in credit support agreements for collateralized derivatives), credit curves, measures of volatility, prepayment rates, loss severity rates and correlations of such inputs. Significant inputs to the valuations of level 2 derivatives can be verified to market transactions, broker or dealer quotations or other alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or firm) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Level 3. Level 3 derivatives are valued using models which utilize observable level 1 and/or level 2 inputs, as well as unobservable level 3 inputs. The significant unobservable inputs used to value the Bank's level 3 derivatives are described below.

- For level 3 interest rate and currency derivatives, significant unobservable inputs include correlations of certain currencies and interest rates (e.g., the correlation between Euro inflation and Euro interest rates). In addition, for level 3 interest rate derivatives, significant unobservable inputs include specific interest rate volatilities.
- For level 3 credit derivatives, significant unobservable inputs include illiquid credit spreads, which are unique to specific reference obligations and reference entities.
- For level 3 equity derivatives, significant unobservable inputs generally include correlation inputs, such as the correlation of the price performance of two or more individual stocks or the correlation of the price performance for a basket of stocks to another asset class.

Subsequent to the initial valuation of a level 3 derivative, the Bank updates the level 1 and level 2 inputs to reflect observable market changes and any resulting gains and losses are classified in level 3. Level 3 inputs are changed when corroborated by evidence, such as similar market transactions, third-party pricing services and/or broker or dealer quotations or other empirical market data. In circumstances where the Bank cannot verify the model value by reference to market transactions, it is possible that a different valuation model could produce a materially different estimate of fair value. See Note 7 for further information about significant unobservable inputs used in the valuation of level 3 derivatives.

Valuation Adjustments. Valuation adjustments are integral to determining the fair value of derivative portfolios and are used to adjust the mid-market valuations produced by derivative pricing models to the exit price valuation. These adjustments incorporate bid/offer spreads, the cost of liquidity, credit valuation adjustments and funding valuation adjustments, which account for the credit and funding risk inherent in the uncollateralized portion of derivative portfolios. The Bank also makes funding valuation adjustments to collateralized derivatives where the terms of the agreement do not permit the Bank to deliver or repledge collateral received. Market-based inputs are generally used when calibrating valuation adjustments to market-clearing levels.

In addition, for derivatives that include significant unobservable inputs, the Bank makes model or exit price adjustments to account for the valuation uncertainty present in the transaction.

Valuation Techniques and Significant Inputs for Other Financial Instruments at Fair Value

In addition to trading cash instruments, derivatives, and certain investments and loans, the Bank accounts for certain of its other financial assets and liabilities at fair value under the fair value option. Such instruments include repurchase agreements and resale agreements; certain other assets; certain time deposits, including structured certificates of deposit, which are hybrid financial instruments; certain other secured financings, including advances from the Federal Home Loan Bank of New York (FHLB); and certain unsecured borrowings, substantially all of which are hybrid financial instruments. These instruments are generally valued based on discounted cash flow techniques, which incorporate inputs with reasonable levels of price transparency, and are generally classified in level 2 because the inputs are observable. Valuation adjustments may be made for liquidity and for counterparty and the Bank's credit quality. The significant inputs used to value the Bank's other financial instruments are described below.

Notes to Consolidated Financial Statements (Unaudited)

Resale and Repurchase Agreements. The significant inputs to the valuation of resale and repurchase agreements are funding spreads, the amount and timing of expected future cash flows and interest rates.

Other Assets. The significant inputs to the valuation of other assets are interest rates, the amount and timing of expected future cash flows and funding spreads.

Deposits. The significant inputs to the valuation of time deposits are interest rates and the amount and timing of future cash flows. The inputs used to value the embedded derivative component of hybrid financial instruments are consistent with the inputs used to value the Bank's other derivative instruments described above. See Note 7 for further information about derivatives and Note 13 for further information about deposits.

Other Secured Financings. The significant inputs to the valuation of other secured financings are the amount and timing of expected future cash flows, interest rates, funding spreads, the fair value of the collateral delivered by the Bank (determined using the amount and timing of expected future cash flows, market prices, market yields and recovery assumptions) and the frequency of additional collateral calls. See Note 11 for further information about other secured financings.

Unsecured Borrowings. The significant inputs to the valuation of unsecured borrowings are the amount and timing of expected future cash flows and interest rates. The inputs used to value the embedded derivative component of hybrid financial instruments are consistent with the inputs used to value the Bank's other derivative instruments described above. See Note 7 for further information about derivatives and Note 14 for further information about borrowings.

Financial Assets and Liabilities at Fair Value

The table below presents financial assets and liabilities accounted for at fair value.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Total level 1 financial assets	\$ 29,349	\$ 55,404
Total level 2 financial assets	110,500	61,595
Total level 3 financial assets	3,049	2,113
Investments in funds at NAV	17	18
Counterparty and cash collateral netting	(32,887)	(24,693)
Total financial assets at fair value	\$ 110,028	\$ 94,437
Total assets	\$ 254,667	\$ 228,835
Total level 3 financial assets divided by:		
Total assets	1.2%	0.9%
Total financial assets at fair value	2.8%	2.2%
Total level 1 financial liabilities	\$ 5,418	\$ 2,748
Total level 2 financial liabilities	49,669	36,543
Total level 3 financial liabilities	5,837	5,363
Counterparty and cash collateral netting	(33,530)	(19,943)
Total financial liabilities at fair value	\$ 27,394	\$ 24,711
Total level 3 financial liabilities divided by		
total financial liabilities at fair value	21.3%	21.7%

In the table above:

- Counterparty netting among positions classified in the same level is included in that level.
- Counterparty and cash collateral netting represents the impact on derivatives of netting across levels of the fair value hierarchy.

The table below presents a summary of level 3 financial assets.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Trading assets:		
Trading cash instruments	\$ 33	\$ 95
Derivatives	2,209	1,828
Investments	72	36
Loans	734	153
Other financial assets	1	1
Total	\$ 3,049	\$ 2,113

Level 3 financial assets as of March 2020 increased compared with December 2019, primarily reflecting an increase in level 3 loans and derivatives. See Notes 5 through 10 for further information about level 3 financial assets (including information about unrealized gains and losses related to level 3 financial assets and transfers in and out of level 3).

Notes to Consolidated Financial Statements (Unaudited)

Note 5.

Trading Assets and Liabilities

Trading assets and liabilities include trading cash instruments and derivatives held in connection with the Bank's market-making or risk management activities. These assets and liabilities are accounted for at fair value either under the fair value option or in accordance with other U.S. GAAP, and the related fair value gains and losses are generally recognized in the consolidated statements of earnings.

The table below presents a summary of trading assets and liabilities.

<i>\$ in millions</i>	Trading Assets	Trading Liabilities
As of March 2020		
Trading cash instruments	\$ 48,555	\$ 6,007
Derivatives	15,581	8,193
Total	\$ 64,136	\$ 14,200
As of December 2019		
Trading cash instruments	\$ 66,766	\$ 3,440
Derivatives	8,506	4,517
Total	\$ 75,272	\$ 7,957

See Note 6 for further information about trading cash instruments and Note 7 for further information about derivatives.

Gains and Losses from Financial Assets and Liabilities

The table below presents gains and losses from financial assets and liabilities by major product type.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Interest rates	\$ 560	\$ 373
Currencies	(635)	(124)
Credit	991	340
Equities	(123)	(57)
Total	\$ 793	\$ 532

In the table above:

- Gains/(losses) include both realized and unrealized gains and losses. Gains/(losses) exclude related interest income and interest expense. See Note 21 for further information about interest income and interest expense.
- Gains and losses are primarily related to the Bank's financial assets and liabilities, including both derivative and non-derivative financial instruments, and the syndication of loans and lending commitments. Gains/(losses) are not representative of the manner in which the Bank manages its business activities because many of the Bank's market-making, lending and other activities utilize financial instruments across various product types. Accordingly, gains or losses in one product type frequently offset gains or losses in other product types. For example, certain of the Bank's interest rate derivatives are sensitive to changes in foreign currency exchange rates and may be economically hedged with foreign currency contracts.

Notes to Consolidated Financial Statements (Unaudited)

Note 6.

Trading Cash Instruments

Trading cash instruments consists of instruments held in connection with the Bank's market-making or risk management activities. These instruments are accounted for at fair value and the related fair value gains and losses are recognized in the consolidated statements of earnings.

Fair Value of Trading Cash Instruments by Level

The table below presents trading cash instruments by level within the fair value hierarchy.

<i>\$ in millions</i>	Level 1	Level 2	Level 3	Total
As of March 2020				
Assets				
U.S. government and agency obligations	\$ 23,140	\$ 19,293	\$ -	\$ 42,433
Loans and securities backed by:				
Commercial real estate	-	1,713	-	1,713
Residential real estate	-	3,613	-	3,613
Corporate debt instruments	-	435	33	468
Other debt obligations	-	328	-	328
Total	\$ 23,140	\$ 25,382	\$ 33	\$ 48,555
Liabilities				
U.S. government and agency obligations	\$ (5,394)	\$ -	\$ -	\$ (5,394)
Loans and securities backed by:				
Residential real estate	-	(4)	-	(4)
Corporate debt instruments	-	(553)	(56)	(609)
Total	\$ (5,394)	\$ (557)	\$ (56)	\$ (6,007)
As of December 2019				
Assets				
U.S. government and agency obligations	\$ 49,531	\$ 11,027	\$ -	\$ 60,558
Loans and securities backed by:				
Commercial real estate	-	1,365	-	1,365
Residential real estate	-	3,805	68	3,873
Corporate debt instruments	-	596	27	623
Other debt obligations	-	347	-	347
Total	\$ 49,531	\$ 17,140	\$ 95	\$ 66,766
Liabilities				
U.S. government and agency obligations	\$ (2,748)	\$ -	\$ -	\$ (2,748)
Loans and securities backed by:				
Residential real estate	-	(2)	-	(2)
Corporate debt instruments	-	(682)	(8)	(690)
Total	\$ (2,748)	\$ (684)	\$ (8)	\$ (3,440)

In the table above:

- Trading cash instrument assets are shown as positive amounts and trading cash instrument liabilities are shown as negative amounts.
- Corporate debt instruments includes corporate loans and debt securities.
- Other debt obligations includes other asset-backed securities.

See Note 4 for an overview of the Bank's fair value measurement policies and the valuation techniques and significant inputs used to determine the fair value of trading cash instruments.

Significant Unobservable Inputs

Significant unobservable inputs used to value the Bank's level 3 trading cash instruments are not material.

Level 3 Rollforward

The table below presents a summary of the changes in fair value for level 3 trading cash instruments.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Total trading cash instrument assets		
Beginning balance	\$ 95	\$ 81
Net unrealized gains/(losses)	(4)	(2)
Purchases	13	3
Sales	(20)	(18)
Settlements	(5)	(3)
Transfers into level 3	19	25
Transfers out of level 3	(65)	(45)
Ending balance	\$ 33	\$ 41
Total trading cash instrument liabilities		
Beginning balance	\$ (8)	\$ (8)
Net unrealized gains/(losses)	2	-
Purchases	3	6
Sales	(54)	(5)
Transfers into level 3	(3)	-
Transfers out of level 3	4	3
Ending balance	\$ (56)	\$ (4)

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- Changes in fair value are presented for all trading cash instruments that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to trading cash instruments that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a trading cash instrument was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- For level 3 trading cash instrument assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 trading cash instrument liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Level 3 trading cash instruments are frequently economically hedged with level 1 and level 2 trading cash instruments and/or level 1, level 2 or level 3 derivatives. Accordingly, gains or losses that are classified in level 3 can be partially offset by gains or losses attributable to level 1 or level 2 trading cash instruments and/or level 1, level 2 or level 3 derivatives. As a result, gains or losses included in the level 3 rollforward below do not necessarily represent the overall impact on the Bank's results of operations, liquidity or capital resources.

The table below presents information, by product type, for assets included in the summary table above.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Loans and securities backed by residential real estate		
Beginning balance	\$ 68	\$ 4
Sales	-	(1)
Settlements	(5)	-
Transfers into level 3	-	1
Transfers out of level 3	(63)	-
Ending balance	\$ -	\$ 4
Corporate debt instruments		
Beginning balance	\$ 27	\$ 77
Net unrealized gains/(losses)	(4)	(2)
Purchases	13	3
Sales	(20)	(17)
Settlements	-	(3)
Transfers into level 3	19	24
Transfers out of level 3	(2)	(45)
Ending balance	\$ 33	\$ 37

Level 3 Rollforward Commentary

Three Months Ended March 2020. The net unrealized losses on level 3 trading cash instrument assets of \$(4) million for the three months ended March 2020 were reported in gains and losses from financial assets and liabilities.

The drivers of net unrealized losses on level 3 trading cash instrument assets for the three months ended March 2020 were not material.

The drivers of transfers into level 3 trading cash instrument assets during the three months ended March 2020 were not material.

Transfers out of level 3 during the three months ended March 2020 primarily reflected transfers of certain loans and securities backed by residential real estate to level 2, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments.

Three Months Ended March 2019. The net unrealized losses on level 3 trading cash instrument assets of \$(2) million for the three months ended March 2019 were reported in gains and losses from financial assets and liabilities.

The drivers of net unrealized losses on level 3 trading cash instrument assets for the three months ended March 2019 were not material.

The drivers of transfers into level 3 trading cash instrument assets during the three months ended March 2019 were not material.

Transfers out of level 3 trading cash instrument assets during the three months ended March 2019 primarily reflected transfers of certain corporate debt instruments to level 2, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments.

Notes to Consolidated Financial Statements (Unaudited)

Note 7.

Derivatives and Hedging Activities

Derivative Activities

Derivatives are instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors. Derivatives may be traded on an exchange (exchange-traded) or they may be privately negotiated contracts, which are usually referred to as over-the-counter (OTC) derivatives. Certain of the Bank's OTC derivatives are cleared and settled through central clearing counterparties (OTC-cleared), while others are bilateral contracts between two counterparties (bilateral OTC).

Market Making. As a market maker, the Bank enters into derivative transactions to provide liquidity to clients and to facilitate the transfer and hedging of their risks. In this role, the Bank typically acts as principal and is required to commit capital to provide execution, and maintains market-making positions in response to, or in anticipation of, client demand.

Risk Management. The Bank also enters into derivatives to actively manage risk exposures that arise from its market-making and financing activities. The Bank's holdings and exposures are hedged, in many cases, on either a portfolio or risk-specific basis, as opposed to an instrument-by-instrument basis. In addition, the Bank may enter into derivatives designated as hedges under U.S. GAAP. These derivatives are used to manage interest rate exposure in certain deposits and borrowings.

The Bank enters into various types of derivatives, including:

- **Futures and Forwards.** Contracts that commit counterparties to purchase or sell financial instruments or currencies in the future.
- **Swaps.** Contracts that require counterparties to exchange cash flows, such as currency or interest payment streams. The amounts exchanged are based on the specific terms of the contract with reference to specified rates, financial instruments, currencies or indices.
- **Options.** Contracts in which the option purchaser has the right, but not the obligation, to purchase from or sell to the option writer financial instruments or currencies within a defined time period for a specified price.

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). Derivative assets are included in trading assets and derivative liabilities are included in trading liabilities. Realized and unrealized gains and losses on derivatives not designated as hedges are included in gains and losses from financial assets and liabilities in the consolidated statements of earnings.

The tables below present the gross fair value and the notional amounts of derivative contracts by major product type, the amounts of counterparty and cash collateral netting in the consolidated balance sheets, as well as cash and securities collateral posted and received under enforceable credit support agreements that do not meet the criteria for netting under U.S. GAAP.

<i>\$ in millions</i>	As of March 2020		As of December 2019	
	Derivative Assets	Derivative Liabilities	Derivative Assets	Derivative Liabilities
Not accounted for as hedges				
Exchange-traded	\$ 871	\$ 1,450	\$ 311	\$ 680
OTC-cleared	95	9	–	–
Bilateral OTC	794,039	786,577	541,068	533,668
Total interest rates	795,005	788,036	541,379	534,348
OTC-cleared	29	–	14	–
Bilateral OTC	112,251	113,232	70,905	69,406
Total currencies	112,280	113,232	70,919	69,406
Credit – bilateral OTC	4,949	4,785	4,209	4,799
Equities – bilateral OTC	2,559	2,031	1,628	863
Commodities – bilateral OTC	373	371	128	126
Subtotal	915,166	908,455	618,263	609,542
Accounted for as hedges				
Bilateral OTC	34	–	18	–
Total interest rates	34	–	18	–
Total gross fair value	\$ 915,200	\$ 908,455	\$ 618,281	\$ 609,542
Offset in the consolidated balance sheets				
Counterparty netting	\$ (868,148)	\$ (868,148)	\$(586,115)	\$(586,115)
Cash collateral netting	(31,471)	(32,114)	(23,660)	(18,910)
Total amounts offset	\$ (899,619)	\$ (900,262)	\$(609,775)	\$(605,025)
Included in the consolidated balance sheets				
Exchange-traded	\$ 871	\$ 1,450	\$ 311	\$ 680
OTC-cleared	124	9	14	–
Bilateral OTC	14,586	6,734	8,181	3,837
Total	\$ 15,581	\$ 8,193	\$ 8,506	\$ 4,517
Not offset in the consolidated balance sheets				
Cash collateral	\$ (599)	\$ (615)	\$ (229)	\$ (239)
Securities collateral	(3,476)	(1,105)	(1,955)	(571)
Total	\$ 11,506	\$ 6,473	\$ 6,322	\$ 3,707

Notes to Consolidated Financial Statements (Unaudited)

	Notional Amounts as of	
	March 2020	December 2019
<i>\$ in millions</i>		
Not accounted for as hedges		
Exchange-traded	\$ 3,274,823	\$ 4,314,923
OTC-cleared	10,846,940	6,404,660
Bilateral OTC	26,877,423	25,985,075
Total interest rates	40,999,186	36,704,658
Exchange-traded	4	37
OTC-cleared	106,192	88,956
Bilateral OTC	6,208,752	5,477,627
Total currencies	6,314,948	5,566,620
Credit – bilateral OTC	205,853	176,520
Exchange-traded	47	–
Bilateral OTC	52,693	52,402
Total equities	52,740	52,402
Commodities – bilateral OTC	4,783	4,987
Subtotal	47,577,510	42,505,187
Accounted for as hedges		
OTC-cleared	19,200	19,752
Bilateral OTC	683	704
Total interest rates	19,883	20,456
Total notional amounts	\$ 47,597,393	\$ 42,525,643

In the tables above:

- Gross fair values exclude the effects of both counterparty netting and collateral, and therefore are not representative of the Bank's exposure.
- Where the Bank has received or posted collateral under credit support agreements, but has not yet determined such agreements are enforceable, the related collateral has not been netted.
- Notional amounts, which represent the sum of gross long and short derivative contracts, provide an indication of the volume of the Bank's derivative activity and do not represent anticipated losses.
- Counterparty and cash collateral netting relate to bilateral OTC derivatives.
- Total gross fair value of derivatives included derivative assets of \$3.66 billion as of March 2020 and \$1.90 billion as of December 2019, and derivative liabilities of \$1.88 billion as of March 2020 and \$786 million as of December 2019, which are not subject to an enforceable netting agreement or are subject to a netting agreement that the Bank has not yet determined to be enforceable.

Fair Value of Derivatives by Level

The table below presents derivatives on a gross basis by level and product type, as well as the impact of netting.

<i>\$ in millions</i>	Level 1	Level 2	Level 3	Total
As of March 2020				
Assets				
Interest rates	\$ 1	\$ 794,449	\$ 589	\$ 795,039
Currencies	–	111,988	292	112,280
Credit	–	3,539	1,410	4,949
Equities	–	2,093	466	2,559
Commodities	–	362	11	373
Gross fair value	1	912,431	2,768	915,200
Counterparty netting in levels	–	(866,173)	(559)	(866,732)
Subtotal	\$ 1	\$ 46,258	\$ 2,209	\$ 48,468
Cross-level counterparty netting				(1,416)
Cash collateral netting				(31,471)
Net fair value				\$ 15,581
Liabilities				
Interest rates	\$ (24)	\$ (787,423)	\$ (589)	\$ (788,036)
Currencies	–	(112,991)	(241)	(113,232)
Credit	–	(3,461)	(1,324)	(4,785)
Equities	–	(1,948)	(83)	(2,031)
Commodities	–	(362)	(9)	(371)
Gross fair value	(24)	(906,185)	(2,246)	(908,455)
Counterparty netting in levels	–	866,173	559	866,732
Subtotal	\$ (24)	\$ (40,012)	\$ (1,687)	\$ (41,723)
Cross-level counterparty netting				1,416
Cash collateral netting				32,114
Net fair value				\$ (8,193)
As of December 2019				
Assets				
Interest rates	\$ –	\$ 541,029	\$ 368	\$ 541,397
Currencies	–	70,505	414	70,919
Credit	–	3,232	977	4,209
Equities	–	1,050	578	1,628
Commodities	–	124	4	128
Gross fair value	–	615,940	2,341	618,281
Counterparty netting in levels	–	(584,569)	(513)	(585,082)
Subtotal	\$ –	\$ 31,371	\$ 1,828	\$ 33,199
Cross-level counterparty netting				(1,033)
Cash collateral netting				(23,660)
Net fair value				\$ 8,506
Liabilities				
Interest rates	\$ –	\$ (533,891)	\$ (457)	\$ (534,348)
Currencies	–	(69,226)	(180)	(69,406)
Credit	–	(3,784)	(1,015)	(4,799)
Equities	–	(834)	(29)	(863)
Commodities	–	(124)	(2)	(126)
Gross fair value	–	(607,859)	(1,683)	(609,542)
Counterparty netting in levels	–	584,569	513	585,082
Subtotal	\$ –	\$ (23,290)	\$ (1,170)	\$ (24,460)
Cross-level counterparty netting				1,033
Cash collateral netting				18,910
Net fair value				\$ (4,517)

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- Gross fair values exclude the effects of both counterparty netting and collateral netting, and therefore are not representative of the Bank's exposure.
- Counterparty netting is reflected in each level to the extent that receivable and payable balances are netted within the same level and is included in counterparty netting in levels. Where the counterparty netting is across levels, the netting is included in cross-level counterparty netting.
- Derivative assets are shown as positive amounts and derivative liabilities are shown as negative amounts.

See Note 4 for an overview of the Bank's fair value measurement policies and the valuation techniques and significant inputs used to determine the fair value of derivatives.

Significant Unobservable Inputs

The table below presents the amount of level 3 derivative assets (liabilities), and ranges, averages and medians of significant unobservable inputs used to value level 3 derivatives.

<i>\$ in millions</i>	Level 3 Assets (Liabilities) and Range of Significant Unobservable Inputs (Average/Median) as of	
	March 2020	December 2019
Interest rates, net	\$0	\$(89)
Correlation	60% to 81% (67%/63%)	57% to 81% (65%/60%)
Volatility (bps)	31 to 150 (80/55)	31 to 150 (80/55)
Currencies, net	\$51	\$234
Correlation	28% to 70% (48%/46%)	28% to 70% (46%/46%)
Credit, net	\$86	\$(38)
Credit spreads (bps)	10 to 1,369 (256/152)	1 to 1,151 (140/98)
Equities, net	\$383	\$549
Correlation	10% to 98% (61%/70%)	10% to 98% (54%/51%)

Level 3 commodities, net were not material as of both March 2020 and December 2019, and therefore are not included in the table above.

In the table above:

- Derivative assets are shown as positive amounts and derivative liabilities are shown as negative amounts.
- Ranges represent the significant unobservable inputs that were used in the valuation of each type of derivative.
- Averages represent the arithmetic average of the inputs and are not weighted by the relative fair value or notional of the respective financial instruments. An average greater than the median indicates that the majority of inputs are below the average. For example, the difference between the average and the median for credit spreads indicates that the majority of the inputs fall in the lower end of the range.
- The ranges, averages and medians of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one derivative. For example, the highest correlation for interest rate derivatives is appropriate for valuing a specific interest rate derivative but may not be appropriate for valuing any other interest rate derivative. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 derivatives.
- Interest rates, currencies and equities derivatives are valued using option pricing models, and credit derivatives are valued using option pricing and discounted cash flow models.
- The fair value of any one instrument may be determined using multiple valuation techniques. For example, option pricing models and discounted cash flows models are typically used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.
- Correlation within currencies and equities includes cross-product type correlation.

Notes to Consolidated Financial Statements (Unaudited)

Range of Significant Unobservable Inputs

The following provides information about the ranges of significant unobservable inputs used to value the Bank's level 3 derivative instruments:

- **Correlation.** Ranges for correlation cover a variety of underliers both within one product type (e.g., foreign exchange rates) and across product types (e.g., correlation of an interest rate and a currency), as well as across regions. Generally, cross-product type correlation inputs are used to value more complex instruments and are lower than correlation inputs on assets within the same derivative product type.
- **Volatility.** Ranges for volatility cover numerous underliers across a variety of markets, maturities and strike prices.
- **Credit spreads.** The ranges for credit spreads cover a variety of underliers (index and single names), regions, sectors, maturities and credit qualities (high-yield and investment-grade). The broad range of this population gives rise to the width of the ranges of significant unobservable inputs.

Sensitivity of Fair Value Measurement to Changes in Significant Unobservable Inputs

The following is a description of the directional sensitivity of the Bank's level 3 fair value measurements to changes in significant unobservable inputs, in isolation, as of each period-end:

- **Correlation.** In general, for contracts where the holder benefits from the convergence of the underlying asset or index prices (e.g., interest rates, foreign exchange rates and equity prices), an increase in correlation results in a higher fair value measurement.
- **Volatility.** In general, for purchased options, an increase in volatility results in a higher fair value measurement.
- **Credit spreads.** In general, the fair value of purchased credit protection increases as credit spreads increase. Credit spreads are strongly related to distinctive risk factors of the underlying reference obligations, which include reference entity-specific factors, such as leverage, volatility and industry, market-based risk factors, such as borrowing costs or liquidity of the underlying reference obligation, and macroeconomic conditions.

Due to the distinctive nature of each of the Bank's level 3 derivatives, the interrelationship of inputs is not necessarily uniform within each product type.

Level 3 Rollforward

The table below presents a summary of the changes in fair value for level 3 derivatives.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Total level 3 derivatives, net		
Beginning balance	\$ 658	\$ 844
Net realized gains/(losses)	7	(39)
Net unrealized gains/(losses)	(143)	(289)
Purchases	15	15
Sales	(17)	(4)
Settlements	(28)	33
Transfers into level 3	27	21
Transfers out of level 3	3	47
Ending balance	\$ 522	\$ 628

In the table above:

- Changes in fair value are presented for all derivative assets and liabilities that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to instruments that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a derivative was transferred into level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- Positive amounts for transfers into level 3 and negative amounts for transfers out of level 3 represent net transfers of derivative assets. Negative amounts for transfers into level 3 and positive amounts for transfers out of level 3 represent net transfers of derivative liabilities.
- A derivative with level 1 and/or level 2 inputs is classified in level 3 in its entirety if it has at least one significant level 3 input.
- If there is one significant level 3 input, the entire gain or loss from adjusting only observable inputs (i.e., level 1 and level 2 inputs) is classified in level 3.
- Gains or losses that have been classified in level 3 resulting from changes in level 1 or level 2 inputs are frequently offset by gains or losses attributable to level 1 or level 2 derivatives and/or level 1, level 2 and level 3 trading cash instruments. As a result, gains/(losses) included in the level 3 rollforward below do not necessarily represent the overall impact on the Bank's results of operations, liquidity or capital resources.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents information, by product type, for derivatives included in the summary table above.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Interest rates, net		
Beginning balance	\$ (89)	\$ (221)
Net realized gains/(losses)	(3)	(6)
Net unrealized gains/(losses)	85	(18)
Purchases	–	1
Sales	(9)	(4)
Settlements	9	1
Transfers into level 3	7	6
Transfers out of level 3	–	38
Ending balance	\$ –	\$ (203)
Currencies, net		
Beginning balance	\$ 234	\$ 621
Net realized gains/(losses)	–	(14)
Net unrealized gains/(losses)	(190)	(227)
Purchases	2	2
Sales	1	–
Settlements	(2)	16
Transfers into level 3	(2)	–
Transfers out of level 3	8	11
Ending balance	\$ 51	\$ 409
Credit, net		
Beginning balance	\$ (38)	\$ 163
Net realized gains/(losses)	3	(5)
Net unrealized gains/(losses)	124	(137)
Purchases	3	–
Sales	(9)	–
Settlements	3	15
Transfers into level 3	(2)	11
Transfers out of level 3	2	23
Ending balance	\$ 86	\$ 70
Equities, net		
Beginning balance	\$ 549	\$ 279
Net realized gains/(losses)	7	(14)
Net unrealized gains/(losses)	(162)	93
Purchases	10	12
Settlements	(38)	1
Transfers into level 3	24	4
Transfers out of level 3	(7)	(25)
Ending balance	\$ 383	\$ 350
Commodities, net		
Beginning balance	\$ 2	\$ 2
Net unrealized gains/(losses)	–	–
Ending balance	\$ 2	\$ 2

Level 3 Rollforward Commentary

Three Months Ended March 2020. The net realized and unrealized losses on level 3 derivatives of \$136 million (reflecting \$7 million of net realized gains and \$143 million of net unrealized losses) for the three months ended March 2020 were reported in gains and losses from financial assets and liabilities.

The net unrealized losses on level 3 derivatives for the three months ended March 2020 were primarily attributable to losses on certain currency derivatives (primarily reflecting the impact of a decrease in interest rates) and losses on certain equity derivatives (primarily reflecting the impact of a decrease in equity prices), partially offset by gains on certain credit derivatives (primarily reflecting the widening of certain credit spreads).

The drivers of transfers into level 3 derivatives and transfers out of level 3 derivatives during the three months ended March 2020 were not material.

Three Months Ended March 2019. The net realized and unrealized losses on level 3 derivatives of \$328 million (reflecting \$39 million of net realized losses and \$289 million of net unrealized losses) for the three months ended March 2019 were reported in gains and losses from financial assets and liabilities.

The net unrealized losses on level 3 derivatives for the three months ended March 2019 were primarily attributable to losses on certain currency derivatives (primarily reflecting the impact of a decrease in interest rates, and losses on certain credit derivatives, reflecting the impact of tighter credit spreads), partially offset by gains on certain equity derivatives (reflecting the impact of an increase in underlying equity prices).

The drivers of transfers into level 3 derivatives and transfers out of level 3 derivatives during the three months ended March 2019 were not material.

Credit Derivatives

The Bank enters into a broad array of credit derivatives to facilitate client transactions and to manage the credit risk associated with market-making and financing activities. Credit derivatives are actively managed based on the Bank's net risk position. Credit derivatives are generally individually negotiated contracts and can have various settlement and payment conventions. Credit events include failure to pay, bankruptcy, acceleration of indebtedness, restructuring, repudiation and dissolution of the reference entity.

Notes to Consolidated Financial Statements (Unaudited)

The Bank enters into the following types of credit derivatives:

- Credit Default Swaps.** Single-name credit default swaps protect the buyer against the loss of principal on one or more bonds, loans or mortgages (reference obligations) in the event the issuer of the reference obligations suffers a credit event. The buyer of protection pays an initial or periodic premium to the seller and receives protection for the period of the contract. If there is no credit event, as defined in the contract, the seller of protection makes no payments to the buyer. If a credit event occurs, the seller of protection is required to make a payment to the buyer, calculated according to the terms of the contract.
- Credit Options.** In a credit option, the option writer assumes the obligation to purchase or sell a reference obligation at a specified price or credit spread. The option purchaser buys the right, but does not assume the obligation, to sell the reference obligation to, or purchase it from, the option writer. The payments on credit options depend either on a particular credit spread or the price of the reference obligation.
- Credit Indices, Baskets and Tranches.** Credit derivatives may reference a basket of single-name credit default swaps or a broad-based index. If a credit event occurs in one of the underlying reference obligations, the protection seller pays the protection buyer. The payment is typically a pro-rata portion of the transaction's total notional amount based on the underlying defaulted reference obligation. In certain transactions, the credit risk of a basket or index is separated into various portions (tranches), each having different levels of subordination. The most junior tranches cover initial defaults and once losses exceed the notional amount of these junior tranches, any excess loss is covered by the next most senior tranche.
- Total Return Swaps.** A total return swap transfers the risks relating to economic performance of a reference obligation from the protection buyer to the protection seller. Typically, the protection buyer receives a floating rate of interest and protection against any reduction in fair value of the reference obligation, and the protection seller receives the cash flows associated with the reference obligation, plus any increase in the fair value of the reference obligation.

The Bank economically hedges its exposure to written credit derivatives primarily by entering into offsetting purchased credit derivatives with identical underliers. Substantially all of the Bank's purchased credit derivative transactions are with financial institutions and are subject to stringent collateral thresholds. In addition, upon the occurrence of a specified trigger event, the Bank may take possession of the reference obligations underlying a particular written credit derivative, and consequently may, upon liquidation of the reference obligations, recover amounts on the underlying reference obligations in the event of default.

As of March 2020, written credit derivatives had a total gross notional amount of \$85.63 billion and purchased credit derivatives had a total gross notional amount of \$120.22 billion, for total net notional purchased protection of \$34.59 billion. As of December 2019, written credit derivatives had a total gross notional amount of \$76.98 billion and purchased credit derivatives had a total gross notional amount of \$99.54 billion, for total net notional purchased protection of \$22.56 billion. The Bank's written and purchased credit derivatives primarily consist of credit default swaps.

The table below presents information about credit derivatives.

<i>\$ in millions</i>	Credit Spread on Underlier (basis points)				Total
	0 - 250	251 - 500	501 - 1,000	Greater than 1,000	
As of March 2020					
Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor					
Less than 1 year	\$ 9,697	\$ 345	\$ 1,237	\$ 974	\$ 12,253
1 – 5 years	56,600	1,650	1,377	4,097	63,724
Greater than 5 years	7,585	624	588	858	9,655
Total	\$ 73,882	\$ 2,619	\$ 3,202	\$ 5,929	\$ 85,632
Maximum Payout/Notional Amount of Purchased Credit Derivatives					
Offsetting	\$ 70,290	\$ 1,724	\$ 2,056	\$ 4,133	\$ 78,203
Other	\$ 34,397	\$ 2,595	\$ 2,141	\$ 2,885	\$ 42,018
Fair Value of Written Credit Derivatives					
Asset	\$ 441	\$ 55	\$ 35	\$ 52	\$ 583
Liability	2,013	128	151	1,365	3,657
Net asset/(liability)	\$ (1,572)	\$ (73)	\$ (116)	\$ (1,313)	\$ (3,074)
As of December 2019					
Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor					
Less than 1 year	\$ 10,686	\$ 92	\$ 128	\$ 417	\$ 11,323
1 – 5 years	51,261	1,736	1,033	2,413	56,443
Greater than 5 years	8,715	159	120	221	9,215
Total	\$ 70,662	\$ 1,987	\$ 1,281	\$ 3,051	\$ 76,981
Maximum Payout/Notional Amount of Purchased Credit Derivatives					
Offsetting	\$ 65,132	\$ 1,915	\$ 1,262	\$ 2,647	\$ 70,956
Other	\$ 27,176	\$ 661	\$ 206	\$ 540	\$ 28,583
Fair Value of Written Credit Derivatives					
Asset	\$ 2,641	\$ 120	\$ 74	\$ 131	\$ 2,966
Liability	680	14	21	349	1,064
Net asset/(liability)	\$ 1,961	\$ 106	\$ 53	\$ (218)	\$ 1,902

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- Fair values exclude the effects of both netting of receivable balances with payable balances under enforceable netting agreements, and netting of cash received or posted under enforceable credit support agreements, and therefore are not representative of the Bank's credit exposure.
- Tenor is based on remaining contractual maturity.
- The credit spread on the underlier, together with the tenor of the contract, are indicators of payment/performance risk. The Bank is less likely to pay or otherwise be required to perform where the credit spread and the tenor are lower.
- Offsetting purchased credit derivatives represent the notional amount of purchased credit derivatives that economically hedge written credit derivatives with identical underliers.
- Other purchased credit derivatives represent the notional amount of all other purchased credit derivatives not included in offsetting.

Impact of Credit and Funding Spreads on Derivatives

The Bank realizes gains or losses on its derivative contracts. These gains or losses include credit valuation adjustments (CVA) relating to uncollateralized derivative assets and liabilities, which represents the gains or losses (including hedges) attributable to the impact of changes in credit exposure, counterparty and GS Group's credit spreads, liability funding spreads (which includes GS Group's credit), probability of default and assumed recovery. These gains or losses also include funding valuation adjustments (FVA) relating to uncollateralized derivative assets, which represents the gains or losses (including hedges) attributable to the impact of changes in expected funding exposures and funding spreads.

The table below presents information about CVA and FVA.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
CVA, net of hedges	\$ 147	\$ (79)
FVA, net of hedges	(259)	79
Total	\$ (113)	\$ -

Derivatives with Credit-Related Contingent Features

Certain of the Bank's derivatives have been transacted under bilateral agreements with counterparties who may require the Bank to post collateral or terminate the transactions based on changes in the credit ratings of the Bank and/or Group Inc. Typically, such requirements are based on the credit ratings of Group Inc. The Bank assesses the impact of these bilateral agreements by determining the collateral or termination payments that would occur assuming a downgrade by all rating agencies. A downgrade by any one rating agency, depending on the agency's relative ratings of the Bank and/or Group Inc. at the time of the downgrade, may have an impact which is comparable to the impact of a downgrade by all rating agencies.

The table below presents information about net derivative liabilities under bilateral agreements (excluding collateral posted), the fair value of collateral posted and additional collateral or termination payments that could have been called by counterparties in the event of a one- or two-notch downgrade in the credit ratings of the Bank and/or Group Inc.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Net derivative liabilities under bilateral agreements	\$ 11,436	\$ 6,420
Collateral posted	\$ 10,032	\$ 5,982
Additional collateral or termination payments:		
One-notch downgrade	\$ 113	\$ 149
Two-notch downgrade	\$ 282	\$ 303

Hedge Accounting

The Bank applies hedge accounting for certain interest rate swaps used to manage the interest rate exposure of certain fixed-rate certificates of deposit and certain fixed-rate unsecured short- and long-term borrowings.

To qualify for hedge accounting, the hedging instrument must be highly effective at reducing the risk from the exposure being hedged. Additionally, the Bank must formally document the hedging relationship at inception and assess the hedging relationship at least on a quarterly basis to ensure the hedging instrument continues to be highly effective over the life of the hedging relationship.

Fair Value Hedges

The Bank designates certain interest rate swaps as fair value hedges of certain fixed-rate certificates of deposit and certain fixed-rate unsecured short- and long-term borrowings. These interest rate swaps hedge changes in fair value attributable to the designated benchmark interest rate (e.g., London Interbank Offered Rate (LIBOR)), effectively converting a substantial portion of fixed-rate obligations into floating-rate obligations.

Notes to Consolidated Financial Statements (Unaudited)

The Bank applies a statistical method that utilizes regression analysis when assessing the effectiveness of its fair value hedging relationships in achieving offsetting changes in the fair values of the hedging instrument and the risk being hedged (i.e., interest rate risk). An interest rate swap is considered highly effective in offsetting changes in fair value attributable to changes in the hedged risk when the regression analysis results in a coefficient of determination of 80% or greater and a slope between 80% and 125%.

For qualifying fair value hedges, gains or losses on derivatives are included in interest expense. The change in fair value of the hedged item attributable to the risk being hedged is reported as an adjustment to its carrying value (hedging adjustment) and is also included in interest expense. When a derivative is no longer designated as a hedge, any remaining difference between the carrying value and par value of the hedged item is amortized to interest expense over the remaining life of the hedged item using the effective interest method. See Note 21 for further information about interest income and interest expense.

The table below presents the gains/(losses) from interest rate derivatives accounted for as hedges and the related hedged deposits and borrowings, and total interest expense.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Interest rate hedges	\$ 585	\$ 107
Hedged deposits and borrowings	\$ (572)	\$ (111)
Interest expense	\$ 974	\$ 1,105

The table below presents the carrying value of the hedged items designated in a hedging relationship and the related cumulative hedging adjustment (increase/(decrease)) from current and prior hedging relationships included in such carrying values.

<i>\$ in millions</i>	Carrying	Cumulative
	Value	Hedging Adjustment
As of March 2020		
Deposits	\$ 18,987	\$ 743
Unsecured short-term borrowings	\$ 1,003	\$ 3
As of December 2019		
Deposits	\$ 18,956	\$ 172
Unsecured short-term borrowings	\$ 1,004	\$ 4

In the table above, the cumulative hedging adjustments from prior hedging relationships that were de-designated were not material as of both March 2020 and December 2019.

In addition, as of both March 2020 and December 2019, cumulative hedging adjustments for items no longer designated in a hedging relationship were not material.

Note 8.

Investments

Investments includes debt instruments and equity securities that are accounted for at fair value and are generally held by the Bank in connection with its long-term investing activities. In addition, investments includes debt securities classified as available-for-sale and held-to-maturity that are generally held in connection with the Bank's asset-liability management activities.

The table below presents information about investments.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Equity securities, at fair value	\$ 60	\$ 64
Debt instruments, at fair value	1,883	40
Available-for-sale securities, at fair value	6,208	5,873
Investments, at fair value	8,151	5,977
Held-to-maturity securities	1,510	1,500
Total investments	\$ 9,661	\$ 7,477

Equity Securities and Debt Instruments, at Fair Value

Equity securities and debt instruments, at fair value are accounted for at fair value either under the fair value option or in accordance with other U.S. GAAP, and the related fair value gains and losses are recognized in earnings.

Equity Securities, at Fair Value. Equity securities, at fair value consists of the Bank's private equity-related investments in corporate and real estate entities. Equity securities, at fair value includes investments made as part of the Bank's CRA activities. Equity securities, at fair value includes \$17 million as of March 2020 and \$18 million as of December 2019 of investments in funds that are measured at NAV.

Debt Instruments, at Fair Value. Debt instruments, at fair value includes money market instruments and corporate debt securities.

The table below presents information about debt instruments, at fair value.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Money market instruments	\$ 1,844	\$ -
Corporate debt securities	39	40
Total	\$ 1,883	\$ 40

Notes to Consolidated Financial Statements (Unaudited)

In the table above, money market instruments includes commercial paper and certificates of deposit. The increase in money market instruments from December 2019 to March 2020 was related to the Bank's purchase of commercial paper and certificates of deposit from two affiliated money market funds. See Note 20 for further information.

Available-for-Sale Securities

Available-for-sale securities are accounted for at fair value, and the related unrealized fair value gains and losses are included in accumulated other comprehensive income/(loss).

The table below presents information about available-for-sale securities by tenor.

<i>\$ in millions</i>	Amortized Cost	Fair Value	Weighted Average Yield
As of March 2020			
Less than 5 years	\$ 3,005	\$ 3,112	1.80%
Greater than 5 years	2,866	3,096	1.77%
Total	\$ 5,871	\$ 6,208	1.79%
As of December 2019			
Less than 5 years	\$ 2,996	\$ 3,013	1.80%
Greater than 5 years	2,869	2,860	1.77%
Total	\$ 5,865	\$ 5,873	1.79%

In the table above:

- Available-for-sale securities consists of U.S. government obligations that were classified in level 1 of the fair value hierarchy as of both March 2020 and December 2019.
- The gross unrealized gains included in accumulated other comprehensive income/(loss) were \$337 million and there were no gross unrealized losses included in accumulated other comprehensive income/(loss) as of March 2020. The gross unrealized gains included in accumulated other comprehensive income/(loss) were \$24 million and the gross unrealized losses included in accumulated other comprehensive income/(loss) were \$16 million as of December 2019.

- Beginning in January 2020, available-for-sale securities are reviewed to determine if an allowance for credit losses should be recorded in the consolidated statements of earnings. The Bank considers various factors in such determination, including market conditions, changes in issuer credit ratings, severity of the unrealized losses, and the intent and ability to hold the security until recovery. See Note 3 for further information about the adoption of CECL. Prior to January 2020, such securities were reviewed for other-than-temporary impairment. The Bank did not record any provision for credit losses on such securities during the three months ended March 2020 and there was no other-than-temporary impairment during the year ended December 2019.

Fair Value of Investments by Level

The table below presents investments accounted for at fair value by level within the fair value hierarchy.

<i>\$ in millions</i>	Level 1	Level 2	Level 3	Total
As of March 2020				
U.S. government and agency obligations	\$ 6,208	\$ -	\$ -	\$ 6,208
Equity securities	-	10	33	43
Corporate debt securities	-	-	39	39
Money market instruments	-	1,844	-	1,844
Subtotal	\$ 6,208	\$ 1,854	\$ 72	\$ 8,134
Investments in funds at NAV				17
Total investments				\$ 8,151
As of December 2019				
U.S. government and agency obligations	\$ 5,873	\$ -	\$ -	\$ 5,873
Equity securities	-	10	36	46
Corporate debt securities	-	40	-	40
Subtotal	\$ 5,873	\$ 50	\$ 36	\$ 5,959
Investments in funds at NAV				18
Total investments				\$ 5,977

See Note 4 for an overview of the Bank's fair value measurement policies and the valuation techniques and significant inputs used to determine the fair value of investments.

Notes to Consolidated Financial Statements (Unaudited)

Significant Unobservable Inputs

The table below presents the amount of level 3 investments, and ranges and weighted averages of significant unobservable inputs used to value such investments.

<i>\$ in millions</i>	Level 3 Assets and Range of Significant Unobservable Inputs (Weighted Average) as of	
	March	December
	2020	2019
Equity securities		
Level 3 assets	\$33	\$36
Discount rate/yield	5.3% to 10.0% (7.5%)	5.2% to 10.0% (7.4%)

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of investment.
- Weighted averages are calculated by weighting each input by the relative fair value of the investment.
- The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one investment. For example, the highest discount rate for private equity securities is appropriate for valuing a specific private equity security but may not be appropriate for valuing any other private equity security. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 investments.
- Equity securities are valued using market comparables and discounted cash flows.
- The fair value of any one instrument may be determined using multiple valuation techniques. For example, market comparables and discounted cash flows may be used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.
- Significant unobservable inputs used to value the Bank's level 3 corporate debt securities are not material and are therefore excluded from the table.

Level 3 Rollforward

The table below presents a summary of the changes in fair value for level 3 investments.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Beginning balance	\$ 36	\$ 273
Net realized gains/(losses)	(1)	–
Net unrealized gains/(losses)	(5)	–
Purchases	2	–
Transfers into level 3	40	–
Transfers out of level 3	–	(30)
Ending balance	\$ 72	\$ 243

In the table above:

- Changes in fair value are presented for all investments that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to investments that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If an investment was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- For level 3 investments, increases are shown as positive amounts, while decreases are shown as negative amounts.

The table below presents information, by product type, for investments included in the summary table above.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Equity securities		
Beginning balance	\$ 36	\$ 273
Net realized gains/(losses)	(1)	–
Net unrealized gains/(losses)	(3)	–
Purchases	1	–
Transfers out of level 3	–	(30)
Ending balance	\$ 33	\$ 243
Corporate debt securities		
Beginning balance	\$ –	\$ –
Net unrealized gains/(losses)	(2)	–
Purchases	1	–
Transfers into level 3	40	–
Ending balance	\$ 39	\$ –

Notes to Consolidated Financial Statements (Unaudited)

Level 3 Rollforward Commentary

Three Months Ended March 2020. The net realized and unrealized losses on level 3 investments of \$(6) million (reflecting \$(1) million of net realized losses and \$(5) million of net unrealized losses) for the three months ended March 2020 were reported in gains and losses from financial assets and liabilities.

The drivers of net unrealized losses on level 3 investments for the three months ended March 2020 were not material.

Transfers into level 3 investments during the three months ended March 2020 reflected transfers of certain corporate debt instruments from level 2, principally due to certain unobservable yield and duration inputs becoming significant to the valuation of these instruments.

There were no transfers out of level 3 investments during the three months ended March 2020.

Three Months Ended March 2019. There were no net realized and unrealized gains/(losses) on level 3 investments for the three months ended March 2019.

There were no transfers into level 3 investments during the three months ended March 2019.

Transfers out of level 3 investments during the three months ended March 2019 primarily reflected transfers of certain equity securities to level 2, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments.

Held-to-Maturity Securities

Held-to-maturity securities are accounted for at amortized cost.

The table below presents information about held-to-maturity securities by tenor.

<i>\$ in millions</i>	Amortized Cost	Fair Value	Weighted Average Yield
As of March 2020			
Less than 5 years	\$ 1,510	\$ 1,588	2.73%
Total	\$ 1,510	\$ 1,588	2.73%
As of December 2019			
Less than 5 years	\$ 1,500	\$ 1,540	2.73%
Total	\$ 1,500	\$ 1,540	2.73%

In the table above:

- Held-to-maturity securities consists of U.S. government obligations.
- As these securities are not accounted for at fair value, they are not included in the Bank's fair value hierarchy in Notes 4 through 10. Had these securities been included in the Bank's fair value hierarchy, they would have been classified in level 1 of the fair value hierarchy as of both March 2020 and December 2019.
- The gross unrealized gains were \$78 million as of March 2020 and \$40 million as of December 2019.
- Beginning in January 2020, held-to-maturity securities are reviewed to determine if an allowance for credit loss should be recorded in the consolidated statements of earnings. The Bank considers various factors in such determination, including market conditions, changes in issuer credit ratings, historical credit losses and sovereign guarantees. See Note 3 for further information about the adoption of CECL. Prior to January 2020, such securities were reviewed for other-than-temporary impairment. The Bank did not record any provision for credit losses on such securities during the three months ended March 2020 and there were no other-than-temporary impairments during the year ended December 2019.

Notes to Consolidated Financial Statements (Unaudited)

Note 9.

Loans

Loans include (i) loans held for investment that are accounted for at amortized cost net of allowance for loan losses or at fair value under the fair value option and (ii) loans held for sale that are accounted for at the lower of cost or fair value. Interest on loans is recognized over the life of the loan and is recorded on an accrual basis.

The table below presents information about loans.

<i>\$ in millions</i>	Amortized Cost	Fair Value	Held for Sale	Total
As of March 2020				
Loan Type				
Corporate	\$ 46,873	\$ 1,336	\$ 1,028	\$ 49,237
Wealth management	17,718	7,834	–	25,552
Commercial real estate	10,812	189	174	11,175
Residential real estate	3,123	–	28	3,151
Consumer:				
Installment	4,826	–	–	4,826
Credit cards	2,081	–	–	2,081
Other	3,814	–	511	4,325
Total loans, gross	89,247	9,359	1,741	100,347
Allowance for loan losses	(1,891)	–	–	(1,891)
Total loans	\$ 87,356	\$ 9,359	\$ 1,741	\$ 98,456

As of December 2019

Loan Type				
Corporate	\$ 27,387	\$ 695	\$ 1,319	\$ 29,401
Wealth management	16,959	7,824	–	24,783
Commercial real estate	9,402	213	1,754	11,369
Residential real estate	4,009	–	34	4,043
Consumer:				
Installment	4,747	–	–	4,747
Credit cards	1,858	–	–	1,858
Other	2,780	–	679	3,459
Total loans, gross	67,142	8,732	3,786	79,660
Allowance for loan losses	(777)	–	–	(777)
Total loans	\$ 66,365	\$ 8,732	\$ 3,786	\$ 78,883

In the table above, as of March 2020, wealth management loans included \$15.00 billion of loans, substantially all of which are secured by investments in both financial and nonfinancial assets, \$2.74 billion of loans secured by commercial real estate and \$7.80 billion of loans secured by residential real estate. As of December 2019, wealth management loans included \$14.35 billion of loans, substantially all of which are secured by investments in both financial and nonfinancial assets, \$2.65 billion of loans secured by commercial real estate and \$7.79 billion of loans secured by residential real estate.

The following is a description of the loan types in the table above:

- Corporate.** Corporate loans includes term loans, revolving lines of credit, letter of credit facilities and bridge loans, and are principally used for operating and general corporate purposes, or in connection with acquisitions. Corporate loans also includes loans originated as part of the Bank's CRA activities. Corporate loans may be secured or unsecured, depending on the loan purpose, the risk profile of the borrower and other factors.
- Wealth Management.** Wealth management loans includes loans extended to private bank clients, including wealth management and other clients. Wealth management loans also include loans originated through *Goldman Sachs Private Bank Select*. Wealth management loans are used to finance investments in both financial and nonfinancial assets, bridge cash flow timing gaps or provide liquidity for other needs. Substantially all wealth management loans are secured by securities, residential real estate, commercial real estate, or other assets.

Notes to Consolidated Financial Statements (Unaudited)

- **Commercial Real Estate.** Commercial real estate loans includes loans extended by the Bank (other than to private bank clients) that are directly or indirectly secured by hotels, retail stores, multifamily housing complexes and commercial and industrial properties. Commercial real estate loans also includes loans extended to clients who warehouse assets that are directly or indirectly backed by commercial real estate. In addition, commercial real estate includes loans purchased by the Bank and loans originated as part of the Bank's CRA activities.
- **Residential Real Estate.** Residential real estate loans includes loans extended by the Bank to clients (other than private bank clients) who warehouse assets that are directly or indirectly secured by residential real estate. Residential real estate loans also includes loans purchased and originated by the Bank.
- **Installment.** Installment loans are unsecured and are originated by the Bank.
- **Credit Cards.** Credit card loans are loans made pursuant to revolving lines of credit issued to consumers by the Bank.
- **Other.** Other loans primarily includes loans extended to clients who warehouse assets that are directly or indirectly secured by consumer loans, including auto loans and private student loans. Other loans also includes unsecured consumer loans purchased by the Bank.

Credit Quality

Risk Assessment. The Bank's risk assessment process includes evaluating the credit quality of its loans. For corporate loans and a majority of wealth management, residential real estate, and other loans, the Bank performs credit reviews which include initial and ongoing analyses of its borrowers, resulting in an internal credit rating. A credit review is an independent analysis of the capacity and willingness of a borrower to meet its financial obligations and is performed on an annual basis or more frequently if circumstances change that indicate that a review may be necessary. The determination of internal credit ratings also incorporates assumptions with respect to the nature of and outlook for the borrower's industry and the economic environment.

The table below presents gross loans by an internally determined public rating agency equivalent or other credit metrics and the concentration of secured and unsecured loans.

<i>\$ in millions</i>	Investment- Grade	Non-Investment- Grade	Other/ Unrated	Total
As of March 2020				
Accounting Method				
Amortized cost	\$ 35,228	\$ 46,028	\$ 7,991	\$ 89,247
Fair value	1,947	3,059	4,353	9,359
Held for sale	263	911	567	1,741
Total	\$ 37,438	\$ 49,998	\$ 12,911	\$ 100,347
Loan Type				
Corporate	\$ 17,035	\$ 32,171	\$ 31	\$ 49,237
Wealth management	17,071	4,149	4,332	25,552
Real estate:				-
Commercial	257	10,897	21	11,175
Residential	250	2,341	560	3,151
Consumer:				
Installment	-	-	4,826	4,826
Credit cards	-	-	2,081	2,081
Other	2,825	440	1,060	4,325
Total	\$ 37,438	\$ 49,998	\$ 12,911	\$ 100,347
Secured	65%	91%	45%	75%
Unsecured	35%	9%	55%	25%
Total	100%	100%	100%	100%

As of December 2019				
Accounting Method				
Amortized cost	\$ 25,940	\$ 34,352	\$ 6,850	\$ 67,142
Fair value	2,008	2,381	4,343	8,732
Held for sale	328	2,906	552	3,786
Total	\$ 28,276	\$ 39,639	\$ 11,745	\$ 79,660
Loan Type				
Corporate	\$ 8,710	\$ 20,672	\$ 19	\$ 29,401
Wealth management	16,961	3,461	4,361	24,783
Real estate:				
Commercial	343	10,955	71	11,369
Residential	235	3,738	70	4,043
Consumer:				
Installment	-	-	4,747	4,747
Credit cards	-	-	1,858	1,858
Other	2,027	813	619	3,459
Total	\$ 28,276	\$ 39,639	\$ 11,745	\$ 79,660
Secured	82%	94%	43%	83%
Unsecured	18%	6%	57%	17%
Total	100%	100%	100%	100%

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- Substantially all of the other/unrated wealth management loans consists of loans backed by residential real estate. The Bank's risk assessment process for these loans includes reviewing certain key metrics, such as loan-to-value ratio, delinquency status, collateral values, expected cash flows, the Fair Isaac Corporation (FICO) credit score and other risk factors.
- Installment and credit card loans represent loans originated by the Bank. An important credit-quality indicator for such loans is the FICO credit score, which measures a borrower's creditworthiness by considering factors such as payment and credit history. FICO credit scores are refreshed by the Bank to assess the updated creditworthiness of the borrower.

The table below presents gross installment and credit card loans and the concentration by refreshed FICO credit score.

\$ in millions	As of	
	March 2020	December 2019
Installment, gross	\$ 4,826	\$ 4,747
Credit cards, gross	2,081	1,858
Total	\$ 6,907	\$ 6,605
Refreshed FICO credit score		
Greater than or equal to 660	82%	85%
Less than 660	18%	15%
Total	100%	100%

In March 2020, in response to the global outbreak of the coronavirus (COVID-19) pandemic, GS Group announced a customer assistance program providing borrowers of installment and credit card loans the flexibility to defer a payment for up to two months at no cost. The impact of this program was not material to the Bank's results for the three months ended March 2020.

The Bank also assigns a regulatory risk rating to its loans based on the definitions provided by the U.S. federal bank regulatory agencies. Total loans included 96% of loans as of March 2020 and 98% of loans as of December 2019 that were rated pass/non-criticized.

Vintage. The table below presents gross loans accounted for at amortized cost (excluding originated installment and credit card loans) by an internally determined public rating agency equivalent or other credit metrics and by origination year for term loans.

\$ in millions	As of March 2020			Total
	Investment- Grade	Non-Investment- Grade	Other/ Unrated	
2020	\$ 769	\$ 1,768	\$ -	\$ 2,537
2019	1,152	3,925	-	5,077
2018	2,364	1,777	-	4,141
2017	883	1,566	-	2,449
2016	165	616	-	781
2015 or earlier	435	1,867	-	2,302
Revolving	10,721	18,864	1	29,586
Corporate	\$ 16,489	\$ 30,383	\$ 1	\$ 46,873
2020	\$ 172	\$ 45	\$ -	\$ 217
2019	515	387	-	902
2018	393	78	-	471
2017	378	75	-	453
2016	30	65	-	95
2015 or earlier	284	208	-	492
Revolving	13,634	1,454	-	15,088
Wealth management	\$ 15,406	\$ 2,312	\$ -	\$ 17,718
2020	\$ -	\$ 586	\$ -	\$ 586
2019	45	1,306	-	1,351
2018	195	1,693	-	1,888
2017	18	1,343	-	1,361
2016	-	80	-	80
2015 or earlier	-	276	-	276
Revolving	-	5,270	-	5,270
Commercial real estate	\$ 258	\$ 10,554	\$ -	\$ 10,812
2020	\$ -	\$ 92	\$ 22	\$ 114
2019	-	399	220	619
2018	-	57	291	348
2017	171	50	-	221
2016	-	522	-	522
Revolving	79	1,220	-	1,299
Residential real estate	\$ 250	\$ 2,340	\$ 533	\$ 3,123
2020	\$ -	\$ -	\$ 480	\$ 480
2019	-	-	57	57
2018	-	67	13	80
2017	-	7	-	7
Revolving	2,825	365	-	3,190
Other	\$ 2,825	\$ 439	\$ 550	\$ 3,814
Total	\$ 35,228	\$ 46,028	\$ 1,084	\$ 82,340

In the table above, revolving loans which converted to term loans were not material as of March 2020.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents gross originated installment loans by origination year and credit card revolving loans.

<i>\$ in millions</i>	As of
	March 2020
2020	\$ 723
2019	2,043
2018	1,686
2017	355
2016	19
Revolving	2,081
Total	\$ 6,907

Credit Concentrations. The table below presents the concentration of gross loans by region.

<i>\$ in millions</i>	Carrying				Total
	Value	Americas	EMEA	Asia	
As of March 2020					
Corporate	\$ 49,237	79%	17%	4%	100%
Wealth management	25,552	99%	1%	–	100%
Commercial real estate	11,175	96%	4%	–	100%
Residential real estate	3,151	100%	–	–	100%
Consumer:					
Installment	4,826	100%	–	–	100%
Credit cards	2,081	100%	–	–	100%
Other	4,325	100%	–	–	100%
Total	\$ 100,347	89%	9%	2%	100%

As of December 2019					
Corporate	\$ 29,401	71%	23%	6%	100%
Wealth management	24,783	99%	1%	–	100%
Commercial real estate	11,369	94%	6%	–	100%
Residential real estate	4,043	100%	–	–	100%
Consumer:					
Installment	4,747	100%	–	–	100%
Credit cards	1,858	100%	–	–	100%
Other	3,459	100%	–	–	100%
Total	\$ 79,660	88%	10%	2%	100%

In the table above EMEA represents Europe, Middle East and Africa.

The table below presents the concentration of gross corporate loans by industry.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Corporate, gross	\$ 49,237	\$ 29,401
Industry		
Consumer, Retail & Healthcare	17%	16%
Diversified Industrials	20%	14%
Financial Institutions	12%	14%
Funds	8%	12%
Natural Resources & Utilities	12%	11%
Real Estate	8%	6%
Technology, Media & Telecommunications	13%	11%
Structured Finance	6%	9%
Other (including Special Purpose Vehicles)	4%	7%
Total	100%	100%

The table below presents the Bank's credit exposure from originated installment and credit card loans and the concentration by the five most concentrated U.S. states.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Installment	\$ 4,826	\$ 4,747
California	12%	12%
Texas	9%	9%
New York	7%	7%
Florida	7%	7%
Illinois	4%	4%
Other	61%	61%
Total	100%	100%
Credit Card	\$ 2,081	\$ 1,858
California	20%	21%
Texas	9%	9%
New York	8%	8%
Florida	8%	8%
Illinois	4%	4%
Other	51%	50%
Total	100%	100%

Notes to Consolidated Financial Statements (Unaudited)

Nonaccrual and Past Due Loans. Loans accounted for at amortized cost (other than credit card loans) are placed on nonaccrual status when it is probable that the Bank will not collect all principal and interest due under the contractual terms regardless of the delinquency status or if a loan is past due for 90 days or more, unless the loan is both well collateralized and in the process of collection. At that time, all accrued but uncollected interest is reversed against interest income and interest subsequently collected is recognized on a cash basis to the extent the loan balance is deemed collectible. Otherwise, all cash received is used to reduce the outstanding loan balance. A loan is considered past due when a principal or interest payment has not been made according to its contractual terms. Credit card loans are not placed on nonaccrual status and accrue interest until the loan is paid in full or is charged-off.

In certain circumstances, the Bank may also modify the original terms of a loan agreement by granting a concession to a borrower experiencing financial difficulty. Such modifications are considered troubled debt restructurings and typically include interest rate reductions, payment extensions and modification of loan covenants.

The table below presents information about past due loans.

<i>\$ in millions</i>	90 days		Total
	30-89 days	or more	
As of March 2020			
Corporate	\$ 64	\$ 1	\$ 65
Wealth management	20	16	36
Commercial real estate	44	52	96
Residential real estate	8	22	30
Consumer:			
Installment	65	23	88
Credit cards	35	39	74
Other	1	—	1
Total	\$ 237	\$ 153	\$ 390
Past due loans divided by gross loans at amortized cost			0.4%

As of December 2019			
Corporate	\$ —	\$ 1	\$ 1
Wealth management	13	15	28
Commercial real estate	34	59	93
Residential real estate	17	16	33
Consumer:			
Installment	71	29	100
Credit cards	35	4	39
Other	—	—	—
Total	\$ 170	\$ 124	\$ 294
Past due loans divided by gross loans at amortized cost			0.4%

The table below presents information about nonaccrual loans.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Corporate	\$ 617	\$ 257
Wealth management	52	52
Commercial real estate	79	68
Residential real estate	59	48
Installment	35	38
Total	\$ 842	\$ 463
Nonaccrual loans divided by gross loans at amortized cost		0.9%
		0.7%

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- Nonaccrual loans included \$228 million as of March 2020 and \$130 million as of December 2019 of loans that were 30 days or more past due.
- Loans that were 90 days or more past due and still accruing were not material as of both March 2020 and December 2019.
- Corporate loans that were modified in a troubled debt restructuring were not material as of both March 2020 and December 2019. The Bank's lending commitments related to these loans were not material as of March 2020 and the Bank did not have any lending commitments related to these loans as of December 2019. Installment loans that were modified in a troubled debt restructuring were not material as of both March 2020 and December 2019.

Allowance for Credit Losses

The Bank's allowance for credit losses consists of the allowance for losses on loans and lending commitments accounted for at amortized cost. Loans and lending commitments accounted for at fair value or accounted for at the lower of cost or fair value are not subject to an allowance for credit losses.

The Bank adopted ASU No. 2016-13 in January 2020, which replaced the incurred credit loss model for recognizing credit losses with the CECL model. As a result, the Bank's allowance for credit losses effective January 2020 reflects management's estimate of credit losses over the remaining expected life of such loans and also considers forecasts of future economic conditions. Prior to January 2020, the allowance for credit losses reflected probable incurred credit losses. See Note 3 for further information about the adoption of CECL.

To determine the allowance for credit losses, the Bank classifies its loans and lending commitments accounted for at amortized cost into wholesale and consumer portfolios. These portfolios represent the level at which the Bank has developed and documented its methodology to determine the allowance for credit losses. The allowance for credit losses is measured on a collective basis for loans that exhibit similar risk characteristics using a modeled approach and asset-specific basis for loans that do not share similar risk characteristics.

Under CECL, the allowance for loan losses takes into account the weighted average of a range of forecasts of future economic conditions over the expected life of the loan. These forecasts include baseline, favorable and adverse economic scenarios. The allowance for loan losses also includes qualitative components which allow management to reflect the uncertain nature of economic forecasting and account for model imprecision.

Management's estimate of loan losses entails judgment about loan collectability at the reporting dates, and there are uncertainties inherent in those judgments. While management uses the best information available to determine this estimate, future adjustments to the allowance may be necessary based on, among other things, changes in the economic environment or variances between actual results and the original assumptions used.

The table below presents gross loans and lending commitments accounted for at amortized cost by portfolio.

<i>\$ in millions</i>	As of March 2020		As of December 2019	
	Loans	Lending Commitments	Loans	Lending Commitments
Wholesale				
Corporate	\$ 46,873	\$ 92,971	\$ 27,387	\$ 106,815
Wealth management	17,718	2,292	16,959	2,117
Commercial real estate	10,812	1,502	9,402	1,588
Residential real estate	3,123	1,277	4,009	707
Other	3,814	2,908	2,780	2,891
Consumer				
Installment	4,826	10	4,747	12
Credit cards	2,081	16,447	1,858	13,669
Total	\$ 89,247	\$ 117,407	\$ 67,142	\$ 127,799

In the table above, wholesale loans included \$602 million as of March 2020 and \$425 million as of December 2019 of nonaccrual loans for which the allowance for credit losses was measured on an asset-specific basis. The allowance for credit losses on these loans was \$79 million as of March 2020 and \$48 million as of December 2019. These loans included \$270 million as of March 2020 and \$243 million as of December 2019 of loans which did not require a reserve as the loan was deemed to be recoverable.

See Note 18 for further information about lending commitments.

**Notes to Consolidated Financial Statements
(Unaudited)**

The following is a description of the methodology used to calculate the allowance for credit losses:

Wholesale. The allowance for credit losses for wholesale loans and lending commitments that exhibit similar risk characteristics is measured on a collective basis and is calculated using a modeled approach. These models determine the probability of default and loss given default based on various risk factors, including internal credit ratings, industry default and loss data, contractual maturity, current macroeconomic indicators, the borrower's capacity to meet its financial obligations, the borrower's country of risk and industry, loan seniority and collateral type. For lending commitments, the methodology also considers probability of drawdowns or funding. In addition, for loans backed by real estate, risk factors include the loan-to-value ratio, debt service ratio and home price index. Under CECL, the allowance for loan losses for wholesale loans also takes into account the weighted average of a range of forecasts of future macroeconomic indicators over the expected life of the loan for a period of three years before reverting to historical average probability of default using a non-linear modeled approach. Key macroeconomic inputs to the forecast model include regional GDP, unemployment rates, credit spreads, commercial and industrial delinquency rates and commodities prices. In addition, the allowance for loan losses includes a qualitative component.

The allowance for loan losses for wholesale loans that do not share similar risk characteristics, such as nonaccrual loans or loans in a troubled debt restructuring, is measured on an asset-specific basis and is calculated using the present value of expected future cash flows discounted at the loan's original effective rate, the observable market price of the loan or the fair value of the collateral.

Wholesale loans are charged-off against the allowance for loan losses when deemed to be uncollectible.

Consumer. The allowance for credit losses for consumer loans that exhibit similar risk characteristics is measured on a collective basis and is calculated using a modeled approach. These models classify consumer loans into pools based on borrower-related and exposure-related characteristics that differentiate a pool's risk characteristics from other pools. The factors considered in determining a pool are generally consistent with the risk characteristics used for internal credit risk measurement and management and include key metrics, such as FICO credit scores, delinquency status, loan vintage and macroeconomic indicators. Under CECL, the allowance for loan losses for consumer loans also takes into account the weighted average of a range of forecasts of future macroeconomic conditions, such as GDP and unemployment rates, to predict FICO scores and delinquency status migration over the expected life of a loan for a period of three years. For loans with maturities extending beyond three years, the model reverts to historical average loss rates using a non-linear modeled approach. In addition, the allowance for loan losses includes a qualitative component.

The allowance for credit losses for consumer loans in a troubled debt restructuring is calculated using the present value of expected future cash flows discounted at the loan's original effective rate, the observable market price of the loan or the fair value of the collateral.

Installment loans are charged-off when they are 120 days past due. Credit card loans are charged-off when they are 180 days past due.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents information about the allowance for credit losses.

<i>\$ in millions</i>	Wholesale	Consumer	Total
Three Months Ended March 2020			
Allowance for loan losses			
Beginning balance, reported	\$ 384	\$ 393	\$ 777
Impact of CECL adoption	147	444	591
Beginning balance, adjusted	\$ 531	\$ 837	\$ 1,368
Net charge-offs	(16)	(81)	(97)
Provision	458	169	627
Other	(7)	–	(7)
Ending balance	\$ 966	\$ 925	\$ 1,891
Allowance for losses on lending commitments			
Beginning balance, reported	\$ 266	\$ –	\$ 266
Impact of CECL adoption	(43)	–	(43)
Beginning balance, adjusted	\$ 223	\$ –	\$ 223
Provision	34	–	34
Ending balance	\$ 257	\$ –	\$ 257
Year Ended December 2019			
Allowance for loan losses			
Beginning balance	\$ 325	\$ 292	\$ 617
Net charge-offs	(19)	(317)	(336)
Provision	173	418	591
Other	(95)	–	(95)
Ending balance	\$ 384	\$ 393	\$ 777
Allowance for losses on lending commitments			
Beginning balance	202	–	202
Provision	64	–	64
Ending balance	\$ 266	\$ –	\$ 266

In the table above:

- The impact of CECL adoption for wholesale and consumer loans is driven by the fact that the allowance under CECL covers expected credit losses over the full expected life of the loan portfolios and also considers forecasts of expected future economic conditions.
- Net charge-offs for wholesale loans were primarily related to corporate loans for both the three months ended March 2020 and the year ended December 2019. Net charge-offs for consumer loans were substantially all related to installment loans for both the three months ended March 2020 and the year ended December 2019.
- The provision for credit losses for the three months ended March 2020 on wholesale loans was primarily related to corporate loans and was driven by growth in the Bank's wholesale loan portfolio, asset-specific provisions relating to borrowers in the oil and gas sector and the impact of the COVID-19 pandemic on the broader economic outlook. The provision for credit losses for wholesale loans was primarily related to corporate loans for the year ended December 2019.
- The provision for credit losses for the three months ended March 2020 on consumer loans was primarily related to seasoning of credit card loans. The provision for credit losses related to consumer loans was primarily related to installment loans for the year ended December 2019.
- Other represents the reduction to the allowance related to loans and lending commitments transferred to held for sale.
- The allowance for loan losses for wholesale loans was 1.2% as of March 2020 and 0.6% as of December 2019 of total gross wholesale loans accounted for at amortized cost. The allowance for loan losses for consumer loans was 13.4% as of March 2020 and 6.0% as of December 2019 of total gross consumer loans accounted for at amortized cost.
- The net charge-off ratio for wholesale loans accounted for at amortized cost was 0.1% on an annualized basis for the three months ended March 2020 and 0.03% for the year ended December 2019. The net charge-off ratio for consumer loans accounted for at amortized cost was 4.8% on an annualized basis for the three months ended March 2020 and 6.2% for the year ended December 2019.

Fair Value of Loans by Level

The table below presents loans held for investment accounted for at fair value under the fair value option by level within the fair value hierarchy.

<i>\$ in millions</i>	Level 1	Level 2	Level 3	Total
As of March 2020				
Loan Type				
Corporate	\$ –	\$ 787	\$ 549	\$ 1,336
Wealth management	–	7,773	61	7,834
Commercial real estate	–	65	124	189
Total	\$ –	\$ 8,625	\$ 734	\$ 9,359
As of December 2019				
Loan Type				
Corporate	\$ –	\$ 670	\$ 25	\$ 695
Wealth management	–	7,764	60	7,824
Commercial real estate	–	145	68	213
Total	\$ –	\$ 8,579	\$ 153	\$ 8,732

The gains as a result of the changes in fair value of loans held for investment for which the fair value option was elected were \$75 million for the three months ended March 2020 and \$59 million for the three months ended March 2019. These gains were included in gains and losses from financial assets and liabilities.

See Note 4 for an overview of the Bank's fair value measurement policies and the valuation techniques and significant inputs used to determine the fair value of loans.

Notes to Consolidated Financial Statements (Unaudited)

Significant Unobservable Inputs

The table below presents the amount of level 3 loans, and ranges and weighted averages of significant unobservable inputs used to value such loans.

<i>\$ in millions</i>	Level 3 Assets and Range of Significant Unobservable Inputs (Weighted Average) as of	
	March	December
	2020	2019
Corporate		
Level 3 assets	\$549	\$25
Yield	0.8% to 8.0% (1.8%)	8.0% to 12.5% (9.7%)
Duration (years)	3.0 to 6.1 (3.2)	N.M.
Commercial real estate		
Level 3 assets	\$124	\$68
Yield	8.7% to 18.9% (10.3%)	8.7% to 12.0% (9.5%)
Duration (years)	0.3 to 2.6 (1.6)	0.2 to 0.4 (0.4)

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of loan.
- Weighted averages are calculated by weighting each input by the relative fair value of the loan.
- The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one loan. For example, the highest yield for commercial real estate loans is appropriate for valuing a specific commercial real estate loan but may not be appropriate for valuing any other commercial real estate loan. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 loans.
- Loans are valued using discounted cash flows.
- Significant unobservable inputs for wealth management loans have no range and are not meaningful and therefore have been excluded from the table.
- As of December 2019, duration for corporate loans is not meaningful and therefore has been excluded from the table.

Level 3 Rollforward

The table below presents a summary of the changes in fair value for level 3 loans.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Beginning balance	\$ 153	\$ 148
Net realized gains/(losses)	6	5
Net unrealized gains/(losses)	4	1
Purchases	583	1
Settlements	(12)	(9)
Ending balance	\$ 734	\$ 146

In the table above:

- Changes in fair value are presented for loans that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to instruments that were still held at period-end.
- Purchases includes originations and secondary purchases.

The table below presents information, by loan type, for loans included in the summary table above.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Corporate		
Beginning balance	\$ 25	\$ 20
Net realized gains/(losses)	-	1
Net unrealized gains/(losses)	(1)	2
Purchases	525	-
Settlements	-	(4)
Ending balance	\$ 549	\$ 19
Wealth management		
Beginning balance	\$ 60	\$ 58
Net unrealized gains/(losses)	1	-
Ending balance	\$ 61	\$ 58
Commercial real estate		
Beginning balance	\$ 68	\$ 70
Net realized gains/(losses)	6	4
Net unrealized gains/(losses)	4	(1)
Purchases	58	1
Settlements	(12)	(5)
Ending balance	\$ 124	\$ 69

Notes to Consolidated Financial Statements (Unaudited)

Level 3 Rollforward Commentary

Three Months Ended March 2020. The net realized and unrealized gains on level 3 loans of \$10 million (reflecting \$6 million of net realized gains and \$4 million of net unrealized gains) for the three months ended March 2020 were reported in gains and losses from financial assets and liabilities.

The drivers of the net unrealized gains on level 3 loans for the three months ended March 2020 were not material.

There were no transfers into or out of level 3 loans during the three months ended March 2020.

Three Months Ended March 2019. The net realized and unrealized gains on level 3 loans of \$6 million (reflecting \$5 million of net realized gains and \$1 million of net unrealized gains) for the three months ended March 2019 were reported in gains and losses from financial assets and liabilities.

The drivers of the net unrealized gains on level 3 loans for the three months ended March 2019 were not material.

There were no transfers into or out of level 3 loans during the three months ended March 2019.

Estimated Fair Value

The table below presents the estimated fair value of loans that are not accounted for at fair value and in what level of the fair value hierarchy they would have been classified if they had been included in the Bank's fair value hierarchy.

\$ in millions	Carrying Value	Estimated Fair Value		
		Level 2	Level 3	Total
As of March 2020				
Amortized cost	\$ 87,356	\$ 46,398	\$ 38,549	\$ 84,947
Held for sale	\$ 1,741	\$ 1,076	\$ 688	\$ 1,764
As of December 2019				
Amortized cost	\$ 66,365	\$ 38,230	\$ 27,920	\$ 66,150
Held for sale	\$ 3,786	\$ 2,957	\$ 840	\$ 3,797

Note 10.

Fair Value Option

Other Financial Assets and Liabilities at Fair Value

In addition to trading assets and liabilities, and certain investments and loans, the Bank accounts for certain of its other financial assets and liabilities at fair value, substantially all under the fair value option. The primary reasons for electing the fair value option are to:

- Reflect economic events in earnings on a timely basis;
- Mitigate volatility in earnings from using different measurement attributes (e.g., transfers of financial assets accounted for as financings are recorded at fair value, whereas the related secured financing would be recorded on an accrual basis absent electing the fair value option); and
- Address simplification and cost-benefit considerations (e.g., accounting for hybrid financial instruments at fair value in their entirety versus bifurcation of embedded derivatives and hedge accounting for debt hosts).

Hybrid financial instruments are instruments that contain bifurcatable embedded derivatives and do not require settlement by physical delivery of nonfinancial assets. The Bank has not elected to bifurcate hybrid financial instruments and accounts for the entire hybrid financial instrument at fair value under the fair value option.

Other financial assets and liabilities accounted for at fair value under the fair value option include:

- Repurchase agreements and resale agreements;
- Certain other secured financings, including advances from the FHLB;
- Certain unsecured borrowings;
- Certain other assets; and
- Certain time deposits (deposits with no stated maturity are not eligible for a fair value option election), including structured certificates of deposit, which are hybrid financial instruments.

Notes to Consolidated Financial Statements (Unaudited)

Fair Value of Other Financial Assets and Liabilities by Level

The table below presents, by level within the fair value hierarchy, other financial assets and liabilities at fair value, substantially all of which are accounted for at fair value under the fair value option.

<i>\$ in millions</i>	Level 1	Level 2	Level 3	Total
As of March 2020				
Assets				
Resale agreements	\$ -	\$ 28,356	\$ -	\$ 28,356
Other assets	-	25	1	26
Total	\$ -	\$ 28,381	\$ 1	\$ 28,382
Liabilities				
Deposits	\$ -	\$ (2,214)	\$ (4,094)	\$ (6,308)
Repurchase agreements	-	(2,825)	-	(2,825)
Other secured financings	-	(4,029)	-	(4,029)
Unsecured borrowings	-	(32)	-	(32)
Total	\$ -	\$ (9,100)	\$ (4,094)	\$ (13,194)

As of December 2019				
Assets				
Resale agreements	\$ -	\$ 4,430	\$ -	\$ 4,430
Other assets	-	25	1	26
Total	\$ -	\$ 4,455	\$ 1	\$ 4,456
Liabilities				
Deposits	\$ -	\$ (2,119)	\$ (4,185)	\$ (6,304)
Repurchase agreements	-	(9,891)	-	(9,891)
Other secured financings	-	(527)	-	(527)
Unsecured borrowings	-	(32)	-	(32)
Total	\$ -	\$ (12,569)	\$ (4,185)	\$ (16,754)

In the table above, other financial assets are shown as positive amounts and other financial liabilities are shown as negative amounts.

See Note 4 for an overview of the Bank's fair value measurement policies and the valuation techniques and significant inputs used to determine the fair value of other financial assets and liabilities.

Significant Unobservable Inputs

See below for information about the significant unobservable inputs used to value level 3 other financial assets and liabilities at fair value as of both March 2020 and December 2019.

Other Assets. As of both March 2020 and December 2019 the Bank's level 3 other assets were not material.

Deposits. The Bank's deposits that are classified in level 3 are hybrid financial instruments. As the significant unobservable inputs used to value such instruments primarily relate to the embedded derivative component of these deposits, these unobservable inputs are incorporated in the Bank's derivative disclosures in Note 7.

Level 3 Rollforward

The table below presents the changes in fair value for level 3 other financial liabilities accounted for at fair value.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Deposits		
Beginning balance	\$ (4,185)	\$ (3,168)
Net realized gains/(losses)	(16)	(1)
Net unrealized gains/(losses)	120	(145)
Issuances	(265)	(190)
Settlements	283	10
Transfers into level 3	(100)	(16)
Transfers out of level 3	69	62
Ending balance	\$ (4,094)	\$ (3,448)

In the table above:

- Changes in fair value are presented for all other financial liabilities that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to other financial assets and liabilities that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a financial liability was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- For level 3 other financial liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Level 3 other financial liabilities are frequently economically hedged with trading assets and liabilities. Accordingly, gains or losses that are classified in level 3 can be partially offset by gains or losses attributable to level 1, 2 or 3 trading assets and liabilities. As a result, gains or losses included in the level 3 rollforward above do not necessarily represent the overall impact on the Bank's results of operations, liquidity or capital resources.

Level 3 Rollforward Commentary

Three Months Ended March 2020. The net realized and unrealized gains on level 3 other financial liabilities of \$104 million (reflecting \$16 million of net realized losses and \$120 million of net unrealized gains) for the three months ended March 2020 included gains of \$15 million reported in gains and losses from financial assets and liabilities in the consolidated statements of earnings, and gains of \$89 million reported in debt valuation adjustment in the consolidated statements of comprehensive income.

Notes to Consolidated Financial Statements (Unaudited)

The net unrealized gains on level 3 other financial liabilities for the three months ended March 2020 primarily reflected gains on certain hybrid financial instruments included in deposits, principally due to the impact of a decrease in the market value of the underlying assets.

Transfers into level 3 other financial liabilities during the three months ended March 2020 primarily reflected transfers of certain hybrid financial instruments included in deposits from level 2, principally due to reduced transparency of certain correlation and volatility inputs used to value these instruments.

Transfers out of level 3 other financial liabilities during the three months ended March 2020 primarily reflected transfers of certain hybrid financial instruments included in deposits to level 2, principally due to increased transparency of certain correlation and volatility inputs used to value these instruments.

Three Months Ended March 2019. The net realized and unrealized losses on level 3 other financial liabilities of \$146 million (reflecting \$1 million of net realized losses and \$145 million of net unrealized losses) for the three months ended March 2019 included losses of \$123 million reported in gains and losses from financial assets and liabilities in the consolidated statements of earnings, and losses of \$23 million reported in debt valuation adjustment in the consolidated statements of comprehensive income.

The net unrealized losses on level 3 other financial liabilities for the three months ended March 2019 primarily reflected losses on certain hybrid financial instruments included in deposits, principally due to the impact of an increase in the market value of the underlying assets.

Transfers into level 3 other financial liabilities during the three months ended March 2019 were not material.

Transfers out of level 3 other financial liabilities during the three months ended March 2019 primarily reflected transfers of certain hybrid financial instruments included in deposits to level 2, principally due to increased transparency of certain correlation and volatility inputs used to value these instruments.

Gains and Losses on Other Financial Assets and Liabilities Accounted for at Fair Value Under the Fair Value Option

The table below presents the gains and losses recognized in earnings as a result of the election to apply the fair value option to certain financial assets and liabilities.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Deposits	\$ 49	\$ (193)
Other	25	5
Total	\$ 74	\$ (188)

In the table above:

- Gains/(losses) are included in gains and losses from financial assets and liabilities.
- Gains/(losses) exclude contractual interest, which is included in interest income and interest expense, for all instruments other than hybrid financial instruments. See Note 21 for further information about interest income and interest expense.
- Gains/(losses) included in deposits were related to the embedded derivative component of hybrid financial instruments for both the three months ended March 2020 and March 2019. These gains and losses would have been recognized under other U.S. GAAP even if the Bank had not elected to account for the entire hybrid financial instrument at fair value.
- Other primarily consists of gains/(losses) on certain unsecured borrowings, FHLB advances, and resale agreements.
- Other financial assets and liabilities at fair value are frequently economically hedged with trading assets and liabilities. Accordingly, gains or losses on such other financial assets and liabilities can be partially offset by gains or losses on trading assets and liabilities. As a result, gains or losses on other financial assets and liabilities do not necessarily represent the overall impact on the Bank's results of operations, liquidity or capital resources.

See Note 8 for information about gains/(losses) on equity securities and Note 9 for information about gains/(losses) on loans which are accounted for at fair value under the fair value option. Gains/(losses) on trading assets and liabilities accounted for at fair value under the fair value option are included in gains and losses from financial assets and liabilities. See Note 5 for further information about gains/(losses) from financial assets and liabilities.

Notes to Consolidated Financial Statements (Unaudited)

Long-Term Deposits

The difference between the aggregate contractual principal amount and the related fair value of long-term deposits for which the fair value option was elected was \$194 million as of March 2020 and \$446 million as of December 2019.

Debt Valuation Adjustment

The Bank calculates the fair value of financial liabilities for which the fair value option is elected by discounting future cash flows at a rate which incorporates the Bank's credit spreads.

The table below presents information about the net debt valuation adjustment (DVA) gains/(losses) on financial liabilities for which the fair value option was elected.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
DVA (pre-tax)	\$ 111	\$ (30)
DVA (net of tax)	\$ 84	\$ (22)

In the table above:

- DVA (net of tax) is included in debt valuation adjustment in the consolidated statements of comprehensive income.
- The gains/(losses) reclassified to earnings from accumulated other comprehensive income/(loss) upon extinguishment of such financial liabilities were not material for both the three months ended March 2020 and March 2019.

Loans and Lending Commitments

The table below presents the difference between the aggregate fair value and the aggregate contractual principal amount for loans (included in trading assets and loans on the consolidated balance sheets) for which the fair value option was elected.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Performing loans		
Aggregate contractual principal in excess of fair value	\$ 65	\$ 203
Loans on nonaccrual status and/or more than 90 days past due		
Aggregate contractual principal in excess of fair value	\$ 43	\$ 34
Aggregate fair value	\$ 47	\$ 58

The fair value of unfunded lending commitments for which the fair value option was elected was a liability of \$156 million as of March 2020 and \$2 million as of December 2019. See Note 18 for further information about lending commitments.

Impact of Credit Spreads on Loans and Lending Commitments

The estimated net loss attributable to changes in instrument-specific credit spreads on loans and lending commitments for which the fair value option was elected was \$40 million for the three months ended March 2020 and \$2 million for the three months ended March 2019. The Bank generally calculates the fair value of loans and lending commitments for which the fair value option is elected by discounting future cash flows at a rate which incorporates the instrument-specific credit spreads. For floating-rate loans and lending commitments, substantially all changes in fair value are attributable to changes in instrument-specific credit spreads, whereas for fixed-rate loans and lending commitments, changes in fair value are also attributable to changes in interest rates.

Note 11.

Collateralized Agreements and Financings

Collateralized agreements are resale agreements. Collateralized financings are repurchase agreements and other secured financings. The Bank enters into these transactions in order to, among other things, facilitate client activities, invest excess cash, acquire securities to cover short positions and finance certain Bank activities.

Collateralized agreements and financings are presented on a net-by-counterparty basis when a legal right of setoff exists. Interest on collateralized agreements, which is included in interest income, and collateralized financings, which is included in interest expense, is recognized over the life of the transaction. See Note 21 for further information about interest income and interest expense.

The table below presents the carrying value of resale and repurchase agreements.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Resale agreements	\$ 28,356	\$ 4,430
Repurchase agreements	\$ 2,825	\$ 9,891

In the table above, all resale agreements and repurchase agreements are carried at fair value under the fair value option.

See Note 4 for further information about the valuation techniques and significant inputs used to determine fair value.

Notes to Consolidated Financial Statements (Unaudited)

Resale and Repurchase Agreements

A resale agreement is a transaction in which the Bank purchases financial instruments from a seller, typically in exchange for cash, and simultaneously enters into an agreement to resell the same or substantially the same financial instruments to the seller at a stated price plus accrued interest at a future date.

A repurchase agreement is a transaction in which the Bank sells financial instruments to a buyer, typically in exchange for cash, and simultaneously enters into an agreement to repurchase the same or substantially the same financial instruments from the buyer at a stated price plus accrued interest at a future date.

Even though repurchase and resale agreements involve the legal transfer of ownership of financial instruments, they are accounted for as financing arrangements because they require the financial instruments to be repurchased or resold before or at the maturity of the agreement. The financial instruments purchased or sold in resale and repurchase agreements typically include U.S. government and agency obligations.

The Bank receives financial instruments purchased under resale agreements and makes delivery of financial instruments sold under repurchase agreements. To mitigate credit exposure, the Bank monitors the market value of these financial instruments on a daily basis, and delivers or obtains additional collateral due to changes in the market value of the financial instruments, as appropriate. For resale agreements, the Bank typically requires collateral with a fair value approximately equal to the carrying value of the relevant assets in the consolidated balance sheets.

Offsetting Arrangements

The table below presents resale and repurchase agreements included in the consolidated balance sheets, as well as the amounts not offset in the consolidated balance sheets.

	Assets	Liabilities
	Resale	Repurchase
<i>\$ in millions</i>	agreements	agreements
As of March 2020		
Included in the consolidated balance sheets		
Gross carrying value	\$ 34,431	\$ 8,900
Counterparty netting	(6,075)	(6,075)
Total	28,356	2,825
Amounts not offset		
Counterparty netting	(14)	(14)
Collateral	(28,245)	(2,772)
Total	\$ 97	\$ 39
As of December 2019		
Included in the consolidated balance sheets		
Gross carrying value	\$ 8,593	\$ 14,054
Counterparty netting	(4,163)	(4,163)
Total	4,430	9,891
Amounts not offset		
Collateral	(4,264)	(9,870)
Total	\$ 166	\$ 21

In the table above:

- Substantially all of the gross carrying values of these arrangements are subject to enforceable netting agreements.
- Where the Bank has received or posted collateral under credit support agreements, but has not yet determined such agreements are enforceable, the related collateral has not been netted.
- Amounts not offset includes counterparty netting that does not meet the criteria for netting under U.S. GAAP and the fair value of collateral received or posted subject to enforceable credit support agreements.

Notes to Consolidated Financial Statements (Unaudited)

Gross Carrying Value of Repurchase Agreements

The table below presents the gross carrying value of repurchase agreements by class of collateral pledged.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
U.S. government and agency obligations	\$ 8,859	\$ 14,037
Securities backed by residential real estate	9	–
Corporate debt securities	10	11
Non-U.S. government and agency obligations	22	6
Total	\$ 8,900	\$ 14,054

As of both March 2020 and December 2019, substantially all of the Bank's repurchase agreements were either overnight or had no stated maturity.

Other Secured Financings

In addition to repurchase agreements, the Bank funds certain assets through the use of other secured financings and pledges financial instruments and other assets as collateral in these transactions. These other secured financings consist of:

- FHLB advances;
- Collateralized central bank financings; and
- Transfers of assets accounted for as financings rather than sales (e.g., collateralized by bank loans and mortgage whole loans).

The Bank has elected to apply the fair value option to certain other secured financings because the use of fair value eliminates non-economic volatility in earnings that would arise from using different measurement attributes. See Note 10 for further information about other secured financings that are accounted for at fair value.

Other secured financings that are not recorded at fair value are recorded based on the amount of cash received plus accrued interest, which generally approximates fair value. As these financings are not accounted for at fair value, they are not included in the Bank's fair value hierarchy in Notes 4 through 10. Had these financings been included in the Bank's fair value hierarchy, substantially all would have been classified in level 2 as of both March 2020 and December 2019.

FHLB Advances. As a member of the FHLB, the Bank can draw under a funding arrangement secured by eligible collateral. Outstanding borrowings from the FHLB were \$4.03 billion as of March 2020 and \$527 million as of December 2019. As of March 2020, interest rates on outstanding borrowings ranged from 0.76% to 1.85% with a weighted average rate of 0.78%. As of December 2019, interest rates on outstanding borrowings ranged from 1.85% to 2.18% with a weighted average rate of 2.16%. These borrowings are carried at fair value under the fair value option in the Bank's fair value hierarchy. See Note 10 for further information about borrowings accounted for at fair value. Outstanding FHLB advances included short-term borrowings of \$4.03 billion as of March 2020 and \$527 million as of December 2019.

Collateral Received and Pledged

The Bank receives cash and securities (e.g., U.S. government and agency obligations, other sovereign and corporate obligations) as collateral, primarily in connection with resale agreements, derivative transactions and customer margin loans. The Bank obtains cash and securities as collateral on an upfront or contingent basis for derivative instruments and collateralized agreements to reduce its credit exposure to individual counterparties.

In many cases, the Bank is permitted to deliver or repledge financial instruments received as collateral when entering into repurchase agreements or collateralized derivative transactions.

The Bank also pledges certain trading assets and loans in connection with repurchase agreements and other secured financings. These assets are pledged to counterparties who may or may not have the right to deliver or repledge them.

The table below presents financial instruments at fair value received as collateral that were available to be delivered or repledged and were delivered or repledged.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Collateral available to be delivered or repledged	\$ 36,372	\$ 10,116
Collateral that was delivered or repledged	\$ 22,135	\$ 5,252

The table below presents information about assets pledged.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Pledged to counterparties that had the right to deliver or repledge		
Trading assets	\$ 5,790	\$ 14,474
Investments	\$ 38	\$ 39
Pledged to counterparties that did not have the right to deliver or repledge		
Trading assets	\$ 3,150	\$ 3,557
Loans	\$ 33,302	\$ 5,762

Notes to Consolidated Financial Statements (Unaudited)

Note 12.

Other Assets

The table below presents other assets by type.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Receivables from affiliates	\$ 778	\$ 594
Income tax-related assets	447	318
FRB shares	414	414
Investments in qualified affordable housing projects	357	302
FHLB shares	210	52
Miscellaneous receivables and other	225	180
Total	\$ 2,431	\$ 1,860

In the table above, receivables from affiliates includes \$26 million as of both March 2020 and December 2019 at fair value. See Note 10 for further information about other assets that are accounted for at fair value.

Note 13.

Deposits

The table below presents the types and sources of deposits.

<i>\$ in millions</i>	Savings and		Total
	Demand	Time	
As of March 2020			
Private bank deposits	\$ 45,655	\$ 878	\$ 46,533
Consumer deposits	29,519	21,409	50,928
Brokered certificates of deposit	–	39,102	39,102
Deposit sweep programs	19,082	–	19,082
Transaction banking	11,283	2,260	13,543
Other deposits	2,501	8,785	11,286
Total	\$ 108,040	\$ 72,434	\$ 180,474

As of December 2019

Private bank deposits	\$ 44,501	\$ 676	\$ 45,177
Consumer deposits	27,417	15,017	42,434
Brokered certificates of deposit	–	39,665	39,665
Deposit sweep programs	17,760	–	17,760
Transaction banking	4,867	235	5,102
Other deposits	9,802	8,458	18,260
Total	\$ 104,347	\$ 64,051	\$ 168,398

In the table above:

- Substantially all deposits are interest-bearing and all are held in the U.S.
- Savings and demand accounts consist of money market deposit accounts, negotiable order of withdrawal accounts and demand deposit accounts that have no stated maturity or expiration date. Savings account holders may be required by the Bank to give written notice of intended withdrawals not less than seven days before such withdrawals are made and may be limited on the number of withdrawals made within a month. Demand account holders are not subject to restrictions with respect to the timing and number of transactions that deposit holders may execute.
- Time deposits primarily consist of brokered certificates of deposit which have stipulated maturity dates and rates of interest. Early withdrawals of brokered time deposits are generally prohibited.
- Time deposits included \$6.31 billion as of March 2020 and \$6.30 billion as of December 2019 of deposits accounted for at fair value under the fair value option. See below and Note 10 for further information about deposits accounted for at fair value.
- Time deposits had a weighted average maturity of approximately 1.6 years as of March 2020 and 1.7 years as of December 2019.
- Deposit sweep programs represent long-term contractual agreements with U.S. broker-dealers who sweep client cash to FDIC-insured deposits. Pursuant to the external deposit sweep program agreements, each third-party broker-dealer agrees, for a prescribed term, to place a certain minimum amount of deposits from their clients with the Bank. Each client's deposit may be withdrawn at any time. As of March 2020, the Bank had 12 such deposit sweep program agreements.
- Other deposits represent deposits from institutional clients. As of both March 2020 and December 2019, other deposits were primarily from Goldman Sachs Funding LLC (Funding IHC), a wholly-owned subsidiary of Group Inc., and Group Inc.
- Deposits insured by the FDIC were \$111.92 billion as of March 2020 and \$103.98 billion as of December 2019.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents time deposits by contractual maturity.

<i>\$ in millions</i>	As of	
	March 2020	
Remainder of 2020	\$ 29,715	
2021	18,604	
2022	8,906	
2023	6,520	
2024	4,413	
2025 - thereafter	4,276	
Total	\$ 72,434	

As of March 2020, deposits included \$18.89 billion of time deposits that met or exceeded the applicable insurance limits.

The Bank's savings and demand deposits are recorded based on the amount of cash received plus accrued interest, which approximates fair value. In addition, the Bank designates certain derivatives as fair value hedges to convert a portion of its time deposits not accounted for at fair value from fixed-rate obligations into floating-rate obligations. The carrying value of time deposits not accounted for at fair value approximated fair value as of both March 2020 and December 2019. As these savings and demand deposits and substantially all time deposits are not accounted for at fair value, they are not included in the Bank's fair value hierarchy in Notes 4 through 10. Had these deposits been included in the Bank's fair value hierarchy, they would have been primarily classified in level 3 as of March 2020 and classified in level 2 as of December 2019.

Note 14.

Unsecured Borrowings

The table below presents information about unsecured borrowings.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Unsecured short-term borrowings	\$ 1,056	\$ 1,053
Unsecured long-term borrowings	6,205	6,205
Total	\$ 7,261	\$ 7,258

Unsecured Short-Term Borrowings

Unsecured short-term borrowings includes the portion of unsecured long-term borrowings maturing within one year of the financial statement date. See below for further information about the Bank's senior unsecured borrowings.

The table below presents information about unsecured short-term borrowings.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Current portion of senior unsecured borrowings	\$ 1,003	\$ 1,004
Hybrid financial instruments	33	32
Borrowings from affiliates	8	12
Other unsecured short-term borrowings	12	5
Total	\$ 1,056	\$ 1,053

Hybrid Financial Instruments. The Bank accounts for hybrid financial instruments at fair value under the fair value option. See Note 10 for further information about hybrid financial instruments that are accounted for at fair value.

Borrowings from Affiliates. As of both March 2020 and December 2019, the Bank had a senior unsecured facility, committed on an intraday basis up to \$4.00 billion with Group Inc. This facility automatically renews each business day and can be terminated with six months' notice. As of both March 2020 and December 2019, there were no outstanding borrowings under this facility.

Accrued interest on long-term subordinated borrowings of \$8 million as of March 2020 and \$12 million as of December 2019 was included in unsecured short-term borrowings from affiliates.

Unsecured Long-Term Borrowings

The table below presents information about unsecured long-term borrowings.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Subordinated borrowings	\$ 4,250	\$ 4,250
Senior unsecured borrowings	1,955	1,955
Total	\$ 6,205	\$ 6,205

Subordinated Borrowings. As of both March 2020 and December 2019, the Bank had a revolving subordinated loan agreement with Funding IHC, which expires in 2039. As of both March 2020 and December 2019, outstanding subordinated borrowings under this agreement included \$2.00 billion maturing in 2024 and \$2.25 billion maturing in 2028. As of both March 2020 and December 2019, outstanding borrowings bear interest at the overnight bank funding rate plus 1.85% per annum. The carrying value of the subordinated borrowings generally approximates fair value. Any amounts payable under the agreement would be subordinate to the claims of certain other creditors of the Bank, including depositors and regulatory agencies.

Notes to Consolidated Financial Statements (Unaudited)

Senior Unsecured Borrowings. The Bank had issued and outstanding senior unsecured borrowings of \$2.95 billion as of both March 2020 and December 2019. The weighted average interest rate was 1.88% as of March 2020 and 2.46% as of December 2019, and primarily related to floating rate obligations which are generally based on either the Secured Overnight Financing Rate or LIBOR. As of March 2020, outstanding borrowings included \$1.00 billion maturing in 2020, \$1.00 billion maturing in 2021, and \$955 million maturing in 2023. The carrying value of the Bank's senior unsecured borrowings was \$2.96 billion as of both March 2020 and December 2019, which approximated its fair value.

Note 15.

Other Liabilities

The table below presents other liabilities by type.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Payables to affiliates	\$ 710	\$ 446
Income tax-related liabilities	520	363
Compensation and benefits	85	196
Accrued expenses and other	603	626
Total	\$ 1,918	\$ 1,631

Note 16.

Securitization Activities

The Bank securitizes residential and commercial mortgages and other financial assets by selling these assets to securitization vehicles (e.g., trusts, corporate entities and limited liability companies) or through a resecuritization. An affiliate acts as underwriter of the beneficial interests that are sold to investors.

The Bank accounts for a securitization as a sale when it has relinquished control over the transferred financial assets. Prior to securitization, the Bank generally accounts for assets pending transfer at fair value and therefore does not typically recognize significant gains or losses upon the transfer of assets.

The Bank generally receives cash in exchange for the transferred assets but may also have continuing involvement with the transferred financial assets, including ownership of beneficial interests in securitized financial assets, primarily in the form of loans receivable.

The primary risks from the Bank's continuing involvement with securitization vehicles are the performance of the underlying collateral and the position of the Bank's investment in the capital structure of the securitization vehicle. Substantially all of these retained interests are accounted for at amortized cost net of allowance for loan losses. Had these interests been included in the Bank's fair value hierarchy, they would have been primarily classified in level 3 as of March 2020 and December 2019.

The table below presents the amount of financial assets securitized and the cash flows received on retained interests in securitization entities in which the Bank had continuing involvement as of the end of the period.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Residential mortgages	\$ 476	\$ 1,722
Commercial mortgages	4,615	530
Other financial assets	540	172
Total financial assets securitized	\$ 5,631	\$ 2,424
Retained interests cash flows	\$ 23	\$ 23

In the table above, financial assets securitized included assets of \$119 million during the three months ended March 2020 and \$104 million during the three months ended March 2019, which were securitized in a non-cash exchange for loans.

The table below presents information about nonconsolidated securitization entities to which the Bank sold assets and had continuing involvement as of the end of the period.

<i>\$ in millions</i>	Outstanding	Retained
	Principal Amount	Interests
As of March 2020		
Residential mortgage-backed	\$ 11,827	\$ 536
Commercial mortgage-backed	28,640	668
Other asset-backed	2,740	146
Total	\$ 43,207	\$ 1,350
As of December 2019		
Residential mortgage-backed	\$ 11,730	\$ 532
Commercial mortgage-backed	25,470	587
Other asset-backed	2,411	126
Total	\$ 39,611	\$ 1,245

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- The outstanding principal amount is presented for the purpose of providing information about the size of the securitization entities and is not representative of the Bank's risk of loss.
- The Bank's risk of loss from retained interests is limited to the carrying value of these interests.
- Substantially all of the total outstanding principal amount and total retained interests relate to securitizations during 2017 and thereafter.
- The fair value of retained interests was \$1.35 billion as of March 2020 and \$1.25 billion as of December 2019.

In addition to the interests in the table above, the Bank had other continuing involvement in the form of derivative transactions and commitments with certain nonconsolidated VIEs. As of March 2020, the notional amount of these derivatives and commitments was \$85 million and the carrying value was not material. As of December 2019, the notional amount of these derivatives and commitments was \$96 million and the carrying value was not material. The notional amounts of these derivatives and commitments are included in maximum exposure to loss in the nonconsolidated VIE table in Note 17.

The table below presents information about the weighted average key economic assumptions used in measuring the fair value of mortgage-backed retained interests.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Fair value of retained interests	\$ 1,201	\$ 1,119
Weighted average life (years)	5.8	5.9
Constant prepayment rate	7.5%	7.7%
Impact of 10% adverse change	\$ (2)	\$ (1)
Impact of 20% adverse change	\$ (4)	\$ (2)
Discount rate	6.2%	6.0%
Impact of 10% adverse change	\$ (29)	\$ (26)
Impact of 20% adverse change	\$ (57)	\$ (51)

In the table above:

- Amounts do not reflect the benefit of other financial instruments that are held to mitigate risks inherent in these retained interests.
- Changes in fair value based on an adverse variation in assumptions generally cannot be extrapolated because the relationship of the change in assumptions to the change in fair value is not usually linear.
- The impact of a change in a particular assumption is calculated independently of changes in any other assumption. In practice, simultaneous changes in assumptions might magnify or counteract the sensitivities disclosed above.
- The constant prepayment rate is included only for positions for which it is a key assumption in the determination of fair value.
- Expected credit loss assumptions are reflected in the discount rate for the retained interests.

The Bank has other retained interests not reflected in the table above with a fair value of \$146 million and a weighted average life of 2.9 years as of March 2020, and a fair value of \$126 million and a weighted average life of 3.2 years as of December 2019. Due to the nature and fair value of certain of these retained interests, the weighted average assumptions for constant prepayment and discount rates and the related sensitivity to adverse changes are not meaningful as of both March 2020 and December 2019. The Bank's maximum exposure to adverse changes in the value of these interests is the carrying value of \$146 million as of March 2020 and \$126 million as of December 2019.

Notes to Consolidated Financial Statements (Unaudited)

Note 17.

Variable Interest Entities

A variable interest in a VIE is an investment (e.g., debt or equity) or other interest (e.g., derivatives or loans and lending commitments) that will absorb portions of the VIE's expected losses and/or receive portions of the VIE's expected residual returns.

The Bank's variable interests in VIEs include senior and subordinated debt; loans and lending commitments; limited and general partnership interests; preferred and common equity; derivatives that may include foreign currency, equity and/or credit risk; and guarantees. Certain interest rate, foreign currency and credit derivatives the Bank enters into with VIEs are not variable interests because they create, rather than absorb, risk.

VIEs generally finance the purchase of assets by issuing debt and equity securities that are either collateralized by or indexed to the assets held by the VIE. The debt and equity securities issued by a VIE may include tranches of varying levels of subordination. The Bank's involvement with VIEs includes securitization of financial assets, as described in Note 16, and investments in and loans to other types of VIEs, as described below. See Note 3 for the Bank's consolidation policies, including the definition of a VIE.

VIE Consolidation Analysis

The enterprise with a controlling financial interest in a VIE is known as the primary beneficiary and consolidates the VIE. The Bank determines whether it is the primary beneficiary of a VIE by performing an analysis that principally considers:

- Which variable interest holder has the power to direct the activities of the VIE that most significantly impact the VIE's economic performance;
- Which variable interest holder has the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE;
- The VIE's purpose and design, including the risks the VIE was designed to create and pass through to its variable interest holders;
- The VIE's capital structure;
- The terms between the VIE and its variable interest holders and other parties involved with the VIE; and
- Related-party relationships.

The Bank reassesses its evaluation of whether an entity is a VIE when certain reconsideration events occur. The Bank reassesses its determination of whether it is the primary beneficiary of a VIE on an ongoing basis based on current facts and circumstances.

VIE Activities

The Bank is principally involved with VIEs through the following business activities:

Mortgage-Backed VIEs. The Bank sells residential and commercial mortgage loans and securities to mortgage-backed VIEs and may retain beneficial interests in the assets sold to these VIEs. In addition, the Bank may enter into derivatives with certain of these VIEs, primarily interest rate swaps, which are typically not variable interests. The Bank generally enters into derivatives with other counterparties to mitigate its risk.

Corporate Debt and Other Asset-Backed VIEs. The Bank structures VIEs that issue notes to clients and makes loans to VIEs that warehouse corporate debt. Certain of these VIEs synthetically create the exposure for the beneficial interests they issue by entering into credit derivatives with the Bank, rather than purchasing the underlying assets. In addition, the Bank may enter into derivatives, such as total return swaps, with certain corporate debt and other asset-backed VIEs, under which the Bank pays the VIE a return due to the beneficial interest holders and receives the return on the collateral owned by the VIE. The collateral owned by these VIEs is primarily other asset-backed loans and securities. The Bank generally can be removed as the total return swap counterparty and enters into derivatives with other counterparties to mitigate its risk related to these swaps. The Bank may sell assets to the corporate debt and other asset-backed VIEs it structures.

Real Estate, Credit-Related and Other Investing VIEs. The Bank primarily purchases debt securities issued by and makes loans to VIEs that hold real estate and distressed loans. The Bank generally does not sell assets to, or enter into derivatives with, these VIEs.

Notes to Consolidated Financial Statements (Unaudited)

Nonconsolidated VIEs

The table below presents a summary of the nonconsolidated VIEs in which the Bank holds variable interests.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Total nonconsolidated VIEs		
Assets in VIEs	\$ 52,714	\$ 49,398
Carrying value of variable interests – assets	\$ 3,148	\$ 2,973
Carrying value of variable interests – liabilities	\$ 865	\$ 577
Maximum exposure to loss:		
Retained interests	\$ 1,350	\$ 1,245
Commitments and guarantees	1,111	1,076
Derivatives	5,231	5,271
Loans and investments	1,670	1,579
Total maximum exposure to loss	\$ 9,362	\$ 9,171

In the table above:

- The nature of the Bank's variable interests is described in the rows under maximum exposure to loss.
- The Bank's exposure to the obligations of VIEs is generally limited to its interests in these entities. In certain instances, the Bank provides guarantees, including derivative guarantees, to VIEs or holders of variable interests in VIEs.
- The maximum exposure to loss excludes the benefit of offsetting financial instruments that are held to mitigate the risks associated with these variable interests.
- The maximum exposure to loss from retained interests, and debt and equity is the carrying value of these interests.
- The maximum exposure to loss from commitments and guarantees, and derivatives is the notional amount, which does not represent anticipated losses and has not been reduced by unrealized losses. As a result, the maximum exposure to loss exceeds liabilities recorded for commitments and guarantees, and derivatives.

The table below presents information, by principal business activity, for nonconsolidated VIEs included in the summary table above.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Mortgage-backed		
Assets in VIEs	\$ 40,533	\$ 37,266
Carrying value of variable interests – assets	\$ 1,204	\$ 1,120
Maximum exposure to loss:		
Retained interests	\$ 1,204	\$ 1,119
Commitments and guarantees	43	50
Derivatives	65	66
Total maximum exposure to loss	\$ 1,312	\$ 1,235
Corporate debt and other asset-backed		
Assets in VIEs	\$ 9,824	\$ 9,576
Carrying value of variable interests – assets	\$ 1,372	\$ 1,343
Carrying value of variable interests – liabilities	\$ 865	\$ 573
Maximum exposure to loss:		
Retained interests	\$ 146	\$ 126
Commitments and guarantees	911	772
Derivatives	5,166	5,205
Loans and investments	1,098	1,074
Total maximum exposure to loss	\$ 7,321	\$ 7,177
Real estate, credit-related and other investing		
Assets in VIEs	\$ 2,357	\$ 2,556
Carrying value of variable interests – assets	\$ 572	\$ 510
Carrying value of variable interests – liabilities	\$ –	\$ 4
Maximum exposure to loss:		
Commitments and guarantees	\$ 157	\$ 254
Loans and investments	572	505
Total maximum exposure to loss	\$ 729	\$ 759

As of both March 2020 and December 2019, the carrying values of the Bank's variable interests in nonconsolidated VIEs are included in the consolidated balance sheets as follows:

- Mortgage-backed: Substantially all assets were included in loans.
- Corporate debt and other asset-backed: Substantially all assets were included in loans and substantially all liabilities were included in trading liabilities.
- Real estate, credit-related and other investing: Assets were primarily included in other assets. Liabilities were included in other liabilities.

Consolidated VIEs

As of both March 2020 and December 2019, the Bank had no consolidated VIEs.

Notes to Consolidated Financial Statements (Unaudited)

Note 18.

Commitments, Contingencies and Guarantees

Commitments

The table below presents commitments by type.

\$ in millions	As of	
	March 2020	December 2019
Commitment Type		
Commercial lending:		
Investment-grade	\$ 70,776	\$ 77,944
Non-investment-grade	40,734	43,642
Warehouse financing	7,278	4,998
Credit cards	16,447	13,669
Total lending	135,235	140,253
Collateralized agreement	798	835
Collateralized financing	47	16
Investment	557	626
Other	4,525	1,504
Total commitments	\$ 141,162	\$ 143,234

The table below presents commitments by expiration.

\$ in millions	As of March 2020			
	Remainder of 2020	2021 - 2022	2023 - 2024	2025 - Thereafter
Commitment Type				
Commercial lending:				
Investment-grade	\$ 7,973	\$ 24,460	\$ 33,021	\$ 5,322
Non-investment-grade	3,007	14,150	16,007	7,570
Warehouse financing	818	5,059	1,208	193
Credit cards	16,447	-	-	-
Total lending	28,245	43,669	50,236	13,085
Collateralized agreement	798	-	-	-
Collateralized financing	47	-	-	-
Investment	-	-	-	557
Other	4,525	-	-	-
Total commitments	\$ 33,615	\$ 43,669	\$ 50,236	\$ 13,642

Lending Commitments

The Bank's commercial and warehouse financing lending commitments are agreements to lend with fixed termination dates and depend on the satisfaction of all contractual conditions to borrowing. These commitments are presented net of amounts syndicated to third parties. The total commitment amount does not necessarily reflect actual future cash flows because the Bank may syndicate all or substantial portions of these commitments. In addition, commitments can expire unused or be reduced or cancelled at the counterparty's request. The Bank also provides credit to consumers by issuing credit card lines.

The table below presents information about lending commitments.

\$ in millions	As of	
	March 2020	December 2019
Held for investment	\$ 117,407	\$ 127,799
Held for sale	10,733	11,454
At fair value	7,095	1,000
Total	\$ 135,235	\$ 140,253

In the table above:

- Held for investment lending commitments are accounted for at amortized cost. The carrying value of lending commitments was a liability of \$359 million (including allowance for losses of \$256 million) as of March 2020 and \$384 million (including allowance for losses of \$266 million) as of December 2019. The estimated fair value of such lending commitments was a liability of \$4.89 billion as of March 2020 and \$2.43 billion as of December 2019. Had these lending commitments been carried at fair value and included in the fair value hierarchy, \$2.80 billion as of March 2020 and \$1.52 billion as of December 2019 would have been classified in level 2, and \$2.09 billion as of March 2020 and \$917 million as of December 2019 would have been classified in level 3.
- Held for sale lending commitments are accounted for at the lower of cost or fair value. The carrying value of lending commitments held for sale was a liability of \$56 million as of March 2020 and \$31 million as of December 2019. Had these lending commitments been included in the fair value hierarchy, they would have been primarily classified in level 3 as of both March 2020 and December 2019.
- Gains or losses related to lending commitments at fair value, if any, are generally recorded net of any fees in gains and losses from financial assets and liabilities.

Notes to Consolidated Financial Statements (Unaudited)

Commercial Lending. The Bank's commercial lending commitments were primarily extended to investment-grade corporate borrowers. Such commitments primarily included relationship lending activities (principally used for operating and general corporate purposes) and other activities (generally extended for contingent acquisition financing and are often intended to be short-term in nature, as borrowers often seek to replace them with other funding sources). The Bank also extends lending commitments in connection with other types of corporate lending, as well as commercial real estate financing. See Note 9 for further information about funded loans.

Sumitomo Mitsui Financial Group, Inc. (SMFG) provides the Bank and its affiliates with credit loss protection on certain approved loan commitments (primarily investment-grade commercial lending commitments). The notional amount of such loan commitments was \$4.05 billion as of March 2020 and \$5.74 billion as of December 2019, substantially all of which was in the Bank. The credit loss protection on loan commitments provided by SMFG is generally limited to 95% of the first loss the Bank and its affiliates realize on such commitments, up to a maximum of approximately \$950 million. In addition, subject to the satisfaction of certain conditions, upon the Bank's request, SMFG will provide protection for 70% of additional losses on such commitments, up to a maximum of \$750 million, of which no protection had been provided as of March 2020 and December 2019. The Bank also uses other financial instruments to mitigate credit risks related to certain commitments not covered by SMFG. These instruments primarily include credit default swaps that reference the same or similar underlying instrument or entity, or credit default swaps that reference a credit index.

Warehouse Financing. The Bank provides financing to clients who warehouse financial assets. These arrangements are secured by the warehoused assets, primarily consisting of residential real estate, consumer and corporate loans.

Credit Cards. The Bank's credit card lending commitments represents credit card lines issued by the Bank to consumers. These credit card lines are cancelable by the Bank.

Collateralized Agreement Commitments/ Collateralized Financing Commitments

Collateralized agreement commitments includes forward starting resale agreements, and collateralized financing commitments includes forward starting repurchase and secured lending agreements that settle at a future date, generally within three business days. Collateralized agreement commitments also includes transactions where the Bank has entered into commitments to provide contingent financing to its clients and counterparties through resale agreements. The Bank's funding of these commitments depends on the satisfaction of all contractual conditions to the resale agreement and these commitments can expire unused.

Investment Commitments

Investment commitments includes commitments to invest in securities, real estate and other assets.

Contingencies

Legal Proceedings. See Note 24 for information about legal proceedings.

Certain Mortgage-Related Contingencies. During the period 2005 through 2008 in connection with both sales and securitizations of loans, the Bank provided loan-level representations and/or assigned the loan-level representations from the party from whom the Bank purchased the loans.

Based on the large number of defaults in residential mortgages, including those sold or securitized by the Bank, there is a potential for repurchase claims. However, the Bank is not in a position to make a meaningful estimate of that exposure at this time. The Bank's exposure to claims for repurchase of residential mortgage loans based on alleged breaches of representations will depend on a number of factors, such as the extent to which these claims are made within the statute of limitations, taking into consideration the agreements to toll the statute of limitations the Bank entered into with trustees representing certain trusts.

Notes to Consolidated Financial Statements (Unaudited)

Guarantees

The table below presents derivatives that meet the definition of a guarantee, securities lending indemnifications and certain other financial guarantees.

<i>\$ in millions</i>	Derivatives	Securities lending indemnifications	Other financial guarantees
As of March 2020			
Carrying Value of Net Liability	\$ 2,421	\$ –	\$ 13
Maximum Payout/Notional Amount by Period of Expiration			
Remainder of 2020	\$ 22,123	\$ 21,426	\$ 924
2021 - 2022	33,281	–	1,759
2023 - 2024	6,519	–	1,483
2025 - thereafter	8,086	–	36
Total	\$ 70,009	\$ 21,426	\$ 4,202
As of December 2019			
Carrying Value of Net Liability	\$ 1,160	\$ –	\$ 4
Maximum Payout/Notional Amount by Period of Expiration			
2020	\$ 40,819	\$ 21,490	\$ 1,133
2021 - 2022	37,588	–	1,427
2023 - 2024	5,681	–	1,146
2025 - thereafter	8,384	–	10
Total	\$ 92,472	\$ 21,490	\$ 3,716

In the table above:

- The maximum payout is based on the notional amount of the contract and does not represent anticipated losses.
- Amounts exclude certain commitments to issue standby letters of credit that are included in lending commitments. See the tables in “Commitments” above for a summary of the Bank’s commitments.
- The carrying value for derivatives included derivative assets of \$65 million as of March 2020 and \$132 million as of December 2019, and derivative liabilities of \$2.49 billion as of March 2020 and \$1.29 billion as of December 2019.

Derivative Guarantees. The Bank enters into various derivatives that meet the definition of a guarantee under U.S. GAAP, including written currency contracts and interest rate caps, floors and swaptions. These derivatives are risk managed together with derivatives that do not meet the definition of a guarantee, and therefore the amounts in the table above do not reflect the Bank’s overall risk related to derivative activities. Disclosures about derivatives are not required if they may be cash settled and the Bank has no basis to conclude it is probable that the counterparties held the underlying instruments at inception of the contract. The Bank has concluded that these conditions have been met for certain large, internationally active commercial and investment bank counterparties, central clearing counterparties, hedge funds and certain other counterparties. Accordingly, the Bank has not included such contracts in the table above. See Note 7 for information about credit derivatives that meet the definition of a guarantee, which are not included in the table above.

Derivatives are accounted for at fair value and therefore the carrying value is considered the best indication of payment/performance risk for individual contracts. However, the carrying values in the table above exclude the effect of counterparty and cash collateral netting.

Securities Lending Indemnifications. The Bank, in its capacity as an agency lender, indemnifies most of its securities lending customers against losses incurred in the event that borrowers do not return securities and the collateral held is insufficient to cover the market value of the securities borrowed. Collateral held by the lenders in connection with securities lending indemnifications was \$22.00 billion as of March 2020 and \$22.05 billion as of December 2019. Because the contractual nature of these arrangements requires the Bank to obtain collateral with a market value that exceeds the value of the securities lent to the borrower, there is minimal performance risk associated with these guarantees.

Other Financial Guarantees. In the ordinary course of business, the Bank provides other financial guarantees of the obligations of third parties (e.g., standby letters of credit and other guarantees to enable clients to complete transactions). These guarantees represent obligations to make payments to beneficiaries if the guaranteed party fails to fulfill its obligation under a contractual arrangement with that beneficiary.

Indemnities and Guarantees of Service Providers. In the ordinary course of business, the Bank indemnifies and guarantees certain service providers, such as clearing and custody agents, trustees and administrators, against specified potential losses in connection with their acting as an agent of, or providing services to, the Bank.

Notes to Consolidated Financial Statements (Unaudited)

The Bank may also be liable to some clients or other parties for losses arising from its custodial role or caused by acts or omissions of third-party service providers, including sub-custodians and third-party brokers. In certain cases, the Bank has the right to seek indemnification from these third-party service providers for certain relevant losses incurred by the Bank. In addition, the Bank is a member of a clearing and settlement network, as well as exchanges around the world that may require the Bank to meet the obligations of such networks and exchanges in the event of member defaults and other loss scenarios.

The Bank is unable to develop an estimate of the maximum payout under these guarantees and indemnifications. However, management believes that it is unlikely the Bank will have to make any material payments under these arrangements, and no material liabilities related to these guarantees and indemnifications have been recognized in the consolidated balance sheets as of both March 2020 and December 2019.

Other Representations, Warranties and Indemnifications. The Bank provides representations and warranties to counterparties in connection with a variety of commercial transactions and occasionally indemnifies them against potential losses caused by the breach of those representations and warranties. The Bank may also provide indemnifications protecting against changes in or adverse application of certain U.S. tax laws in connection with ordinary-course transactions, such as borrowings or derivatives.

In addition, the Bank may provide indemnifications to some counterparties to protect them in the event additional taxes are owed or payments are withheld, due either to a change in or an adverse application of certain non-U.S. tax laws.

These indemnifications generally are standard contractual terms and are entered into in the ordinary course of business. Generally, there are no stated or notional amounts included in these indemnifications, and the contingencies triggering the obligation to indemnify are not expected to occur. The Bank is unable to develop an estimate of the maximum payout under these guarantees and indemnifications. However, management believes that it is unlikely the Bank will have to make any material payments under these arrangements, and no material liabilities related to these arrangements have been recognized in the consolidated balance sheets as of both March 2020 and December 2019.

Note 19.

Regulation and Capital Adequacy

The Bank is regulated as described in Note 1, and is subject to consolidated regulatory capital requirements as described below. For purposes of assessing the adequacy of its capital, the Bank calculates its risk-based capital and leverage ratios in accordance with the regulatory capital requirements applicable to state member banks based on the FRB's regulations (Capital Framework).

The capital requirements are expressed as risk-based capital and leverage ratios that compare measures of regulatory capital to risk-weighted assets (RWAs), average assets and off-balance sheet exposures. Failure to comply with these capital requirements could result in restrictions being imposed by the Bank's regulators and could limit the Bank's ability to pay dividends and make certain discretionary compensation payments. The Bank's capital levels are also subject to qualitative judgments by the regulators about components of capital, risk weightings and other factors.

Capital Framework

The regulations under the Capital Framework 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 U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). Under the Capital Framework, the Bank is an "Advanced approach" banking organization.

The capital requirements calculated in accordance with the Capital Framework include the minimum risk-based capital and leverage ratios. In addition, the risk-based capital requirements include the capital conservation buffer and the countercyclical capital buffer, if any, both of which must consist entirely of capital that qualifies as Common Equity Tier 1 (CET1) capital.

The Bank calculates its CET1 capital, 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 Advanced Capital Rules). The lower of each risk-based capital ratio calculated in (i) and (ii) is the ratio against which the Bank's compliance with its risk-based capital requirements is assessed. Under the Capital Framework, the Bank is also subject to leverage requirements which consist of a minimum Tier 1 leverage ratio and a minimum supplementary leverage ratio (SLR).

Notes to Consolidated Financial Statements (Unaudited)

Consolidated Regulatory Risk-Based Capital and Leverage Ratios. The U.S. Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA), among other things, requires the 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.

Under the regulatory framework for prompt corrective action applicable to the Bank, in order to meet the quantitative requirements for being a “well-capitalized” depository institution, the Bank must also meet the “well-capitalized” requirements in the table below.

The Bank’s capital levels and prompt corrective action classification are also subject to qualitative judgments by the regulators about components of capital, risk weightings and other factors. Failure to comply with these capital requirements, including a breach of the buffers described above, could result in restrictions being imposed by the Bank’s regulators.

The table below presents the risk-based capital, leverage and “well-capitalized” requirements.

	Requirements	"Well-capitalized" Requirements
Risk-based capital requirements		
CET1 capital ratio	7.0%	6.5%
Tier 1 capital ratio	8.5%	8.0%
Total capital ratio	10.5%	10.0%
Leverage requirements		
Tier 1 leverage ratio	4.0%	5.0%
SLR	3.0%	6.0%

In the table above:

- The CET1 capital ratio requirement includes a minimum of 4.5%, the Tier 1 capital ratio requirement includes a minimum of 6.0% and the Total capital ratio requirement includes a minimum of 8.0%. The requirements also include the capital conservation buffer of 2.5% and the countercyclical capital buffer, which the FRB has set to zero percent.
- The “well-capitalized” requirements are the binding requirements for leverage ratios.

The table below presents information about risk-based capital ratios.

<i>\$ in millions</i>	Standardized	Advanced
As of March 2020		
CET1 capital	\$ 29,760	\$ 29,760
Tier 1 capital	\$ 29,760	\$ 29,760
Tier 2 capital	\$ 5,710	\$ 4,644
Total capital	\$ 35,470	\$ 34,404
RWAs	\$ 272,752	\$ 164,238
As of December 2019		
CET1 capital	\$ 29,176	\$ 29,176
Tier 1 capital	\$ 29,176	\$ 29,176
Tier 2 capital	\$ 5,293	\$ 4,486
Total capital	\$ 34,469	\$ 33,662
RWAs	\$ 258,541	\$ 135,596
CET1 capital ratio	11.3%	21.5%
Tier 1 capital ratio	11.3%	21.5%
Total capital ratio	13.3%	24.8%

In the table above:

- The lower of the Standardized or Advanced ratio is the ratio against which the Bank’s compliance with the capital requirements is assessed under the risk-based Capital Rules, and therefore, the Standardized ratios applied to the Bank as of both March 2020 and December 2019.
- As permitted by the FRB, the Bank has elected to temporarily delay the estimated effects of adopting CECL on regulatory capital until January 2022 and to subsequently phase-in the effects through January 2025. In addition, during 2020 and 2021, the Bank has elected to increase regulatory capital by 25% of the increase in the allowance for credit losses since January 1, 2020, as permitted by the rules issued by the FRB. The impact of this increase will also be phased in over the three-year transition period. Reflecting the full impact of CECL as of March 2020 would not have had a material impact on the Bank’s Standardized risk-based capital ratios.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents information about leverage ratios.

<i>\$ in millions</i>	For the Three Months	
	Ended or as of	
	March 2020	December 2019
Tier 1 capital	\$ 29,760	\$ 29,176
Average total assets	\$ 243,066	\$ 221,033
Deductions from Tier 1 capital	(59)	(59)
Average adjusted total assets	243,007	220,974
Average off-balance sheet exposures	182,717	192,878
Total leverage exposure	\$ 425,724	\$ 413,852
Tier 1 leverage ratio	12.2%	13.2%
SLR	7.0%	7.0%

In the table above:

- Average total assets represents the average daily assets for the quarter adjusted for the impact of CECL transition.
- Average off-balance sheet exposures represents the monthly average and consists of derivatives, securities financing transactions, commitments and guarantees.
- Tier 1 leverage ratio is calculated as Tier 1 capital divided by average adjusted total assets.
- SLR is calculated as Tier 1 capital divided by total leverage exposure.

Risk-Based Capital. The table below presents information about risk-based capital.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Shareholder's equity	\$ 29,518	\$ 29,332
Impact of CECL transition	552	–
Other adjustments	(310)	(156)
CET1 capital	29,760	29,176
Tier 1 capital	\$ 29,760	\$ 29,176
Standardized Tier 2 and Total capital		
Tier 1 capital	\$ 29,760	\$ 29,176
Qualifying subordinated debt	4,250	4,250
Allowance for credit losses	1,460	1,043
Standardized Tier 2 capital	5,710	5,293
Standardized Total capital	\$ 35,470	\$ 34,469
Advanced Tier 2 and Total capital		
Tier 1 capital	\$ 29,760	\$ 29,176
Standardized Tier 2 capital	5,710	5,293
Allowance for credit losses	(1,460)	(1,043)
Other adjustments	394	236
Advanced Tier 2 capital	4,644	4,486
Advanced Total capital	\$ 34,404	\$ 33,662

In the table above:

- Impact of CECL transition represents the impact of adoption as of January 1, 2020 and the impact of increasing regulatory capital by 25% of the increase in the allowance for credit losses since January 1, 2020. The allowance for credit losses within Standardized and Advanced Tier 2 capital also reflects the impact of these adjustments.
- Other adjustments within CET1 capital primarily include credit valuation adjustments on derivative liabilities and debt valuation adjustments. Other adjustments within Advanced Tier 2 capital include eligible credit reserves.
- Qualifying subordinated debt is subordinated debt issued by the Bank 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 14 for further information about the Bank's subordinated debt.

RWAs. RWAs are calculated in accordance with both the Standardized and Advanced Capital Rules.

Credit Risk

Credit RWAs are calculated based on measures of exposure, which are then risk weighted under the Standardized and Advanced Capital Rules:

- The Standardized Capital Rules apply prescribed risk-weights, which depend largely on the type of counterparty. The exposure measure for derivatives and securities financing transactions are based on specific formulas which take certain factors into consideration.
- Under the Advanced Capital Rules, the Bank computes risk-weights for wholesale and retail credit exposures in accordance with the Advanced Internal Ratings-Based approach. The exposure measures for derivatives and securities financing transactions are computed utilizing internal models.

Market Risk

RWAs for market risk in accordance with the Standardized and Advanced Capital Rules are generally consistent. Market RWAs are calculated based on measures of exposure which include the following:

- Value-at-Risk (VaR) is the potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities accounted for at fair value, due to adverse market movements over a defined time horizon with a specified confidence level.

Notes to Consolidated Financial Statements (Unaudited)

For both risk management purposes and regulatory capital calculations, the Bank uses a single VaR model which captures risks including those related to interest rates, equity prices and currency rates. However, VaR used for regulatory capital requirements (regulatory VaR) differs from risk management VaR due to different time horizons and confidence levels (10-day and 99% for regulatory VaR vs. one-day and 95% for risk management VaR), as well as differences in the scope of positions on which VaR is calculated.

The Bank's positional losses observed on a single day exceeded its 99% one-day regulatory VaR on six occasions during the three months ended March 2020 and on one occasion during the three months ended March 2019. There was no change in the VaR multiplier used to calculate Market RWAs;

- Stressed VaR is the potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities accounted for at fair value, during a period of significant market stress;
- Incremental risk is the potential loss in value of non-securitized positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon;
- Comprehensive risk is the potential loss in value, due to price risk and defaults, within the Bank's credit correlation positions; and
- Specific risk is the risk of loss on a position that could result from factors other than broad market movements, including event risk, default risk and idiosyncratic risk. The standardized measurement method is used to determine specific risk RWAs, by applying supervisory defined risk-weighting factors after applicable netting is performed.

Operational Risk

Operational RWAs are only required to be included under the Advanced Capital Rules. The Bank utilizes an internal risk-based model to quantify Operational RWAs.

The table below presents information about RWAs.

<i>\$ in millions</i>	Standardized	Advanced
As of March 2020		
Credit RWAs		
Derivatives	\$ 83,924	\$ 23,115
Commitments, guarantees and loans	149,481	91,883
Securities financing transactions	3,848	875
Equity investments	549	582
Other	6,851	4,934
Total Credit RWAs	244,653	121,389
Market RWAs		
Regulatory VaR	6,616	6,616
Stressed VaR	18,658	18,658
Incremental risk	1,376	1,376
Comprehensive risk	1,077	1,077
Specific risk	372	372
Total Market RWAs	28,099	28,099
Total Operational RWAs	–	14,750
Total RWAs	\$ 272,752	\$ 164,238
As of December 2019		
Credit RWAs		
Derivatives	\$ 90,493	\$ 15,211
Commitments, guarantees and loans	134,899	79,475
Securities financing transactions	4,209	915
Equity investments	505	535
Other	5,814	3,301
Total Credit RWAs	235,920	99,437
Market RWAs		
Regulatory VaR	4,797	4,797
Stressed VaR	14,893	14,893
Incremental risk	1,750	1,750
Comprehensive risk	404	404
Specific risk	777	777
Total Market RWAs	22,621	22,621
Total Operational RWAs	–	13,538
Total RWAs	\$ 258,541	\$ 135,596

In the table above:

- Securities financing transactions represents resale and repurchase agreements.
- Other includes receivables, certain debt securities, cash and other assets.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents changes in RWAs.

<i>\$ in millions</i>	Standardized	Advanced
Three Months Ended March 2020		
RWAs		
Beginning balance	\$ 258,541	\$ 135,596
Credit RWAs		
Change in:		
Derivatives	(6,569)	7,904
Commitments, guarantees and loans	14,582	12,408
Securities financing transactions	(361)	(40)
Equity investments	44	47
Other	1,037	1,633
Change in Credit RWAs	8,733	21,952
Market RWAs		
Change in:		
Regulatory VaR	1,819	1,819
Stressed VaR	3,765	3,765
Incremental risk	(374)	(374)
Comprehensive risk	673	673
Specific risk	(405)	(405)
Change in Market RWAs	5,478	5,478
Change in Operational RWAs	–	1,212
Ending balance	\$ 272,752	\$ 164,238

Year Ended December 2019

RWAs		
Beginning balance	\$ 248,356	\$ 149,019
Credit RWAs		
Change in:		
Derivatives	3,766	(2,563)
Commitments, guarantees and loans	14,243	(6,516)
Securities financing transactions	(2,024)	(1,379)
Equity investments	(271)	(288)
Other	(2,389)	700
Change in Credit RWAs	13,325	(10,046)
Market RWAs		
Change in:		
Regulatory VaR	1,354	1,354
Stressed VaR	(3,957)	(3,957)
Incremental risk	573	573
Comprehensive risk	(808)	(808)
Specific risk	(302)	(302)
Change in Market RWAs	(3,140)	(3,140)
Change in Operational RWAs	–	(237)
Ending balance	\$ 258,541	\$ 135,596

RWAs Rollforward Commentary

Three Months Ended March 2020. Standardized Credit RWAs as of March 2020 increased by \$8.73 billion compared with December 2019, reflecting an increase in commitments, guarantees and loans, principally due to increased lending activity. This increase was partially offset by a decrease in derivatives, principally due to reduced exposures. Standardized Market RWAs as of March 2020 increased by \$5.48 billion compared with December 2019, reflecting an increase in stressed VaR and regulatory VaR, as a result of increased risk exposures.

Advanced Credit RWAs as of March 2020 increased by \$21.95 billion compared with December 2019, primarily reflecting an increase in commitments, guarantees and loans, principally due to increased lending activity, and an increase in derivatives, primarily due to increased exposure including the impact of higher levels of volatility and counterparty credit risk. Advanced Market RWAs as of March 2020 increased by \$5.48 billion compared with December 2019, reflecting an increase in stressed VaR and regulatory VaR, as a result of increased risk exposures.

Three Months Ended March 2019. Standardized Credit RWAs as of March 2019 increased by \$2.58 billion compared with December 2018, primarily reflecting increases in derivatives and securities financing transactions, principally due to increased exposures, partially offset by a decrease in other, principally due to reduced exposures. Standardized Market RWAs as of March 2019 decreased by \$5.10 billion compared with December 2018, primarily reflecting a decrease in stressed VaR, as a result of changes in risk exposure.

Advanced Credit RWAs as of March 2019 decreased by \$1.30 billion compared with December 2018, primarily reflecting a decrease in derivatives, principally due to reduced exposures. Advanced Market RWAs as of March 2019 decreased by \$5.10 billion compared with December 2018, primarily reflecting a decrease in stressed VaR, as a result of changes in risk exposure.

Notes to Consolidated Financial Statements (Unaudited)

Required Reserves

The deposits of the Bank are insured by the FDIC to the extent provided by law. The FRB requires that the Bank maintain cash reserves with the Federal Reserve Bank of New York (FRBNY). The amount deposited by the Bank at the FRBNY was \$34.16 billion as of March 2020 and \$50.55 billion as of December 2019, which exceeded regulatory reserve requirements by \$34.16 billion as of March 2020 and \$50.29 billion as of December 2019.

Note 20.

Transactions with Related Parties

Transactions between the Bank and its affiliates are regulated by the FRB. These regulations generally limit the types and amounts of transactions (including credit extensions from the Bank) that may take place and generally require those transactions to be on terms that are at least as favorable to the Bank as prevailing terms for comparable transactions with non-affiliates. These regulations generally do not apply to transactions within the Bank.

The table below presents assets and liabilities with affiliates.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Assets		
Cash	\$ 379	\$ 222
Resale agreements	12,267	944
Customer and other receivables	4,164	1,665
Trading assets	839	359
Other assets	778	594
Total	\$ 18,427	\$ 3,784
Liabilities		
Deposits	\$ 11,481	\$ 17,639
Repurchase agreements	2,823	9,891
Customer and other payables	289	371
Trading liabilities	1,085	311
Unsecured borrowings	4,291	4,295
Other liabilities	710	452
Total	\$ 20,679	\$ 32,959

In the table above, trading assets and trading liabilities consist of net outstanding derivative contracts with Group Inc. and affiliates. The Bank enters into derivative contracts with Group Inc. and its affiliates in the normal course of business.

Group Inc. Guarantee

Group Inc. has guaranteed the payment obligations of Goldman Sachs Bank USA, subject to certain limitations.

In addition, Group Inc. has provided a guarantee to the Bank related to certain assets that the Bank acquired from certain subsidiaries and affiliated funds of Group Inc. during March 2020, as described below.

- The Bank and unaffiliated entities purchased certificates of deposit and commercial paper from two money market funds managed by GS Group. These funds are not covered funds under the Volcker Rule. The Bank's purchase price of \$1.84 billion represented the fair value of these securities, which also closely approximated their face values. These purchases were made to promote liquidity in the short-term credit markets and to increase the funds' weekly liquid assets. These securities are included within investments in the consolidated balance sheets.
- The Bank purchased \$797 million of loans from wholly-owned subsidiaries of Group Inc. for \$726 million, which represented the fair value of these loans. In addition, the Bank acquired unfunded lending commitments of \$5.40 billion from wholly-owned subsidiaries of Group Inc. and, in connection with assuming these commitments, was paid \$339 million, which represented the fair value of the commitments.

Interest Income and Interest Expense

The Bank recognizes interest income and interest expense in connection with various affiliated transactions. These transactions include resale agreements, other assets, repurchase agreements, deposits, collateral posted and received, other liabilities, and unsecured borrowings. The Bank recorded net interest income from affiliates of \$9 million for the three months ended March 2020 and \$149 million for the three months ended March 2019.

Other Transactions

The Bank enters into various activities with affiliated entities and transfers revenues to, and receives revenues from, such affiliates for their participation. The Bank received net revenues of \$113 million from affiliates for the three months ended March 2020 and transferred net revenues of \$76 million for the three months ended March 2019. These amounts are included in gains and losses from financial assets and liabilities.

Notes to Consolidated Financial Statements (Unaudited)

The Bank is subject to service charges from affiliates. The net charge to the Bank by affiliates was \$117 million for the three months ended March 2020 and \$118 million for the three months ended March 2019. This service charge from affiliates is for employment related costs of dual employees and employees of affiliates pursuant to a Master Services Agreement supplemented by Service Level Agreements (collectively, the Master Services Agreement). These amounts are included in service charges.

The Bank receives operational and administrative support and management services from affiliates and is charged for these services. In addition, the Bank provides similar support and services to affiliates and charges these affiliates for the services provided. These amounts are reflected net in the applicable expense captions in the consolidated statements of earnings.

In connection with its partnership interest in Goldman Sachs Mitsui Marine Derivative Products, L.P., the Bank has provided to Mitsui Sumitomo Insurance Co., Ltd. (Mitsui Sumitomo) additional protection in the form of assets held in a VIE which could be liquidated for the benefit of Mitsui Sumitomo under certain circumstances.

Note 21.

Interest Income and Interest Expense

Interest is recorded over the life of the instrument on an accrual basis based on contractual interest rates.

The table below presents sources of interest income and interest expense.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Deposits with banks	\$ 125	\$ 259
Collateralized agreements	123	207
Trading assets	363	200
Investments	38	21
Loans	952	919
Other interest	184	205
Total interest income	1,785	1,811
Deposits	710	832
Collateralized financings	58	40
Trading liabilities	24	17
Borrowings	53	66
Other interest	129	150
Total interest expense	974	1,105
Net interest income	\$ 811	\$ 706

In the table above:

- Collateralized agreements consists of resale agreements.
- Loans excludes interest on loans held for sale that are accounted for at the lower of cost or fair value. Such interest is included within other interest.
- Other interest income primarily includes interest income on loans held for sale that are accounted for at the lower of cost or fair value collateral balances posted to counterparties and foreign currency funding facilities.
- Collateralized financings consists of repurchase agreements.
- Borrowings includes interest expense from other secured financings and unsecured borrowings, which primarily relates to interest incurred on the Bank's affiliate borrowings from Group Inc. and Funding IHC, as well as FHLB advances.
- Other interest expense primarily includes interest expense on collateral balances received from counterparties and interest expense on foreign currency funding facilities.

Note 22.

Income Taxes

Provision for Income Taxes

Income taxes are provided for using the asset and liability method under which deferred tax assets and liabilities are recognized for temporary differences between the financial reporting and tax bases of assets and liabilities. The Bank reports interest expense related to income tax matters in provision for taxes and income tax penalties in other expenses.

The Bank's results of operations are included in the consolidated federal and certain state tax returns of GS Group. The Bank computes its tax liability as if it was filing a tax return on a modified separate company basis and settles such liability with Group Inc. pursuant to a tax sharing agreement. To the extent the Bank generates tax benefits from losses, it will be reimbursed by Group Inc. pursuant to a tax sharing agreement at such time as GS Group would have been able to utilize such losses.

Notes to Consolidated Financial Statements (Unaudited)

Deferred Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities. These temporary differences result in taxable or deductible amounts in future years and are measured using the tax rates and laws that will be in effect when such differences are expected to reverse. Valuation allowances are established to reduce deferred tax assets to the amount that more likely than not will be realized. Tax assets are included in other assets and tax liabilities are included in other liabilities.

Unrecognized Tax Benefits

The Bank recognizes tax positions in the consolidated 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. A position that meets this standard is measured at the largest amount of benefit that will more likely than not be realized on settlement. A liability is established for differences between positions taken in a tax return and amounts recognized in the consolidated financial statements.

Regulatory Tax Examinations

The Bank is subject to examination by the U.S. Internal Revenue Service (IRS), as part of GS Group, and other taxing authorities in jurisdictions where the Bank has significant business operations, such as New York State and City. The tax years under examination vary by jurisdiction.

U.S. Federal examinations of 2011 and 2012 began in 2013. GS Group has been accepted into the Compliance Assurance Process program by the IRS for each of the tax years from 2013 through 2020. This program allows GS Group to work with the IRS to identify and resolve potential U.S. Federal tax issues before the filing of tax returns. The 2013 through 2018 tax years remain subject to post-filing review.

All years including and subsequent to 2015 for New York State and City remain open to examination by the taxing authorities. All years including and subsequent to 2009 for all other significant states, excluding New York State and City, remain open to examination by the taxing authorities.

All years including and subsequent to the years detailed above remain open to examination by the taxing authorities. The Bank believes that the liability for unrecognized tax benefits it has established is adequate in relation to the potential for additional assessments.

Note 23.

Credit Concentrations

The Bank's concentrations of credit risk arise from its lending, market-making, cash management and other activities, and may be impacted by changes in economic, industry or political factors. These activities expose the Bank to many different industries and counterparties, and may also subject the Bank to a concentration of credit risk to a particular central bank, counterparty, borrower or issuer, including sovereign issuers, or to a particular clearing house or exchange. The Bank seeks to mitigate credit risk by actively monitoring exposures and obtaining collateral from counterparties as deemed appropriate.

The Bank measures and monitors its credit exposure based on amounts owed to the Bank after taking into account risk mitigants that the Bank considers when determining credit risk. Such risk mitigants include netting and collateral arrangements and economic hedges, such as credit derivatives, futures and forward contracts. Netting and collateral agreements permit the Bank to offset receivables and payables with such counterparties and/or enable the Bank to obtain collateral on an upfront or contingent basis.

The table below presents the credit concentrations included in trading cash instruments and investments.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
U.S. government and agency obligations	\$ 50,151	\$ 67,931
Percentage of total assets	19.7%	29.7%

In addition, the Bank had \$34.16 billion as of March 2020 and \$50.55 billion as of December 2019 of cash deposits held at the FRBNY. These cash deposits are included in cash.

As of both March 2020 and December 2019, the Bank did not have credit exposure to any other external counterparty that exceeded 2% of total assets.

Collateral obtained by the Bank related to derivative assets is principally cash and is held by the Bank or a third-party custodian. Collateral obtained by the Bank related to resale agreements is primarily U.S. government and agency obligations. See Note 11 for further information about collateralized agreements and financings.

Notes to Consolidated Financial Statements (Unaudited)

The Bank had resale agreements of \$24.88 billion as of March 2020 and \$1.71 billion as of December 2019 that are collateralized by U.S. government and agency obligations.

Given that the Bank's primary credit exposure on such transactions is to the counterparty to the transaction, the Bank would be exposed to the collateral issuer only in the event of counterparty default.

Note 24.

Legal Proceedings

The Bank is involved in a number of judicial, regulatory and arbitration proceedings concerning matters arising in connection with the conduct of the Bank's businesses. Many of these proceedings are in early stages, and many of these cases seek an indeterminate amount of damages.

Management is generally unable to estimate a range of reasonably possible loss for matters in which the Bank is involved due to various factors, including where (i) actual or potential plaintiffs have not claimed an amount of money damages, except in those instances where management can otherwise determine an appropriate amount, (ii) matters are in early stages, (iii) matters relate to regulatory investigations or reviews, except in those instances where management can otherwise determine an appropriate amount, (iv) there is uncertainty as to the likelihood of a class being certified or the ultimate size of the class, (v) there is uncertainty as to the outcome of pending appeals or motions, (vi) there are significant factual issues to be resolved, and/or (vii) there are novel legal issues presented.

Management does not believe, based on currently available information, that the outcomes of any such matters will have a material adverse effect on the Bank's financial condition, though the outcomes could be material to the Bank's operating results for any particular period, depending, in part, upon the operating results for such period.

Regulatory Investigations and Reviews and Related Litigation. The Bank and certain of its affiliates (including Group Inc.) are subject to a number of investigations and reviews by, and in some cases have received subpoenas and requests for documents and information from, various governmental and regulatory bodies and self-regulatory organizations and litigation relating to such matters in each case relating to the Bank's current and past businesses and operations, including, but not limited to, credit cards, unsecured installment and residential mortgage lending and servicing, and compliance with related consumer laws; the sales, trading, transaction reporting, execution and clearance of derivatives, currencies and other financial products and related communications and activities, including trading activities and communications in connection with the establishment of benchmark rates, such as currency rates, and activities in U.S. Treasury securities; and transactions involving government-related financings and other matters, including those related to 1Malaysia Development Berhad (1MDB), a sovereign wealth fund in Malaysia. The Bank is cooperating with all such regulatory investigations and reviews.

In addition, governmental and other investigations, reviews, actions and litigation involving the Bank's affiliates and such affiliates' businesses and operations, including without limitation various matters referred to above, may have an impact on the Bank's businesses and operations.

Note 25.

Subsequent Events

The Bank evaluated subsequent events through May 6, 2020, the date the consolidated financial statements were issued, and determined that there were no material events or transactions that would require recognition or additional disclosure in these consolidated financial statements.



Report of Independent Auditors

To the Board of Directors and Shareholder of Goldman Sachs Bank USA and Subsidiaries:

We have reviewed the accompanying consolidated interim financial information of Goldman Sachs Bank USA and its subsidiaries (the Bank), which comprise the consolidated balance sheet as of March 31, 2020, the related consolidated statements of earnings, comprehensive income, changes in shareholder's equity, and cash flows for the three month periods ended March 31, 2020 and 2019.

Management's Responsibility for the Consolidated Interim Financial Information

The Bank's management is responsible for the preparation and fair presentation of the consolidated interim financial information in accordance with accounting principles generally accepted in the United States of America; this responsibility includes the design, implementation, and maintenance of internal control sufficient to provide a reasonable basis for the preparation and fair presentation of the consolidated interim financial information in accordance with accounting principles generally accepted in the United States of America.

Auditors' Responsibility

Our responsibility is to conduct our review in accordance with auditing standards generally accepted in the United States of America applicable to reviews of interim financial information. A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with auditing standards generally accepted in the United States of

America, the objective of which is the expression of an opinion regarding the financial information taken as a whole. Accordingly, we do not express such an opinion.

Conclusion

Based on our review, we are not aware of any material modifications that should be made to the accompanying consolidated interim financial information for it to be in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We previously audited, in accordance with auditing standards generally accepted in the United States of America, the consolidated balance sheet of the Bank as of December 31, 2019, and the related consolidated statements of earnings, comprehensive income, changes in shareholder's equity and cash flows for the year then ended (not presented herein), and in our report dated March 9, 2020, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying consolidated balance sheet as of December 31, 2019, is consistent, in all material respects, with the audited consolidated balance sheet from which it has been derived.

May 6, 2020

Supplemental Financial Information

Distribution of Assets, Liabilities and Shareholder's Equity

The tables below present information about average balances, interest and average interest rates.

\$ in millions	Average Balance for the	
	Three Months Ended March	
	2020	2019
Assets		
Deposits with banks	\$ 41,311	\$ 43,422
Collateralized agreements	25,012	28,196
Trading assets	59,762	25,308
Investments	7,756	4,224
Loans	77,840	71,471
Other interest-earning assets	14,108	13,357
Total interest-earning assets	225,789	185,978
Cash and due from banks	563	426
Other non-interest-earning assets	16,163	10,023
Total assets	\$ 242,515	\$ 196,427
Liabilities		
Interest-bearing deposits	\$ 164,173	\$ 139,728
Collateralized financings	11,064	2,551
Trading liabilities	5,654	2,684
Borrowings	9,063	7,638
Other interest-bearing liabilities	7,340	4,096
Total interest-bearing liabilities	197,294	156,697
Non-interest-bearing deposits	5,568	4,337
Other non-interest-bearing liabilities	10,460	7,534
Total liabilities	213,322	168,568
Shareholder's equity	29,193	27,859
Total liabilities and shareholder's equity	\$ 242,515	\$ 196,427

\$ in millions	Interest for the	
	Three Months Ended March	
	2020	2019
Assets		
Deposits with banks	\$ 125	\$ 259
Collateralized agreements	123	207
Trading assets	363	200
Investments	38	21
Loans	952	919
Other interest-earning assets	184	205
Total interest-earning assets	\$ 1,785	\$ 1,811
Liabilities		
Interest-bearing deposits	\$ 710	\$ 832
Collateralized financings	58	40
Trading liabilities	24	17
Borrowings	53	66
Other interest-bearing liabilities	129	150
Total interest-bearing liabilities	\$ 974	\$ 1,105
Net interest income	\$ 811	\$ 706

	Annualized Average Rate for the Three Months Ended March	
	2020	2019
Assets		
Deposits with banks	1.21%	2.47%
Collateralized agreements	1.97%	3.05%
Trading assets	2.44%	3.28%
Investments	1.97%	2.06%
Loans	4.91%	5.33%
Other interest-earning assets	5.23%	6.37%
Total interest-earning assets	3.17%	4.04%
Liabilities		
Interest-bearing deposits	1.73%	2.47%
Collateralized financings	2.10%	N.M.
Trading liabilities	1.70%	2.63%
Borrowings	2.35%	3.58%
Other interest-bearing liabilities	N.M.	N.M.
Total interest-bearing liabilities	1.98%	2.92%
Net interest margin	1.44%	1.57%

In the tables above:

- Deposits with banks primarily consist of deposits held at the FRBNY.
- Collateralized agreements consists of resale agreements. Collateralized financings consists of repurchase agreements. The average balances for both collateralized agreements and collateralized financings reflect the impact of counterparty netting, while the related interest income and interest expense do not reflect the impact of such counterparty netting. Accordingly, the average rate on collateralized financings for the three months ended March 2019 was not meaningful. See Note 11 to the consolidated financial statements and "Results of Operations" in Part II of this Quarterly Report for further information about collateralized agreements and collateralized financings and related interest.
- See Notes 4 through 10 to the consolidated financial statements and "Results of Operations" in Part II of this Quarterly Report for further information about financial assets and liabilities and related interest.

Supplemental Financial Information

- Loans consists of loans held for investment that are accounted for at amortized cost net of allowance for loan losses or at fair value under the fair value option. Loans exclude loans held for sale that are accounted for at the lower of cost or fair value. Such loans are included within other interest-earning assets. Interest on loans is recognized over the life of the loan and is recorded on an accrual basis. See Note 9 to the consolidated financial statements and “Results of Operations” in Part II of this Quarterly Report for further information about loans and related interest.
- Other interest-earning assets consists of customer and other receivables and loans held for sale that are accounted for at the lower of cost or fair value. Other interest-bearing liabilities consists of customer and other payables. The average balances for both other interest-earning assets and other interest-bearing liabilities reflect the impact of counterparty netting, while the related interest income and interest expense do not reflect the impact of such counterparty netting. Accordingly, the average rate on other interest-bearing liabilities for the three months ended March 2020 and March 2019 was not meaningful.
- Derivative instruments are included in other non-interest-earning assets and other non-interest-bearing liabilities. See Note 7 to the consolidated financial statements and “Results of Operations” in Part II of this Quarterly Report for further information about derivatives.
- Interest-bearing deposits consists of deposits from private bank clients, U.S. consumers, clients of third-party broker-dealers, institutions, corporations and affiliates. See Note 13 to the consolidated financial statements and “Results of Operations” in Part II of this Quarterly Report for further information about deposits and related interest.
- Borrowings include senior unsecured debt, subordinated borrowings, hybrid financial instruments and borrowings from affiliates. See Notes 11 and 14 to the consolidated financial statements and “Balance Sheet Analysis” in Part II of this Quarterly Report for further information about short-term and long-term borrowings and related interest.
- See Note 21 to the consolidated financial statements for further information about interest income and interest expense.

Management's Discussion and Analysis

PART II. Management's Discussion and Analysis of Financial Condition and Results of Operations

Introduction

Goldman Sachs Bank USA, together with its consolidated subsidiaries (collectively, the Bank), is a New York State-chartered bank and a member of the Federal Reserve System. The Bank is supervised and regulated by the Board of Governors of the Federal Reserve System (FRB), the New York State Department of Financial Services (NYDFS) and the Consumer Financial Protection Bureau (CFPB), and is a member of the Federal Deposit Insurance Corporation (FDIC). The Bank's deposits are insured by the FDIC up to the maximum amount provided by law. The Bank is registered as a swap dealer with the U.S. Commodity Futures Trading Commission (CFTC). The Bank is also a government securities dealer subject to the rules and regulations of the U.S. Department of the Treasury.

The Bank is a wholly-owned subsidiary of The Goldman Sachs Group, Inc. (Group Inc.). Group Inc. is a bank holding company (BHC) under the U.S. Bank Holding Company Act of 1956 (BHC Act), a financial holding company under amendments to the BHC Act effected by the U.S. Gramm-Leach-Bliley Act of 1999, and is subject to supervision and examination by the FRB.

When we use the terms "we," "us" and "our," we mean Goldman Sachs Bank USA and its consolidated subsidiaries. When we use the term "GS Group," or "firmwide" we are referring to Group Inc. and its consolidated subsidiaries, including us. References to revenue-producing units and control and support functions include activities performed by our employees, by dual employees (who are employees who perform services for both us and another GS Group subsidiary) and by affiliate employees under Bank supervision pursuant to Master Services Agreements supplemented by Service Level Agreements (collectively, the Master Services Agreement) between us and our affiliates.

This Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our Annual Report for the year ended December 31, 2019. References to "the 2019 Annual Report" are to our Annual Report for the year ended December 31, 2019. All references to "this Quarterly Report," of which this Management's Discussion and Analysis forms a part, refers to the report dated May 6, 2020. See the 2019 Annual Report for more information relating to our business, the supervision and regulation to which we are subject, risk factors affecting our business, our results of operations and financial condition, as well as our consolidated financial statements.

References to "the consolidated financial statements" or "Supplemental Financial Information" are to Part I of this Quarterly Report. The consolidated financial statements are unaudited. All references to March 2020 and March 2019 refer to our periods ended, or the dates, as the context requires, March 31, 2020 and March 31, 2019, respectively. All references to December 2019 refer to the date December 31, 2019. Any reference to a future year refers to a year ending on December 31 of that year. Beginning in the fourth quarter of 2019, we changed our balance sheet presentation to better reflect the nature of our activities. See Note 2 in Part III of the 2019 Annual Report for further information. Reclassifications have been made to previously reported amounts to conform to the current presentation.

Our principal office is located in New York, New York. We operate two domestic branches, which are located in Salt Lake City, Utah and Draper, Utah. Both branches are regulated by the Utah Department of Financial Institutions. We also have a foreign branch in London, United Kingdom, which is regulated by the Financial Conduct Authority and the Prudential Regulation Authority.

We are a financial services provider that engages in banking activities. We are GS Group's primary lending entity, serving corporate and private bank clients, as well as U.S. consumers through our digital platform, *Marcus by Goldman Sachs* (Marcus), and by issuing credit cards. We are also GS Group's primary deposit-taking entity. Our depositors include private bank clients, U.S. consumers, clients of third-party broker-dealers, institutions, corporations and our affiliates. Our consumer deposit-taking activities are conducted through Marcus. We also provide transaction banking services, which includes deposit taking and payment services. In addition, we enter into interest rate, currency, credit and other derivatives, and transact in certain related cash products, for the purpose of market making and risk management.

Management's Discussion and Analysis

Executive Overview

In response to the global outbreak of the coronavirus (COVID-19) pandemic, GS Group is harnessing its resources, experience and network to help where it can, working with public and private clients to partner on initiatives with a focus on community assistance, economic support for businesses and serving its clients and customers. Through the first quarter of 2020, GS Group has announced a number of important initiatives to support its employees, clients and the broader public during this crisis, reinforcing its core values of partnership, client service, integrity and excellence:

Employees and Vendors

- Activated its global Business Continuity Planning (BCP) strategy, with approximately 98% of global employees working remotely.
- Extended 10 days of family leave to its people globally to care for family members due to COVID-19-related illness or childcare needs.
- Introduced telemedicine benefit to employees and covered dependents and waived all costs for 2020.
- Provided access to global patient advocacy teams to help employees and their families gain access to appropriate care for COVID-19.
- Partnered with its vendors to ensure that workers dedicated to GS Group continue to receive their full pay and benefits, even if their shifts are temporarily reduced or eliminated.
- Launched virtual volunteer opportunities for its people to support their communities remotely.
- Honoring the full financial commitment to its 2,800 summer interns who will have a truncated program.

Clients

- Announced a COVID-19 Customer Assistance Program, giving consumers the flexibility to defer a Marcus loan or Apple Card payment for up to two months at no cost and access funds in Marcus certificates of deposit early with no penalty.
- Leveraging its digital banking model to provide uninterrupted customer service, including rapid response times through virtual call centers.
- Continuing to provide savings products with attractive interest rates.
- Led more than \$15 billion of "Fight COVID-19" bonds.
- Funded \$19 billion of loans to corporate clients.
- Bookrunner on more than \$200 billion of total investment-grade issuance during the first quarter of 2020.
- Working in partnership with central banks, governments, and regulators to support financial system.

Communities

- Announced an approximate \$550 million commitment to COVID-19 relief efforts through mid-April 2020, including (i) \$500 million of emergency loan capital for underserved small businesses through Community Development Financial Institutions (CDFIs) and other mission-driven lenders across the U.S.; (ii) \$25 million in grants to CDFIs and mission-driven lending partners to enable them to hire necessary staff and set up additional operations; (iii) \$30 million COVID-19 relief effort; and (iv) city/state-specific COVID-19 public-private partnerships in New York, Texas, Ohio, Rhode Island, Chicago and Baltimore.
- Launched a U.S. Small Business Resource Center and emergency coaching sessions to 10,000 Small Businesses and 10,000 Women graduates.
- Donated over 2.5 million surgical masks and 700,000 N95 masks across the U.S. and Europe.
- Working with the National Health Service to deliver technical and data support related to the spread of COVID-19.

Three Months Ended March 2020 versus March 2019.

We generated net earnings of \$268 million for the first quarter of 2020, a decrease of 35% compared with \$413 million for the first quarter of 2019.

Net revenues were \$1.62 billion for the first quarter of 2020, an increase of 26% compared with \$1.28 billion for the first quarter of 2019, primarily reflecting higher gains from financial assets and liabilities.

Net interest income was \$811 million for the first quarter of 2020, an increase of 15% compared with \$706 million for the first quarter of 2019. This increase was primarily driven by lower interest expense on interest-bearing deposits and other interest-bearing liabilities.

Non-interest revenues were \$805 million for the first quarter of 2020, an increase of 40% compared with \$576 million for the first quarter of 2019, primarily reflecting higher gains from financial assets and liabilities.

Provision for credit losses was \$661 million for the first quarter of 2020, an increase of 210% compared with \$213 million for the first quarter of 2019, primarily related to corporate loans as a result of continued pressure in the energy sector and the impact of the COVID-19 pandemic on the broader economic environment. In addition, the first quarter of 2020 included provisions related to growth in corporate loans and credit card loans, and the impact of accounting for credit losses under the CECL standard.

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Operating expenses were \$610 million for the first quarter of 2020, an increase of 17% compared with \$522 million for the first quarter of 2019, primarily reflecting higher lending related expenses, securitization related expenses and professional fees.

As of March 2020, our Common Equity Tier 1 (CET1) capital ratio as calculated in accordance with the Standardized Capital Rules was 10.9% and as calculated in accordance with the Advanced Capital Rules was 18.1%. See Note 19 to the consolidated financial statements for further information about our capital ratios.

If the COVID-19 pandemic persists, it may lead to a decline in market-making activity levels, a further widening of credit spreads, a continued deterioration in the creditworthiness of borrowers, or a decline in consumer deposits. As a result, net revenues and the provision for credit losses would likely be negatively impacted.

Business Environment

The beginning of the first quarter of 2020 was characterized by favorable market conditions, reflecting continued economic growth and strong consumer sentiment. However, in March, the spread of COVID-19 across the globe and the dramatic measures taken to contain it, including the temporary closures of non-essential businesses and stay-at-home requirements, caused a sharp contraction in global economic activity, high levels of volatility across most financial assets and global markets, an unprecedented decline in global equity prices, and a significant widening of credit spreads. Global central banks responded quickly with accommodative monetary policy by reducing policy interest rates and increasing large scale asset purchases, and the establishment of a number of facilities, to support the functioning of markets and to provide liquidity to the market. In addition, governments globally intervened with fiscal policy to mitigate the impact, including the Coronavirus Aid, Relief, and Economic Security (CARES) Act in the U.S., which aimed to provide economic relief to businesses and individuals.

The beginning of the second quarter of 2020 continued to be impacted by the COVID-19 pandemic, reflecting continued declines in recent economic indicators, particularly in advanced economies, and a historic increase in initial jobless claims in the U.S. To alleviate the economic impact, global central banks continued their quantitative easing, while signaling that they would do more if needed, and the U.S. government approved additional fiscal measures to support small businesses and individuals. This intervention helped equity prices recover and credit spreads tighten moderately compared with the end of the first quarter of 2020. However, the pace of industry-wide announced mergers and acquisition activity has slowed, volatility in the equity markets, although declining, has remained elevated, and commodities markets experienced significant turmoil, as oil prices declined significantly due to an unprecedented surplus in net supply.

Critical Accounting Policies

Allowance for Credit Losses

We estimate and record an allowance for credit losses related to our loans held for investment and accounted for at amortized cost. We adopted ASU No. 2016-13, "Financial Instruments — Credit Losses (Topic 326) — Measurement of Credit Losses on Financial Instruments," in January 2020, which replaced the probable incurred credit loss model for recognizing credit losses with the current expected credit losses (CECL) model. As a result, our allowance for credit losses effective January 2020, reflects our estimate of credit losses over the remaining expected life of such loans and also takes into account forecasts of future economic conditions. See Note 3 to the consolidated financial statements for further information about adoption of ASU No. 2016-13. To determine the allowance for credit losses, we classify our loans into wholesale and retail portfolios. These portfolios represent the level at which we have developed and documented our methodology to determine the allowance for credit losses. The allowance for credit losses is measured on a collective basis for loans that exhibit similar risk characteristics using a modeled approach and asset-specific basis for loans that do not share similar risk characteristics. The determination of the allowance for credit losses entails significant judgment on various risk factors, including industry default and loss data, current macroeconomic indicators, borrower's capacity to meet its financial obligations, borrower's country of risk, loan seniority and collateral type. In addition, for loans backed by real estate, risk factors include loan-to-value ratio, debt service ratio and home price index. Risk factors for installment and credit card loans include Fair Isaac Corporation (FICO) credit scores and delinquency status.

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Our estimate of credit losses entails judgment about collectability at the reporting dates, and there are uncertainties inherent in those judgments. While we use the best information available to determine this estimate, future adjustments to the allowance may be necessary based on, among other things, changes in the economic environment or variances between actual results and the original assumptions used. Loans are charged off against the allowance for loan losses when deemed to be uncollectible.

We also record an allowance for losses on lending commitments which are held for investment and accounted for at amortized cost. Such allowance is determined using the same methodology as the allowance for loan losses, while also taking into consideration the probability of drawdowns or funding, and is included in other liabilities. See Note 9 to the consolidated financial statements for further information about the allowance for credit losses.

Fair Value

Fair Value Hierarchy. Trading assets and liabilities, certain investments and loans and certain other financial assets and liabilities, are included in our consolidated balance sheets at fair value (i.e., marked-to-market), with related gains or losses generally recognized in our consolidated statements of earnings.

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 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 for the majority of our 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 liabilities may require appropriate valuation adjustments that a market participant would require to arrive at fair value for factors, such as counterparty and our or our affiliates' 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. Level 3 financial assets represented 1.2% as of March 2020 and 0.9% as of December 2019, of our total assets. See Notes 4 through 10 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.

Management's Discussion and Analysis

Controls Over Valuation of Financial Instruments.

We leverage GS Group's control infrastructure over valuation of financial instruments, which is described below. Market makers and investment professionals in revenue-producing units are responsible for pricing our financial instruments. GS Group's 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 independent risk oversight and control functions. This independent price verification is critical to ensuring that our financial instruments are properly valued.

Price Verification. All financial instruments at fair value classified in levels 1, 2 and 3 of the fair value hierarchy are subject to an 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 risk oversight and control 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, IHS 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, market-making 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 Note 4 to the consolidated financial statements for further information about fair value measurements.

Review of Net Revenues. Independent risk oversight and control functions ensure adherence to GS Group's 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. A model risk management group (Model Risk), consisting of quantitative professionals who are separate from model developers, performs an independent model review and validation process of valuation models. New or changed models are reviewed and approved prior to implementation. Models are reviewed 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" in Part II of the 2019 Annual Report for further information about the review and validation of valuation models.

Recent Accounting Developments

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

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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 economic and market conditions. In addition to transactions entered into with third parties, we also enter into transactions with affiliates in the normal course of business, primarily as part of our market-making activities. See "Risk Factors" in Part I of the 2019 Annual Report 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.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Net revenues	\$ 1,616	\$ 1,282
Pre-tax earnings	\$ 345	\$ 547
Net earnings	\$ 268	\$ 413
Annualized net earnings to average total assets	0.4%	0.9%
Annualized return on average shareholder's equity	3.7%	6.1%
Average shareholder's equity to average total assets	12.0%	14.2%

In the table above, annualized return on average shareholder's equity is calculated by dividing annualized net earnings by average monthly shareholder's equity.

Net Revenues

The table below presents our net revenues by line item, as well as net interest margin.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Interest income	\$ 1,785	\$ 1,811
Interest expense	974	1,105
Net interest income	811	706
Non-interest revenues	805	576
Net revenues	\$ 1,616	\$ 1,282
Net interest margin	1.44%	1.57%

In the table above:

- Interest income includes interest earned from our lending portfolio, consisting of corporate lending, wealth management lending, commercial real estate lending, residential real estate lending, installment lending, credit card lending and other lending. Interest income is also earned from cash deposits held primarily at the Federal Reserve Bank of New York (FRBNY). In addition, interest is earned primarily from certain trading assets, investments, collateralized agreements, collateral balances posted to counterparties and foreign currency funding facilities.
- Interest expense includes interest related to deposit-taking activities. Interest expense also includes interest related to certain trading liabilities, collateralized financings, unsecured borrowings, collateral balances received from counterparties and foreign currency funding facilities. We apply hedge accounting to certain interest rate swaps used to manage the interest rate exposure of certain fixed-rate unsecured borrowings and certain fixed-rate term certificates of deposit (CDs). For qualifying fair value hedges, gains and losses on derivatives are included in interest expense. See Note 7 to the consolidated financial statements for further information about hedge accounting.
- Non-interest revenues includes gains and losses from financial assets and liabilities related to market-making and risk management activities in interest rate, currency, credit and other derivatives and certain related products which are primarily accounted for at fair value. Non-interest revenues also includes net gains and losses from loans and lending commitments primarily accounted for at fair value. In addition, non-interest revenues includes fees earned from relationships with affiliates, loan syndication fees and other fees.

Three Months Ended March 2020 versus March 2019.

Net revenues in the consolidated statements of earnings were \$1.62 billion for the first quarter of 2020, an increase of 26% compared with \$1.28 billion for the first quarter of 2019, primarily reflecting higher gains from financial assets and liabilities.

Net Interest Income

Net interest income in the consolidated statements of earnings was \$811 million for the first quarter of 2020, 15% higher than the first quarter of 2019, primarily driven by lower interest expense, partially offset by lower interest income. Net interest income was 50% of net revenues in the first quarter of 2020, compared with 55% in the first quarter of 2019.

Management's Discussion and Analysis

Net Interest Margin

Net interest margin was 144 basis points for the first quarter of 2020, a decrease of 13 basis points compared with 157 basis points for the first quarter of 2019, primarily driven by a lower interest rate environment and the impact of higher average interest-earning assets.

Non-Interest Revenues

Non-interest revenues were \$805 million for the first quarter of 2020, 40% higher than the first quarter of 2019, primarily reflecting higher gains from financial assets and liabilities, including gains on hedges related to our relationship lending activities.

Interest Income

The table below presents our sources of interest income.

\$ in millions	Three Months Ended March	
	2020	2019
Loans	\$ 952	\$ 919
Trading assets	363	200
Collateralized agreements	123	207
Deposits with banks	125	259
Investments	38	21
Other	184	205
Total interest income	\$ 1,785	\$ 1,811

Three Months Ended March 2020 versus March 2019.

Interest income in the consolidated statements of earnings was \$1.79 billion for the first quarter of 2020, essentially unchanged compared with the first quarter of 2019. See below and “Supplemental Financial Information — Distribution of Assets, Liabilities and Shareholder’s Equity” for further information about our sources of interest income, including average balances and rates.

Interest income from loans was \$952 million for the first quarter of 2020, 4% higher than the first quarter of 2019, primarily due to higher average balances, partially offset by lower interest rates. See Note 9 to the consolidated financial statements for further information about loans.

Interest income from trading assets was \$363 million for the first quarter of 2020, 82% higher than the first quarter of 2019, primarily due to higher average balances. See Note 5 to the consolidated financial statements for further information about trading assets.

Interest income from collateralized agreements was \$123 million for the first quarter of 2020, 41% lower than the first quarter of 2019, primarily due to lower rates. See Note 11 to the consolidated financial statements for further information about collateralized agreements.

Interest income from deposits with banks was \$125 million for the first quarter of 2020, 52% lower than the first quarter of 2019, due to lower rates and lower average balances. See Note 3 to the consolidated financial statements for further information about our cash.

Interest income from investments was \$38 million for the first quarter of 2020, 81% higher than the first quarter of 2019, primarily due to higher average balances. See Note 8 to the consolidated financial statements for further information about investments.

Other interest income was \$184 million for the first quarter of 2020, 10% lower than the first quarter of 2019, primarily due to lower rates. Other interest income primarily includes interest income on loans held for sale that are accounted for at the lower of cost or fair value, collateral balances posted to counterparties and foreign currency funding facilities.

Interest Expense

The table below presents our sources of interest expense.

\$ in millions	Three Months Ended March	
	2020	2019
Deposits	\$ 710	\$ 832
Borrowings	53	66
Collateralized financings	58	40
Trading liabilities	24	17
Other	129	150
Total interest expense	\$ 974	\$ 1,105

Three Months Ended March 2020 versus March 2019.

Interest expense in the consolidated statements of earnings was \$974 million for the first quarter of 2020, 12% lower than the first quarter of 2019. See below and “Supplemental Financial Information — Distribution of Assets, Liabilities and Shareholder’s Equity” for further information about our sources of interest expense, including average balances and rates.

Interest expense from deposits was \$710 million for the first quarter of 2020, 15% lower than the first quarter of 2019, due to lower rates, partially offset by higher average balances.

Interest expense from borrowings was \$53 million for the first quarter of 2020, 20% lower than the first quarter of 2019, due to lower rates, partially offset by higher average balances.

Interest expense from collateralized financings was \$58 million for the first quarter of 2020, 45% higher than the first quarter of 2019, due to higher average balances, partially offset by lower rates.

Interest expense from trading liabilities was \$24 million for the first quarter of 2020, 41% higher than the first quarter of 2019, primarily due to higher average balances, partially offset by lower rates.

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Other interest expense was \$129 million for the first quarter of 2020, 14% lower than the first quarter of 2019, due to lower rates, partially offset by higher average balances. Other interest expense primarily includes interest expense on collateral balances received from counterparties and interest expense on foreign currency funding facilities.

Provision for Credit Losses

Provision for credit losses consists of provision for credit losses on loans and lending commitments held for investment and accounted for at amortized cost. See Note 9 to the consolidated financial statements for further information about the provision for credit losses.

The table below presents our provision for credit losses.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Provision for credit losses	\$ 661	\$ 213

Three Months Ended March 2020 versus March 2019.

Provision for credit losses in the consolidated statements of earnings was \$661 million for the first quarter of 2020, 210% higher than the first quarter of 2019, primarily related to corporate loans as a result of continued pressure in the energy sector and the impact of the COVID-19 pandemic on the broader economic environment. In addition, the first quarter of 2020 included provisions related to growth in corporate loans and credit card loans, and the impact of accounting for credit losses under the CECL standard. See Note 3 to the consolidated financial statements for further information about ASU No. 2016-13.

Operating Expenses

Our operating expenses are primarily influenced by compensation, headcount and levels of business activity. Compensation and benefits includes salaries, estimated year-end discretionary compensation, amortization of equity awards and other items such as benefits. Compensation and benefits relate to direct Bank employees. Discretionary compensation is significantly impacted by, among other factors, GS Group's overall financial performance, prevailing labor markets, business mix, the structure of GS Group's share-based compensation programs and the external environment. Another component of our operating expenses is service charges, which includes employment related costs of dual employees and employees of affiliates pursuant to the Master Services Agreement.

The table below presents our operating expenses by line item and headcount.

<i>\$ in millions</i>	Three Months Ended March	
	2020	2019
Compensation and benefits	\$ 134	\$ 146
Service charges	117	118
Professional fees	65	35
Market development	55	47
Communications and technology	52	35
Brokerage, clearing, exchange and distribution fees	27	27
Other expenses	160	114
Total operating expenses	\$ 610	\$ 522
Headcount at period-end	2,313	1,912

In the table above:

- Compensation and benefits and service charges include employee-related expenses. As described above, compensation and benefits are expenses of direct Bank employees. Service charges include expenses related to dual employees and employees of affiliates who provide services to us pursuant to the Master Services Agreement.
- Other expenses primarily includes expenses related to loan securitizations, non-compensation expenses charged by affiliates to us pursuant to the Master Services Agreement, regulatory and agency fees and lending related expenses. Expenses related to communications and technology were previously reported in Other expenses. Reclassifications have been made to previously reported amounts to conform to the current presentation.

Three Months Ended March 2020 versus March 2019.

Operating expenses in the consolidated statements of earnings were \$610 million for the first quarter of 2020, 17% higher than the first quarter of 2019.

Compensation and benefits expenses in the consolidated statements of earnings were \$134 million for the first quarter of 2020, 8% lower than the first quarter of 2019, consistent with lower operating performance.

Professional fees in the consolidated statements of earnings were \$65 million for the first quarter of 2020, 86% higher than the first quarter of 2019, primarily due to consultant expenses related to our credit card business.

Market development expenses in the consolidated statements of earnings were \$55 million for the first quarter of 2020, 17% higher than the first quarter of 2019, due to higher advertising expenses related to our consumer deposit business.

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Communications and technology expenses in the consolidated statements of earnings were \$52 million for the first quarter of 2020, 49% higher than the first quarter of 2019, due to the consumer business.

Other expenses in the consolidated statements of earnings were \$160 million for the first quarter of 2019, 40% higher than the first quarter of 2019, primarily due to higher lending related expenses, securitization related expenses and regulatory and agency fees.

Provision for Taxes

The effective income tax rate for the first quarter of 2020 was 22.3%, unchanged from the full year tax rate of 22.3% for 2019.

The CARES Act was enacted on March 27, 2020. The CARES Act includes retroactive and prospective provisions enacted to provide income tax relief and liquidity to businesses affected by the COVID-19 pandemic. The legislation includes corporate income tax provisions that temporarily allow for the carryback of net operating losses and remove limitations on the use of loss carryforwards, increase interest expense deduction limitations and allow accelerated depreciation deductions on certain asset improvements. The CARES Act did not have a material impact on our effective tax rate for the first quarter of 2020.

The U.S. Internal Revenue Service and the U.S. Department of the Treasury have released final and proposed regulations relating to the implementation of Global Intangible Low Taxed Income (GILTI) and Base Erosion and Anti-Abuse Tax (BEAT). During both the first quarter of 2020 and the year ended December 2019, we were not subject to BEAT and GILTI.

Balance Sheet and Funding Sources

See "Balance Sheet and Funding Sources" in Part II of the 2019 Annual Report for further information about our balance sheet management process and our funding sources.

Balance Sheet Analysis

As of March 2020, total assets in our consolidated balance sheets were \$254.67 billion, an increase of \$25.83 billion from December 2019, primarily reflecting increases in securities purchased under agreements to resell (resale agreements) of \$23.93 billion and loans of \$19.57 billion, partially offset by decreases in cash of \$16.02 billion and trading assets of \$11.14 billion. The increase in resale agreements and decrease in cash reflects a change in the composition of our global core liquid assets (GCLA). The increase in loans primarily reflected an increase in corporate loans. The decrease in trading assets primarily reflected a decrease in U.S. government obligations.

As of March 2020, total liabilities in our consolidated balance sheets were \$225.15 billion, an increase of \$25.65 billion from December 2019, primarily reflecting increases in deposits of \$12.08 billion and other secured financings of \$9.49 billion. The increase in deposits primarily reflected an increase in consumer deposits and transaction banking deposits. The increase in other secured financing primarily reflected an increase in Federal Home Loan Bank of New York (FHLB) advances and collateralized central bank financings.

Funding Sources

Our primary sources of funding are deposits, collateralized financings, unsecured borrowings and shareholder's equity. We seek to maintain broad and diversified funding sources across products, programs, tenors and creditors to avoid funding concentrations.

The table below presents information about our funding sources.

\$ in millions	As of			
	March 2020		December 2019	
Deposits	\$ 180,474	78%	\$ 168,398	78%
Collateralized financings	12,976	6%	10,548	5%
Unsecured borrowings	7,261	3%	7,258	3%
Total shareholder's equity	29,518	13%	29,332	14%
Total	\$ 230,229	100%	\$ 215,536	100%

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Substantially all of our funding is raised in U.S. dollars. We generally distribute our funding products through third-party distributors and private wealth advisors, to a depositor base in a variety of markets and directly to U.S. consumers, through our digital deposit platform. We believe that our relationships with our creditors are critical to our liquidity. Our creditors include individuals, financial institutions, nonfinancial institutions, corporations and asset managers. We have imposed various internal guidelines to monitor creditor concentration across our funding programs.

Deposits. Our deposits provide us with a diversified source of funding and reduce our reliance on wholesale funding. We accept deposits, including savings, demand and time deposits. Our depositors include private bank clients, U.S. consumers, clients of third-party broker-dealers, institutions, corporations and affiliates.

We also accept deposits from Funding IHC and Group Inc.

The average annualized interest rate on our interest-bearing deposits was 1.73% for the first quarter of 2020 and 2.47% for the first quarter of 2019.

The table below presents our average annualized interest rate on each type of deposit.

	Three Months Ended March	
	2020	2019
Savings and demand	1.53%	2.38%
Time	2.06%	2.59%

See “Supplemental Financial Information — Distribution of Assets, Liabilities, and Shareholder’s Equity” and Note 13 to the consolidated financial statements for further information about deposits.

Collateralized Financings. We fund certain of our inventory and a portion of investments on a secured basis by entering into collateralized financing agreements, such as repurchase agreements. We are also a member of the FHLB. Outstanding borrowings from the FHLB were \$4.03 billion as of March 2020 and \$527 million as of December 2019. See Note 11 to the consolidated financial statements for further information about collateralized financings.

We also have access to funding through the Federal Reserve discount window. While we do not rely on this funding in our liquidity planning and stress testing, we accessed the Federal Reserve discount window during the first quarter of 2020, in line with the commitment announced alongside the nation’s other large banks. The discount window allows the Federal Reserve to lend directly to depository institutions to provide liquidity and stability to the banking system so that they can better serve their individual and corporate clients. See Note 11 to the consolidated financial statements for further information about collateralized financings.

Unsecured Borrowings. We may raise funding through unsecured borrowings, primarily from Funding IHC and Group Inc. Group Inc. raises non-deposit unsecured funding and lends to Funding IHC and other affiliates, including consolidated subsidiaries, such as us, to meet those entities’ funding needs. This approach enhances the flexibility with which Funding IHC and Group Inc. can meet our and other Group Inc. subsidiaries’ funding requirements. We may also raise funding through issuing senior unsecured debt. See Note 14 to the consolidated financial statements for further information about our unsecured borrowings.

Shareholder’s Equity. Shareholder’s equity is a stable and perpetual source of funding. See the consolidated statements of changes in shareholder’s equity in the consolidated financial statements for further information about our equity transactions.

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. See “Equity Capital Management and Regulatory Capital” in Part II of the 2019 Annual Report for further information about our equity capital management process and regulatory capital requirement.

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Restrictions on Payments

Our payment of dividends to Group Inc. is subject to certain restrictions. In addition to limitations on the payment of dividends imposed by federal and state laws, the FRB and the FDIC have the authority to prohibit or limit the payment of dividends by the banking organizations they supervise if, in their opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization, pursuant to applicable FRB regulations (the amount of dividends paid should be limited to the lesser of the amounts calculated under a recent earnings test and an undivided profits test). We did not pay a dividend to Group Inc. during both the three months ended March 2020 and the year ended December 2019. Under the FRB regulations referenced above, we could have declared dividends up to \$4.02 billion as of March 2020, and \$5.16 billion as of December 2019, to Group Inc.

Stress Testing Process

Our stress tests incorporate our internally designed stress scenarios, including our internally developed severely adverse scenario, and are designed to capture our specific vulnerabilities and risks.

We were not required by our primary regulators to conduct the annual stress test in 2019.

Regulatory and Other Matters

Regulatory Matters

See "Regulation" in Part I of the 2019 Annual Report 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 19 to the consolidated financial statements for information about our risk-based capital ratios and leverage ratios.

Other Matters

U.K.'s Decision to leave the E.U. (Brexit). In March 2017, the U.K. government commenced the formal proceedings to withdraw from the E.U. The E.U. and the U.K. agreed to a withdrawal agreement (the Withdrawal Agreement), which became effective on January 31, 2020. The transition period under the Withdrawal Agreement will last until the end of December 2020 to allow the two sides to negotiate a future trade agreement. During the transition period, the U.K. will be treated as if it were a member state of the E.U. and therefore the existing arrangements between the U.K. and the E.U. will not change. The Withdrawal Agreement provides for the possibility of an extension of the transition period for either one or two more years. However, the U.K. has pledged not to extend the transition period beyond December 31, 2020.

Based upon the existing non-E.U. country equivalence regimes, the E.U. and the U.K. have agreed to complete their assessments of equivalence by the end of June 2020. There is significant uncertainty as to the outcome of those assessments. GS Group is monitoring the ongoing development related to Brexit and continues to prepare for a scenario where the U.K. financial services firms will lose access to E.U. markets on December 31, 2020 (a "hard" Brexit) while ensuring it remains flexible and well positioned to allow its clients to benefit from any more favorable scenarios. GS Group's planning also recognizes that after the end of the transition period, GS Group can rely on a degree of continuing access for its U.K. entities pursuant to national cross-border access regimes in certain jurisdictions (for example, based on specific licenses or exemptions).

Replacement of Interbank Offered Rates (IBORs), including LIBOR.

Central banks and regulators in a number of major jurisdictions (for example, U.S., U.K., E.U., Switzerland and Japan) have convened working groups to find, and implement the transition to, suitable replacements for IBORs. The Financial Conduct Authority (FCA), which regulates LIBOR, has announced that it will not compel panel banks to contribute to LIBOR after 2021. In addition, in light of COVID-19, the FCA, alongside the Bank of England and the members of the Working Group on Sterling Risk-Free Reference Rates, issued a statement reaffirming that firms cannot rely on LIBOR being published after 2021. Accordingly, GS Group continues to make progress on its LIBOR transition program in line with this deadline. GS Group has created a program that focuses on achieving an orderly transition from IBORs to alternative risk-free reference rates for us and our clients. As part of this transition, GS Group continues to actively engage with regulators and clients, as well as participate in central bank and sector working groups. See "Regulatory Matters and Other Developments — Other Developments" in Part II of the 2019 Annual Report for further information about the transition program.

Management's Discussion and Analysis

Impact of COVID-19 Pandemic. The COVID-19 pandemic has resulted in governments around the world implementing a broad suite of measures to help control the spread of the virus, including, among others, quarantines, travel restrictions and business curtailments.

In response to the COVID-19 pandemic, GS Group activated and successfully executed on its BCP strategy.

The adverse impacts of COVID-19 on financial markets has led central banks to take aggressive steps to increase liquidity. During the first quarter of 2020, we purchased short-term debt securities, primarily certificates of deposit, from two money market funds that GS Group manages, which are not covered by the Volcker Rule. Our purchase price of \$1.84 billion represented the fair value of these securities, which also closely approximated their face values. These purchases were made to promote liquidity in the short-term credit markets and to increase the funds' weekly liquid assets. See Note 8 to the consolidated financial statements for further information on the money market funds.

Our liquidity position during the first quarter of 2020 remained strong. We maintained an average GCLA of \$103 billion for the first quarter of 2020, an increase of \$9 billion compared with the fourth quarter of 2019. Our deposits increased by \$12 billion to \$180 billion compared with December 2019. Our capital ratios declined during the first quarter of 2020, primarily driven by balance sheet growth, but remained in excess of our minimum requirements. See "Balance Sheet and Funding Sources," "Equity Capital Management and Regulatory Capital" and "Liquidity Risk Management" for further information.

The determination of the provision for credit losses is more difficult when severe economic and market shocks occur. Recent market conditions, characterized by a deterioration in the credit worthiness of borrowers have made it more challenging to determine the provision for credit losses. See Note 9 to the consolidated financial statements for further information about the provision for credit losses.

Over the latter part of the first quarter of 2020, financial markets experienced a spike in volatility as concerns over the spread of COVID-19 intensified. Clients sought to reduce risk exposures, resulting in a significant increase in transaction volumes. Our average daily VaR for the first quarter of March 2020 was \$37 million, an increase of \$15 million compared to March 2019, reflecting, among other things, the role that we have played as a risk intermediary for our clients in the current challenging environment. Throughout the crisis, our approach to managing market risk levels has been proactive, involving ongoing review and monitoring of exposures and risk mitigation opportunities. In addition, the sharp decline in economic activity as the pandemic became more acute has increased credit risk in general and particularly with regard to companies in industries that have been most severely impacted by the economic disruption, including oil and gas, gaming and lodging, and airlines. During the first quarter of 2020, we had approximately \$17 billion in drawdowns on committed corporate credit lines in our relationship lending business, which was below the amount that was pre-funded based on our liquidity models. Given the stresses on clients' liquidity, we have elevated our approach to credit risk management, with an increased focus on monitoring of credit exposures and management of margin calls and disputes. Our risk positions remained balanced, controlled and adequately provisioned for, both in terms of counterparty risk and sector exposure. See "Market Risk Management" and "Credit Risk Management" for further information.

GS Group's response to COVID-19 has involved a number of actions and initiatives aimed at providing support to its clients, employees, vendors and communities. See "Executive Overview" for further information.

The COVID-19 pandemic has created significant uncertainty regarding the operating environment for the remainder of 2020 and possibly longer, as the duration and future course of the pandemic cannot be predicted at this time. A sustained period of weak economic conditions as a result of the pandemic would be detrimental to our businesses as it would negatively affect factors that are important to our operating performance, such as the level of client activity and creditworthiness of counterparties and borrowers. We are monitoring the ongoing developments related to COVID-19 and will take further action as may be required by government authorities or that we determine are in the best interests of employees, clients and counterparties. For further information about the risks associated with COVID-19, see "Risk Factors" below.

Management's Discussion and Analysis

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 and interest payments.

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 22 to the consolidated financial statements for further information about our unrecognized tax benefits.

The table below presents our contractual obligations by type.

\$ in millions	As of	
	March 2020	December 2019
Time deposits	\$ 30,964	\$ 30,757
Unsecured long-term borrowings	\$ 6,205	\$ 6,205
Interest payments	\$ 2,247	\$ 2,361

The table below presents our contractual obligations by expiration.

\$ in millions	As of March 2020			
	Remainder of 2020	2021 - 2022	2023 - 2024	2025 - Thereafter
Time deposits	\$ -	\$ 15,755	\$ 10,933	\$ 4,276
Unsecured long-term borrowings	\$ -	\$ 1,000	\$ 2,955	\$ 2,250
Interest payments	\$ 529	\$ 1,153	\$ 446	\$ 119

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 Notes 11 and 14 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.
- Interest payments represents estimated future contractual interest payments related to unsecured long-term borrowings and time deposits based on applicable interest rates as of March 2020.

Risk Management

Risks are inherent in our businesses and include liquidity, market, credit, operational, model, legal, compliance, conduct, regulatory and reputational risks. Our risks include the risks across our risk categories, regions or 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 risk management processes, see "Overview and Structure of Risk Management," "Liquidity Risk Management," "Market Risk Management," "Credit Risk Management," "Operational Risk Management," "Model Risk Management" and "Risk Factors," below and in Parts I and II of the 2019 Annual Report.

Liquidity Risk Management

Overview

Liquidity risk is the risk that we will be unable to fund ourselves or meet our liquidity needs in the event of Bank-specific, GS Group, broader industry or market liquidity stress events. We have in place a comprehensive and conservative set of liquidity and funding policies. Our principal objective is to be able to fund ourselves and to enable our core businesses to continue to serve clients and generate revenues, even under adverse circumstances. See "Liquidity Risk Management" in Part II of the 2019 Annual Report for further information about our liquidity risk management process.

GCLA Metrics

Based on the results of our internal liquidity risk models, as well as our consideration of other factors including, but not limited to, a qualitative assessment of GS Group's, inclusive of our, condition, as well as the financial markets, we believe our liquidity position as of both March 2020 and December 2019 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 information about our GCLA by asset class.

\$ in millions	Average for the Three Months Ended	
	March 2020	December 2019
Overnight cash deposits	\$ 39,856	\$ 34,219
U.S. government obligations	51,835	51,222
U.S. agency obligations	11,314	8,470
Non-U.S. government obligations	188	198
Total	\$ 103,193	\$ 94,109

Management's Discussion and Analysis

GCLA consists of (i) certain overnight U.S. dollar cash deposits, (ii) 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 (iii) certain non-U.S. dollar-denominated government obligations.

Liquidity Regulatory Framework

We are subject to a minimum Liquidity Coverage Ratio (LCR) under the LCR rule approved by the U.S. federal bank regulatory agencies. The LCR rule requires organizations to maintain an adequate ratio of eligible high-quality liquid assets to expected net cash outflows under an acute short-term liquidity stress scenario. We are required to maintain a minimum LCR of 100%. As of March 2020, our LCR exceeded the minimum requirement.

Credit Ratings

Credit ratings are important when we are competing in certain markets, such as over-the-counter (OTC) derivatives, and when we seek to engage in longer-term transactions.

The table below presents our unsecured credit ratings and outlook by Fitch, Inc. (Fitch), Moody's Investors Service (Moody's), and Standard & Poor's Ratings Services (S&P).

	As of March 2020		
	Fitch	Moody's	S&P
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

We believe our credit ratings are primarily based on the credit rating agencies' assessment of:

- Our status within GS Group and likelihood of GS Group support;
- Our liquidity, market, credit and operational risk management practices;
- The level and variability of our earnings;
- Our capital base;
- Our primary businesses, 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.

In April 2020, due to COVID-19 uncertainty, Fitch revised the outlook of the Bank from stable to negative.

Market Risk Management

Overview

Market risk is the risk of loss in the value of our positions, investments, loans and other financial assets and liabilities, due to changes in market conditions. We hold such positions primarily for market making for our clients and for our investing and financing activities, and therefore, these positions change based on client demands and our investment opportunities. We employ a variety of risk measures, each described in the respective sections below, to monitor market risk.

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; and
- Currency rate risk: results from exposures to changes in spot prices, forward prices and volatilities of currency rates.

See "Market Risk Management" in Part II of the 2019 Annual Report for further information about our market risk management process.

Metrics

We analyze Value-at-Risk (VaR) at the Bank level and a variety of more detailed levels, including by risk category, business and region. Diversification effect in the tables below represents the difference between total VaR and the sum of the VaRs for the two risk categories. This effect arises because the two market risk categories are not perfectly correlated.

The table below presents our average daily VaR.

\$ in millions	Three Months Ended		
	March 2020	December 2019	March 2019
Categories			
Interest rates	\$ 37	\$ 30	\$ 22
Currency rates	5	4	3
Diversification effect	(5)	(5)	(3)
Total	\$ 37	\$ 29	\$ 22

Our average daily VaR increased to \$37 million for the first quarter of 2020 from \$29 million for the fourth quarter of 2019, primarily due to an increase in the interest rates category. The overall increase was primarily due to higher levels of volatility.

Our average daily VaR increased to \$37 million for the first quarter of 2020 from \$22 million for the first quarter of 2019, primarily due to an increase in the interest rates category. The overall increase was primarily due to higher levels of volatility.

Management's Discussion and Analysis

The table below presents our period-end VaR.

\$ in millions	As of		
	March 2020	December 2019	March 2019
Categories			
Interest rates	\$ 76	\$ 25	\$ 24
Currency rates	13	4	5
Diversification effect	(10)	(4)	(5)
Total	\$ 79	\$ 25	\$ 24

Our period-end VaR increased to \$79 million as of March 2020 from \$25 million as of December 2019, primarily due to an increase in the interest rates category. The overall increase was primarily due to higher levels of volatility and increased exposures.

Our period-end VaR increased to \$79 million as of March 2020 from \$24 million as of March 2019, primarily due to an increase in the interest rates category. The overall increase was primarily due to higher levels of volatility.

During the three months ended March 2020, our total VaR limit was exceeded four times. Our total VaR limit was raised on two occasions to facilitate increased market volatility.

The table below presents our high and low VaR.

\$ in millions	Three Months Ended					
	March 2020		December 2019		March 2019	
	High	Low	High	Low	High	Low
Categories						
Interest rates	\$ 83	\$ 22	\$ 45	\$ 24	\$ 27	\$ 19
Currency rates	\$ 16	\$ 3	\$ 5	\$ 3	\$ 11	\$ 3
Bank						
VaR	\$ 85	\$ 21	\$ 46	\$ 23	\$ 27	\$ 17

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 our market risk by asset category for positions accounted for at fair value that are not included in VaR.

\$ in millions	As of		
	March 2020	December 2019	March 2019
Debt	\$ 950	\$ 865	\$ 787
Equity	6	7	35
Total	\$ 956	\$ 872	\$ 822

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 investments in qualified affordable housing projects.
- Debt positions include loans backed by commercial and residential real estate, corporate bank loans and other corporate debt.
- Funded equity and debt positions are included in our consolidated balance sheets in investments and loans. See Note 8 to the consolidated financial statements for further information about investments and Note 9 to the consolidated financial statements for further information about loans.
- These measures do not reflect the diversification effect across asset categories or across other market risk measures.

Interest Rate Sensitivity. Loans accounted for at amortized cost were \$87.36 billion as of March 2020 and \$66.37 billion as of December 2019, substantially all of which had floating interest rates. The estimated sensitivity to a 100 basis point increase in interest rates on such loans was \$709 million as of March 2020 and \$522 million as of December 2019, 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. In addition, we manage our exposure to structural interest rate risk generated by our net asset-liability position, which is primarily a function of our fixed rate term deposits and non-maturity deposits. See Note 9 to the consolidated financial statements for further information about loans that are held for investment and Note 13 for further information about deposits.

Other Market Risk Considerations

As of both March 2020 and December 2019, we had commitments and held loans for which we, and our affiliates, 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 or held-to-maturity and included in investments in the consolidated balance sheets. See Note 8 to the consolidated financial statements for further information.

Management's Discussion and Analysis

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 loans and lending commitments and OTC derivatives. Credit risk also comes from cash placed with banks, securities financing transactions (resale agreements and securities sold under agreements to repurchase (repurchase agreements)) and customer and other receivables. See "Credit Risk Management" in Part II of the 2019 Annual Report for further information about our credit risk management process.

Credit Exposures

As of March 2020, our aggregate credit exposure increased as compared with December 2019, primarily reflecting increases in loans and lending commitments and OTC derivatives, partially offset by a decrease in cash deposits with the FRBNY. 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 2019, primarily reflecting an increase in non-investment-grade loans and lending commitments. Our credit exposure to counterparties that defaulted during the three months ended March 2020 was higher as compared with our credit exposure to counterparties that defaulted during the same prior year period, and such exposure was primarily related to loans and lending commitments. Our credit exposure to counterparties that defaulted during the three months ended March 2020 remained low, representing approximately 0.5% of our total credit exposure. Estimated losses associated with these defaults have been recognized in earnings. Our credit exposures are described further below.

Cash. Our credit exposure on cash arises from our unrestricted cash, and includes both interest-bearing and non-interest-bearing deposits. To mitigate the risk of credit loss, we deposit substantially all of our cash at the FRBNY.

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.

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.

The table below presents our net credit exposure from OTC derivatives and the concentration by industry and region.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
OTC derivative assets	\$ 14,710	\$ 8,195
Collateral (not netted under U.S. GAAP)	(4,229)	(2,269)
Net credit exposure	\$ 10,481	\$ 5,926
Industry		
Consumer, Retail & Healthcare	6%	4%
Diversified Industrials	7%	7%
Financial Institutions	13%	17%
Funds	12%	8%
Municipalities & Nonprofit	24%	27%
Natural Resources & Utilities	16%	14%
Sovereign	6%	5%
Technology, Media & Telecommunications	11%	12%
Other (including Special Purpose Vehicles)	5%	6%
Total	100%	100%
Region		
Americas	77%	70%
EMEA	18%	28%
Asia	5%	2%
Total	100%	100%

In the table above:

- OTC derivative assets, included in the consolidated balance sheets, are reported on a net-by-counterparty basis (i.e., the net receivable for a given counterparty) when a legal right of setoff exists under an enforceable netting agreement (counterparty netting) and are accounted for at fair value, net of cash collateral received under enforceable credit support agreements (cash collateral netting).
- Collateral represents cash collateral and the fair value of securities collateral, primarily U.S. and non-U.S. government and agency obligations, received under credit support agreements, that we consider when determining credit risk, but such collateral is not eligible for netting under U.S. GAAP.
- EMEA represents Europe, Middle East and Africa.

Management's Discussion and Analysis

The table below presents the distribution of our net credit exposure from OTC derivatives by tenor.

\$ in millions	Investment-	Non-Investment-	Total
	Grade	Grade / Unrated	
As of March 2020			
Less than 1 year	\$ 11,289	\$ 471	\$ 11,760
1 - 5 years	10,785	1,461	12,246
Greater than 5 years	30,140	2,506	32,646
Total	52,214	4,438	56,652
Netting	(45,092)	(1,079)	(46,171)
Net credit exposure	\$ 7,122	\$ 3,359	\$ 10,481
As of December 2019			
Less than 1 year	\$ 5,184	\$ 224	\$ 5,408
1 - 5 years	8,487	819	9,306
Greater than 5 years	25,465	1,426	26,891
Total	39,136	2,469	41,605
Netting	(35,279)	(400)	(35,679)
Net credit exposure	\$ 3,857	\$ 2,069	\$ 5,926

In the table above:

- Tenor is based on remaining contractual maturity.
- Netting includes counterparty netting across tenor categories and cash and securities collateral that we consider when determining credit risk (including collateral that is not eligible for netting under U.S. GAAP). Counterparty netting within the same tenor category is included within such tenor category.

The tables below present the distribution of our net credit exposure from OTC derivatives by tenor and internally determined public rating agency equivalents.

\$ in millions	Investment-Grade				Total
	AAA	AA	A	BBB	
As of March 2020					
Less than 1 year	\$ 7	\$ 1,088	\$ 8,218	\$ 1,976	\$ 11,289
1 - 5 years	2	1,297	6,180	3,306	10,785
Greater than 5 years	764	4,613	16,074	8,689	30,140
Total	773	6,998	30,472	13,971	52,214
Netting	(261)	(5,519)	(27,155)	(12,157)	(45,092)
Net credit exposure	\$ 512	\$ 1,479	\$ 3,317	\$ 1,814	\$ 7,122
As of December 2019					
Less than 1 year	\$ 55	\$ 403	\$ 3,714	\$ 1,012	\$ 5,184
1 - 5 years	38	760	5,098	2,591	8,487
Greater than 5 years	554	2,674	15,726	6,511	25,465
Total	647	3,837	24,538	10,114	39,136
Netting	(220)	(2,851)	(22,849)	(9,359)	(35,279)
Net credit exposure	\$ 427	\$ 986	\$ 1,689	\$ 755	\$ 3,857

\$ in millions	Non-Investment-Grade / Unrated		
	BB or lower	Unrated	Total
As of March 2020			
Less than 1 year	\$ 379	\$ 92	\$ 471
1 - 5 years	1,434	27	1,461
Greater than 5 years	2,505	1	2,506
Total	4,318	120	4,438
Netting	(1,078)	(1)	(1,079)
Net credit exposure	\$ 3,240	\$ 119	\$ 3,359
As of December 2019			
Less than 1 year	\$ 216	\$ 8	\$ 224
1 - 5 years	812	7	819
Greater than 5 years	1,409	17	1,426
Total	2,437	32	2,469
Netting	(383)	(17)	(400)
Net credit exposure	\$ 2,054	\$ 15	\$ 2,069

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.

- **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 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.

Management's Discussion and Analysis

The table below presents our credit exposure from commercial loans and lending commitments, and the concentration by industry, region and credit quality.

\$ in millions	As of	
	March 2020	December 2019
Loans and Lending Commitments	\$ 177,121	\$ 167,320
Industry		
Consumer, Retail & Healthcare	19%	20%
Diversified Industrials	16%	14%
Financial Institutions	8%	8%
Funds	4%	3%
Natural Resources & Utilities	15%	17%
Real Estate	9%	9%
Technology, Media & Telecommunications	15%	15%
Other (including Special Purpose Vehicles)	14%	14%
Total	100%	100%
Region		
Americas	84%	84%
EMEA	14%	14%
Asia	2%	2%
Total	100%	100%
Credit Quality (Credit Rating Equivalent)		
AAA	1%	1%
AA	4%	5%
A	15%	15%
BBB	31%	31%
BB or lower	49%	48%
Total	100%	100%

- Wealth Management, Residential Real Estate and Other Lending.** Wealth management loans and lending commitments are extended to private bank clients, substantially all of which are secured by securities, commercial and residential real estate or other assets. The fair value of the collateral received against such loans and lending commitments generally exceeds their carrying value.

We also have residential real estate and other lending exposures, which include purchased residential real estate and installment loans and commitments to purchase such loans and securities.

The table below presents our credit exposure from wealth management, residential real estate and other lending, and the concentration by region. Loans extended to private bank clients and loans originated through *Goldman Sachs Private Bank Select* are included in wealth management loans.

\$ in millions	Wealth Management	Residential Real Estate and Other
As of March 2020		
Credit Exposure	\$ 29,312	\$ 5,292
Americas	99%	100%
EMEA	1%	–
Total	100%	100%
As of December 2019		
Credit Exposure	\$ 27,439	\$ 5,483
Americas	99%	100%
EMEA	1%	–
Total	100%	100%

- Installment and Credit Card Lending.** We originate installment and credit card loans. Our credit exposure to installment loans was \$4.83 billion as of March 2020 and \$4.75 billion as of December 2019 and our credit exposure to credit card loans was \$2.08 billion as of March 2020 and \$1.86 billion as of December 2019.

See Note 9 to the consolidated financial statements for further information about U.S. state concentrations and the credit quality indicators of installment and credit card loans.

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 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 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. We had credit exposure related to securities financing transactions of \$101 million as of March 2020 and \$175 million as of December 2019, reflecting both netting agreements and collateral that we consider when determining credit risk.

Management's Discussion and Analysis

Other Credit Exposures. We are exposed to credit risk from our customer and other receivables. These receivables primarily consist of initial cash margin placed with clearing organizations and receivables related to sales of loans 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 loan settlements.

The table below presents our other credit exposures and the concentration by industry, region and credit quality.

<i>\$ in millions</i>	As of	
	March 2020	December 2019
Other Credit Exposures	\$ 4,721	\$ 4,351
Industry		
Consumer, Retail & Healthcare	5%	1%
Financial Institutions	82%	96%
Funds	8%	2%
Other (including Special Purpose Vehicles)	5%	1%
Total	100%	100%
Region		
Americas	20%	6%
EMEA	79%	94%
Asia	1%	–
Total	100%	100%
Credit Quality (Credit Rating Equivalent)		
AAA	2%	1%
AA	79%	94%
A	10%	3%
BBB	2%	1%
BB or lower	7%	1%
Total	100%	100%

The table above reflects collateral that we consider when determining credit risk.

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 positions due to changes in market prices.

Industry Exposures. The recent decline in oil prices has led to market concerns regarding the creditworthiness of certain companies in the oil and gas industry. As of March 2020, our credit exposure to oil and gas companies related to loans and lending commitments was \$10.26 billion (\$2.84 billion of loans and \$7.42 billion of lending commitments). Such exposure included \$5.38 billion of exposure to non-investment-grade counterparties (\$2.26 billion related to loans and \$3.12 billion related to lending commitments), of which 70% was secured. In addition, we have exposure to our clients in the oil and gas industry arising from derivatives. As of March 2020, our credit exposure related to derivatives and receivables with oil and gas companies was \$425 million (\$45 million with investment-grade counterparties and \$380 million with non-investment-grade counterparties). After taking into consideration the benefit of \$624 million of hedges, our net credit exposure was \$10.06 billion. As of March 2020, our market exposure related to oil and gas companies was \$(945) million, which was primarily to investment-grade issuers or underliers.

The sharp decline in economic activity as a result of the COVID-19 pandemic has resulted in a significant impact to the gaming and lodging industry. As of March 2020, our credit exposure to gaming and lodging companies (including hotel owners and operators) related to loans and lending commitments was \$2.95 billion (\$933 million of loans and \$2.02 billion of lending commitments). Such exposure included \$1.75 billion of exposure to non-investment-grade counterparties (\$680 million related to loans and \$1.07 billion related to lending commitments), of which 80% was secured. In addition, we extend loans that are secured by hotel properties. As of March 2020, our exposure related to such loans and lending commitments was \$1.03 billion and was to non-investment-grade counterparties. In addition, we have exposure to our clients in the gaming and lodging industry arising from derivatives. As of March 2020, our credit exposure related to derivatives and receivables with gaming and lodging companies was \$28 million, primarily with investment-grade counterparties. As of March 2020, our market exposure related to gaming and lodging companies was \$(201) million, which was primarily to investment-grade issuers or underliers.

Management's Discussion and Analysis

Concerns surrounding the COVID-19 pandemic have resulted in a sharp decline in travel which has significantly impacted the airline industry. As of March 2020, our credit exposure to airline companies related to loans and lending commitments was \$2.63 billion (\$1.71 billion of loans and \$919 million of lending commitments). Such exposure included \$2.23 billion of exposure to non-investment-grade counterparties (\$1.62 billion related to loans and \$614 million related to lending commitments), of which 87% was secured. In addition, we have exposure to our clients in the airline industry arising from derivatives. As of March 2020, our credit exposure related to derivatives and receivables with airline companies was not material. After taking into consideration the benefit of \$205 million of hedges, our net credit exposure was \$2.42 billion. As of March 2020, our market exposure related to airline companies was \$(121) million, which was primarily to non-investment-grade issuers or underliers.

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. See "Operational Risk Management" in Part II of the 2019 Annual Report for further information about our operational risk management process.

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 liabilities, to monitor and manage our risk, and to measure and monitor our regulatory capital. See "Model Risk Management" in Part II of the 2019 Annual Report for further information about our model risk management process.

Cautionary Statement

In the preceding discussion and analysis of our financial condition and results of operations, we have included statements that may constitute "forward-looking statements." Forward-looking statements are not historical facts or statements of current conditions, but instead represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside our control.

These statements may relate to, among other things, (i) our future plans and objectives, (ii) various legal proceedings, governmental investigations or other contingencies as set forth in Notes 18 and 24 to the consolidated financial statements in Part I of this Quarterly Report, (iii) the objectives and effectiveness of our risk management and liquidity policies, (iv) our resolution plan and resolution strategy, (v) the impact of regulatory changes applicable to us, as well as our future status, activities or reporting under banking and financial regulation, (vi) our expected provisions for credit losses, (vii) GS Group's preparations for Brexit, (viii) the replacement of LIBOR and other IBORs and our program for the transition to alternative risk-free reference rates, (ix) the adequacy of our allowance for credit losses, (x) the growth of our deposits, (xi) the projected growth of our installment loan and credit card businesses, (xii) our business initiatives, including those related to transaction banking and new consumer financial products (xiii) our expense savings initiatives and increasing use of strategic locations (xiv) the impact of the COVID-19 pandemic on our business, results, financial position and liquidity and (xv) expenses we may incur, including those associated with investing in our installment lending, credit card and transaction banking activities.

By identifying these statements for you in this manner, we are alerting you to the possibility that our actual results, financial condition and liquidity may differ, possibly materially, from the anticipated results, financial condition and liquidity in these forward-looking statements. Important factors that could cause our results and financial condition to differ from those in these statements include, among others, those described below and in "Risk Factors" and "Cautionary Statement Regarding Forward-Looking Statements" in Part I of the 2019 Annual Report.

Management's Discussion and Analysis

Statements about our expected provisions for credit losses are subject to the risk that actual credit losses may differ and our expectations may change, possibly materially, from that currently anticipated due to, among other things, changes to the composition of our loan portfolio and changes in the economic environment in future periods and our forecasts of future economic conditions, as well as changes in our models, policies and other management judgments.

Statements about the growth of our deposits and our installment loan and credit card businesses are subject to the risk that actual growth may differ, possibly materially, from that currently anticipated due to, among other things, changes in interest rates and competition from other similar products.

Statements about the timing, costs and benefits of our business and expense savings initiatives and increases in market share are based on our current expectations regarding our ability to implement these initiatives and actual results may differ, possibly materially, from current expectations due to, among other things, a delay in the timing of these initiatives, increased competition and an inability to reduce expenses and grow businesses.

Risk Factors

Our businesses, financial condition, liquidity and results of operations have been, and will likely continue to be, adversely affected by the emergence of the COVID-19 pandemic.

The emergence of the global outbreak of the coronavirus (COVID-19) pandemic has created economic and financial disruptions that during the quarter adversely affected, and are likely to continue to adversely affect, our business, financial condition, liquidity and results of operations. The extent to which the COVID-19 pandemic will continue to negatively affect our businesses, financial condition, liquidity and results of operations will depend on future developments, which are highly uncertain and cannot be predicted.

The COVID-19 pandemic has contributed to (i) the sudden and significant reduction in the valuation of the equity, fixed-income and commodity markets and the significant increase in the volatility of those markets; (ii) a decrease in the rates and yields on U.S. Treasury securities, in some cases declining below zero; (iii) a major reduction in merger and acquisition activity and significant uncertainty about whether previously announced deals will be completed or restructured; (iv) a major reduction in equity new issue activity; (v) significantly more challenging conditions in the new issue debt market; (vi) significant draws in credit lines, including syndicated credit lines, as clients seek to increase liquidity; (vii) the risk that hedges become less effective, including, for example, due to the movement of short and long positions in U.S. Treasuries and the assets they hedge; (viii) significant increases in collateral calls and disputes as the valuation of derivative positions and, in some cases, collateral has become more challenging; (ix) ratings downgrades, credit deterioration and defaults in many industries, including oil and gas, gaming and lodging, and airlines and (x) heightened cybersecurity, information security and operational risks as a result of work-from-home arrangements.

The effects of the COVID-19 pandemic on economic and market conditions have also increased demands on our liquidity as we meet client needs. Likewise, these adverse developments have affected our capital and leverage ratios. The COVID-19 pandemic has also resulted in higher allowances for credit losses for wholesale and consumer loans.

Governmental authorities worldwide have taken increased measures to stabilize the markets and support economic growth. The success of these measures is unknown and they may not be sufficient to address the market dislocations or avert severe and prolonged reductions in economic activity. We also face an increased risk of client disputes, litigation and governmental and regulatory scrutiny as a result of the effects of COVID-19 on economic and market conditions.

The length of the pandemic and the efficacy of the extraordinary measures being put in place to address it are unknown. Until the pandemic subsides, we expect continued draws on lines of credit, reduced activity levels in investment banking, reduced revenues in our wealth management business and increased client defaults, including defaults in unsecured loans. Even after the pandemic subsides, the U.S. economy, as well as most other major economies, may continue to experience a recession, and we anticipate our businesses would be materially and adversely affected by a prolonged recession in the U.S. and other major markets.